

Tailings Storage Management Framework

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Fortescue
The New Force in Iron Ore

Tailings Storage Management

Fortescue acknowledges that the effective management of the storage of tailings requires rigorous design practices, comprehensive monitoring and management programs, independent auditing and a strict corporate governance regime.

To this extent, Fortescue utilises internal expertise together with external design consultants to ensure that the Company's Tailings Storage Facilities (TSF) are designed to the highest standard to minimise the environmental and community impacts and to maximise operational efficiency.

Generation of Tailings

Fortescue's iron ore processing facilities generate a fine-grained by-product, referred to as tailings. This material is pumped as a slurry via pipelines to specifically designed TSFs. Over time the fine-grained material settles, allowing water to be recovered and recycled.

The tailings produced during the beneficiation of Fortescue's iron ore is geochemically benign and therefore poses a negligible environmental and/or health contamination risk.

Fortescue's TSFs

Fortescue currently operates three active TSFs and manages an additional six inactive facilities. All of these facilities are located in the Pilbara Region of Western Australia.

Two of the inactive facilities have been rehabilitated, one is in the process of being rehabilitated and another two are being dried for future rehabilitation. The final inactive TSF is located at the Company's

Iron Bridge minesite and is in care and maintenance pending development of the Iron Bridge project. The active TSFs are located at Fortescue's operational mine sites at Cloudbreak, Christmas Creek and Solomon.

None of Fortescue's TSFs are considered to be large or complex engineering structures, or operated in geotechnically, geologically, topographically or meteorologically complex settings.

Fortescue does not use the upstream raise construction method and does not use tailings as a structural element in any of its active or closed TSFs.

All of Fortescue's TSFs are located in remote areas and there are no communities situated near any facilities.

As part of the TSF design phase a number of aspects are considered including the location of mining infrastructure, employees and communities, areas of environmental significance, topography, geological and climatic conditions, surface and groundwater, future land use, tailings characteristics and seismic activity of the area.

Fortescue's Tailings Storage Facilities register can be found on the Safeguarding the Environment page of Fortescue's website.

Tailings production volumes and general information on Fortescue's TSFs are also reported annually in Fortescue's Corporate Social Responsibility Reports available at fmgl.com.au.

Fortescue's Tailings Management Framework

Fortescue carries out all tailings management activities including design, construction and monitoring in accordance with the requirements of risk-based TSF management set out in the Western Australian Government's Department of Mines, Industry Regulations and Safety (DMIRS) tailings guidelines and the Australian National Committee on Large Dams (ANCOLD) guidelines. The risk-based process ensures risks are identified and reviewed, and that implementation and control effectiveness are monitored and audited. This process also assists in mitigating the impacts of failure through targeted response plans.

Fortescue implements a life-cycle TSF risk management framework (see figure 1). The objective of this framework is to define, understand, prioritise, control, mitigate and effectively eliminate TSF failure.

Fortescue's TSF risk- management framework is underpinned by three preventative critical control groups.

- Critical Control Group #1 - Risk/ Consequence based Planning, Investigation, design and construction supervision and QA/QC
- Critical Control Group #2 - Operation, Surveillance, Monitoring and Maintenance – Observational Approach
- Critical Control Group #3 - Technical, Condition, Performance and Dam Safety Review Process.

Each active TSF has a comprehensive operations, surveillance and monitoring plan and Dam Safety Emergency Plan (DSEP) that act in parallel with the site emergency response plan.



Figure 1

Inspections and audits

Fortescue implements internal TSF monitoring programs that include daily, weekly and monthly visual inspections and instrumentation surveillance monitoring and alarm systems. All tailings related personnel are trained and must be assessed as competent prior to operating a TSF.

The Company also has each tailings facility independently audited annually by independent experts in accordance with DMIRS requirements to ensure the ongoing integrity and safety of each facility. The most recent external audits were completed in late 2018.

In addition, during 2019 Fortescue undertook an internal tailings management risk and control review. Findings of this review were reported to the Board.

Fortescue is committed to maintaining tailings risk management in accordance with industry leading practice and stakeholder expectations. The Company will continue to engage with tailings storage management experts and regulators to ensure risks are mitigated and managed effectively.



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