2025 Project Description

Tulsequah Chief Mine

April 2025

Teck

1. Contents

1. Project Overview

The Tulsequah Chief Mine (the Site) is an underground polymetallic mine that was operated under majority ownership by Cominco in the 1950s. Approximately 580,000 tonnes of ore containing primarily gold, silver, copper, and zinc were produced and shipped offsite for processing. Mining ceased in 1957, and further work is required to manage acidic mine drainage to close the site in accordance with current practices. The mine is located on the Taaltsux̲éi Héen (Tulsequah River) about 10 km upstream from its confluence with the Taku River, in the traditional territory of the Taku River Tlingit First Nation (TRTFN). The Taku River crosses the Alaska border into the Taku Inlet and provides critical salmon and trout habitat that supports the TRTFN way of living (Lingít Kusteeyí) and several international fisheries managed under the Pacific Salmon Treaty.

The Tulsequah Chief Mine was managed as a joint venture between Teck Resources (Teck) and Redfern Resources (Redfern) from 1987 to 1992, at which time Redfern exercised the option to purchase, and Teck's ownership interests ceased. In 1994, Redfern applied for a mine development permit, which ultimately led to issuance of an Environmental Assessment Certificate in 2002. Redfern was issued a *Mines Act* permit (M-232) in 2008 for early mine development works and conducted some remediation activities, including installing an underground passive water treatment system and clean water diversion, and sealing of mine openings. Redfern filed for bankruptcy in 2009, and Chieftain Metals acquired the Site in 2010. Chieftain Metals constructed a treatment plant, which operated briefly in 2012, with the intent of supporting a restart of operations. Chieftain did not follow through with plans to develop the mine and an application was made for the appointment of a receiver in 2016. The *Mines Act* permit was subsequently cancelled in March 2024.

During the receivership period, the Chief Inspector of Mines, pursuant to his authority under the *Mines Act,* undertook or caused to be undertaken certain activities, including:

- developing a conceptual reclamation and closure plan (2020 RCP)[1],
- completing site activities to upgrade access in support of executing the 2020 RCP, and
- Developing a plan for future water quality and aquatic effects monitoring that was informed by the initial TRTFN-led program.

Teck provided financial support for some of this work. In 2023, Teck initiated a review of the 2020 Reclamation and Closure Plan (RCP) to identify and address data gaps to inform development of a more detailed plan for the Site.

This Project Description outlines technical investigations proposed for 2025 which will contribute to the development of a Draft RCP by the end of 2026. This Draft RCP will provide additional technical information needed to select the approach to closure that will be used at the site. These technical investigations will be managed by Teck, with support from consultants contracted by Teck and ongoing collaboration with TRTFN throughout the program. Subsequent to endorsement of the Draft RCP by the TRTFN, a Final RCP would be developed for implementation.

2. Location

The Tulsequah Chief Mine is located on the east side of the Taaltsux̲éi Héen, approximately 100 km south of Atlin, British Columbia, approximately 10 km upstream of the confluence with the Taku River and 30 km upstream from the Canada/US border (Figure 2-1). Access is via small aircraft or helicopter from

[1] SNC Lavalin and SRK. 2020. Closure and Reclamation Plan for the Tulsequah Chief Mine Site, Near Atlin, British Columbia. 15 April 2020.

either Whitehorse or Atlin. The site tenure is currently held by Chieftain Metals in the form of 25 Crown granted mineral claim parcels and the Province of BC (Figure 2-2).

The Site includes a barge landing site on the Taku River, access road connecting the barge landing site to the airstrip, camp, and the Big Bull satellite mine; the mine site that includes the underground workings, waste rock storage, ore storage, water treatment plant and exfiltration pond; and several other facilities that had been constructed ahead of the previous proposed mine development project (Figure 2-3).

Figure 2-1: Tulsequah Chief Mine location

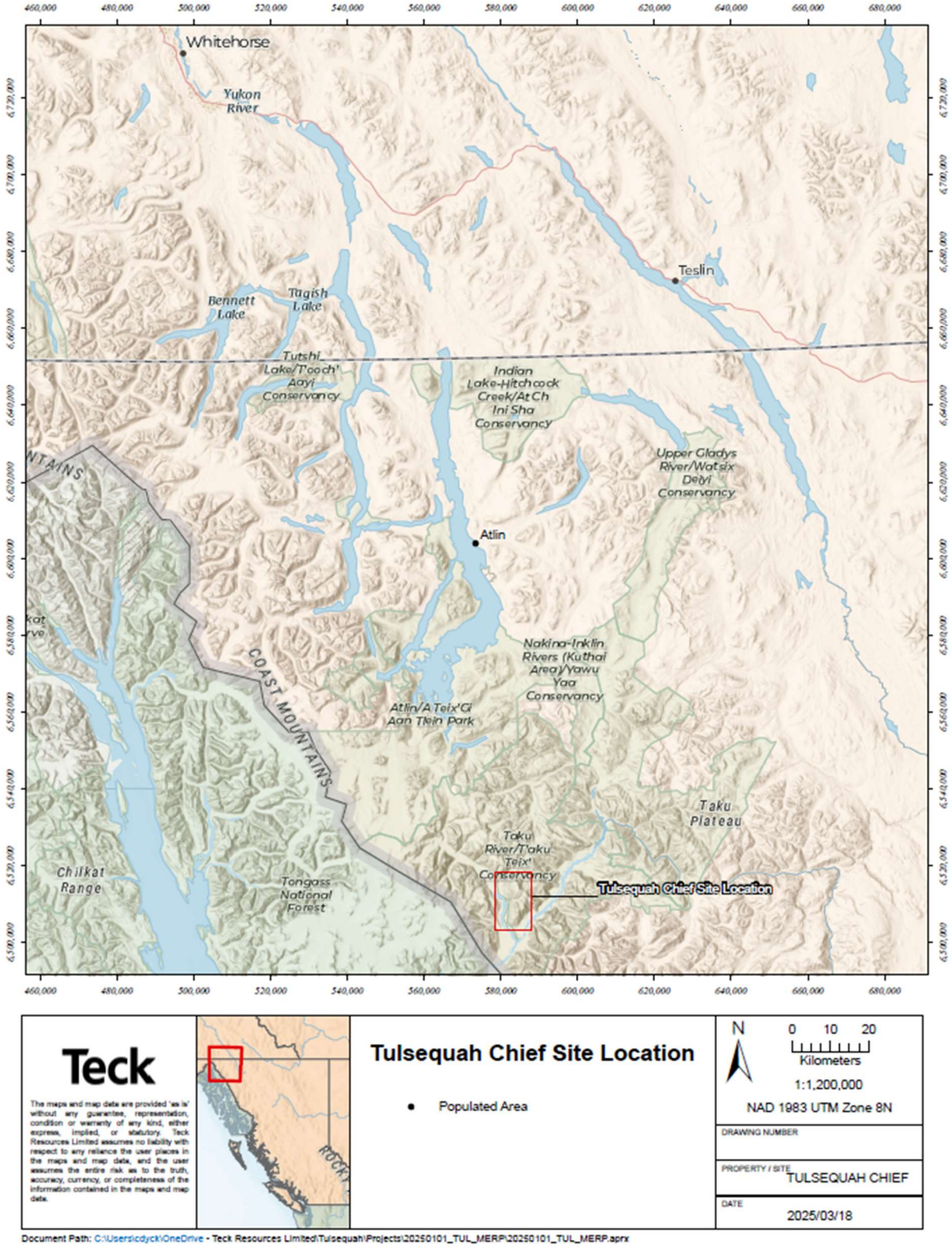


Figure 2-2: Tulsequah Chief Land Rights

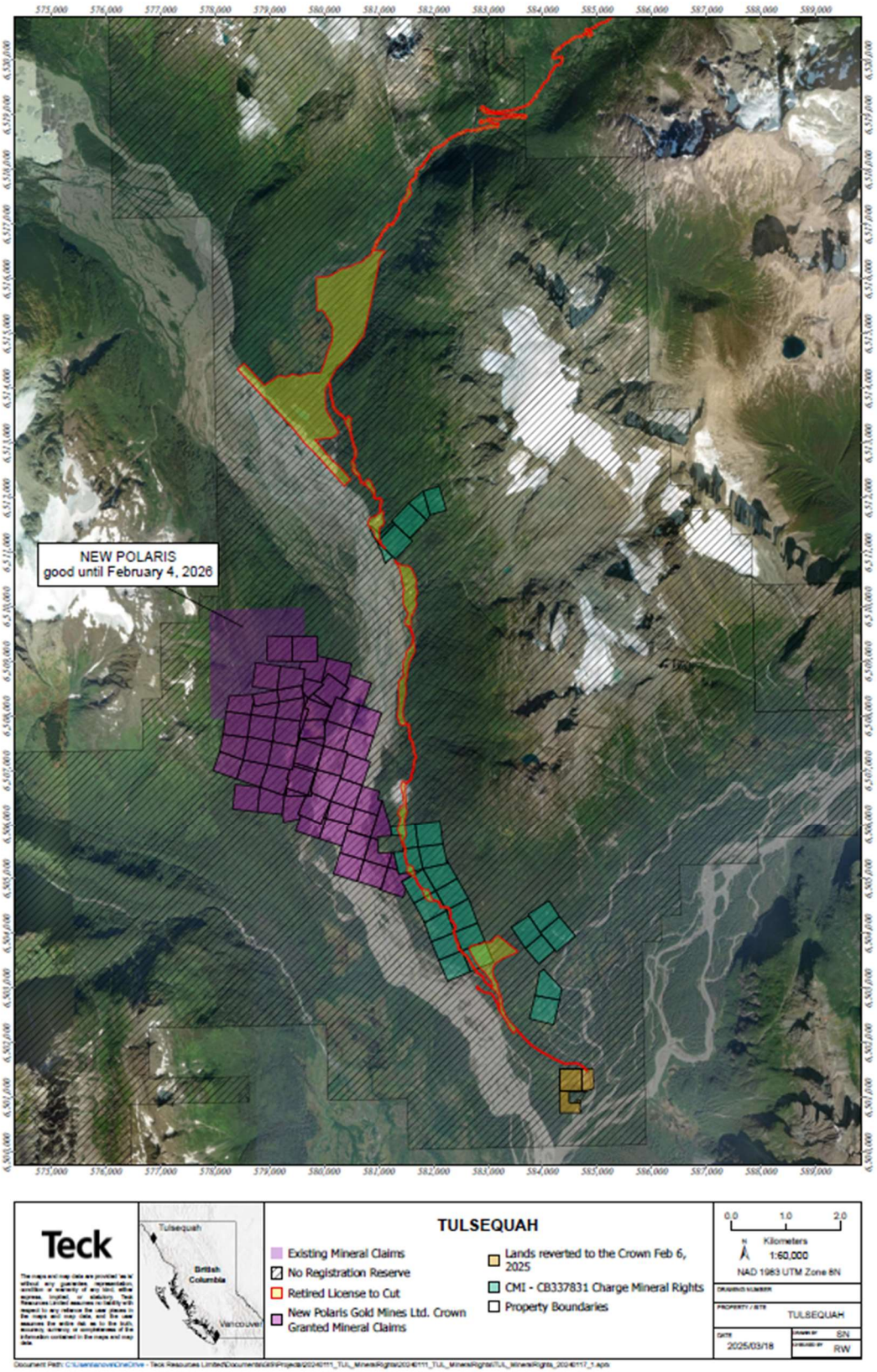
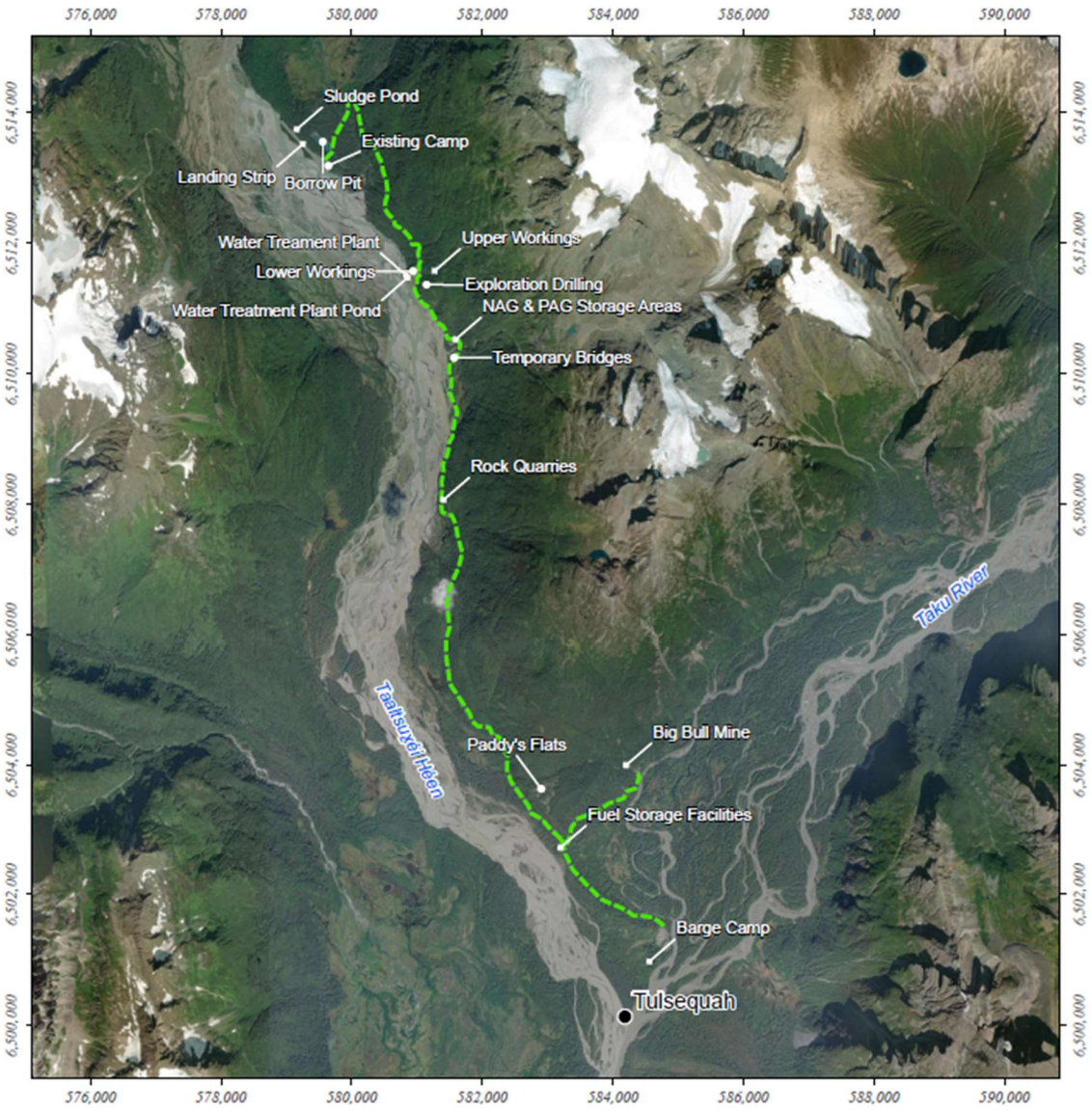


Figure 2-3: Tulsequah Chief Mine Features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Sludge Pond
Existing Camp
Landing Strip
Borrow Pit
Water Treament Plant
Lower Workings
Water Treatment Plant Pond
Upper Workings
Exploration Drilling
NAG & PAG Storage Areas
Temporary Bridges
Rock Quarries
Taku River
Taaltsuyet Hleen
Paddy's Flats
Big Bull Mine
Fuel Storage Facilities
Barge Camp
Tulsequah
Teck
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Atlin
Tulsequah
British Columbia
Vancouver
TULSEQUAH
Project Area
Mine Access Road
N
0
1
2
Kilometers
1:80,000
NAD 1983 UTM Zone 8N
PROPERTY / SITE
TULSEQUAH
DATE
2025/02/17

3. Community Context

The Site is located within the Traditional Territory of the TRTFN. TRTFN are based in Atlin, BC, a remote community of ~400 people on the shores of Áa Tlein Lake. TRTFN territory covers over 40,000 km^2 and includes portions of British Columbia, Yukon and Alaska.

Teck has been collaborating with TRTFN since early 2023 and is committed to conducting closure planning with TRTFN that is informed by the Wóoshtin wudidaa Atlin-Taku Land Use Plan[2] and with the Tlingit land use vision, Hà Tlátgi Hà Khustìyxh Sìti (Our Land Is Our Future): Vision and Management Direction for Land and Resources[3].

A Memorandum of Understanding (MOU) was signed in September 2024 by Teck, the Province, and the TRTFN, which outlines the values, principles and objectives of the three parties in relation to the remediation of the Site. In addition, Teck has signed a Letter of Understanding (LOU) in July 2023 with TRTFN, which outlines engagement mechanisms for Teck and the TRTFN, including the Steering Committee and corresponding Technical Working Group to support meaningful collaboration on the technical investigations and development of the RCP, and provides for TRTFN participation in technical investigations at Site.

Collaboration and information sharing with TRTFN citizens and the broader community of Atlin is ongoing, with community events planned for: 1) 2025 technical investigation plans prior to field activities, and 2) results of the 2025 technical investigation work once completed. Additionally, site visits will be offered to TRTFN and government representatives to promote information sharing and provide opportunities for input on Teck's activities at the Site.

4. Investigation Objectives

In order to reduce environmental risks, the overarching goal for long-term closure is to control the sources of contaminants leaching or flowing from the Site and into the surrounding lands using low or no-maintenance solutions. The objective of the 2025 site investigation is to collect the information needed to select and design site reclamation and closure works, and inform decisions by TRTFN, Teck and the Province on the works that are best suited to meet overall closure objectives.

Following conversations with the Province in early 2023, information gaps in the 2020 RCP were identified that would need to be addressed to advance the reclamation and closure concepts to a detailed design level. Detailed design is needed for implementation/construction of the closure works. Investigation activities undertaken during 2024 aimed to address some of these needs and have informed investigation objectives for 2025.

The objectives of the 2025 technical investigations described below are to:

- Map the underground to identify potential locations for the installation of plugs to seal the underground.

[2] Wóoshtin wudidaa Atlin Taku Land Use Plan. https://www2.gov.bc.ca/gov/content/industry/crown-land-water/land-useplanning/regions/skeena/atlin-taku-lup

[3] Our Land is Our Future. https://www.roundriver.org/wp-content/uploads/pubs/taku/reports/TRTFNVMD.pdf

- Continue to measure the discharge rate and quality of water currently flowing out of the underground at Tulsequah Chief.
- Make additional measurements of the water quality and sediment quality in the aquatic receiving environment.
- Understand the potential risks to the aquatic receiving environment under various underground closure circumstances.
- Identify ways to reduce source and loading of poor-quality water from residual waste rock areas on surface.
- Evaluate the potential for contamination at other locations on site, and if identified, make initial measurements of potential extents.
- Understand potential risks to the environment and/or to the effectiveness of planned closure works due to climate change.
- Understand the fauna on Site, particularly the potential presence of listed species.
- Characterize potential hazardous and non-hazardous waste sources on site and identify potential disposal options.
- Understand the proximity of the underground workings at Big Bull to the surface
- Measure the discharge rate and quality of water flowing out of the Big Bull underground.

5. Investigation Activities

Planned 2025 technical investigations will focus on the following components:

1. Geotechnical assessment of underground workings (Tulsequah Chief and Big Bull) and terrain stability
2. Water quality and flow
3. Mined rock
4. Environment
5. Waste

To enable safe access to the remote Site, some maintenance activities will be required, and access will be achieved via fixed wing and helicopter services and operation of temporary camp facilities. The temporary camp facilities will be similar to those used in 2024 and will include stand-alone sleeper tents, a separate kitchen tent, a wash tent, and first aid support. A weather station and camera will be installed at the airstrip to allow for the confirmation of conditions prior to aircraft arrival at Site. These activities are also discussed in more detail below and will support the 2025 technical investigations.

5.1. Geotechnical Assessment of Underground Workings and Terrain Stability

A possible future remediation activity for the Tulsequah Chief underground mine could be to construct concrete plugs in the 5200, 5400 and possibly the 5900 levels to prevent the flow of mine water into the Taaltsuxéi Héen or groundwater. In 2025, underground stabilization work and ventilation will be completed to facilitate safe access to the underground workings by a qualified professional(s) for geotechnical investigation to support plug location selection and plug design. To create safe access, a number of steps are required that will be iterated as access is gained deeper into the mine:

1. Drone survey as far as drone can reach before connection is lost (up to ~200m)
2. Underground stabilization
3. Ventilation installation
4. Mine rescue support

5. Geotechnical engineering inspection

The underground drone survey will provide data for:

- Underground stabilization activities, to allow underground access to these levels.
- Underground dimensions and mapping.
- Incidental information on groundwater inflow and quality if/when groundwater is encountered.

A geotechnical engineer will provide work instructions for underground stabilization works based on data received from the drone surveys. Underground stabilization works identified from 2024 studies include general scaling and sounding, as well as the installation of bolts and mesh in the 5900 level.

Work instructions will be executed by an underground contractor, and then inspected by the geotechnical engineer to confirm the necessary stabilization activities have been completed and the surveyed portion of the underground is safe to access. This is an iterative process through 2025 and 2026 as access is gained deeper into the underground on each level.

The underground contractor will also provide an engineered design for, and install, mine ventilation to ensure air movement to prevent buildup of potentially harmful gases.

As part of completing underground stabilization works and investigations safely, and in conformance with applicable legal requirements, a mine rescue team will be onsite and available whenever people are working underground. Mine rescue is critical to the safety of those working underground so that workers can be extracted should there be an incident.

Boulders have recently fallen from areas higher on the mountain, ending up on roads, work areas and in front of portals. In addition to the work to gain greater access to the underground, a terrain stability assessment will be conducted in 2025 to identify areas of potential concern. This desktop exercise would support our understanding of higher risk or avoidance areas while working on site.

As little is known about the current condition of the Big Bull underground workings, an InSar survey will be conducted in 2025 to provide initial indications of current ground deformation, and support planning of future field activities to understand the ground stability above the workings.

5.2. Water Quality and Flow

The 2025 water quality and quantity scopes for the Site include:

- Monitoring of existing conditions at the site.
- Development of an empirical model for discharge of mine water from the underground.

Baseline water and sediment quality sampling and flow monitoring will be continued during 2025 as a benchmark against which water and sediment quality and aquatic health could be measured post-closure. Monitoring will be conducted monthly from May through to September, while the temporary camp is operational. Monitoring locations and parameters will be similar to monitoring conducted in 2024. Flow monitoring of the Taaltsuxéi Héen will be undertaken to provide discharge data that supports the development of mine discharge water quality closure criteria and documents the seasonal ranges of water volume available for dilution at the Site. These studies will be undertaken in close collaboration with

the TRTFN who provide both western science expertise and Traditional Knowledge relating to the Site, the Taaltsuxéi Héen, and key aquatic species.

A groundwater load and balance model will be prepared during 2025 and 2026 to test the benefits of various plug locations and configurations, and predict future water quality discharging from the upper portals. Due to the lack of knowledge of the underground inflows, this is expected to be an empirical model that will be calibrated based on observed discharges from the portals. Developing detailed knowledge of underground inflows to support more sophisticated numerical models would require extensive underground surveys to obtain data, extending the overall project time by several years. The simple model will be developed during 2025, with expected scenario testing to be undertaken during 2026.

5.3. Mined Rock

Studies conducted for waste rock and borrow material will be focused on increasing our geochemical understanding of the surface rock material including the categorization of rock as non-acid generating or potentially acid generating. This understanding will be used to evaluate the potential impact of the rock on surface runoff water quality and evaluate the benefits of alternative potential closure options.

The geochemical assessment will be conducted over 2025 and 2026 to determine acid rock drainage (ARD) potential and geochemical loading parameters for use in post-closure water quality predictions.

5.4. Environment

Four environmental studies will be undertaken in 2025 to better understand the potential impact of the Site on the surrounding environment and vice versa. Increasing this understanding will allow for the development of mitigation strategies where necessary. Studies will assess aquatic risk in the Taaltsuxéi Héen, fauna, climate change, and soil contamination. Information will be gathered in collaboration with TRTFN.

Aquatic risk assessment – This will be completed to understand the risk to the aquatic life in the Taaltsuxéi Héen for various closure scenarios. This assessment will utilize the outputs from the geochemical assessment, waste rock closure options, underground plug closure options, the contaminated sites assessment and other relevant information. The aquatic risk assessment will allow for an informed selection of closure options with an understanding of potential risks to the Taaltsuxéi Héen environment associated with each option.

Fauna assessment – This will be undertaken for the Site to understand the presence of protected species, including nesting/migratory birds, and the potential use of the underground workings and historic infrastructure by protected bat species known to be present at a nearby project. This may influence closure requirements and execution methodology for these components.

Site-specific climate change assessment - As the closure of the Tulsequah Chief Mine will be expected to endure long-term, this will be undertaken to determine the range of potential climate impacts that could be expected at Site. The assessment will develop an infilled dataset of meterological parameters such as precipitation and temperature and then use established climate models to provide a range of predictions for these parameters and extreme event frequency for the 2050s and the 2100s.

Contaminated sites assessment - A hybrid phase I/II contaminated sites assessment will be completed to understand location, volumes and types of contaminated soil at the Site present as a result of historic spills. This assessment will include a desktop review of relevant information about site operation and chemical usage, a site visit to further delineate areas of potential concern, and soil sampling and analysis for potential contaminants.

5.5. Refuse

A refuse assessment will be completed to determine the types and volumes of waste at Site for all surface garbage and remant material including hazardous and non-hazardous materials. The assessment will also consider the additional waste that may be generated if all historic infrastructure were to be demolished. This will enable determination of waste disposal options including likely offsite disposal for all hazardous waste, and potentially onsite disposal in a purpose-built landfill for non-hazardous waste. If an onsite landfill is required, the demolition assessment will help estimate the required landfill volume and waste placement requirements. The assessment will be conducted along with collaboration with TRTFN, as their preferences on infrastructure retention and demolition are integral to future work plans.

Potential landfill and waste rock disposal locations will be identified by a desktop assessment including review of LiDAR data and existing hydrology information for the Site. Due to the extreme flooding events that occur in the summer from the upstream glacial lakes, it is expect that these options will be extremely limited. Additional investigations and collaboration with TRTFN would be part of selecting preferred location(s).

6. Maintenance and Water Management

Work conducted in 2024 indicated that maintenance activities will be required to allow safe ongoing access to various parts of the Site and to provide safe working conditions. Initial opportunities to implement water management activities are also proposed. Proposed 2025 maintenance and water management activities are:

- Scaling of rocky slopes immediately above Site roads and work areas,
- Repair of two bridge decks and the abutments of one bridge,
- Airstrip revetment reinforcement and expansion,
- Airstrip and equipment maintenance,
- Mine discharge sediment management, and
- Removal of hazardous waste, currently on Site in containment, from previous operators.

The rationale for activities is detailed below. Many of these activities are contingent on agreements for, or obtainment of, provincial and federal permits. This is also further discussed below.

6.1. Lower Hillslope Scaling

The Site access road, some work areas, and the temporary camp are located beneath rocky hillslopes. Scaling of, and removal of loose rocks from, these rocky slopes will be undertaken early in the 2025 field season to reduce the risk of unexpected rockfall and potential for injury of workers and visitors.

6.2. Sediment Management

The TRTFN have expressed concern over the poor-quality water flowing unmitigated from the underground mine into the Taaltsuxéi Héen and the lack of water treatment at Site. To start addressing this rapidly, sediment control measures are planned to slow the flow of mine water discharge from the portals and surface runoff. These measures will help prevent the iron-rich sediment from entering the Taaltsuxéi Héen and are expected to reduce the loading of suspended solids to the river. Fouled sediment filtration media will be removed from Site for appropriate disposal.

Active water treatment at the Site will not be started in 2025 due to the extensive refurbishment efforts that would be required for the existing water treatment plant, or alternatively the long lead time required to select, procure and mobilize a mobile treatment unit. Detailed studies and permitting processes would also be required.

The implementation of water treatment in the future via a mobile treatment unit is under consideration, with viability, and permitting considerations to be further investigated in 2025.

6.3. Bridge Deck and Abutment Repairs

A bridge inspection conducted by a Professional Engineer in 2024 indicated that two bridge decks are currently not safe for heavy equipment and are only expected to be safe for light vehicles for the next two years. In addition, the abutments of one bridge are expected to fail within the next two years. The loss of these bridges would result in loss of access to the southern portion of Site, impeding certain closure studies and activities. Reconstruction of these bridges would be difficult and expensive. As such, replacements of the two bridge decks and the abutment of one bridge are planned for 2025.

This work is contingent upon confirmation that the maintenance of the bridge decks and abutments can be undertaken in accordance with the Department of Fisheries and Oceans Canada (DFO) Bridge Repair and Maintenance Code of Practice. A Professional Engineer will provide the design for the abutments and recommendations on construction methodology. If the required work cannot be carried out in accordance with the Code of Practice, a Project Notification to DFO would be needed, indicating where the Code of Practice cannot be followed and proposing mitigation measures to manage potential impacts to fish and fish habitat. A Section 11 Approval or Notification might also be required under the BC *Water Sustainability Act* to undertake this work.

6.4. Airstrip Revetment

An inspection by a Professional Engineer during 2024 indicated that the northern end of the airstrip is susceptible to erosion during Jökulhlaup (glacial lake outburst) flooding events that occur regularly each summer. Some armouring of the airstrip was previously undertaken by the Province. However, the 2024 inspection indicated that reinforcement and extension of this armouring was required to safeguard the length of the airstrip, and a design was prepared. Material and equipment required for this armouring is available on Site. This activity is proposed for 2025 and is contingent on the bridge repairs so that heavy equipment can safely traverse the bridges. The additional armouring for the airstrip revetment is also contingent on the receipt of a Fisheries and Oceans Canada Project Authorization and a Section 11, Water Sustainability Act Permit.

6.5. Airstrip Maintenance

The airstrip requires routine maintenance to maintain functionality and safety. At the start of the 2025 field season, any vegetation that has grown on the airstrip will be removed by brush saw and stacked at the side of the airstrip. The airstrip will subsequently require bi-weekly compaction to address any rocks loosened by aircraft activity. Without this compaction, the airstrip surface would become unsafe and aircraft operations would need to be suspended.

6.6. Hazardous Waste Removal

During the 2024 field season, chemicals stored within the water treatment plant facilities were inventoried and secured using appropriate containment. Chemicals found at the airstrip were moved into containment and some of the historic garbage dispersed around Site was collected in preparation for future removal and controlled disposal. Removal of hazardous waste from site and transportation to an appropriate disposal facility is contemplated for 2025.

6.7. Equipment Maintenance

Equipment on Site requires inspection by a qualified mechanic prior to use at the start of each field season. Any repairs identified by this inspection must be completed prior to use of equipment. Further to these inspections and repairs, all equipment being used requires routine maintenance. Pre-use inspection, repair and routine maintenance of equipment to be used on Site is planned for the 2025 field season.

7. Health and Safety

Teck has a comprehensive program to ensure the health and safety of all workers, consultants, and visitors to site. This program will be applied for the Tulsequah Chief Mine.

Prior to site work, Health, Safety, and Environment (HSE) Work Plans will be prepared for each specific scope of work planned and will be reviewed and signed off by all workers, consultants and visitors.

Prior to workers accessing any underground workings, a detailed underground re-entry Health and Safety Plan will be developed using both the drone survey results and the findings by ground control and ventilation specialists and geotechnical engineers.

All aspects of the 2025 technical investigations will be conducted in accordance with the following legislation:

- *Workers Compensation Act*
- Occupational Health and Safety Regulation
- Occupational Health and Safety Guidelines
- Health, Safety and Reclamation Code for Mines in British Columbia
- Other relevant legislation, codes and standards

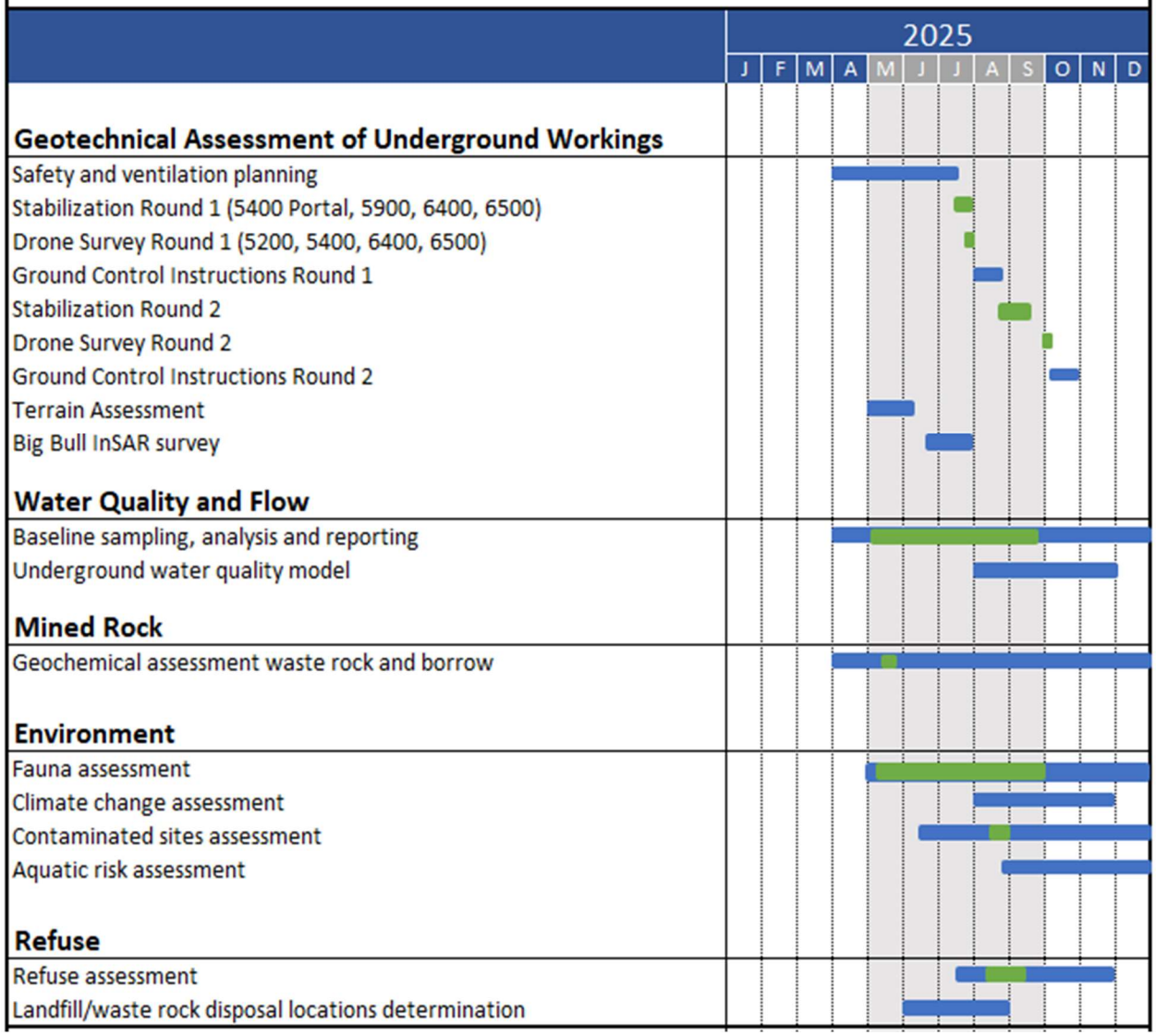
8. Schedule

The schedule proposed for the 2025 technical investigations is provided in Table 8-1. Teck is proposing to be on Site from early May to late September. Some uncertainty exists around the amount of access to the underground that will be achieved in 2025 due to the unknown underground condition and the

iterative nature of gaining safe access. All field activities are subject to weather conditions and the acquisition of necessary permits for proposed activities.

Table 8-1: 2025 Schedule

Tulsequah Chief Mine Closure Prefeasibility Study Project
Level 1 Schedule
2025



Tulsequah Chief Mine Closure Prefeasibility Study Project
Level 1 Schedule
2025