Our Approach to Tailings Management

Which Teck sites does this document apply to?

This document summarizes our approach to tailings management. This document applies to all Teck sites and projects, with a focus on operations and legacy sites with major active tailings facilities, and on major development projects with proposed large tailings facilities. This does not include operations in which Teck has/had an ownership interest but is not the principal operator.

2019 Tailings Management performance information: See our 2019 Sustainability Report available for download on our website. Also see https://www.teck.com/Tailings/ for further disclosure.

Governance and Accountability

Background

Tailings and mine waste rock are common by-products of mining practice. Tailings facilities are historically well managed with very few incidents; however, a tailings incident has the potential to have a significant impact on communities, local economies and the surrounding environment. Teck currently manages 55 tailings facilities. Of these, 35 are at our operating mines and 20 are at the legacy properties that we manage. This total includes 16 “dry stack” (unsaturated) facilities at our steelmaking coal mines. Of the tailings facilities, 16 are in active use and 39 are closed and no longer receiving tailings.

Tailings storage facilities at all of Teck’s operating and closed sites meet or exceed regulatory requirements, and responsible management of tailings and waste rock is critical for our company. We are continually improving the management of our facilities by developing and incorporating best practices.

Accountability and Resourcing

The Board of Directors, through its Safety and Sustainability Committee, broadly oversees health, safety, environment and community policies, systems, performance and auditing, including implementation of our Health, Safety, Environment and Community (HSEC) Management Standards and tailings guidance. Our activities associated with tailings and waste management are reported to the Safety and Sustainability Committee of the Board and/or to our HSEC Risk Management Committee.

The following senior leaders are involved in implementing the management of tailings and mine waste:

- The Senior Vice President, Sustainability and External Affairs reports directly to the President and CEO and is responsible for sustainability, health and safety, environment, community, and Indigenous affairs, including tailings management
- The Vice President, Environment oversees compliance with environmental standards for projects, operations and our legacy properties, and regularly reviews environmental performance risks and strategic issues, including tailings management, biodiversity, water, air and energy
- The Senior Advisor, Tailings & Mine Waste chairs our Tailings Working Group and reports directly to the Vice President, Environment

The Tailings Working Group includes members of our senior management team and tailings management subject matter experts from operations where we have active tailings storage facilities. The group provides oversight and guidance, and conducts reviews to ensure alignment with Teck’s guidelines for tailings management. This activity includes engaging qualified professionals for the entire life cycle of our tailings facilities for completing independent reviews.

Policies and Standards

Teck’s Tailings and Water Retaining Structures Governance framework provides a consistent company-wide approach to how we manage the risks inherent with tailings. This framework provides clear guidance on roles and responsibilities related to tailings management across all Teck projects, operations and legacy properties.
Teck’s HSEC Management Standards also include general guidance on tailings and mine waste management. The Safety and Sustainability Committee of the Board oversees these management standards and the associated guidance documents, and our adherence to them.

Memberships, Partnerships and External Commitments

We work with various local, national and international organizations and programs to support improvements in tailings and mine waste management across the industry:

- **International Council on Mining and Metals (ICMM):** A global industry association that represents leading international mining and metals companies who are required to implement the ICMM 10 Principles, including Principle 6 on Environmental Performance
- **Mining Association of Canada (MAC):** A national association that promotes the development of Canada’s mining and mineral processing industry. Through MAC, we are required to implement the Towards Sustainable Mining (TSM) program, which aids in improving industry performance. Teck’s Senior Advisor, Tailings & Mine Waste is the Chair of MAC’s Tailings Working Group.
- **Canada’s Oil Sands Innovation Alliance (COSIA):** An alliance of oil sands producers focused on accelerating improvement in environmental performance in Canada’s oil sands through collaborative action and innovation
- **Engineers and Geoscientists BC:** As a member company, Teck’s Senior Advisor, Tailings & Mine Waste was a reviewer for the guideline that was issued in 2016 for the requirements of foundation investigations for dams
- **Australian Research Council:** In 2017, Teck became part of an initial three-year applied research program, along with four universities in Australia and several other mining companies, that is focused on finding more effective tools for predicting and avoiding tailings facility failures

Approach to Tailings Management

Tailings Management

Tailings storage facilities at all our operations meet or exceed regulatory requirements, and we work to continually improve the management of these facilities. Planning, design, construction, operation, decommissioning and closure are carried out in a manner such that:

- Structures are stable
- Solids and water are managed within designated/approved areas
- Facilities comply with regulatory requirements
- Facilities conform to applicable standards, internal policies, industry best practices and the technical guidelines of the jurisdictions in which we operate

We have comprehensive systems and procedures in place for the safe operation and monitoring of tailings facilities that follow best practices, organized around interrelated activities that include:

1. **Surveillance Technology:** Dictated by site-specific conditions and approved designs, our sites employ surveillance systems such as piezometers, inclinometers, pressure gauges, satellite and other remote sensing, and other technologies to monitor tailings dams, abutments, natural slopes and water levels. The surveillance information is evaluated against established response levels that include predetermined mitigation activities, should unusual performance arise.

2. **Staff Inspections:** Tailings dams are inspected by trained operators and expert technical staff as frequently as several times daily, with formal staff inspections at least once per month.

3. **Annual External Inspections:** A fully licensed, qualified individual who is vetted by our Tailings Working Group conducts formal dam safety inspections at least annually. Independent, qualified engineers also conduct periodic reviews, with timing dependent upon the consequence classification of the facility. For all facilities, the annual inspection reports are provided to the appropriate authority in each jurisdiction.

4. **Internal Review:** On a formal rotation basis every two to three years, we conduct internal management reviews of our tailings facilities. These Tailings Governance Reviews evaluate each site’s conformance with our internal tailings guidance documents and policy. In addition, informal and more frequent reviews of our facilities are carried out by one or more members of our Tailings Working Group during routine site evaluations, which assist in reinforcing the issues discussed during the most recent governance reviews.
5. **Detailed Third-Party Reviews:** A qualified independent tailings reviewer, vetted by our Tailings Working Group, conducts comprehensive third-party dam safety reviews every five to 10 years for active and inactive facilities. The frequency of inspection is based on the consequence classification for each facility.

6. **Independent Review Boards:** Our operations and projects with existing or planned major tailings storage facilities have Tailings Review Boards made up of independent experts from relevant areas, such as geotechnical, hydrogeological, hydro-technical and geochemical fields. These boards meet from once to several times per year, depending upon the nature of the facility and the issues being considered by the board, to conduct a third-party review of design, operation, surveillance and maintenance of our storage facilities. Each facility also has a regularly updated detailed Operations, Maintenance and Surveillance (OMS) manual and Emergency Preparedness and Response Plan. We maintain site-specific Tailings Management Systems that conform to or exceed industry standards of practice. These systems demonstrate leadership, and commitment to responsible tailings management practices, and were developed through consultation with communities. We continually review our facilities and procedures and are committed to maintaining the highest standard of safety at our operations. See Our Approach to Emergency Preparedness for further information.

Antamina and Fort Hills, joint venture operations where Teck is not the operator, both have Tailings Review Boards in place as well. Teck also provides senior experts to Antamina’s Tailings Technical Committee.

For information about Teck’s approach to waste management, including tailings and fine coal refuse, waste rock and overburden, coarse coal refuse, and hazardous and non-hazardous waste, see Our Approach to Responsible Production and Waste Management.

**Our Targets and Commitments**

We are committed to the safe and environmentally responsible development, operation and management of tailings storage facilities. We continually review our facilities and procedures, and are committed to maintaining the highest standard of safety and environmental protection at our operations, including standards set by MAC and ICMM. We aim to have zero significant environmental incidents across the organization.

Our sustainability strategy outlines our goals in relation to continuously improving tailings management at our operations. In 2019, we conducted broad engagement with employees and external stakeholders to identify and prioritize global trends and issues and set a new sustainability strategy, including new goals in tailings management:

**Strategic Priority:**

- Continue to manage our tailings across their life cycle in a safe and environmentally responsible way

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### 2019 Status of Major Tailings and Water Retaining Structures

<table>
<thead>
<tr>
<th>Location</th>
<th>Annual Dam Safety Inspections1</th>
<th>Dam Safety Reviews2</th>
<th>Independent Review Board Activity3</th>
<th>Tailings Governance Reviews</th>
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<tbody>
<tr>
<td>Carmen de Andacollo</td>
<td>Up to Date</td>
<td>Up to Date</td>
<td></td>
<td>Current—reviewed in 2019</td>
</tr>
<tr>
<td>Elkview</td>
<td>Up to Date</td>
<td></td>
<td></td>
<td>Current—next review in 2020</td>
</tr>
<tr>
<td>Fording River</td>
<td>Up to Date</td>
<td></td>
<td></td>
<td>Current—reviewed in 2019</td>
</tr>
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<td>Current—next review in 2020</td>
</tr>
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<tr>
<td>Red Dog</td>
<td>Up to Date</td>
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<tr>
<td>Louviourt4</td>
<td>Up to Date</td>
<td></td>
<td></td>
<td>Current—next review in 2021</td>
</tr>
<tr>
<td>Quebrada Blanca Phase 2</td>
<td>Not yet operating</td>
<td>Not yet operating</td>
<td></td>
<td>Current—reviewed in 2019</td>
</tr>
</tbody>
</table>

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1 The Engineer of Record performs a detailed examination of the facility, its related infrastructure and the records relating to these, to identify any conditions or changes that might contribute to, or signal the potential for, a compromise to the safety and reliability of the structure.

2 A facility review by an independent, third-party engineer not affiliated with the Engineer of Record or the Tailings Review Board. The frequency of these reviews depends on the failure consequence risk-rating of that structure.

3 Review by a team of independent senior subject matter experts who review the facility design approach, surveillance results and a site’s overall approach to tailings management, including performance of the Engineer of Record.

4 Legacy property.
Goals:
• Preferentially consider milling and tailings technologies that use less water, both for new mines and any mine life extensions at existing mines
• Expand the use of digitally connected surveillance technologies to assist in monitoring our tailings storage facilities

For more information on our existing and new sustainability strategy goals, see the Sustainability Strategy section of our website.

Tailings Management Related Assurance

In addition to the external review processes and the internal assessments of performance against our own guidelines and practices noted above, we assess our tailings management practices under MAC’s TSM Tailings Management Protocol. Achieving a minimum of a Level A rating under TSM is a requirement of our HSEC Management Standards. A Level A rating indicates that tailings management practices that meet industry best practice, as defined by the MAC Tailings Guidelines, have been developed and implemented. All of our operations meet or exceed this standard. Several of our facilities reached a verified Level AAA, which indicates excellence and leadership in tailings management, through validation by an external, independent evaluation.

The table below describes Tailings Management Related Assurance processes at Teck. Following each of these types of assurance, applicable management teams use the results to inform future actions and Teck’s five-year planning process.

We report on our performance against these indicators and our progress towards our tailings and environmental management goals on an annual basis in our sustainability report.

<table>
<thead>
<tr>
<th>Type</th>
<th>Organization</th>
<th>Items Reviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>External</td>
<td>Mining Association of Canada: Towards Sustainable Mining</td>
<td>• Tailings management policy and commitment&lt;br&gt;• Tailings management system&lt;br&gt;• Assigned accountability and responsibility for tailings management&lt;br&gt;• Annual tailings management review&lt;br&gt;• Operation, Maintenance and Surveillance manual</td>
</tr>
<tr>
<td>External</td>
<td>ISO 14001 external audits</td>
<td>• Components of the environmental management system at each site</td>
</tr>
<tr>
<td>Internal</td>
<td>Risk-based Health, Safety and Environment audits at each site</td>
<td>• Adherence to regulatory and permit requirements; effectiveness of controls based on risk profile</td>
</tr>
<tr>
<td>Internal</td>
<td>Tailings Governance Reviews</td>
<td>• Assessment of operational tailings management activities relative to Tailings Governance framework</td>
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</table>