MINE TAILINGS STORAGE FACILITY MANAGEMENT

Five-Day Live Online Training Programme

Client distribution edition | 29 October 2026

Delivery	Duration	Practical focus
Live online, instructor-led	08:30-16:00 daily 30 learning hours	Day 5 workshops and integrated case study

Course purpose

Develop the ability to recognise tailings storage facility (TSF) hazards, apply operating controls, interpret monitoring information, and respond to abnormal conditions throughout the facility lifecycle.

Audience and entry requirements

Mine engineers, TSF operators and supervisors, metallurgists, environmental officers, maintenance personnel, emergency-response staff and mine management. Basic mining knowledge is recommended; engineering concepts are explained through practical examples.

Learning outcomes

- Explain facility components, types and lifecycle stages.
- Recognise failure mechanisms, warning signs and critical controls.
- Use an Operation, Maintenance and Surveillance (OMS) manual.
- Interpret monitoring trends and apply a Trigger Action Response Plan (TARP).
- Explain governance, construction assurance, emergency readiness and closure responsibilities.

Online learning approach

Short live presentations, polls, breakout groups, shared worksheets, virtual inspections and daily assessments. A continuous fictional facility links the five days. Participants need a computer, reliable internet, audio access, PDF reader and basic spreadsheet software.

Each day includes six learning hours and 90 minutes of breaks. Course dates and delivery time zone are to be agreed with the client.

Day 1 - TSF Fundamentals, Hazards, and Governance

Learning objective: Explain facility functions, identify major hazards, and describe management responsibilities.

Time	Session	Content and online activity
08:30-09:00	Orientation and baseline check	Platform introduction and ungraded baseline quiz.
09:00-10:00	Tailings and facility components	Tailings properties; slurry, thickened, paste and filtered tailings; embankments, beaches, ponds, drainage and return-water systems.
10:15-11:30	Facility types and lifecycle	Upstream, downstream and centreline concepts; filtered stacks; planning, construction, operation, closure and post-closure.
11:30-12:15	Hazards and warning signs	Overtopping, instability, internal erosion, liquefaction and environmental releases. Photo-based scenarios.
13:00-14:00	Governance and responsibilities	Accountability, Engineer of Record, responsible site roles, community engagement and reporting. Responsibility mapping.
14:15-15:15	Group application	Identify hazards and responsibilities at a fictional TSF in breakout rooms.
15:15-16:00	Daily assessment and feedback	Individual quiz: 30 minutes; feedback: 15 minutes.

Breaks: 10:00-10:15 and 14:00-14:15. **Lunch:** 12:15-13:00.

Participant outputs: Annotated facility drawing, hazard register and responsibility map.

Day 2 - Site Characterisation, Design, and Construction

Learning objective: Recognise the information and quality controls needed to support safe design and construction.

Time	Session	Content and online activity
08:30-09:00	Review and retrieval	Polls and facilitated discussion.
09:00-10:00	Understanding the site	Geology, foundations, groundwater, hydrology, climate, seismic setting and downstream receptors.
10:15-11:30	Design fundamentals	Stability, pore-water pressure, seepage and liquefaction. Visual explanations and worked examples.
11:30-12:15	Water and flood management	Water balance, flood management and freeboard principles. Guided worksheet.
13:00-14:00	Construction assurance	Quality assurance and control; drainage, filters, material placement, records, as-built drawings and staged raises.
14:15-15:15	Document review exercise	Identify missing evidence and defects in a simplified investigation and construction package.
15:15-16:00	Daily assessment and feedback	Applied individual questions: 30 minutes; feedback: 15 minutes.

Breaks: 10:00-10:15 and 14:00-14:15. **Lunch:** 12:15-13:00.

Participant outputs: Design-review questions and construction quality checklist.

Worked examples explain principles. Facility-specific design and approval require competent engineering assessment.

Day 3 - Operations, Maintenance, and Water Management

Learning objective: Apply routine operating procedures and recognise conditions requiring escalation.

Time	Session	Content and online activity
08:30-09:00	Review and operating scenario	Facilitated discussion.
09:00-10:00	OMS manual and limits	Guided document walkthrough; shift responsibilities and approved operating limits.
10:15-11:30	Deposition and pond management	Spigots, beach development, pond location and deposition planning. Diagrams and decision exercises.
11:30-12:15	Operational water controls	Reclaim systems, stormwater diversion, rainfall preparation and contingency arrangements.
13:00-14:00	Maintenance and change control	Pumps, pipelines, decants and drains; defect reporting, handovers and management of change.
14:15-15:15	Operational scenario exercise	Respond to a pump outage and forecast rainfall using supplied operating information and a spreadsheet.
15:15-16:00	Daily assessment and feedback	Individual operational scenario: 30 minutes; feedback: 15 minutes.

Breaks: 10:00-10:15 and 14:00-14:15. **Lunch:** 12:15-13:00.

Participant outputs: Operating checklist, shift-handover record and prioritised maintenance actions.

Day 4 - Surveillance, Monitoring, and Emergency Readiness

Learning objective: Interpret trends, apply response triggers, and explain emergency and closure arrangements.

Time	Session	Content and online activity
08:30-09:00	Review and warning signs	Image-based quiz and discussion.
09:00-10:00	Virtual facility inspection	Cracks, deformation, erosion, seepage, drains and pond position using photographs or video.
10:15-11:30	Instrumentation and monitoring	Piezometers, movement surveys, seepage measurement, rainfall and pond levels. Dashboard walkthrough.
11:30-12:15	Data interpretation and TARPs	Data quality, trends, critical controls, triggers and escalation. Guided interpretation exercise.
13:00-14:00	Emergency readiness	Notifications, community warnings, incident roles and evacuation coordination. Communication mapping.
14:15-15:15	Closure and post-closure	Stability, drainage, rehabilitation, monitoring, success criteria and long-term responsibilities.
15:15-16:00	Daily assessment and feedback	Monitoring and escalation exercise: 30 minutes; feedback: 15 minutes.

Breaks: 10:00-10:15 and 14:00-14:15. **Lunch:** 12:15-13:00.

Participant outputs: Virtual inspection report, monitoring interpretation and escalation record.

Use approved facility limits and response triggers. Course examples do not establish universal thresholds.

Day 5 - Practical Workshops and Integrated Case Study

Learning objective: Combine operational, monitoring, risk and emergency-response knowledge to make and justify decisions.

Case study: A fictional TSF experiences prolonged rainfall, a reclaim-pump outage, rising pond levels, and changing seepage and piezometer readings. Information is released in stages. Teams use a supplied OMS manual, TARP and emergency response plan.

Time	Practical activity	Required output
08:30-09:00	Case briefing and team allocation	Review layout, history, responsibilities and evidence.
09:00-10:00	Workshop 1: Virtual inspection	Prioritised findings from photographs and inspection records.
10:15-11:30	Workshop 2: Water and operational controls	Action plan based on water balance, pond trends and pump availability.
11:30-12:15	Workshop 3: Monitoring and TARP	Data checks, trigger identification and escalation record.
13:00-14:00	Workshop 4: Emergency tabletop	Notifications, decisions and incident log responding to staged updates.
14:15-15:00	Assessed team presentations - 45 minutes	Justify decisions, evidence, responsibilities and recovery actions.
15:00-15:45	Individual final assessment - 45 minutes	Scenario questions and workplace improvement plan.
15:45-16:00	Debrief and course close	Lessons and feedback arrangements.

Breaks: 10:00-10:15 and 14:00-14:15. **Lunch:** 12:15-13:00.

Assessment: 90 minutes, plus observation during workshops. Use 3-4 teams within the 45-minute presentation block.

Assessment and Delivery

Day	Assessment	Time	Weight
1	Fundamentals, hazards and governance quiz	30 min	10%
2	Applied design and construction questions	30 min	15%
3	Operational decision scenario	30 min	15%
4	Monitoring and escalation exercise	30 min	20%
5	Team presentation and workshop performance	45 min presentation block; workshop observation	20%
5	Individual final assessment	45 min	20%

Total formal assessment: 210 minutes, plus workshop observation. Days 1-4 include a further 15 minutes of feedback daily. The Day 1 baseline quiz is ungraded.

Suggested completion requirements

At least 70% overall; attendance at 90% or more of live learning time; participation in all assessed activities; satisfactory critical escalation and emergency actions. Provide coaching and reassessment where critical actions are missed. These are proposed course rules, not external accreditation requirements.

Certificates state successful completion of training. Completion does not establish professional design competence or authorise approval of TSF changes. Arrange separate supervised workplace assessment for physical inspection or equipment skills where required.

Delivery requirements

Recommended cohort: 12-20. Lead trainer: experienced in TSF engineering and operations, with site specialist support. Use a second facilitator for larger groups and breakout activities. Provide downloadable materials and an alternative assessment submission route for connectivity problems.

Resources and client preparation

Provide a workbook, glossary, drawings, OMS and TARP extracts, inspection forms, water-balance worksheets, monitoring data, emergency notification matrix, scenario cards, closure checklist and action-plan template. Confirm dates, time zone, participant nominations, accessibility needs and platform. Obtain approved site documents and applicable national requirements before site-specific delivery. Use fictional or appropriately anonymised case information.

Reference framework

Global Industry Standard on Tailings Management:
globaltailingsreview.org/global-industry-standard/
Mining Association of Canada - Tailings Guide:
mining.ca/our-focus/tailings-management/tailings-guide/

Prospective Participants

Recommended client nomination profile

This proposed role-based list supports client planning. It contains no confirmed attendees. The client should nominate individuals according to facility responsibilities and training needs.

Role / function	Suggested seats
TSF operators and shift supervisors	4
Mine, tailings and geotechnical engineers	3
Metallurgy and processing representatives	2
Environmental and water-management officers	2
Maintenance: pumps, pipelines and instrumentation	2
Health, safety and emergency-response representatives	2
Mine management / accountable site leadership	1
Community relations / stakeholder engagement	1
Projects, construction or closure representatives	1
Total proposed cohort	18

Nomination priorities

Prioritise personnel who operate or inspect the facility, interpret monitoring data, authorise operational actions, manage water or coordinate emergency response. Include contractors who hold these responsibilities.

Complete the register on the next page. Confirm that nominees can attend all five days and participate in online group work and assessments.

Client organisation: _____

Training coordinator: _____

Proposed dates: _____

Delivery time zone: _____

Client Nomination Register

To be completed by the client. Entries are prospective nominations; attendance has not been confirmed.

No.	Participant name	Role / department	Email / contact
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Client coordinator / approval: _____

Date: _____ Final participant count: _____