Tailings Storage Facility Disclosure Report

Highland Valley Copper, Trojan Tailings Storage Facility

July 2023

Teck

Contents

1. Tailings Facility Description

The Trojan Tailings Storage Facility (TSF) is located on the Highland Valley Copper Mine (HVC Mine), which is owned and operated by Teck Resources Ltd. The HVC Mine is located approximately 45 km southwest of Kamloops, in the interior of British Columbia.

The site is located within the highlands of the Thompson Plateau and is characterized by elevated regions of moderate relief with moderate to gentle slopes. The vegetation comprises bunchgrass steppes, sagebrush and open forest comprised of pine, fir, aspen and larch. The climate is characterized as semi-arid and is affected by the rain shadow of the Cascade Mountain Range to the west of the Thompson River Valley.

The Trojan TSF is located 4 km north of the operating Highland Mill, immediately west of the Bethlehem TSF. The Trojan TSF was built in 1973 and operated until 1989 as part of the now inactive Bethlehem Mine. The purpose of the Trojan TSF is to store tailings (a bi-product of the mining process). Tailings are retained by the Trojan Dam. Local runoff and seepage from the Trojan Dam and the seepage ponds are collected by the R4 Seepage Pond Dam and the Lower Trojan Dam, respectively. See Figure 1 for a plan view of the TSF.

The Trojan TSF stores approximately 26 million cubic metres of tailings and generally between 1.6 and 2.1 Mm^3 of water.

The most recent Annual Performance Facility Report (AFPR) for this facility was completed in 2022 and can be found at www.teck.com/tailings. This facility also has an Independent Tailings Review Board, which is a group of outside experts, that meets several times per year to discuss and review the tailings facilities at the HVC Mine.

Structures comprising the Trojan TSF are summarized in the table below.

Table 1: Structures Comprising the Trojan TSF

Structure	Purpose
Trojan Dam	Tailings and water retaining structure
R4 Seepage Pond Dam	Collects seepage from the Trojan Dam toe.
Lower Trojan Dam	Collects local runoff and flows from the R3 Reclaim Pond (from Bethlehem No. 1 TSF) and from R4 Seepage Pond Dam.

Note: Further details regarding the TSF configuration can be found in our facility inventory at www.Teck.com/tailings.

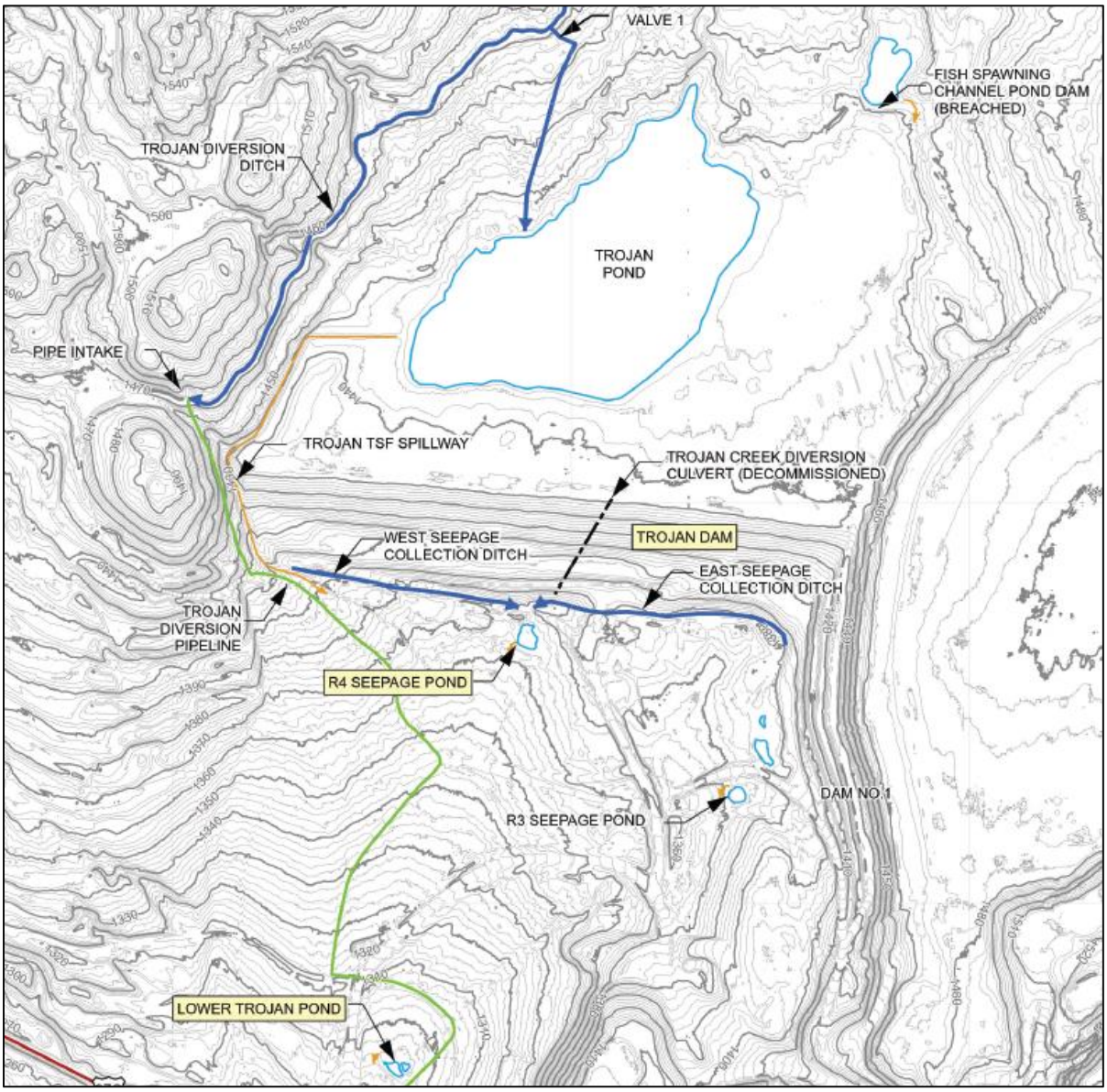

Figure 1: Trojan TSF Site Plan

2. Consequences of Failure

All Teck tailings facilities are assessed for credible failure modes, and the impacts from these credible failure scenarios inform our risk management activities. For the purposes of assigning a facility classification, the downstream consequences of *potential* failure modes (not considering whether they are credible or not) are used, as per the Canadian Dam Association (CDA) guidelines and the requirements of the jurisdictions in which we operate. The Global Industry Standard on Tailings Management (GISTM) bases consequence classification on credible failure modes only, which may result in a lower stated classification.

Consequence classification should not be confused with risk, as risk also requires the consideration of the likelihood of the event occurring. To better understand the risk that a tailings facility presents, it is necessary to consider both the likelihood of a failure event, and the consequence of the event, which is performed through our risk assessment process described in the next section.

The Trojan TSF has a consequence classification of “Very High” under both the CDA guidelines and GISTM.

3. Summary of Risk Assessment Findings

Teck applies risk-based design approaches, whereby risk assessments are used to demonstrate the resilience of our facilities to extreme loading criteria, and to inform decisions to manage risks to as low as reasonably practicable (ALARP). This approach focuses our efforts on credible failure modes, reducing risks at our facilities by reducing the likelihood of occurrence and mitigating downstream impacts, regardless of the consequence classification from hypothetical dam failures.

The most recent risk assessment for the Trojan TSF was conducted in 2017 and updated in 2023, assessing potential failure modes for hazards up to and including extreme events (i.e., an event that occurs once in 10,000 years). As part of this assessment, failure modes are deemed as credible or non-credible, considering the greatest combination of events or operational errors, and then the risks of such events are evaluated.

All credible failure modes are sorted according to Teck’s risk matrix, with risk mitigation controls identified and tracked. These risk assessments are prepared with assistance from the Engineer of Record and are reviewed by the Independent Tailings Review Board. Teck regularly updates these detailed risk assessments, and the key findings from the most recent assessment are described below.

The Trojan Dam has several potentially credible failure modes that are of very low likelihood and may ultimately be deemed non-credible upon completion of additional detailed assessments. A summary of material risks (high or extreme consequences, regardless of likelihood) that are being managed for Trojan are summarized below.

Blockage of the Trojan Dam Spillway during a Very Large Flood:

What could happen:

- During a large storm event, a landslide into the spillway could block the outlet of water from the facility, which could lead to overtopping of the dam, and erosion of the slope leading to a dam breach.

What are we doing to control the risk:

- The facility's water levels are maintained at low levels to provide additional capacity to contain storm water flows.
- A surveillance and monitoring program is in place, including instrumentation and routine visual observations.

Internal Erosion Leading to a Dam Breach:

What could happen:

- If seepage through the dam were to somehow increase, and if there was an unknown construction defect in the dam, internal erosion could potentially occur, leading to instability and potentially a dam breach.

What are we doing to control the risk:

- The condition of the facility and the material characterization have been thoroughly investigated to the level of industry best practices, including recent research work and innovative geophysical techniques.
- Regardless of our high level of understanding of the facility, additional measures have been taken, including maintaining the facility's water levels low to reduce the seepage through the dam.
- The closure configuration of the facility also includes a wide tailings beach against the dam, which further reduces seepage through the dam.
- A surveillance and monitoring program is in place, including instrumentation and routine visual observations.

Potential for a Weak Soil Layer in the Foundation of the West Abutment:

What could happen:

- If present, a weak soil layer could theoretically lead to instability or deformation of the dam during a very large earthquake, or through some other loading imposed on the dam, resulting in water and tailings overtopping the dam, potentially leading to a dam breach.

What are we doing to control the risk:

- Multiple controls are in place to manage this risk, including site characterization that meets industry best practices, and a design to withstand very large loading events,
- A surveillance and monitoring program is in place, including geotechnical instrumentation and routine visual inspections.
- Multiple layers of review are in place, including an external Independent Review Board and regular Dam Safety Reviews.
- Additional site investigation work is planned to further characterize the foundation soils at the west abutment, and to provide input into the determination of no credible failure modes. The facility was also recently included in a liquefaction research project, and was used as a location to test an innovative geophysical methods.

The above risks, and the results of the performance monitoring and surveillance program that monitors these risks are described in more detail in the Annual Facility Performance Report at www.teck.com/tailings.

4. Summary of Impact Assessments and of Human Exposure and Vulnerability to Tailings Facility Credible Flow Failure Scenarios

Preliminary inundation studies have been conducted at the Trojan TSF to identify potentially impacted communities and waterbodies in the extremely unlikely event of a tailings dam breach. An assessment of human exposure (potential for a person to be located in the inundation area) and vulnerability (existing physical, social, economic and environmental conditions that make people and the environment more susceptible to the impacts) was undertaken for the Trojan TSF area of influence to understand the severity of the effects of a tailings dam breach. Results of the assessment are summarized below.

The potential effects in the highly unlikely scenario of a breach of the Trojan Dam would be primarily contained to the area of the HVC mining operation and associated work areas, and may include loss of life. The potential effects to communities and the environment include temporary disruption to highway traffic, impact to Indigenous Territory, Rights and Title, critical infrastructure, and water resources. Vulnerability is primarily associated with the potential for moderate to high watershed impacts. The area of influence for the Trojan Dam includes the on-site work area downstream of Trojan Dam and the Valley Pit, a road crossing of Highway 97C, and Witches Brook.

The controls and mitigations that have been implemented to reduce the likelihood and consequences of credible tailings facility failure scenarios at Trojan TSF are described in Section 3 above. Further, measures have been taken to protect potentially affected people, including sharing of information, assessing capacity of the communities to respond to emergencies, and co-developing emergency response measures with provincial agencies and project-affected people to improve preparedness.

5. Description of the Design for all Phases of the Tailings Facility Lifecycle

General information regarding the three structures associated with the Trojan TSF (Trojan Dam, R4 Seepage Pond Dam and Lower Trojan Dam) are summarized in the table below.

Table 2: Trojan TSF Design Information Summary

Structure	Trojan Dam	R4 Seepage Pond Dam	Lower Trojan Dam
Containment or Design Type	-Pervious rockfill starter dam underlain by a drainage layer. The upper slope of the starter dam has a sand and gravel filter zone. These zones are separated by a finer rockfill transition zone. Above the starter dam, the crest was raised in an upstream manner with cyclone sand. -An operational spillway exists on the right abutment. It is 957 m long founded on tailings, natural ground and bedrock. -Construction was completed in 1981.	-Constructed using a compacted glacial till fill, on a glacial till foundation, with a 300 mm thick layer of waste rock on the upstream slope. -An open channel emergency spillway is located near the right abutment. -Construction was completed in 1984.	-Constructed using compacted glacial till fill. -An open channel emergency spillway located near the right abutment as well as a decant pipe buried through the dam at the right abutment. -Construction was completed in 1989.
Estimated Crest El. (m)	1440.0	1365.0	1296.5
Current Dam Height (m)	70.0	3.0	4.0
Initial Operation	1973	1984	1989
Final Permitted Dam Height (m)	70.0	3.0	4.0
Current Tailings Volume (m^3)	26	n/a	n/a
Final Permitted Tailings Capacity (m^3)	n/a	n/a	n/a
Crest Length (m)	1,500	100	100
Overall Downstream Slope	2.9H:1V (lower bench) 3.5H:1V (upper bench) 3.7H:1V (overall)	2H:1V	2H:1V
Design Storm Event	Probable Maximum Flood (PMF)	100-year, 24-hour	100-year, 24-hour
Design Earthquake	½ between 2,475 and 10,000-year return interval	1,000-year return interval	1,000-year return interval

6. Summary of Material Findings of the Annual Facility Performance Report (AFPR) and Dam Safety Reviews (DSR)

Annual Facility Performance Reports (AFPRs) are compiled each year by a third-party Engineer of Record to summarize the past year's monitoring and surveillance information into a concise review. Dam Safety Reviews (DSRs) are performed every 5 years by an independent reviewer in order to provide an independent assessment of the design and performance of the tailings facility. These reports document the safe operation, maintenance, and surveillance of the facility and identify and make any recommendations for continual improvement. Recommendations from these reports are tracked in the site tailings management system through to completion.

The recommendations from the AFPRs and DSRs are considered 'material[1] findings' when the observation relates to credible failure modes of the facility that could result in a very high or extreme consequence, regardless of the likelihood of such an occurrence. It is important to note that a 'material finding' does not mean a high probability of occurrence. The urgency with which recommendations are to be addressed are defined by the Engineer of Record or independent reviewer by assigning a priority rating, which then informs the timeline to complete the action.

The most recent AFPR for this facility was completed for the period of October 2021 through September 2022 and the most recent DSR was performed in 2018. There were no material findings in either the 2022 AFPR or 2018 DSR that would indicate any tailings facility safety issues.

7. Summary of Material Findings of the Environmental and Social Monitoring Program

HVC has implemented an Environmental Management System (EMS) that conforms to the requirements of ISO 14001:2015 and applicable Teck corporate standards for health, safety, environment and community (HSEC) management. The EMS applies to all activities that could impact the environment at HVC and outlines the processes and practices to reduce potential environmental impacts and improve environmental performance. Monitoring and review requirements are defined within a digital EMS application and used to track the overall effectiveness of the EMS in controlling environmental impacts, verifying conformance with operational controls, tracking regulatory compliance status, and progress toward achieving objectives and targets. Key process indicators of interest tracked within the EMS system include:

- Environmental performance
- Water and tailings performance
- Waste management
- On site and downstream water quality
- Compliance obligations
- Emergency preparedness and response
- Community affairs

[1] Material: Important enough to merit attention or having an effective influence or bearing on the determination in question. For the Standard, the criteria for what is material will be defined by Operator, subject to the provisions of local regulations, and evaluated as part of any audit or external independent assessment that may be conducted on implementation. (GISTM, 2020)

An external audit was conducted in 2022 of HVC's EMS to determine the effectiveness of the system. There were no material findings from the environment monitoring program associated with the Trojan TSF.

There were no material findings from the 2022 Social Monitoring Program associated with Trojan TSF. HVC recently completed an assessment of human exposure, vulnerability and human rights risks associated with credible failure scenarios. A socio-economic profile was updated in 2023 to ensure the mine has updated knowledge for the area of influence of the Trojan TSF and future development related to the HVC 2040 mine extension application. All community feedback is tracked and continually updated within the HVC Knowledge Base. Material findings from social monitoring across the site in general can be found in the Teck Sustainability Report.

8. Summary of the Tailings Facility Emergency Preparedness and Response Plan (EPRP)

Trojan TSF is covered under the HVC Emergency Response Plan. This plan identifies hazards associated with credible flow failure scenarios and describes actions to prepare for and respond to emergencies arising from those hazards. The plan describes roles and responsibilities of site personnel and of provincial emergency response organizations, alert and notification procedures including off-site contacts, an inventory of response equipment, and training requirements for site personnel. The plan is developed by working with outside agencies such as, but not limited to, Emergency Management BC, local communities, Indigenous organizations and independent engineering consultants.

The EPRP program is linked to the tailings specific trigger action response plans (TARP), which are associated with the tailings surveillance and monitoring program described in Section 3. The objectives of the EPRP are:

- Establish procedures for emergency preparation, including escalating levels of response;
- Respond to developing, imminent or actual dam failure scenarios in a way that reduces potential consequences; and
- Identify training and testing requirements for effective implementation of the EPRP.

In the highly unlikely event of an imminent tailings dam failure, response actions would be taken to save human lives and reduce the potential downstream consequences. The actions identified in the EPRP generally include:

- Immediate physical actions that could potentially be taken in response to an unexpected triggering event to prevent further deterioration of the situation or condition toward dam failure.
- Emergency call out procedures to establish internal and external communication lines. These contact lists are verified annually to confirm accurate contact information. The groups that would be contacted include, but are not limited to:
    - Emergency Management BC
    - Indigenous Government Organizations
    - Local Governments of potentially affected downstream communities
    - Teck Corporate Crisis Response Team
    - The Engineer of Record

- Procedures for coordination with Emergency Management BC in order to conduct an evacuation of downstream potentially affected areas. For this purpose, evacuation maps have been prepared.

In preparation for emergencies, emergency simulations and training exercises are conducted annually, and include participation by emergency preparedness agencies and representatives of the downstream project affected people. During these exercises, HVC requests input on the capability and capacity of emergency response services of downstream communities and project affected people to respond in an evacuation situation. As part of our commitment to continuous improvement, HVC's EPRP will continue to develop over time in collaboration with project affected people to improve the state of preparedness for emergencies. EPRP Testing for the L-L Dam at HVC is used to test and train for other TSFs as well (such as Trojan TSF). The TSF EPRP testing is part of the Mine Emergency Response Plan (MERP) testing, which satisfies the BC Health and Safety Reclamation Code (HSRC) minimum testing requirements. The EPRP and associated evacuation procedures are tested and reviewed annually.

9. Independent Reviews

The Independent Tailings Review Board takes place 2-3 times a year. The last meeting was in April 2023, and the next one is scheduled for August 2023.

10. Financial Capacity

Teck confirms that it has adequate financial capacity to cover estimated costs of planned closure, early closure, reclamation, and post-closure of the Highland TSF and its appurtenant structures. These costs are disclosed annually in aggregate form in our annual financial statements contained within our Annual Report. These cost estimates are based on the tailings facility closure designs described in Section 5.

Further, Teck maintains insurance for our tailings facilities to the extent commercially available.

11. Conformance to the Global Industry Standard on Tailings Management

Teck has performed a self-assessment of conformance to the Global Industry Standard on Tailings Management (GISTM) for Trojan TSF at Highland Valley Copper. This self-assessment has been performed in accordance with the ICMM Conformance Protocols issued in May 2021.

Categories of conformance for individual Requirements in the GISTM are set out below. These take into account guidance from ICMM. Where some requirements represent ongoing community engagement or other ongoing activities, and the systems and/or practices are substantively implemented such that the intended outcome is functionally achieved, and there is no physical risk to tailings facility safety, then these requirements can be considered conformance with the GISTM.

Table 3: Categories of Conformance

Conformance Level	Description
Meets	Systems and/or practices related to the Requirement have been implemented and there is sufficient evidence that the Requirement is being met.
Meets with plans in place	Where an Operator is required to undertake engineering work or other measures to conform to some Requirements (e.g., for Requirements 4.7 or 5.7, which might include remedial engineering measures for existing facilities), the expectation is that these shall be carried out as soon as reasonably practicable. It is not necessary for such measures to be complete by the implementation deadlines for an Operator to be in conformance, but both the measures and associated timelines should be clearly documented by an Accountable Executive.
Partially meets	Systems and/or practices related to meeting the Requirement have been only partially implemented. Gaps or weaknesses persist that may contribute to an inability to meet the Requirement, or insufficient verifiable evidence has been provided to demonstrate that the activity is aligned to the Requirement.
Does not meet	Systems and/or practices required to support implementation of the Requirement are not in place, are not being implemented or cannot be evidenced.
Not applicable	The specific Requirement is not applicable to the context of the asset.

For Trojan TSF at HVC, all requirements have been met, or are met with a plan in place, for Principles 1 to 3 and 5 to 15. Ongoing work to meet all requirements in Principle 4 will continue beyond August 5, 2023, and this principle is considered partially met. Importantly, there are no immediate physical safety risks at the facility related to the work in progress. The ongoing work to address the outstanding recommendations is as follows:

- Principle 4: Work is ongoing to demonstrate that risks are as low as reasonably practicable (ALARP), including evaluation of performance against extreme loading criteria. The facility was designed to loading criteria that conforms to the GISTM requirements and has appropriate tailings management and governance systems in place, with established independent reviews and ongoing community engagement. Evaluations of long-term facility performance to inform long term planning is expected to be complete by the end of 2024.