

Standard

E13 – Chemically reactive mineral waste management

November 2017

Group Standard	Title: Chemically reactive mineral waste management		Document number: HSEC-B-04	
	Function: Health, Safety and Environment (HSE)			
	No. of Pages: 3			
	Approved by ExCo: November 2017	Effective: November 2017	Supersedes: 2014 version	No audit before: 01 January 2019
Owner: Group Executive Health, Safety & Environment		Approver: Executive Committee	Target audience: All Rio Tinto staff and each Rio Tinto Group business and function	
Direct linkages to other relevant policies, standards, procedures or guidance notes: Rio Tinto management system standard, E11 – Water quality protection and water management standard, D5 – Tailings and water storage standard. E13 – Chemically reactive mineral waste control guidance note				
Document purpose: To support the implementation of the Group HSEC policy. This standard defines the minimum acceptable requirements for behaviours and/or conditions in respect of managing chemically reactive mineral waste, which if not met, could materially impact the Group.				

Confidential

This document is the copyright property of Rio Tinto HSE and contains information that is confidential to companies within the Rio Tinto Group.

E13 – Chemically reactive mineral waste management

Intent and Scope

Business units and operations are accountable to manage impacts associated with our operations to ensure risk is managed in accordance with regulatory commitments, Rio Tinto values as outlined in *The way we work*, and the HSEC policy. Rio Tinto is committed to protecting the environmental value of the regions where we operate and maintaining good stewardship for the long term. The intent of the standard and the requirements herein, is to prevent, or otherwise minimise, mitigate and remediate the effects that our business' operations have on communities and environments.

This standard is applicable to all Rio Tinto business units and managed operations across all phases of their life cycle from exploration through post-closure. This standard covers all mineral wastes, potential and actual releases from reactive mineral waste, and the management of geochemical issues associated with rock masses disturbed or exposed by open pit and underground mining.

Performance requirements

- 1.1 Manage chemically reactive mineral waste to protect the environment, and/or community health and livelihoods, and to avoid or minimise the development of sites that present environmental legacy and financial liability.
- 1.2 Riverine and shallow marine disposal of mining and processing mineral waste is not permitted at new operations and projects. Existing operations that already practice riverine or shallow marine disposal must have a process in place to discontinue this practice and reduce the environmental impacts.

Control requirements

Requirements in this standard apply in addition to any requirements defined in the *Rio Tinto Management System* standard, and those of the *Tailings and water storage standard*, the *Community and social performance* standard, and the other environmental standards. Materiality thresholds, described in guidance to this standard, determine the level of effort required to meet subsequent clauses herein.

Hazard identification and risk management

- 2.1 Develop internal performance criteria when government regulations are absent, or insufficient to ensure protection of environment, and/or community health and livelihoods. Any performance criteria that are more stringent than government regulations must have formal approval from the business' Managing Director.
- 2.2 Predict and plan for the volumes, storage locations and general characteristics of all mineral wastes that will be disturbed, generated, exposed or stored on- and off-site.
- 2.3 Characterise and develop an integrated understanding of actual and potential unauthorised mineral waste release, transport pathways and receiving environments to predict potential impacts and use this information to inform the design of containment infrastructure, monitoring and management strategies.
- 2.4 Develop and maintain an inventory comprising quantities, location and representative characteristics of chemically reactive mineral waste stored on- and off-site.
- 2.5 Characterise and predict the long-term geochemical and physical behaviour of all mineral waste types and rock masses.
- 2.6 Plan for, and implement, the remediation of existing contaminated sites, as appropriate.
- 2.7 Evaluate and document all potential mineral waste and drainage impacts. Develop appropriate mitigation strategies for all significant risks and impacts as part of the technical and financial preparation and evaluation of capital projects.

Management of change

- 2.8 Evaluate and document any change to mine design, infrastructure and operations that could have an impact relating to chemically reactive waste as part of a formal management of change process that prioritises opportunities to avoid and/or reduce impacts.

Monitoring, measuring and reporting

- 2.9 Design and implement a geochemical and geophysical monitoring programme for all mineral waste storage facilities, impacted waters and potential receiving environments to confirm impact predictions, and determine if performance criteria are being met to validate the success of mitigation programmes.
- 2.10 Investigate and take appropriate actions when material deviations from impact predictions are identified or when internal performance criteria are not met.
- 2.11 Arrange for a qualified independent expert to conduct an external review of the mineral waste characterisation programmes, management strategies, disposal facilities, monitoring programmes, remediation budgets and plans at least every four years where significant mineral waste and impacted drainage or other geochemical hazards exist.