



# Responsible Production

Global use of materials has nearly quadrupled since 1972, to over 100 billion tonnes in 2021. Over 90% of this material is disposed of as waste, with only 8.6% being recycled back into the economy. With a business-as-usual approach, consumption of raw materials is projected to surpass 170 billion tonnes by 2050, with related increases in waste and greenhouse gas emissions.<sup>16</sup>

In order to counter this trend, the global economy must encourage material reuse and regeneration of natural resources. Minerals and metals present one of the greatest opportunities to use natural resources in a responsible and circular manner.<sup>17</sup> Critical minerals, which are essential to develop the technologies required for a low-carbon economy, are highly recyclable. While these products of mining are enabling a low-carbon future, mining companies are increasingly working with value chain partners to improve product traceability and encourage product reuse at end of life.<sup>18</sup>

Teck provides critical commodities required for sustainable products and infrastructure. We have long worked to reduce waste and pollution, to keep products in use and to help improve the natural environment where we operate. Our Trail Operations recycles various metals, and its

smelting and refining operation is highly efficient. We have a Materials Stewardship Committee responsible for monitoring the responsible use of our products and, at our operations, we track and report on waste and are implementing waste reduction and recycling programs.

### GRI Indicators

GRI 3-3, 2-23, 2-24, 2-27, 306, 306-2, 306-3, 306-4, 306-5 G4-DMA, G4-MM3

This topic is considered one of the most material by our employees, local communities, government regulators, investors and society in the context of all Teck-managed sites.

### How Does Teck Manage This Topic?

Information about how we manage responsible production and waste management, including relevant policies, management practices and systems, is available for [download on our website](#).

<sup>16</sup> 21 Circular Solutions for Every Business, City and Nation. Circularity Gap Reporting Initiative. 2022. <sup>17</sup> Mining for Circularity: Five Strategic Insights. World Circular Economy Forum. 2021. <sup>18</sup> Towards a Circular Economy Approach to Mining Operations: Key Concepts, Drivers and Opportunities. Natural Resources Canada (NRCAN). 2022.

Pictured: Employee at Trail Operations, Canada.

## 2022 Highlights

60,842 tonnes

of hazardous and non-hazardous waste recycled

32,695 tonnes

of urban ore/secondary sources recycled at Trail Operations

### Case Study: Recycling Over 1,000 Tonnes of HDPE Pipes at Highland Valley Copper Operations

Teck supports responsible production by responsibly producing critical minerals that contribute to a low-carbon future while also working to minimize impacts. At our Highland Valley Copper (HVC) Operations, a new high-density polyethylene (HDPE) pipe recycling project is helping meet those goals and contribute to the circular economy. HDPE pipe used at HVC had accumulated from general usage over the years, reaching a total of over 1,300 metric tonnes by 2022. With the support of Secure Energy Solutions, this inventory of decommissioned pipe at HVC has been sent for recycling, with an additional 232 metric tonnes scheduled to be sent this year, for a total of nearly 1,600 metric tonnes of HDPE pipe being recycled. The success of this project has provided a long-term solution to HDPE pipe waste management at HVC, in line with Teck's values around responsible product management.

Read the full case study at [www.teck.com/news/stories](http://www.teck.com/news/stories).

## Our Performance in Responsible Production in 2022

**Our Targets and Commitments** At Teck, we're supporting responsible production by providing the critical metals and minerals essential for a low-carbon economy while also working to minimize our operational impacts. The following table shares our progress related to responsible production and waste management goals.

Sustainability Strategy Goals	Status	Summary of Progress in 2022
<p>Strategic Priorities:</p> <ul style="list-style-type: none"> <li>· Be a leader in responsibly providing the metals and minerals needed for the transition to an economy focused on reducing waste and keeping products in use</li> <li>· Work towards disposing zero industrial waste by 2040</li> </ul>		
<p><b>Goal:</b> By 2025, establish site-based industrial waste inventories and plans to turn waste into useful and appropriate products. Based on these inventories and plans, set goals for industrial waste reduction.</p>	On track	Commenced a project to identify the final destination of the off-site wastes across all Canadian operations, using our updated waste inventories. This project will support the planning to turn waste into useful and appropriate products.
<p><b>Goal:</b> By 2025, develop and implement a responsible producer program and "product passport" that is traceable through the value chain.</p>	On track	Completed a pilot to explore the potential of blockchain technology to support traceability of raw materials from mine sites, through refinement and to an end customer.
<p><b>Goal:</b> Be a leader in product stewardship by continuing to implement our Materials Stewardship program and produce secondary metals at our Trail Operations.</p>	On track	Our Materials Stewardship Committee continues to lead our product stewardship activities.

# Waste Management Performance

## Mineral Waste

Based on volume, mineral waste is the most significant waste type generated by Teck. In 2022, our operations generated approximately 755 million tonnes of mineral waste, with the vast majority being waste rock from the extraction of ore and steelmaking coal. We have permit and regulatory requirements for treating and recycling waste at all of our operations. We use internal and independent third-party subject matter experts to design our mineral waste storage facilities. Mineral waste storage methods are determined based on site-specific conditions and industry good practices.

The following categories of mineral waste are products of Teck's operations:

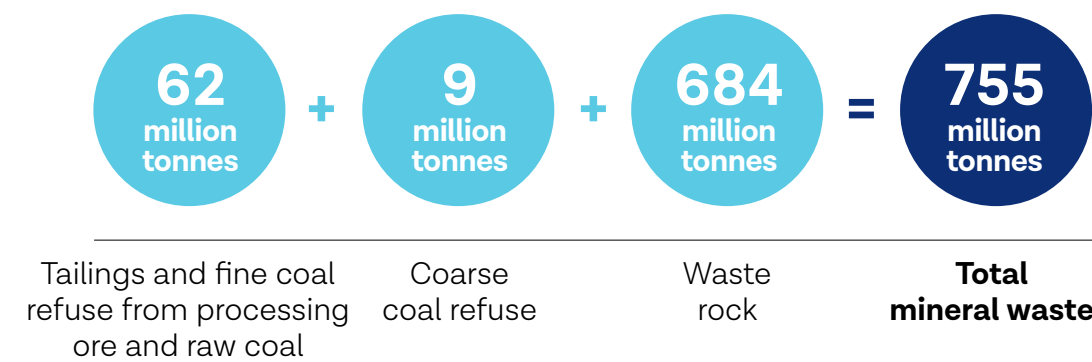
**Waste Rock:** Waste rock, which is material that is removed to access ores, coal and oil sands, typically contains trace amounts of naturally occurring metals and other constituents. The bulk of waste rock from our operations is placed in areas that are specifically designed to contain the rock. Where geochemical and physical properties allow, waste rock is also used for construction purposes such as haul roads, retention embankments for tailings storage and other similar projects. The remainder of the rock, which may still have some geochemical concern, is placed within tailings storage facilities or used to backfill open pits and underground workings.

**Coarse Coal Refuse:** Coarse coal refuse is a coarse fraction of raw coal that is separated during processing; it is not currently an economic product. Coarse coal refuse is placed in designated engineered facilities or, if determined to not be susceptible to leaching, it may be used as a construction material. Coarse coal refuse is an excellent construction material for creating retention embankments for fine coal refuse.

**Tailings and Fine Coal Refuse:** Tailings and fine coal refuse are the finer fractions of the processed mined material that have no economically recoverable commodities. These materials are typically stored in tailings storage facilities.

All of Teck's tailings storage facilities are designed by external third-party experts and independently reviewed for both design and performance. Learn more about tailings management at Teck on our website at [www.teck.com/tailings](http://www.teck.com/tailings).

**Figure 14: Mineral Waste (million tonnes)<sup>(1)</sup>**



(1) Rounding of the individual numbers may cause a discrepancy in the total value.

## Non-Mineral Waste

In addition to mineral wastes summarized above, Teck also generates non-mineral waste. Non-mineral waste includes waste generated from overall activities such as construction, packaging, maintenance and office activities, but excludes waste generated from extraction and processing, which is further categorized as non-hazardous and hazardous waste. These waste materials are segregated and disposed of in accordance with material-specific waste management plans and regulatory requirements, to ensure potential impacts on environmental and human health are mitigated.

Our strategic intent is to eliminate or reduce the generation of non-mineral waste, to explore long-term viable alternatives, and to divert waste from disposal through reuse and recycling whenever possible.

The following categories of non-mineral waste are products of Teck's operations:

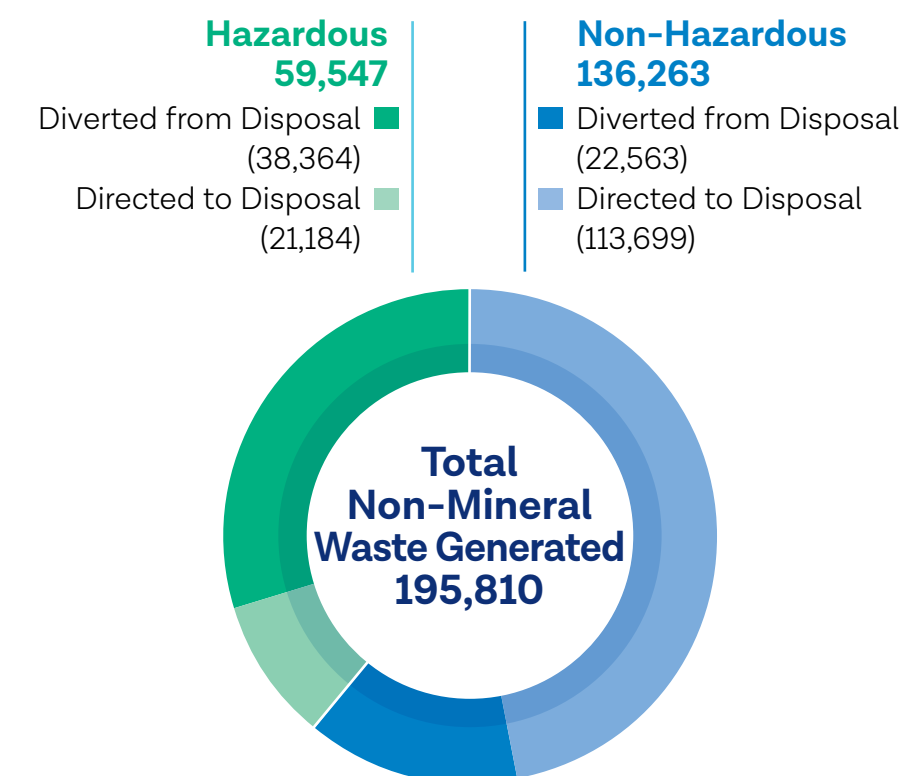
**Hazardous Waste:** At Teck, waste is considered hazardous as defined by jurisdictional regulatory regimes. The primary industrial hazardous wastes produced at our operations include waste oil, solvents, antifreeze, paint

and batteries. We collect and store hazardous waste in a responsible manner and in accordance with regulatory requirements, and licensed contractors recycle or dispose of this waste off-site as required by regulation.

**Non-hazardous Waste:** The most significant types of non-hazardous waste streams include contaminated solids, scrap metal, wood waste, glass, tires, e-waste, cardboard and paper.

**Industrial Waste:** Industrial waste is a subcategory of non-mineral waste, which includes types of waste generated by industrial processes, and does not include municipal/domestic waste streams. Significant industrial waste streams at Teck include metallurgical waste, sludges, process residuals (such as from water treatment), haul truck tires, construction and demolition debris, equipment and contaminated soil. We have set a target to dispose of zero industrial waste by 2040, and we are working towards establishing site-based industrial waste inventories and plans to turn waste into useful and appropriate products by 2025. Based on these inventories and plans, we will set the final goals for each industrial waste stream aligned with the waste mitigation hierarchy.

**Figure 15: Non-Mineral Waste by Composition in Metric Tonnes (t) – 2022<sup>(1)</sup>**



(1) Rounding of the individual numbers may cause a discrepancy in the total value.

**Table 10: Waste Diverted from Disposal by Recovery Operation, in Metric Tonnes (t) – 2022<sup>(1)</sup>**

Type of Waste	On-Site	Off-Site	Total
<b>Hazardous Waste</b>			
Preparation for reuse	0	64	64
Recycling	29,092	9,201	38,293
Other recovery operations	0	7	7
<b>Total Hazardous Waste</b>	<b>29,092</b>	<b>9,271</b>	<b>38,364</b>
<b>Non-Hazardous Waste</b>			
Preparation for reuse	111	419	530
Recycling	1,860	20,173	22,033
Other recovery operations	0	0	0
<b>Total Non-Hazardous Waste</b>	<b>1,971</b>	<b>20,592</b>	<b>22,563</b>

(1) Rounding of the individual numbers may cause a discrepancy in the total value.

## Waste Management Performance (continued)

**Table 11: Waste Directed to Disposal, by Disposal Operation - in Metric Tonnes (t) — 2022<sup>(1)</sup>**

Type of Waste	On-Site	Off-Site	Total
<b>Hazardous Waste</b>			
Incineration (with energy recovery)	0	581	581
Incineration (without energy recovery)	0	4	4
Landfilling	2	6,518	6,520
Other disposal operations	0	14,079	14,079
<b>Total Hazardous Waste</b>	<b>2</b>	<b>21,182</b>	<b>21,184</b>
<b>Non-Hazardous Waste</b>			
Incineration (with energy recovery)	28	0	28
Incineration (without energy recovery)	672	0	673
Landfilling	62,360	46,841	109,201
Other disposal operations	1,308	2,489	3,798
<b>Total Non-Hazardous Waste</b>	<b>64,369</b>	<b>49,331</b>	<b>113,699</b>

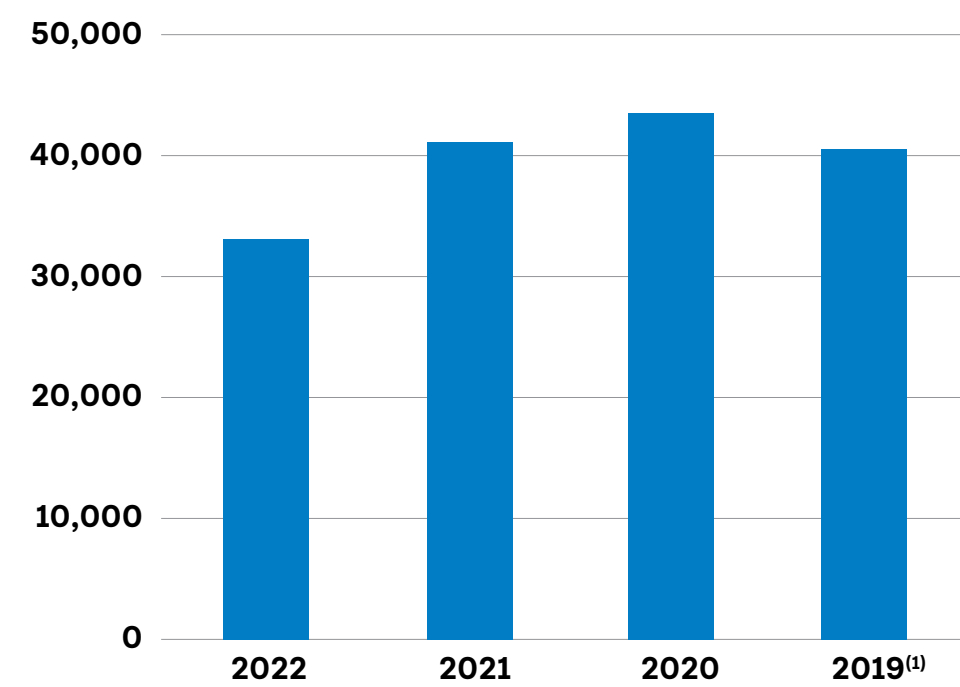
(1) Rounding of the individual numbers may cause a discrepancy in the total value.

### Recycling

Teck's methods for recycling include recycling for value recovery, industrial waste processing and domestic recycling. We do not currently track office and construction waste, which are managed by licensed external waste service providers. We recycle in accordance with international, national, provincial and local requirements and we aim to exceed these requirements. Continually improving recycling at our operations by identifying and sharing best practices throughout the company is our goal — including ongoing assessments of our recycling and reuse practices.

At our Trail Operations, we recycle materials purchased from external users. Our focus remains on treating cathode ray tube glass, plus small quantities of zinc alkaline batteries and other post-consumer waste through our lead acid battery recycling program.

**Figure 16: Recycled Material at Trail Operations**



### Technology and Innovation

Innovation at Teck focuses not only on technology, but also on building change capabilities to support change management. At our Fording River Operations (FRO), a pilot program on behavioural change resulted in reducing tire waste by 20%.

The target lifespan for a 290-tonne earth mover truck tire is about 4,000 hours, or 8 months. However, 40% of trucks in operation were performing under the 8-month threshold due to three main issues: weather, road conditions and operator behaviour. When assessing ways to reduce tire waste and costs related to tire performance, it was determined that the majority of premature tire failures could be prevented by encouraging better driving behaviour. The technology and innovation team together with the FRO team implemented a pilot program to influence behaviours, including using targeted messaging, training, peer support and leadership reinforcement, along with tracking, analyzing and displaying data to reflect the new results. By mid-2022, the percentage of tires failing under 3,500 hours was reduced by 20%.

### Red Dog Operations and the Toxics Release Inventory

Every year, Red Dog is listed on the United States Environmental Protection Agency (EPA) Toxics Release Inventory (TRI) due to the volumes of rock and ore safely moved at the mine site each year. Red Dog is required to report the amount of materials moved at the mine site due to the grades of zinc and lead naturally occurring in the rocks. This is part of the mining process and does not indicate any health or environmental effect, including any releases of materials from Red Dog to the environment. The Alaska Department of Environmental Conservation (DEC) has also responded to the TRI, noting that almost all of the releases from TRI facilities in Alaska are regulated under strict EPA and state of Alaska permits, with monitoring and compliance requirements designed to prevent human and environmental harm.

### Significant Incidents and Non-Compliance Related to Hazardous Materials and Waste Management

We assess the severity of environmental incidents, spills, and non-compliances based on potential environmental, safety, community, reputational and financial impacts. Based on our incident severity criteria, there were no significant incidents related to waste management in 2022. There were no significant charges, fines or penalties for non-compliance related to waste management in 2022.

### Spills

Teck has extensive environmental risk mitigation, reporting, response and remediation protocols outlined in our Health, Safety, Environment and Community (HSEC) Standards. In 2022, there were no significant spills.

In May 2022, our Elkview Operations (EVO) received a \$198,000 Determination of Administrative Penalty from the B.C. Ministry of Environment and Climate Change Strategy for unauthorized discharges of process slurry and tailings from the EVO Coal Processing Plant and tailings transfer lines. This incident did not result in off-site discharge, and EVO undertook investigations to identify root causes for each spill and completed repairs, upgrades and training to prevent reoccurrence. EVO is continuing efforts to minimize the potential for spills at the processing plant by implementing a Plant Spill Action Plan, by adding dedicated resources to address this issue, and by focusing efforts on spill areas with the highest volume and risk to the environment.

## Adding Value and Managing Product Impacts through Materials Stewardship

All Teck products are listed on a master material list that is managed by Teck's Materials Stewardship Committee (MSC). For products to be added to the list, a detailed application is submitted to the MSC. Products are assessed annually on their whole product life cycle and may include customer assessments, legal jurisdiction reviews, logistics and form of transportation, hazardous materials and emergency response, contracts and financial rate of return. No new products were added to the master material list in 2022.

The MSC also commissions and conducts site assessments to help ensure that products are properly used and that wastes are appropriately managed along the supply chain to smelters, refineries, and other downstream end users. These assessments allow us to uphold customer relations and regulatory requirements. In 2022, Teck carried out 14 logistics and customer site assessments.

Similar risk management practices are applied to hazardous wastes that are generated at Teck sites. The MSC has developed various tools to assess off-site disposal facilities, thereby reducing our long-term risk profile and financial exposure. In 2021, Teck announced our formal commitment to The Copper Mark, a voluntary assurance framework to promote responsible production practices. Teck's Highland Valley Copper Operations were assessed and independently verified against The Copper Mark's responsible production criteria and were awarded the Copper Mark in 2022, and we plan to apply for the certification of Carmen de Andacollo Operations and Quebrada Blanca Operations in 2023.

### Responding to Regulatory Requirements

Our materials stewardship efforts have expanded in recent years to meet growing regulatory pressures on mineral concentrates. These are manifested, for example, in the International Maritime Organization bulk cargo requirements, Chinese import restrictions and the Minamata Convention for Mercury. These requirements and restrictions now affect mining companies and smelters globally and Teck specifically, in the same way that Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulations have defined chemical management programs for refined metals, alloys and compounds in the European Union since 2006.

### Technology and Innovation

Teck, along with project partners, is creating the first integrative platform for collecting, storing and analyzing the genomic data of water, soil and rock environments. The Supercluster Mining Microbiome Analytics Platform (MMAP) project will extract the DNA from more than 15,000 mining site samples to identify naturally occurring and synthetic microbes that can replace chemicals used in the mineral extraction process and in remediation of mine sites. This data will be linked to geospatial data, climate data and chemical data to support global breakthroughs in biomineral solutions for natural resource extraction and green site remediation.

This project aims to develop analytical tools that will enable understanding of what microbes in mining environments do, how they do it, and how this can be applied to improve sustainability in mining processes in areas including carbon sequestration, mineral processing, water treatment, tailings management, reduced air and water pollution, source control and reclamation. In addition to providing leadership for the program, Teck is providing 10,000 samples from a variety of mining environments over 2022 and 2023.