

Title	Describe and operate a tailings disposal system at an extractive site		
Level	3	Credits	12

Purpose	People credited with this unit standard are able to: describe the operational characteristics and performance of a tailings disposal system; describe the safety systems, adjustments, and checks required for a tailings disposal system; describe the environmental constraints and controls for a tailings disposal system; operate a tailings disposal system; and carry out shut-down procedures and complete documentation for tailings disposal, at an extractive site.
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Classification	Extractive Industries > Surface Extraction
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Available grade	Achieved
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Guidance Information

- 1 Performance of the outcomes of this unit standard must comply with the following:
Health and Safety at Work Act 2015 (HSW);
Health and Safety at Work (General Risk and Workplace Management) Regulations 2016;
Health and Safety at Work (Worker Engagement, Participation, and Representation) Regulations 2016;
Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016;
approved codes of practice issued pursuant to the HSW Act.
- 2 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.
- 3 Definition
Industry best practice refers to those practices which competent practitioners within the industry recognise as current industry best practice. These may be documented in management plans, company procedures or requirements, managers' rules, occupational health and safety policy, industry guidelines, codes of practice, manufacturers' instructions, and safe working and/or job procedures (or equivalent).
- 4 This unit standard is intended for, but is not limited to, workplace assessment.

Outcomes and performance criteria

Outcome 1

Describe the operational characteristics and performance of a tailings disposal system at an extractive site.

Performance criteria

- 1.1 The operational characteristics and performance of a tailings disposal system are described in terms of its operation at a surface extraction site.
- 1.2 Tailings disposal system is described in terms of the types of pumps and pumping systems used.
- Range may include but is not limited to – valves, pipelines, structures, pump-houses, controls, pipe couplings, discharge, ponds, power source and supply, drainage, stackers, pipeline construction.
- 1.3 The tailings dump design and system is described in terms of tailings disposal.
- Range may include but is not limited to – tailings pond location, site preparations, permeability of material, slime layers, under-drains, periphery drains, dry and wet stacking, stability, dams and bunds, liner systems, construction techniques, water management.
- 1.4 The operating procedures for tailings disposal are described in terms of resource consents and industry best practice.
- Range may include but is not limited to – start-up and shut-down, tailings flow rate and volume, tailings flow diagram, slimes control, stacking configuration, moving tailings lines, trash disposal, dump stability.

Outcome 2

Describe the safety systems, adjustments, and checks required for a tailings disposal system at an extractive site.

Performance criteria

- 2.1 A tailings disposal system is described in terms of the checks, adjustments and monitoring required.
- Range may include but is not limited to – pump performance, leakage from pumps and pipes, dump stability, line blockages, slimes control, support for pipeline, stacker discharge, drainage and run-off water, line extensions/shortening, pre-start checks.

2.2 A tailings disposal system is described in terms of the required safety systems.

Range warning and direction signs, gates and fencing, barriers, alarms, tailings line isolation, power isolation procedures.

Outcome 3

Describe the environmental constraints and controls for a tailings disposal system at an extractive site.

Performance criteria

3.1 The control and monitoring required are described in terms of resource consents and industry best practice.

Range may include but is not limited to – losses to ground and seepage, liner systems, drainage control, flora and fauna protection, sampling, stream diversions, slimes and fines disposal, leachate effects, dust control, slope stability, cultural effects.

3.2 The rehabilitation of tailings dumps is described in terms of resource consents and industry best practice.

Range may include but is not limited to – slimes control, nutrient replacement, revegetation and reforestation, contouring of dumps, drainage control.

Outcome 4

Operate a tailings disposal system at an extractive site.

Performance criteria

4.1 The tailings disposal system is operated in accordance with industry best practice and required safety systems.

Outcome 5

Carry out shut-down procedures and complete documentation for tailings disposal.

Performance criteria

5.1 The pumping and tailings discharge system is shut down in accordance with manufacturer's recommendations and industry best practice.

Range may include but is not limited to – tailings line settlement, stacker positioning, control settings, communication.

5.2 Defects are listed in accordance with industry best practice.

Range may include but is not limited to – pumps, pipelines, associated equipment inspections, hazard inspections, tailings pond inspections, checks for leaks, sediment accumulations, stackers, drainage system, bund/dam stability.

5.3 Documentation is completed in accordance with industry best practice.

Range may include but is not limited to – tailings operator logsheets, control room reports, hazard reports, defect reports.

Planned review date	31 December 2022
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	31 July 2001	31 December 2019
Review	2	23 September 2005	N/A
Rollover and Revision	3	16 July 2010	N/A
Rollover and Revision	4	25 January 2018	N/A

Consent and Moderation Requirements (CMR) reference	0114
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.