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Mine Closure Plan

**McARTHUR RIVER MINE PHASE 3
DEVELOPMENT PROJECT**

January 2012

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Appendix E4 – Mine Closure Plan

McArthur River Mine Phase 3 Development Project Mine Closure Plan January 2012

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1 Scope and Purpose

This Preliminary Closure Plan provides a framework for sustainable closure of the McArthur River Mine and the McArthur River Mine Phase 3 Development Project (the Project). It is being submitted as an appendix to the Project's Draft Environmental Impact Statement (EIS) in line with the closure guidelines issued by the Northern Territory Government Department of Infrastructure, Planning and Environment.

The Preliminary Closure Plan is based on the Preliminary Closure Plan prepared in 2008 with updates to include components particular to this Project and takes into account mining being extended to 2036.

2 Project Summary

MRM is located approximately 70 kilometres south-west of the township of Borroloola and 900 kilometres (km) south-east of Darwin in the Gulf Region of the Northern Territory. The existing project is one of the world's largest bulk zinc concentrate suppliers. The concentrate is trucked 120 km north- east to the Bing Bong concentrate storage and ship loading facility (Bing Bong) for export.

The target ore body is the 'Here's Your Chance' zinc-lead deposit. Discovered in 1955, the deposit did not become economically viable until the 1990s when technological advances in fine grinding technology and an emerging market for high-grade bulk concentrate was developed. McArthur River Mine currently supplies 70% of the bulk concentrate for smelters worldwide that use the Imperial Smelting Process.

McArthur River Mine is in the Xstrata Zinc Commodity Business. The General Manager reports to the Australian based Chief Operating Officer. Maintenance and review of the closure plan will be the responsibility of the Health, Safety and Environment Manager.

This document is being submitted as an appendix to the Project's Draft EIS which contains a detailed summary of the existing and proposed operations at the site including:

- land ownership including occupancy, mining tenure, postal and site address, and contact details
- location of the operation including all relevant tenures and maps
- the major components of the mining operations
- existing and proposed areas of disturbance within the Project area
- plans illustrating the above.

The current operation is described in Chapter 4-Project Description of the Draft EIS.

3 Identification of Closure Obligations and Commitments

3.1 Company Obligations and commitments

The Xstrata Sustainable Development (SD) Standards requires all operations to develop a Closure Plan, which shall include in it operational provisioning for the physical and financial resources required for closure.

The principles of protecting and conserving the environment are embedded throughout Xstrata plc's policies and standards and these apply to the planning for closure and the implementation of these plans.

Various Xstrata plc and MRM policies, standards and systems are in place to ensure that planning for closure progresses through the operation to post closure relinquishment.

A key component of closure planning is the assessment of closure related risks throughout the life of the operation, and the development of a system to deliver the Project to closure, or care and maintenance, with minimal risk. With respect to closure, the MRM SD Standard 2 Planning and Resources requires Xstrata sites to:

- address SD risks and performance issues at the planning, design, operational and closure phases.

The MRM Standard 13 Life Cycle Management – Projects and Operations requires that the design, construction and operation of all projects consider closure planning SD requirements and that closure plans be developed, implemented as designed and maintained for all operations. The closure plans must also be:

- compliant with Xstrata's Business Principles, Policies, Sustainable Development Standards, all applicable regulatory obligations and international standards regarding mine closure, including financial provisioning requirements
- based on a robust process developed at the commodity business level for identifying and assessing all significant SD risks and controls. This includes commercial opportunities to share risks with other parties and the associated costs related to the foreseen decommissioning, closure, rehabilitation and post-closure obligations and activities
- annually reviewed, including a review of assumptions and cost estimates, to address any changes in circumstances such as changes in legal requirements, new technologies, the local environmental and community situation etc.
- developed and reviewed by appropriately experienced and competent persons including external experts, as necessary.

The Xstrata SD Standards continue this theme by requiring MRM to engage stakeholders in respect of their SD concerns and expectations, identify risks and opportunities to their most affected communities and interact with relevant communities, throughout the project's lifecycle. Local community social and economic well-being should be improved, where practicable through:

- development and use of appropriate skills and technologies
- support for community educational initiatives and health programs
- providing employment opportunities for local people
- sourcing and purchasing from local companies
- support for community projects
- promoting local business development.

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3.2 Regulatory Conditions and Commitments

Northern Territory mining operations are regulated by the *Mining Management Act 2001* (MMA) and administered by the NT Department of Resources (DOR). The MMA amalgamates all operational provisions for mining into a single statute leaving the *Mining Act 1982* to regulate titles. The *Mining Act 1982* contains limited provisions governing environmental performance, although the Minister can attach specific environmental conditions as part of the grant of tenement.

Examples of these are:

- Section 16 of the MMA - It is the responsibility of the operator to ensure the environmental impact of mining activities carried out on the site is limited to what is necessary for the establishment, operation and closure of the site
- Section 40 of the MMA - A Mining Management Plan (MMP) is to be provided with each application for an authorisation and must include, amongst other provisions, a plan and costing of closure activities
- Section 42 of the MMA - The operator for a mining site must notify the Minister in writing of the proposed cessation of mining activities on the site that is not in accordance with the MMP as soon as practicable before cessation
- Section 43 of the MMA - A security required by the Minister under a condition of an authorisation is for the purpose of securing any of the following: payment of costs and expenses in relation to the Minister causing an action to be taken to complete rehabilitation of a mining site
- Section 46 of the MMA - On completion of the rehabilitation of a mining site to the satisfaction of the Minister, the operator for the site may apply to the Minister for a certificate of closure in respect of the site. When the operator has met the closure criteria for the mining site, the Minister must:
 - issue to him or her a certificate of closure in respect of the site
 - return or relinquish any outstanding security provided by the operator.

In documents submitted to the Northern Territory Government, MRM has made a number of rehabilitation and closure commitments. These commitments are detailed in Table 3-1.

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Table 3-1 MRM Rehabilitation and Closure Commitments

Commitment	Source	Reference
No contaminated (contact with broken ore, waste rock, concentrate or tailings) water is permitted to leave the lease (no release system). Controlled release may occur under extreme conditions and in consultation with the Department of Resources (DOR). Such as severe rainfall events, where water quality is unlikely to be impacted given the high dilution factor.	Mineral Lease N1121-5	Condition 10
No contaminated water is permitted to leave the lease or enter the sea.	Lease 1126	Section 11
MRM must lodge a guarantee and keep such a guarantee current for the term of MRM Leases. The guarantee is a security for compliance by the company with its obligations as to rehabilitation of the Mineral Lease Areas pursuant to the <i>Mining Act 1982</i> or the Mineral Lease terms.	Lease 112 1-5	Condition 7
Prior to decommissioning the Tailings Storage Facility (TSF), a complete rehabilitation proposal must be submitted.	Lease 1121-5	Condition 12
A Life of Mine Closure plan will be prepared. Life of mine rehabilitation costs and associated decommissioning activities will be reviewed annually and will be provided in annual Mining Management Plan (MMP) updates.		
The goal for rehabilitation is to return the disturbed areas to stable landforms to minimise off-site deleterious effects. The fundamental aims may therefore be summarised as follows: - the surface of the rehabilitated ground is to be stabilised against the forces of erosion and the rehabilitated landform is to be non-polluting to contiguous properties - the vegetation cover is to be capable of recovering from natural disturbance, such as drought and fire, and man-made disturbances (such as overgrazing) likely to occur for a selected land use sufficiently quickly such that the land is not prone to erosion.	1992 Draft EIS	pp.181
Options are presented for TSF rehabilitation as being covering with a Non-Acid Forming (NAF) rock mulch, capping with an impermeable layer. Overlaying this layer is potentially a number of layers for stability and plant growth. Vegetation may be using natural colonisation or active revegetation.	1992 Draft EIS	pp.181-182
Options are presented for waste rock at the end of mine life as being left as is, backfilling underground, capping, with or without vegetative material.	1992 Draft EIS	pp.181-182
Topsoil is to be salvaged in all areas which are to be disturbed and which contain suitable topsoil (nominally 10 to 15 cm).	1992 Draft EIS	pp. 183
Revegetation of topsoil stockpiles will be undertaken manually if not naturally attained.	1992 Draft EIS	pp. 185
Trials during the mine life will be undertaken as required but will investigate the following landform options, soil cover options, vegetation options, rock mulch options.	1992 Draft EIS	pp. 186

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Table 3-1 MRM Rehabilitation and Closure Commitments (cont)

Commitment	Source	Reference
A selection of suitable native species and proven pasture species will be trialled during the life of the operation. A range of species and post-mining use aspects will be considered for the final seed list.	1992 Draft EIS	pp. 185
A monitoring program will be used to assess rehabilitation success.	1992 Draft EIS	pp. 187
More advanced trials will be designed after the initial vegetation screening process include man induced plant successions, irrigation for plant establishment, land preparation and seeding techniques, mulch covers and seeding techniques.	1992 Draft EIS	pp. 187
Soil erosion will be scored by visual assessments with identified poor areas remediated prior to the next wet season. A regular photographic record will be maintained over time.	1992 Draft EIS	pp. 187
The success of tailings or acid generating mine waste rock capping will be assessed using strategic ground water monitoring	1992 Draft EIS	pp. 187
Revegetation will be assessed using transects for 6 years after establishment. Success will be determined through plant population estimations from planting's and topsoil. Growth rates and biomass surveys will be undertaken.	1992 Draft EIS	pp. 188
The decommissioning strategy for rehabilitating contaminated sites will be to stabilise and cover exposed surfaces. Groundwater and surface material will be isolated from the noxious material. The waste rock dump will either be used as backfill or rehabilitated. Should the waste rock remain above ground, its surface will be isolated from water runoff and stabilised (either rock mulch or vegetation).	1992 Draft EIS	pp. 188
The decommissioning strategy for rehabilitating inert sites will be relatively similar to surrounding areas. The rehabilitated areas will be made safe by: • the dismantling and removal of all structures and equipment • the removal of infrastructure and unused equipment • the disposal of rubbish or hazardous wastes in approved sites • closing or burial of adit opening and exposed shafts • removing or closing access roads and tracks • the retention of water storage's which may be useful for cattle grazing and the elimination of any other water storage areas. The inert sites will be levelled off, deep ripped and seeded with native species or pastures. A topsoil cover of 100 mm may be required in areas where there is no topsoil.	1992 Draft EIS	pp. 188

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Table 3-1 MRM Rehabilitation and Closure Commitments (cont)

Commitment	Source	Reference
The Bing Bong facility will be decommissioned in a similar manner by removing all plant and equipment and rehabilitating all disturbed areas.	1992 Draft EIS	pp. 188
The dredge channel will be left untouched as benthic biota will recolonise the area (channel beacons will be removed).	1992 Draft EIS	pp. 188
Local tourism post-mining options are discussed.	1992 Draft EIS	pp. 223
Bing Bong dredge spoil disposed as per Dredge Spoil Relinquishment Strategy (May 2002) and 2004 Annual Dredge Spoil Monitoring Report.	As noted	
It is noted that additional rehabilitations and closure commitments maybe included on subsequent MMP's that supersedes these commitments.	As noted	

MRM have also made numerous commitments in regards to the TSF via previous environmental assessments and Mining Management Plans. MRM will continue these commitments for the life of the Project and refine them where appropriate.

3.2.1 Draft EIS Commitments (August 2005) for Major Open Cut 25 Year Mine Life

The Draft EIS August 2005 lists the following commitments in relation to the TSF and water systems

Extract Section 7 Waste Management

- 7.4.1 The existing TSF footprint will be utilised for the open pit operations. No additional land disturbances will be necessary.
- 7.4.2 The general operational philosophy for the new TSF will be based on the use of sub-aerial techniques for tailings deposition. Sub-aerial deposition involves the discharge of tailings from multiple locations around the perimeter of the active cell.

As the head of water in the TSF is a key driver of seepage, the volume of water in the decant pond will be kept as small as possible and water will not be stored across the tailings surface.

It will be necessary to inhibit the formation of oxidation products from drying tailings beaches, and to prevent dust generation.

- 7.4.3 The TSF embankment will be coincident with the existing embankments. Their integrity will be confirmed by detailed investigations and depending on the results they will be either incorporated into the new embankments or removed for the new construction.

The embankments will be designed to meet the minimum factors of safety. A factor of safety for any structure needs to be greater than one before it can be considered safe.

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Condition	Factor of Safety	Design
Steady State (at maximum storage level)	1.5	1.8
Seismic condition	1.1	1.2
At Closure	1.3	1.3
Rapid drawdown	1.2	

Water management design will be based on the requirements of the Australian National Committee on Large Dams (ANCOLD, 1999). Using these criteria, the hazard category of the TSF is rated as high given the potential impacts from an uncontrolled release or embankment failure.

Any external draining spillway will be based on ANCOLD (1999) design conditions for a high hazard category and will incorporate the worst of the following

- Probable maximum flood (PMF) on the highest pond level in normal year or
- Worst wet season on record less water returned to the plant, plus 100 year average recurrence interval (ARI) storm plus waves.

7.4.4 The site water balance indicates that the Water Management Dam (WMD) requires a capacity of 2,500 ML. An emergency spillway will be provided. It will be designed to accommodate at least a 1:500 year event.

7.4.5 Maintaining a large enough decant pond to enable sufficient residence time for the settlement of suspended solids prior to recovery.

Maintaining an appropriate tailings deposition regime so that the potential for tailings to oxidise and release oxidation products is limited. Levels of saturation/moisture within the beach will be defined and maintained to inhibit oxidation. This practice will significantly reduce the dusting potential of the tailings

7.4.7 The design objective of the TSF will be to prevent seepage from occurring. On the basis of ANCOLD (1999), the following design objectives have been adopted for seepage at the new TSF:

- Surface expression of seepage discharge downstream of the TSF should not occur
- No significant impact should occur on the environmental quality of receiving waters
- The potential beneficial uses of surface and ground water downstream of the TSF should not be compromised.

Water from recovery bores will be pumped to the concentrator for reuse.

3.2.2 Supplement to Draft EIS December 2005

7.4.3 The water management system will be designed such that spillway discharge from the TSF will be extremely unlikely (1:500 year probability) which is more stringent than ANCOLD guideline requirements which require containment for 1:200 year wet season rainfall. The possibility of discharges from the TSF to Surprise Creek will be extremely rare and in excess of the 1:500 year probability.

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3.2.3 Public Environmental Report July 2006

Section 7.0 Tailings Storage Facility

Summary

The overall strategy to manage the risk of environmental harm from the tailings storage facility (TSF), in particular seepage, comprises a multiple lines of defence strategy that has been developed over the three key stages of the life of the TSF as follows:

1. Design Stage:

- Decommission the existing Cell 1
- Incorporate seepage control measures in the design of the perimeter TSF embankment, including a compacted low permeability clay cut off into the foundation and a low permeability clay core to the embankment
- Incorporating additional seepage control measures, including a low permeability geo-polymer cut-off wall below the embankment to the eastern wall down gradient of the regional groundwater flow, as well as recovery bores downstream of the embankment for the full perimeter of the TSF, to intersect and capture seepage flows and
- Modify the current tailings and water management practices to keep ponded water away from the perimeter embankment.

2. Operations Stage:

- Modify the current tailings and water management practices, to minimise the risk of tailings oxidising and generating acidic runoff
- Monitoring the performance of the TSF to measure the actual seepage control performance against the predicted performance as a part of an observational approach and
- Managing a network of seepage recovery bores so that while seepage from the TSF is recovered, regional groundwater levels surrounding the TSF are not affected.

3. Closure and Rehabilitation Stage:

- Tailings placement to the TSF ceases
- Re-profile the tailings surface to provide a well graded surface that promotes surface runoff and prevents ponding
- Construct a low permeability cap across the final landform surface (500mm of clay)
- Construct a surface water management system across the TSF to collect rainfall and discharge this clean water to the surrounding environment in a controlled manner. Monitoring data and erosion modelling will be used to verify the rehabilitation design provides adequate protection against erosion
- Maintain the recovery bores until the seepage head within the TSF has been lowered to the design level and
- Monitor the groundwater levels around the perimeter of the TSF for a period of five years after the recovery bores have been decommissioned, to ensure that the ongoing seepage performance meets the design expectations, with limited impacts to the regional groundwater regime.

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12.1.1 3.2.4 2009-2010 MRM Mine Management Plan

Key features of the closure strategy for Cell 1 include:

- Batter any raises within the cell and contour depositional tailings with the use of a D8 dozer
- Spread clay obtained from Cell 2 at a depth of 500 mm over the entire surface
- Complete the coverage of cell 1 with clay to 500 mm
- Spread a layer of clean waste rock over the clay at an approximate depth of two metres
- Spread topsoil over the area and direct seed with shallow rooted species primarily made up of grasses and
- Dust control chemicals will be applied to the tailings surface.

These Mining Management Plan (MMP) commitments for Cell 1 will be adopted for future TSF rehabilitation.

Before mining starts, the mining site operator must apply for an authorisation to carry out mining activities. A MMP must accompany the application. The MMP is attached to the authorisation and is the principal administrative document for the mine. The MMP is reviewed at specified intervals as set out in the authorisation and, if changes occur, the MMP must be amended and submitted to the Minister for acceptance. The MMP contains sections on site conditions, mining waste strategies, environmental management and rehabilitation and closure. Water management is detailed in a separate management plan.

Mineral leases and other holdings held by MRM are summarised in Table 3-2. A Legal and Safety Obligations Register is found in Appendix 1.

Table 3-2 Mineral Leases and Other Relevant Holdings

Lease Type	Name	Lease No.	Area (hectares)	Term (years)	Expiry Date
Mining	HYC	MLN1121	372	25	5/1/2018
Mining	Glyde	MLN1122	3,348	25	5/1/2018
Mining	Buffalo	MLN1123	3,884	25	5/1/2018
Mining	Emu	MLN1124	3,283	25	5/1/2018
Mining	Emu East	MLN1125	657	25	5/1/2018
Mining	Bing Bong Port	MLN1126	900	25	5/1/2018
Mining	Batten	MLN582	16	20	31/12/2019
Pastoral*	Dredge Spoil	PPL1051	89	1	31/12/2019
Authorisation	Emu Fault	AN366	9**	2	4/06/2012
		Total Mining	12,558		

* Non-pastoral land use approval NP033** Authorisation AN366 is not included in the total hectares

Figure 1-2 in Draft EIS Chapter 1–Introduction provides a visual illustration of these tenements.

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Other statutory requirements related to closure are:

- the *McArthur River Project Agreement Ratification Act 2007*
- the *McArthur River Project Agreement*
- Mineral Leases N1121 - N1126 and N582
- Non-Pastoral Land Use Approval NP033
- the *Aboriginal Sacred Sites (N.T.) Act 1989*, which contains statutory requirements according to the Aboriginal Areas Protection Authority. Certificates referenced C2004 – 007 to 023 have been issued for the site.

Other Commonwealth and Northern Territory legislation applicable to closure includes:

Northern Territory

- *Environment Assessment Act*
- *Weeds Management Act*
- *Water Act*
- *Heritage Conservation Act*
- *Pastoral Land Act*
- *Waste Management and Pollution Control Act*
- *Native Title Act*
- *Territory Parks and Wildlife Conservation Act*
- *Soil Conservation and Land Utilisation Act*
- *Energy Pipelines Act*.

Commonwealth Legislation

- *Aboriginal Land Rights (NT) Act*
- *Native Title Act*
- *Aboriginal and Torres Strait Islander Heritage Act*
- *Environment Protection and Biodiversity Conservation Act*
- National Environmental Protection Measures (NEPM).

4 Collection and Analysis of Closure Data

4.1 Monitoring

McArthur River Mine has an extensive environmental monitoring program assessing the potential impact on surface water and groundwater, terrestrial and marine flora and fauna, terrestrial and marine sediments and air quality. The program covers the mining area, the area around Bing Bong and the channels.

The current monitoring programme is described below.

The environmental monitoring program is designed to achieve the following objectives:

- confirm compliance with statutory regulations
- evaluate the environmental performance of the operation
- assist in improving environmental management strategies
- identify emerging environmental issues and potential impacts
- contribute to the local knowledge on regional biodiversity.

MRMs monitoring program is a dynamic system able to reflect new government requirements or other agreed stakeholder expectations. The monitoring conducted at MRM is specified in the Environmental Monitoring Technical Manual and the MMP.

Generic ANZECC 2000 guideline Hardness modified trigger values are used for different catchment areas for natural surface waters, and NEPM guidelines used for soils. The 95% protection level (i.e. trigger levels designed to protect 95% of species) is currently applied to MRM surface water quality data, as this is the level most commonly applied to ecosystems that could be classified as slightly to moderately disturbed. The ANZECC Hardness Modified Trigger Values criteria will be used to assess the bio-available portion of metals contaminants.

ANZECC 2000 Interim Sediment Quality Guidelines (ISQG) low trigger levels are used for fluvial sediments. When a trigger value is breached, an incident is recorded and an investigation is undertaken.

Given the known mineralisation in the area of the mine, elevated background metal levels above guideline values may be encountered. It is therefore proposed that site specific trigger levels be established in consultation with DOR. The trigger for total metals is an exceedence 10% higher than upstream (background) results.

The Australian Drinking Water Quality Guidelines 2004 are used to assess the quality of potable water tested on the MRM mine site and at Bing Bong. Seawater results are compared against the ANZECC Guidelines for Fresh and Marine Water Quality 2000. Marine sediments are also compared against this same standard.

4.1.1 Tailings System

The TSF monitoring program includes the following:

- piezometric bore levels that indicate the phreatic surface through the embankment, while additional monitoring bores will be progressively installed in each embankment lift
- monthly inspections of the surface drainage system and after significant rainfall events
- recording groundwater levels at observation bores downstream of the recovery bores to assess the effectiveness of the seepage control measures and the water quality
- testing of the water quality of the sediment ponds and decant ponds monthly, Surprise Creek and the tributary to Barney Creek to the south-east of the TSF weekly when flowing. The quality of the monitoring bores is evaluated every second month

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- regular comparisons of the decant water pond level against the maximum decant pond level
- regular inspections of the embankment condition, with a particular focus on surface expression of seepage and erosion
- monitoring the tailings pipeline thickness every six to twelve months by breaking the pipeline in a number of locations, measuring the pipe diameter and inspecting the pipe for wear and build-up of scale
- monthly analysis of tailings for Total sulphur (S) Fluoride (F-) Soluble hexavalent chromium (Cr⁶⁺)
Major cations: Ca, K, Mg, Metals: As, Cd, Cu, Pb, Zn ANC (Acid Neutralising Capacity), NAPP (Net Acid Producing Potential), MPA (Maximum Potential Acidity) and NAG (Net Acid Generation).

4.1.2 Water Monitoring

Artificial Surface Water

The surface water at the following sites on the mine is sampled and analysed as in Table 4-1 below:

Table 4-1 Sample Sites and Analysis of Artificial Water

Site	Frequency	Parameters
Tailings Storage Facility		
Cell 2 TSF	Monthly and bi-annually	Monthly pH, Temp, DO, EC and ORP (field meter) TDS, TSS filtered metals (As, Cd, Cu, Pb, Zn) filtered major cations (Ca, Mg, Na, K), soluble Cl and SO ₄ ²⁻ , hardness Quarterly total metals (As, Cd, Cu, Pb, Zn) total major cations (Ca, Mg, Na, K), Bi-annually multi-element ICP-MS scan TPH sites: APP, VDD, CRP
Water management dam	monthly	as above
Interceptor drain 1	monthly	as above
Interceptor drain 2	monthly	as above
Tailings dam borrow pit	monthly	as above
Mine		

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Table 4-1 Sample Sites and Analysis of Artificial Water (cont)

Site	Frequency	Parameters
Pit Sump	monthly	as above
Van Dunk Dam	monthly	as above
Lake Archer	monthly	as above
Pete's Pond	monthly	as above
Northern OEF PAF sediment dam	monthly	as above plus acidity/alkalinity
Northern OEF PAF run-off dam	monthly	as above plus acidity/alkalinity
Mill		
Concentrator Runoff Pond	monthly	as above
Anti-Pollution Pond	monthly	as above
ROM pad sump	monthly	as above
Bing Bong		
BBSRP	monthly	as above
BBSRP2	monthly	as above

The mine water monitoring program also includes:

- automated monitoring of water levels in all key mine water storages
- water meters on all major water transfer pipelines
- installing water meters on pipe supplying mine water for dust suppression and reuse at the process plant.

Natural Surface Water

The natural surface water flows in receiving water environments of Barney Creek, Surprise Creek and McArthur River are routinely monitored as listed below in Table 4-2. Monitoring is undertaken to:

- continually improve the knowledge and characterisation of natural water quality and variation in the upstream and receiving water environments
- assess and monitor potential contaminant impacts of mine operations (including mine water management impacts, and groundwater impacts on surface water quality)
- supplement the fluvial sediment and marine water monitoring programmes
- monitor physio-chemical water parameters to confirm the suitability of aquatic habitat conditions as the diversion channels are rehabilitated and gradually regain full ecosystem functioning.

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Table 4-2 Natural Water Surface Flow Monitoring

Site	Number of sites	Frequency	Parameters
Surprise Creek	4 (SW1-2, 23-24)	weekly and monthly when flowing and bi-annually	Weekly (when flowing) - pH, Temp, DO, EC, ORP, and turbidity (field meter) - TDS, TSS - total and filtered metals (As, Cd, Cu, Pb, Zn) - total and filtered major cations (Ca, Mg, Na, K) - soluble Cl and SO₄ Monthly (when flowing) - hardness - N, P, Bi-annually (when flowing) - multi-element ICP-MS scan - chlorophyll 'a'
Barney Creek	4 (SW3-4, SW22, SW25)	as above	as above
Barney Creek channel	3 (SW18-20)	as above	as above
McArthur River	7 (SW6-8, SW10-12, SW21)	as above	as above Monthly - SW 11 & SW 21 - Al, Cd, Cu, Zn, Pb, Fe chelex - Total cations and total anions
McArthur River Channel	5 (SW13-17)	as above	as above
Glyde River	1 (SW9)	as above	as above
Downstream gauging station on MR	1 (DSGS)	1 m water level intervals, collected continuously	level and flow
Upstream gauging station on MR	1 (USGS)	1 m water level intervals, collected continuously	level and flow
Glyde River gauging station	1 (near SW9)	continuously	level data
Barney Creek gauging station	1	continuously	level and flow data
Early warning flood gauging station (confluence Kilgour and McArthur Rivers)	1	continuously	level data

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Potable Water

Potable water is tested monthly for chemical and bacteriological quality at 13 sites at the MRM site and three at Bing Bong.

Groundwater

The objectives of the groundwater monitoring program are as follows:

- monitoring the impacts of groundwater abstraction
- assessing the effectiveness of the TSF seepage control systems
- assessing the potential impact of the North OEF
- determining the extent of any contaminants in shallow aquifers.

Bores are installed around the mine site and perimeter of the TSF while bores monitor the impact of the open pit operations and the NOEF. The groundwater monitoring program is summarised in the Table 4-3 below:

Table 4-3 Groundwater Monitoring Program

Site	Number of sites	Frequency	Parameters
Mine			
Process area	GW3A, GW5A, GW15, GW16	every 2 nd month,	Every two months • standing water level • pH, EC • TDS • filtered metals (As, Cd, Cu, Pb, Zn) • SO₄²⁻ • hardness Bi- annually • multi-element ICP-MS scan (inc. Hg) • TPH sites: GW3, GW5, GW15.
OEF	GW64S, GW64D, GW65S, GW65D	as above	as above
TSF			
Cell 1 Group C1-	GWTSF01, GWTSF02, GWTSF03, GWTSF04, GWTSF05	as above	as above
Cell 1 Group C1-N	GW42A, GW42B, GW45B, GW48B	as above	as above
Cell 1 Group C1-NE	GW21, GW22, GW23	as above	as above

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Table 4-3 Groundwater Monitoring Program (cont)

Site	Number of sites	Frequency	Parameters
Cell 1 Group C1-E	GW43A, GW42B,	as above	as above
Cell 1 Group C1-SE	GW12, GW20A, GW20B	as above	as above
Water management dam perimeter	GW4, GW6, GW7, GW14	as above	as above
Bing Bong			
Bing Bong	GWBB01A, GWBB01B, GWBB002, GWBB03A, GWBB03B, GWBB04A, GWBB04B	as above	as above

Bing Bong Marine Water Monitoring

The objectives of the Bing Bong water quality monitoring program are:

- evaluate the impact of waterborne contaminants, from the facility, on the marine environment at Bing Bong
- establish long-term water quality trends for waters leaving the port site and receiving waters
- monitor the effectiveness of the water management systems.

A network of monitoring sites has been established in the port's navigation channel and swing basin. The control site is located outside the lease, 4 km to the north-east of the facility. The sites are described below in Table 4-4.

Table 4-4 Marine Water Monitoring Sites

Site	Number of sites	Frequency	Parameters
Control	3 (MSW 01-03)		Monthly • pH, Temp, EC and ORP (field meter) • TSS • total metals (As, Cd, Cu, Pb, Zn) Annually • multi-element ICP-MS scan
Navigation Channel	3 (MSW 04-06)	monthly and annually	as above
Swing Basin	2 (MSW 07-08)	as above	as above

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4.1.3 Heavy Metals in Marine and Riverine Biota

The Annual MRM Marine Monitoring Program consists of sites along the Bing Bong coast together with sites around the Sir Edward Pellew Islands.

Metal and arsenic concentrations and lead isotope ratios in seawater, surface sediments, molluscs (oysters, *Telescopium* and *Terebralia*) and seagrass are used to quantify the quality of receiving environment, Bing Bong coast and Sir Edward Pellew Islands.

The monitoring program is detailed in Table 4-5.

Table 4-5 Heavy Metal Monitoring Program

Site	Number of sites	Frequency	Parameters
Bing Bong	7	annually	Seawater - Depth, temp, DO, pH, salinity and EC - Dissolved (filtered) and total (unfiltered) Al, Fe, Mn, Co, Cu, Ni, Zn, As, Pb, Pb isotope Sediment - Concentrations of Al, Fe, Mn, Co, Cu, Ni, Zn, As, Pb determined by ICPMS Biota - Oysters - Concentrations of Al, Fe, Mn, Co, Cu, Ni, Zn, As, Pb determined by ICPMS, Arsenic speciation - Seagrass - Concentrations of Al, Fe, Mn, Co, Cu, Ni, Zn, As, Pb determined by ICPMS, Arsenic speciation
Sir Edward Pellew Islands	7	annually	As above

4.1.2 Sediment Quality

Mine Site

This sampling program is an adjunct to the surface water monitoring program and monitors for accumulated heavy metals potentially sourced from the mine's activities. Sediments are monitored twice yearly. Table 4-6 provides details of this monitoring program.

Respective default ISQG low trigger values are applied immediately downstream of the mineral lease (MLN 1122) at SW11 (adjacent to the downstream gauging station) for external reporting purposes. In the event of an exceedence of one or more of the trigger values, the bioavailable fraction will be determined and a comparison with background levels made.

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Table 4-6 Mine Site Sediment Monitoring Program

Site	Number of sites	Frequency	Parameters
Northern OEF PAF sediment dams	2	bi-annually	• paste pH, EC • particle size distribution • Cations (Ca, Mg, Na, K) • As, Cd, Cu, Pb, Zn(total fraction 63 micron fraction)
Fluvial sediment	same sites as natural surface water sampling	bi-annually	as above

Marine Sediments

As detailed in Table 4-7 a number of marine sites, including three transects in the swing basin, are regularly sampled and analysed and metal concentrations compared against the ANSECC ISQG.

Table 4-7 Marine Sediment Sampling Program

Site	Number of sites	Frequency	Parameters
Control Site	1 (MS01)	as above	• paste pH, EC • particle size distribution • Cations (Ca, Mg, Na, K), • As, Cd, Cu, Fe, Pb, Zn (total and 63 µm • Pb isotope ratios
Navigation Channel	3 (MS02-4)	bi-annually	as above
Swing Basin	3 transects (MS05-7)	as above	as above

Mine Site Erosion and Sediment Monitoring

Mine site erosion and sediment monitoring involves:

- qualitative visual observations of bund walls to identify cracking or gully erosion
- sediment traps being inspected weekly during the wet season, after all intense rainfall events and monthly during the dry season
- topsoil stockpiles being regularly inspected for both wind and water erosion.

Erosion and Sedimentation Monitoring of the Channels

Monitoring of erosion in, and sedimentation downstream of, the channels currently includes:

- photographing reference sites at 250 m intervals along the channel, at rock riffle structures, and where tributary creeks join the channel. The sites will be initially photographed after construction, after the first three flood events, annually until three years after construction, and annually thereafter on both sides of the channel

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- taking aerial photographs of the site after completion of the channels and thereafter bi-annually.

Downstream Sedimentation Monitoring

Monitoring of potential sedimentation downstream towards the Bukalara range involves:

- a pre-construction sedimentation survey of the downstream natural channels provided a reference for future assessments
- photographing reference sites at 250 m intervals along the channel, at rock riffle structures, and where tributary creek channels join the rechannel. The sites will be initially photographed after construction, after the first three flood events, annually until three years after construction, and biannually thereafter
- taking aerial photographs of the natural channels downstream of the rechannel works until after construction, and thereafter at bi-annual intervals.

4.1.1 Rehabilitation

Channel Rehabilitation

Monitoring of rehabilitation plots in the rechannelled areas involves measuring the effectiveness of revegetation works as well as the extent of natural regeneration, and the characteristics of the evolving ecosystem:

MRM has commissioned Charles Darwin University (CDU) between 2007- 2011 to conduct the annual revegetation monitoring programme. The scope of the monitoring programme includes:

- measure woody plant density at three sites each along Barney Creek and the McArthur River channels
- obtain survival information to assist in determining the main factors causing mortality
- reassess the analogue vegetation monitoring sites for comparison with the revegetation monitoring sites.

TSF Rehabilitation Monitoring

Monitoring of early rehabilitation on the TSF will include the performance of capping materials and depth, topsoil cover (i.e. evidence of topsoil erosion and loss), vegetation cover species and resilience, integrity of constructed drainage, erosion and silt accumulation in constructed drainages, net sediment loss rates (tonnes/ha/year), sediment quality, and runoff quality.

Bing Bong Concentrate Storage and Ship Loading Facility Rehabilitation

MRM is required to show how it is meeting agreed relinquishment objectives for the dredge spoil at Bing Bong. These relinquishment objectives include:

- accelerate the leaching of salt through the profile to enable establishment of vegetation
- achieve a stable revegetated landform
- encourage the process of natural revegetation on fine spoil material.

At the end of mine life, and prior to relinquishment, MRM will provide detailed post rehabilitation monitoring reports to the Northern Territory Government to demonstrate that the rehabilitated landform is stable, and that performance criteria, agreed in the Life of Mine Completion Plan have been achieved.

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4.1.4 Fish Monitoring

Aquatic Macroinvertebrate Monitoring

MRM established an aquatic fauna monitoring program as part of the approvals for the McArthur River diversion works. As a component of the monitoring, a program to assess the abundance and distribution of aquatic macroinvertebrates within the vicinity of the mine and at reference sites has been established.

Sampling for macroinvertebrates was conducted at monitoring sites established in April/May 2008 following discussions with DOR. Sites sampled during 2010 included:

- one site on the Barney Creek Channel
- three sites on Surprise Creek upstream of the Barney Creek confluence
- six sites on the McArthur River
- three sites on the McArthur River Channel
- six off-stream reference sites on the Glyde River, Amelia Creek and Carinbirini Creek.

Fish and Sawfish Monitoring

MRM established an aquatic fauna monitoring program as part of the approvals for the McArthur River Channel. The aim of the program is to assess the abundance and distribution of fish populations in the McArthur River and to assess the potential impacts of the river channel on fish populations.

The program aims to:

- compare the diversity and abundance of fishes present in the original section of the McArthur River adjacent to the mine, to those present in the channel
- collate data on sightings and the capture/re-capture of the freshwater sawfish *Pristis microdon*, including information on the growth rates and movements of re-captured individuals
- compare the size distribution and abundance of cherabin *Macrobrachium rosenbergii* present within the channel to those occurring outside as a potential indicator of habitat complexity
- assess the effectiveness of adding woody debris to the channel as a key rehabilitation strategy
- collect size and distribution data on several species of aquatic reptiles known to occur in the McArthur River including the Arafura file snake *Acrochordus arafurae* and diamond-head turtle (Worrells Turtle) *Emydura worrelli*.

Forty seven sites were sampled for fish in the main channel and tributaries of the McArthur River between during the May / June 2011 program.

Heavy Metal Analysis in Fish

Heavy metal analysis in fish and crustacean tissue is conducted annually. Samples of fish and crayfish are collected from eight sites in the main channel of the McArthur River, two sites in Surprise Creek and one site in Barney Creek.

4.1.5 Bird Monitoring

Mine Site Community Structure

Baseline data on the riparian bird assemblage in the vicinity of the impact area and, in both upstream and downstream habitats, has been collected. This data will be used to compare riparian bird communities at selected sites on the McArthur River pre- and post-development of the channel, and assess the restoration of the riparian corridor.

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The monitoring program focuses on riparian bird fauna and in particular on two indicator bird species, the buff-sided robin (*Poecilodryas cerviniventris*) and the purple-crowned fairy-wren (*Malurus coronatus macgillivrayi*).

The riparian bird monitoring program provides data on the bird species occurring in riparian habitats associated with the McArthur River, the channel areas and associated tributaries along a 17 km stretch of the McArthur River. The monitoring program includes:

- seasonal monitoring of riparian bird communities at established sample sites
- assessment of seasonal changes in the abundance and distribution of riparian bird assemblage and riparian habitat specialist species (purple-crowned fairy-wren and buff-sided robin)
- assessment of movements of colour banded birds
- monitoring of vegetation condition parameters within riparian bird monitoring plots using the Tropical Rapid Appraisal of Riparian Condition method (TRARC).

Bird monitoring sites include:

- riparian vegetation on the McArthur River upstream of the open pit and river channel (five sites, 10 survey plots)
- riparian vegetation on the McArthur River downstream of the open-pit and river channel (five sites, 10 survey plots)
- riparian vegetation on the McArthur River between the inlet and outlet and adjacent to or within the bunds protecting the open pit (six sites, 12 survey plots). These sites may be impacted by the diversion of water from the existing McArthur River channel and the proximity of mining activity. An additional site (PIT6) was added in April 2008 due to the loss of an existing site as construction activities progress. Site PIT2 and PIT3 were not monitored during May 2010
- McArthur River Channel (rehabilitation or riparian restoration area) (six sites, 12 survey plots). These sites represent a restoration treatment with the McArthur River realignment where restoration of the riparian corridor will be undertaken
- Barney Creek riparian corridor and channel. Three sites (six survey plots) are located on Barney Creek upstream of the channel (reference) and three sites are located on the re-alignment of Barney Creek (riparian restoration).

Migratory Bird Monitoring – Bing Bong

A condition of the Commonwealth Government approval for the 2005 EIS process was to monitor and conduct surveys of listed migratory waders and other birds in the Port McArthur area.

The main requirement of the Commonwealth Government approval condition is that surveys should be undertaken to observe any significant changes in the numbers and species mix of migratory shorebirds and other birds.

The study area incorporates approximately 140 km of coastline between Tern Island to the west of Bing Bong and Pelican Spit to the south of Vanderlin Island.

The current survey methodology is based on the aerial survey count methods and aerial survey sections established by Garnett (2007a).

Ground count sites were selected by flying over representative habitat/aerial count sections to identify where bird density was the highest. Migratory shorebirds were scanned to determine the presence of leg flags.

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4.1.6 Mosquito Monitoring

Routine adult mosquito monitoring commenced at McArthur River Mine in September 2009 and is conducted by the Northern Territory Department of Health. Trapping occurs monthly during the dry season (May to October) and fortnightly during the wet season.

4.1.7 Depositional Dust

Dust fallout monitoring programs at the mine site and Bing Bong monitor the potential for contaminated dust from MRM activities to impact on the environment. Both dust deposition gauges and volumetric dust samplers are used. The sites are detailed below in Table 4-8.

Table 4-8 Fugitive Dust Monitoring Program

Site	Number of sites	Frequency	Parameters
Less than 3 km from point source			
PACRIM/ROM pad	9	every 28 – 32 days	total insoluble matter total Pb, total Zn
NOEF	2	as above	total insoluble matter total Pb, total Zn
TSF	7	as above	total insoluble matter total Pb, total Zn
Bing Bong	6	as above	as above
Greater than 3 km from point source			
PACRIM/ROM pad/NOEF/TSF	3	as above	total insoluble matter total Pb, total Zn

In order to minimise dust emission from the concentrate shed, MRM has installed a Venturi Particulate Scrubber i.e. wet scrubber extraction system. This is a negative pressure system designed to allow for one roller door to be open at a time. The main roller doors were replaced by a fast action remote driver allowing the doors to be closed during normal operations and open only when a road train is on location

Mini Vol® portable air samplers and will be routinely placed around the site as a component of the dust monitoring program.

4.1.8 Soil

Soil sampling is conducted at the various dust deposition sites around the mine site and Bing Bong. The method of sampling requires a random sample to be collected from an area that lies at a fixed radius and bearing from the dust stand. The annual soil monitoring program is conducted late in the dry season at the sites detailed in Table 4-9.

The soil monitoring program aims to provide a health and environmental risk assessment of soil strata to which humans and other receptors could feasibly be exposed. The objectives of the programme are:

- assist in identifying any potential sources of impact from mining operations
- accurate assessment of the soil physico - chemical properties
- compliment the current dust monitoring programme.

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Table 4-9 Soil Monitoring Program

Site	Number of sites	Frequency	Parameters
Mine site	21	annually	• Paste pH and EC • particle size distribution • Cations (Ca, Mg, Na, K,) • As, Cd, Cu, Fe, Mn, Pb, Zn (2 mm fraction)
Bing Bong	6	annually	as above

4.1.9 Marine Environmental Monitoring Program (MEMP)

MRM has committed to a monitoring program taking place in the south-west Gulf of Carpentaria i.e. lower McArthur River, McArthur River Estuary and Sir Edward Pellew Island Group and Bing Bong coast.

Bing Bong Monitoring Program

Monitoring of oysters, snails, seagrass, sediment and seawater has been conducted annually at Bing Bong since 1998. Surface sediments are sampled at 12 different sites at an approximate depth of 10 centimetres.

Oysters are collected whole, while snails are collected by hand from around the base of mangroves along the beach east and west of Bing Bong.

Whole plant seagrass samples are collected by hand.

Extension of Annual Marine Monitoring program to include McArthur River Mouth and Estuary and Sir Edward Pellew Islands

The current annual marine monitoring program includes the McArthur River Mouth and Estuary and Sir Edward Pellew Islands at monitoring locations and targets suggested by members of the local community. Fish, mud crabs and other traditional foods are also included in the program.

Twelve sediment sites and five sites for oysters, seagrass and seawater are sampled for Fe, Mn, Co, Ni, Cu, Zn, Cd, Pb and Pb isotope ratios.

Investigation of Potential Dispersion of MRM Concentrate-Derived Metals from the Swing Basin

Prior to the 2000 cyclone, lead isotope ratios in seagrass were used to identify the dispersion of dissolved metals (from Bing Bong) in the water column. These ratios indicated metal concentrations remained within background ranges. After the destruction of the seagrass beds during the cyclone the Diffusive Gradients in Thin Films technique is now employed, in new colonies of seagrass, to evaluate metal uptake.

Sediment Quality in the Trans-shipment Area

Previous studies of sediment quality in the trans-shipment area found that there was no evidence of impact from the trans-shipment activities.

Two sediment sampling areas with approximately 15 sites in each area are sampled regularly (last sampled in 2010). The control site will be 5 km east of the trans-shipment area.

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4.2 Land Use

The surrounding land use is predominantly cattle grazing on large pastoral properties owned by private persons, companies, and Aboriginal groups.

The McArthur River Station pastoral property, operated by Colinta Holdings, a 100% owned subsidiary of Xstrata plc., immediately surrounds the mine site leases. This property runs approximately 17,000 head of cattle over 8,000 square kilometres, utilising approximately one third of the area for grazing. Cattle have been excluded from the mining and processing areas, but McArthur River Station cattle are agisted on undisturbed sections of the lease. Cattle agisted by another party are agisted on undisturbed areas at Bing Bong.

4.3 Physical Conditions

4.3.1 Geology

The Project area is located in the McArthur River alluvium and fractured rocks of the Proterozoic McArthur Group, in the McArthur Basin south of the Gulf of Carpentaria in the Northern Territory. The McArthur Group is an interbedded sequence of dolostones, sandstones, shales and siltstones comprising of two sub-groups the Batten and the underlying Umbolooga. It is up to 4,000 m thick in the McArthur River district where it is best exposed. The McArthur Group is part of the McArthur Basin along with the Roper, Nathan and Tawallah groups.

Within the Project area, Quaternary sediments overlie the bedrock and consist of colluvial, alluvial, lacustrine sediment including clay, sand and silt, and gravelly residual soils. These strata are overlain by more recent alluvial silt, sand and clay deposited on the floodplains, flood terraces, levees and channel floors of the McArthur River and the Glyde River.

The MRM deposit was discovered in the 1950s and was originally named 'Here's Your Chance' (HYC). The mineralisation covers an area of 2 km² with a thickness of 55 m. The HYC deposit is comprised of eight discrete zinc and lead sulphide-rich siltstone horizons, seven of which are identified mineral resources.

The horizons are separated by cyclic barren sedimentary rock. Most of the ore dips 15-20 degrees to the east. Major sulphides present are pyrite (FeS₂), sphalerite (ZnS) and galena (PbS). Minor chalcopyrite (CuFeS₂), arsenopyrite (FeAsS) and marcasite (FeS₂) are also present.

4.3.2 Overburden Geochemistry

The overburden has been divided into Potentially Acid Forming (PAF) and Non Acid Forming (NAF) material. PAF overburden has the potential, in the presence of air and water, to generate acid water, soluble metals and salts that could impact the environment. Modelling of the overburden geochemistry for the open pit (2005 EIS process) indicated that 12-13% of waste would be potentially acid forming (PAF). During actual mining operations, the percentage of PAF material removed from the pit was closer to 25% (AMDAD, 2011).

Overburden geochemistry for the Project is currently being reassessed through a drilling program and geochemical analysis expected to be completed in early 2012.

4.4 Environmental Data

4.4.1 Topography and Soils

The dominant relief is low escarpments, plateaux and ridges, with limestone or dolomite rocks of Palaeozoic age or older in the western part of the McArthur River catchment upstream of the Project site, and sandstone and conglomerate rocks in the eastern sub-catchments, including the Kilgour and Glyde Rivers.

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The land systems identified within the area of major disturbance on the mine are:

- McArthur: Broad or narrow fluvial corridors conducting regional drainage across various land systems towards the coast. Grey and brown clays and siliceous sands support mid-high open woodland of predominantly Inland Bloodwood and Coolibah trees. Tall fringing riparian vegetation often includes the melaleuca species
- Unnamed: Major river depositional flood plains host grey cracking clays, supporting Coolibah and Ghost Gum woodland
- Emmerugga: Undulating to rolling low hills on mainly argillaceous sediments with lithosols and shallow yellow earths hosting mid-high open woodland of mainly Snappy Gum.

4.4.2 Hydrology

The mine site is situated adjacent to the McArthur River, in the middle reaches of the river's catchment, between the confluences of the Kilgour and Glyde Rivers. The total catchment of the McArthur River is approximately 20,000 km², and the sub-catchment area of the river above the mine site is approximately 10,400 km². All current major site infrastructure is located above the 100 year ARI flood level RL (39.5 m), as will be any Project related infrastructure.

The main creek systems that bound the mine site and the TSF are the Barney and Surprise Creeks. Barney Creek has a total catchment area of 660 km², with a sub-catchment area of 390 km² at the Surprise Creek junction. The creeks are dry throughout most of the year. This is particularly the case for Surprise Creek, which has a catchment size of only 100 km² and normally flows for only a few days each wet season.

As would be expected, the greatest flows occur during the wet season, which generally extends from October to March. The major wet season flows occur in February and March. Stream flow typically dries to a series of large isolated pools during the dry season between April and September. Periods of no flow are typically one to two months and can last up to six months.

Groundwater in the Project area occurs on a local scale in both surficial deposits and bedrock. Extensive aquifers with inter-granular permeability in the area are rare and are generally limited to the alluvium that occurs along the drainage channels of the rivers and creeks. Historical inflows into the underground mine indicated that the permeable sections of the weathered bedrock at shallow depths can act as significant aquifers that receive rapid recharge from the ground surface and serve as a source of recharge to fractured rock aquifers. The aquifers are unconfined to semi-unconfined types. The following groundwater aquifers can be distinguished in the area:

- local and or perched aquifers in the alluvium
- local and or perched aquifers located at the interface between the soils and/or weathered rock and the solid bedrock
- local fractured rock (i.e. Fractures, joints, vugs, solution channel) aquifers of the bedrock
- artificial (enhanced) aquifer in the underground mine tunnels and voids.

The regional groundwater flow is towards the low topography associated with the major river channels. Groundwater levels across the site, measured at the end of the 2004 dry season, indicate that groundwater flows easterly from high elevations around the TSF (40 m AHD) to lower elevations near the McArthur River (20 m AHD).

The Project's potential groundwater impacts are described in detail in Chapter 10 Water Resources of the EIS.

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Accommodation Village

Water for potable water is pumped from groundwater bores in the Mimex borefield and treated on-site. The potable water storage capacity is 155 kL.

Mine

Twenty percent of the water for the mine is sourced from five bores at the Mimex borefield, seven at the Emu borefield and four at the Donkey field. This water is used as raw water, or treated and used as soft or potable water. The balance of water used on the mine is recycled. The mine consumes approximately 150 ML of potable water annually.

Bing Bong

Water for potable use is pumped 25 km from the Federation groundwater bore and treated at Bing Bong. An average of 35.5 kl is annually consumed.

4.4.3 Climate

The McArthur River Mine (MRM) region experiences a 'Grassland' climate, based on the Köppen classification system (Australian Bureau of Meteorology (BOM) 2011). This classification consists of two distinct seasons: the wet season which lasts from December to March and the generally dry conditions which last for the remainder of the year (winter drought).

The rainfall data indicates that the rainfall at MRM is highly seasonal with distinct wet and dry seasons. The majority of the rainfall occurs between December and March with limited rainfall and drought like conditions occurring between May and September. According to the BOM data, January has the highest mean rainfall with 208.4 mm and August exhibits the lowest mean rainfall with 0.4 mm. The mean annual rainfall recorded at the MRM is 788.5 mm.

The monthly statistical data from the McArthur River Mine Weather Station indicates that:

- mean 9 am relative humidity is generally higher from December to March and lower from June to October at MRM which coincides with seasonal patterns of the wet and dry seasons
- the mean relative humidity recorded at 3 pm is lower than 9 am recordings all year round, with mean 9 am recordings ranging from 46% in September to 75% in February
- mean maximum temperatures range from 29.8 – 38.5°C. The highest mean temperature have historically been recorded in November
- mean minimum temperatures range from 12.2 – 24.9°C. The coolest mean temperature occur in July.

Site specific climate change information for the location of MRM is limited. However there is some literature on the changes expected in other regions in Northern Australia such as Cairns. This research provides insight into the predicted changes for the regions surrounding MRM, which is located at similar latitudes. Annual average temperatures in the Cairns area are expected to increase between 1.0 and 4.2°C by 2070 (compared to 1990 temperatures) (Suppiah et al, 2007), with an increased number of days above 35°C (Australian Greenhouse Office, 2004).

Extreme rainfall events are expected to become more intense due to a warmer, wetter atmosphere, although changes in summer tropical rainfall in northern Australia remain highly uncertain (CSIRO, 2011). In terms of cyclone activity due to climate change, there is no clear picture with respect to regional changes in frequency and movement, but increases in intensity are indicated (IPCC 2007, Short and Woodroffe 2009).

Although the effects of climate change are measureable, there are still a number of key uncertainties in relation to climate change. It is important to note however, that these uncertainties are in connection to data

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coverage and not scientific accuracy. Data coverage remains limited in some regions and there is a notable lack of geographic balance in data and literature on observed changes in natural and managed systems, particularly in developing countries.

The Project is expected to extend the life of the mine to 2036. For this reason, impacts of climate change on the operation of the Project and Bing Bong are relevant only up to that point. Consequently, changes in sea level and temperature from climate change are not expected to have a significant impact on the Project's mining operation or the operation of Bing Bong.

As the effects of climate change will vary from region to region, it is difficult to assess quantitatively. Impacts related to possible increases of intensity of rain events and cyclone activity will be closely monitored by MRM, and will be considered in the surface water management plan and subsequent surface water infrastructure design.

4.4.4 Flora

Nine distinct vegetation communities occur within the McArthur River mine Project area. Four of these are described as upland communities on sandstone or rocky hills, three are lowland woodland communities, and the remaining two are riparian or riverine communities. The riparian and floodplain communities are common and widespread, while the two sandstone plateau vegetation types have some local ecological value, but no declared conservation value. The poorly drained clay soils at Bing Bong host vegetation largely dominated by open woodland communities.

A total of 364 plant species from 84 families and 215 genera have been identified in the Project area. True grasses (53 species) and legumes (31 species) were common. Common tree species included *Acacia* (14 species), *Eucalyptus* (8 species) and *Ficus* (7 species).

No plants of rare or endangered status were discovered. No significant species that are at risk from mining activities were identified.

Twenty-one weed species have been recorded within the project area, including six declared as noxious. Weeds are most abundant on land disturbed by mining and grazing. The areas of highest weed infestation were the riparian areas along the McArthur River and its tributary creeks. The site Weed Management Plan is reviewed annually.

4.4.5 Fauna

Five types of fauna habitat have been identified in the vicinity of the MRM Project:

- riverine
- woodland/grassland
- stony rises
- sandstone plateau and gorges
- disturbed areas.

Surveys conducted for the MRM 2005 EIS identified 13 amphibians, 27 reptiles, 114 birds and 22 mammal species. Of these, eight species are listed as Threatened or Near Threatened under the World Conservation Union (IUCN), *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) and the *Territory Parks and Wildlife Conservation Act 2006* (TPWC). In addition, nine migratory birds listed under the EPBC Act have been identified in the project area.

Approximately 27 species of naturally occurring freshwater fish have been identified. Freshwater aquatic reptiles within the project area include freshwater sawfish, freshwater crocodiles, estuarine crocodiles, Worrell's turtle, and the Arafura file snake.

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Of the identified aquatic species, the freshwater sawfish is currently listed as Endangered by the International Union for Conservation of Nature (IUCN) and Vulnerable under the EPBC Act and TPWC Act, while the Worrell's turtle is listed as Near Threatened under the TPWC Act.

Fauna that has been identified includes the Carpentarian grasswren purple-crowned fairy-wren, white-browed robin and the Zig-zag Velvet Gecko.

Insect fauna has been described as rich and diverse reflecting the wide range of habitats available. A total of 27 species of mosquito have been collected.

Feral animals of particular note that have been identified included feral cats, donkeys, horses, pigs and cane toads.

4.5 Other

4.5.1 Spatial datasets and databases

All environmentally related quantitative information is stored in the Monitor Pro database. Spatial plans are generated in the Global Information System mapping application MapInfo. Key SD indicators information, based on the Global Reporting Index, is reported regularly to Xstrata plc. via a sustainable development database.

4.5.2 Design and construction of landforms and voids

The design, construction and management aspects of the OEFs and TSF are detailed in the respective Project management plans (Appendix E1 – Tailings Storage Facility Management Plan and Appendix E2 – Overburden Emplacement Management Plan)

4.5.3 Key rehabilitation materials

A clay investigation program was undertaken in 2011 to estimate the quantity, quality and location of clay resources around site for use in capping and rehabilitation. A summary of the results is shown in Table 4-10 below (Hatch, 2011). It is estimated that clay requirements for capping the OEF (including contingency) is around 14Mm³ over the life of mine, including the Project.

Table 4-10 Clay resource Summary

Feature	Estimated Clay Quantity (Million m ³)
TSF Borrow Area	3.17
Inside Cell 4 Footprint	0.24
Open Pit Borrow Area	1.05
Eastern OEF Borrow Area	0.56
Northern OEF Borrow Area	14.22
Total	19.24 Mm³

4.5.4 Material stockpiling and deployment

An update on overburden geochemistry using the results of infill drilling conducted in 2011 is due in 2012. Schedules conducted as part of the Project studies have estimated the stockpiles of various rehabilitation materials required for successful closure of the mine. Over the life of mine, the following quantities of

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materials are expected to be stockpiled and rehandled at various times to enable progressive capping of the OEFs (refer to Table 4-11).

Extensive stockpiling is required to balance the availability of materials with rehabilitation requirements. This is evident in the NAF stockpile requirement. The last years of the mine life has a relatively high proportion of PAF mined in comparison to NAF, however as the top 20 m of the North OEF must consist of NAF material only stockpiles of NAF and clay must be set aside for use in constructing the final OEF cap. These works are scheduled to take from 2037 to 2039.

Table 4-11 – Estimate of life of mine stockpiles of rehabilitation materials

Material	Estimated Quantity (Million m ³)
Clay	7.5
NAF overburden	10.0
Topsoil	2.5

4.5.5 Learnings from closure experience generated from other mines

MRM will obtain information from Xstrata Coal to refine their rehabilitation plans and security calculations including what strategies have been successful as well as use of equipment and people productivities for rehabilitation tasks and costs. Westside Mine in NSW has shared information with MRM recently as this mine is in the closure stage. Closure guidelines provided by the Northern Territory Department of Resources also inform the site.

4.5.6 Seed mixes used in rehabilitation

McArthur River Channel

Species naturally occurring along the riverine systems are used in the revegetation program including the Silver Cadjeput (*Melaleuca argentea*), grasses and riverine woodland herb species.

Naturally occurring species occur upstream and downstream of the constructed channel, and will be collected from the surrounding riverine habitats. Apart from natural generation, the channel will be seeded by direct seeding as well as planting tubestock.

Barney Creek Channel

The new channel banks will be revegetated with native species in a manner similar to the McArthur River using direct seeding and planting of tube stock. Rehabilitation species will include the tree species *Lophostemon grandifolius* (northern swamp-box) and *Casuarina cunninghamii* (river she-oak).

The following riparian species will be used for both the McArthur River and Barney Creek channels. These will either be planted as tubestock or direct seeded (or both). Other locally occurring species may be used after further site investigation.

Melaleuca argentea – planted tubestock and direct seeded

Melaleuca leucadendra – tubestock and direct seeded

Eucalyptus camaldulensis – tubestock and direct seeded

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Casuarina cunninghamii – tubestock and direct seeded

Acacia hemsleyi – tubestock and direct seeded

Barringtonia actangulata – tubestock

Nauclea orientalis – tubestock

Ficus coronulata – tubestock

Ficus hispida – tubestock

Pandanus spiralis – direct seeded

Chrysopogon elongatus – tubestock

Cyperaceae sp. – tubestock.

The following riverine species will be used:

Corymbia bella

Eucalyptus camaldulensis

Lophostemon grandis

Melaleuca leucadendra

Acacia drepanocarpa

Hibiscus sp.

Terminalia spp

Acacia helmsleyi

Acacia holosericea

Acacia platycarpa

Atalaya hemiglauca

Eucalyptus microtheca

OEF and TSF seed mix

The seed mix for rehabilitating the capped OEF and TSF will be determined once cover designs are accepted and studies being carried out by Charles Darwin University are complete. It is anticipated that the OEF will be revegetated with grasses while the TSF will be rehabilitated with a mixture of grass and shrubs.

4.5.7 Information gaps/research

A number of information gathering programs are currently underway:

- lysimeters are currently being installed to measure the effectiveness of NOEF cover design and construction methods
- an analysis of overburden geochemistry will be available in early 2012
- work on the development of a conceptual cover system design for closure of Cell 1 of the TSF is continuing
- a geochemical and geophysical investigation of the TSF to determine long-term seepage impacts and mitigation has begun
- long term column leach tests for the OEF are continuing

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- closure criteria in regards to acceptable vegetation is also being refined based on CDU studies.

Information updates that MRM will prioritise during the progression of the mine are:

- further in-fill waste characterisation drilling will be conducted periodically to increase material classification confidence ahead of mining
- assessment of the final thickness of NAF material to be placed over PAF cells at the North OEF
- the close-out of the North OEF will be revisited based on its performance to date
- demolition and decommissioning cost will be annually reviewed and
- material balances of key rehabilitation materials (including topsoil, clay and NAF) will be undertaken over the life of the mine.

Research to commence progressively during the life of the mine:

- information on the soil structure and stability of the growth medium used on rehabilitation sites
- Design and construction of drop structures on OEFs.

4.6 Social data

MRM defines the local region within which it operates and influences as being bounded by the communities of:

- Robinson River in the southeast
- Sir Edward Pellew Islands in the north
- Limmen Bight River in the west
- Belbirini Station in the south.

This region is one of the more sparsely populated areas of Northern Australia. The township of Borroloola, 70 km north-east of the McArthur River Mine, is at the heart of this region. The Pellew Township on Centre Island, off the mouth of the McArthur River, is the only other gazetted town in the region, and has been set aside for a future port development. The population of Borroloola is approximately 773, and is comprised of:

- 580 Indigenous inhabitants
- 193 Non Indigenous inhabitants.

It is estimated that a further 500 people live on approximately 26 outstations in the surrounding district. At least 75% of the population is estimated to be Indigenous.

The mine is situated on pastoral land on the McArthur River Station. The mining lease was granted under the *Mining Act 1982* and the *McArthur River Project Agreement Ratification Act 2007* and the Project is located within this existing mining lease.

MRM operates with the appropriate approval from the Aboriginal Areas Protection Authority (AAPA). AAPA certificate conditions are strictly observed for 17 registered sacred sites within the mining lease to ensure these areas are identified, protected and effectively managed.

The Project workforce is expected to peak at 735 employees during the period 2020 to 2025.

5 Stakeholder Consultation

A community consultation engagement program was undertaken between March 2011 and September 2011 to facilitate the sharing of information and encourage community feedback with regard to the Project. The consultation process was undertaken by Rowland, an Australian communication consultancy based in Brisbane. Rowland were supported by Vicky Nangala, a Darwin-based consultant associated with Creative Options Pty Ltd. MRM's General Manager attended all consultation meetings to provide direct information to stakeholders and to demonstrate the Proponent's commitment to the consultation process. The stakeholder consultation report has been included in the Social Impact Assessment which has been submitted with the Draft EIS.

Stakeholder consultation will continue to be an ongoing process through the environmental impact assessment process, the mining operation and the eventual decommissioning and closure of the mine.

With regard to mine closure, stakeholders and community members expressed the preference for the final land use to be returned to grazing after closure. This is in line with the proponent's objectives to create postclosure landforms capable of sustaining limited grazing, similar to that of pre-mining land use.

During consultation, community members suggested that should the proposed Project go ahead, the frequency and scope of the current monitoring process needs to increase, specifically in relation to water testing at identified locations, particularly Surprise Creek, to ensure any impacts from the Project are identified early and addressed.

MRM's current process for communicating monitoring results with stakeholders and community members was raised, with consultation revealing stakeholders, and the community, want more information more regularly.

Stakeholder interest in rehabilitation identified a potential for community involvement in the process. Interest in involving local youth groups in the monitoring process was expressed as well as enquiries about opportunities for local nurseries in the revegetation process. The Rowland report linked this interest with the cultural connection with the land and the interest in generating local enterprise.

In discussion with some stakeholders it emerged that the purpose of the TSF was not well understood and efforts were made to explain the TSF in detail. Some stakeholders expressed satisfaction with the TSF in general given its weathering of the 2010-2011 wet season without incident. Some stakeholder concerns were raised regarding the TSF and the management and mitigation of seepage into Surprise Creek. Mitigating seepage from the TSF is the main objective of a joint geophysical and geochemical investigation into the TSF that is currently in its planning stages.

The majority of stakeholders consulted did not raise any issues or concerns about the OEF when directly questioned on the issue. Questions that were raised after the OEF expansion was described were primarily concerned with the final appearance of the facility and its impact on local visual amenity. Stakeholders were assured that the OEF would not be raised any higher than 80 m, the height of the culturally significant 'Barramundi Dreaming' site and did not raise any issues relating to this design decision. After being advised that the rehabilitation of the OEF would ensure that it eventually blends in with the surrounding environment, stakeholders indicated their awareness of mine closure plans and again raised the possibility of community involvement in the rehabilitation project.

Further information on Stakeholder Consultation is provided in Appendix D10 Phase 3 Development Project, Social Impact Assessment, 1 September 2011.

6 PostMining Land Use(s) and Closure Objectives

The surrounding land use is predominantly cattle grazing on large pastoral properties owned by private persons, companies, and Aboriginal groups.

6.1 Post Mining Land Use(s)

The goal of MRM, in line with views expressed during stakeholder consultation, is to create a stable final land form, returning as much of the Project area as practical to light cattle grazing land use.

6.2 Closure Objectives

The McArthur River Station is 8,000 km² in area and the total mining lease area is 122.04 km². The area disturbed by current operations is approximately 5.05 km² (505 ha). The total proposed disturbance over the life of the mine is 5.21 km² (521 ha), constituting less than 5% of the total mining lease area.

The predominant pre-mining land use was low intensity cattle grazing utilising native grasses and woody shrubs. It is anticipated that the dominant post-mining land use will continue to be grazing. As described above, the return of the mining impacted areas to grazing will be insignificant in terms of the contribution to the local grazing industry.

The initial post-mining objective will be to stabilise and make all areas safe. Once this occurs, secondary values, including the promotion of ecological values and the enhancement of local economically sustainable development industries such as grazing and tourism will be promoted. The development of post-mining land use strategies will continue over the life of the mine in consultation with the government and relevant stakeholders.

The environmental values that have been considered in relation to closure of the Project include:

- the health and well-being of people
- the diversity of ecological processes and associated ecosystems
- maintaining soil resources and agricultural land capability
- maintaining water quality and flows in waterways
- the creation of safe, stable, non-polluting and sustainable landforms.

The landforms after rehabilitation of the TSF, OEF and ROM pads will be broad, vegetated mounds with an earthen cover and a revegetated surface. The rehabilitated TSF will be retained as an area of stable self-sustaining native vegetation and fenced to exclude stock.

MRM closure objectives are summarised below.

6.2.1 Compliance

- meet Australian and Northern Territory closure requirements.

6.2.2 Stable Landform of native vegetation

- OEFs, TSFs, channels and spoil dumps will be stable and host suitable native vegetation.

6.2.3 Physical safety

- workers to be safe during infrastructure decommissioning and removal
- evacuations and subsidence to be rendered safe

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- all drill holes, shafts, open pits and other openings to be securely capped, filled or otherwise made safe
- access of people and livestock to be restricted as appropriate to site conditions.

6.2.4 Low Risk to biota

- the quality of water leaving the site should be such as to cause no significant deterioration of water quality
- production of groundwater from the TSF should be minimised, and trends should indicate improvement
- production of polluted surface water (e.g. metals, acid or caustic runoff from pits, stockpiles, waste rock or tailings) should be minimised and controlled and trends should indicate improvement to the point where after closure water quality reflects pre-mining geochemistry
- TSF seepage, post closure will have no environmental impact on water quality or biota
- continuing active intervention should not be required for site water management
- all sources of radioactivity should be decontaminated, removed or encapsulated such that levels of radioactivity on site conform to contemporary criteria.

6.2.5 Stability

- all disturbed areas should be stabilised, including the construction of stable landforms
- drainage should be consistent with post-mining land use (re-establishment of natural drainage patterns where appropriate)
- erosion by wind and water should be at least comparable with background levels of the area
- water storage's left in-situ should be stable (providing an adequate margin of safety which is dependent on material stored) against floods, erosion and subsidence.

6.2.6 Clean-up

- facilities and equipment to be removed unless they are to remain for an agreed future use
- no waste should remain at the surface, or at risk of being exposed through erosion.

6.2.7 Revegetation or otherwise improved

- available disturbed areas will be progressively rehabilitated
- salts will not rise through the capping profile to the surface on tailings or contaminated hardstand areas
- the establishment of a revegetated, stable land form
- vegetation should be able to survive the local fire regime
- the introduction and spread of weeds and pests should be prevented and an active program in place to minimise their presence.

6.2.8 Visual amenity

- long-term visual impact should be minimised by creating acceptable landforms, preferably compatible with the adjacent landscape.

6.2.9 Heritage and archaeological sites

- condition of heritage and archaeological sites should meet the requirements of relevant authorities.

7 Identification and Management of Closure Issues

7.1 Introduction

The potential risks associated with the closure and decommissioning of the Project are discussed in this section. Both natural and man-made hazards are considered. The potential for adverse effects on members of the community and surrounding property owners were considered in the risk assessment.

The development of future and revised closure plans will incorporate a risk based approach using technical analysis to determine the risk associated with mine closure. Cost-benefit analysis of various closure scenarios will assist MRM to reduce uncertainty levels associated with future closure planning and the alternatives selected for implementation.

Existing management systems are already in place to reduce hazard and risk for mine closure. These established systems are continuously improved and updated to reflect any changes to the risk profile that may occur over time. MRM has a number of comprehensive plans in place to minimise risk that will relate to mine closure, such as a:

- Annual Sustainable Development (SD) Management Plan
- SD Mining Management Plan
- Overburden Emplacement Management Plan
- Tailings Storage Facility Management Plan
- SD Water Management Plan
- Mine Closure Plan.

MRM currently supports an annual independent environmental monitoring review. MRM has conducted an environmental monitoring program since MRM's inception, and the Independent Monitor audit reports have verified that mining and associated related operations at MRM are not impacting significantly on the surrounding environment.

The extensive monitoring program has provided a large database that has greatly contributed to the verification that environmental management controls on the site has been effective in minimising environmental impacts and has created a high level of certainty in terms of environmental risks. The monitoring program will be continued and refined for the Project, including during mine closure.

7.2 Mine Closure Risk Assessment Objectives

This risk assessment aims to assess the risks and identify management practices to mitigate potential impacts resulting from Project closure and is a preliminary review of risks based on the level of detail available for the Project at the feasibility stage.

The risk assessment was based on the methodology provided in Australian and New Zealand Standard AS/NZS ISO 31000:2009 *Risk Management – Principles and Guidelines* and the MRM Risk Management procedure.

The objectives for the risk assessment were specifically to:

- identify the hazards and resultant risks from the Project as a whole, and threats from aspects to the Project
- rank and prioritise risks through a risk assessment process
- evaluate the risks and identify management measures to mitigate the risks.

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The risk management measures to be implemented aim to significantly reduce the likelihood and consequence of hazards and ultimately seek to eliminate any potentially extreme or high risks to people, property and the environment.

MRM site personnel were consulted to conceptualise all the Project activities that may have the potential to create a hazard or risk using a series of flow diagrams for closure and decommissioning related activities. Process inputs and wastes were also included in these flow diagrams.

The Project's decommissioning phases will present a number of hazards and risks. It is anticipated that once detailed Project design and construction is complete, a review of this risk assessment will be conducted and communicated to all relevant stakeholders. Should Project design changes occur during operations, then this risk assessment process will be reassessed and repeated. Regular reviews of this risk assessment will also be conducted during the operations phase of the Project to ensure that it is still appropriate.

7.3 Hazard and Risk Management Definitions

The terminology used in this section is defined below:

- Risk Management Process - The process of identifying hazards, assessing the risks that may result from the hazard, deciding on control measures, monitoring and reviewing the effectiveness of measures
- Hazard - A potential source of harm/damage to life, health, property and environment
- Likelihood - An assessment of the probability of occurrence
- Consequence - The outcome of an event expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain. There may be a range of possible outcomes associated with an event
- Risk Rating Matrix - A matrix used to combine consequence and likelihood to a single value of risk
- Risk Score - The single numerical, priority value obtained from the risk rating matrix
- Risk - The chance of unwanted negative consequence from an injury, damage, near miss or hazard. It is measured in terms of likelihood and consequence
- Hierarchy of Control - The implementation of control methods in a formalised manner to ensure that the most disciplined controls are completed first
- Residual Risk - The remaining level of risk after risk treatment measures have been taken
- ALARP - As Low As Reasonably Practicable.

7.4 Potential Hazard Categories

The hazard categories for the Project's closure and decommissioning phases are based upon the loss of control of the environment, people and machinery in potentially hazardous situations. These hazards have the potential to occur and are categorised below.

7.5 Closure and Decommissioning Hazards

Identified Closure and Decommissioning Hazards are:

- demolishing and removing mine infrastructure (e.g. equipment, demountables, etc.) from the site

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- unauthorised access to the mine site and dangerous structures and landforms such as open pit walls, dams, OEFs and the TSFs
- loss of containment of mine water from the open pit
- erosion and OEF management
- seepage from the TSF.

7.6 Risk Management Process

The risk management process used by MRM has various levels or stages which correspond to the stages of the Project's development with an ongoing process of risk assessment and management which is discussed below. This process is consistent with *AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines*.

The risk management process encompasses qualitative and quantitative methods typically following the stages below:

- formal risk identification
- risk reduction (via analysis)
- residual risk control to acceptable levels.

A risk analysis and a risk assessment is undertaken to identify the safety, health, environmental, social and financial risks and potential hazards associated with all significant aspects of closure. The key requirements of closure hazard and risk management are as follows:

- management shall ensure that all personnel have been trained and assessed as competent to manage risks associated with their role
- the risks associated with all identified hazards shall be assessed. The assessment methodologies and processes shall be selected having due regard for meeting the requirements of legislation and other corporate or statutory due diligence processes
- hazard identification processes shall address all life-cycle stages of a project or activity, including design, procurement, construction, commissioning, operation and maintenance, decommissioning and demolition
- processes should be established to report and record risk issues, and also be able to conduct trend analysis
- control measures are to be implemented and monitoring programs arranged to demonstrate effective control for the reduction or elimination of risk. This process shall be evaluated, documented and modified as appropriate.

7.7 Risk Methodology

Risk management is a dynamic (or iterative) process to both identify opportunities as well as avoid or minimise losses. Risk potential is minimised via several strategies. These include the appropriate selection of materials to be utilised, modern design and construction of facilities that are appropriate for the climatic and other conditions, minimising the levels of stock of hazardous materials held on-site, and proper management.

The 'Hierarchy of Controls' is the recommended method for reducing risk in order of preference from:

- elimination of the hazard
- substitution of the hazard with a lesser risk

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- use of engineering controls
- isolation of the hazard from people, plant and processes
- use of administrative controls such as training
- use of personnel protective equipment (PPE).

7.8 Risk Assessment, Management and Controls

MRM's risk management procedures require the maintenance of a site hazard and risk register to ensure that any potential risk to the safety, health, environmental and business aspects are minimised. The register is formally reviewed by systematically, identifying the potential hazards during normal, abnormal, start-up/shut-down and maintenance operations assessing the risks documenting how they are to be controlled and identifying any actions required to further mitigate the risks.

The process of the development of the risk register involves the following steps:

- dividing MRM operations into appropriate areas for the analysis of risk
- defining the significant activities of each area
- utilise the HIRARC database to document the risk register
- define the hazard scenario associated with these activities
- list the causes of the hazard category
- list the consequences of the hazard category
- complete a gross risk ranking based on the Xstrata Risk Analysis Matrix (Table 7-3)
- list the prevention controls currently in place to prevent the hazard becoming an incident
- list minimisation controls, human aspect controls and generic risk management procedures
- complete a net risk ranking based on the Xstrata Risk Analysis Matrix (Table 7-3)
- propose additional controls as required, including allocating responsibility with an agreed date
- enter these action into CURA for tracking purposes into CURA
- review on an annual basis or in the event of a major process change or new development.

For each of the hazard scenarios assessed, MRM has developed controls and actions to be implemented to minimise the risks. The prioritised risk management procedures undertaken by MRM are as follows:

- continue with more detailed risk assessments at a departmental level to gain improved understanding of the risks relevant to each area and provide documented improvement and contingency plans
- continue with the development of the site risk management procedure linking the various levels and techniques for risk reviews and their associated frequencies
- document and detail the risk management plans for the extreme and high risk scenarios at a site level
- continue and report on action progress

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- conduct an internal auditing program to confirm existence and effectiveness of the identified controls starting with the highest risk scenarios first
- continue risk reduction/existing control improvement activities using the hierarchy of controls linked to the budget planning cycle prioritising highest risk scenarios first
- develop a risk reduction plan on a timetable agreed by stakeholders
- review the common procedural controls and include in the improvement plan.

The team compiling the risk register determines if the current controls in place are acceptable. If controls are considered inadequate, additional actions will be proposed to reduce the risk level. The proposed action list includes target dates and responsibilities.

Each manager reviews and accepts or modifies the proposed actions. Modifications made by the manager are documented. Actions are documented to track action closure.

Assessment of risk involves two processes:

- identification of current controls (procedures, equipment etc.) that reduce risks to an acceptable level
- quantification of the likelihood of an impact occurring and the consequences of the residual impact, based on the original risk and the current controls in place.

hazards, the consequence and likelihood of the hazard occurring was determined and categorised according to the consequence and likelihood classifications shown in Table 7-1 and Table 7-2 respectively.

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Table 7-1 Consequence Categories

Rating	Financial impact US\$ EBIT	Property Damage US\$	Investment Return US\$ NPV	Health and Safety	Environment	Community/Reputation	Legal and Compliance
5	\$100 m+ loss or gain	\$20m+	\$600 m+ loss or gain	Multiple fatalities and/or significant irreversible effects to tens of people.	Category 5 - an incident that has caused disastrous environmental impact with long term effect requiring major remediation.	Prominent negative International media coverage over several days. Significant negative impact on share price for months.	Major litigation or prosecution with damages of \$50 m+ plus significant costs. Custodial sentence for company executive. Prolonged closure of operations by authorities.
4	\$20-\$99.9 m loss or gain	\$2 m-\$19.9	\$60 -\$599.9 m loss or gain	Single fatality or Permanent disability or illness to one or more persons.	Category 4 - an incident that has caused serious environmental impact with medium term effect requiring significant remediation.	National media coverage over several days. Significant negative impact on share price for weeks Community/NGO legal actions. Impact on local economy	Major litigation costing \$10 m. Investigation by regulatory body resulting in long term interruption to operations. Possibility of custodial sentence.
3	\$2 m-\$19.9 loss or gain	\$200 k - \$2 m	\$6 -\$59.9 m loss or gain	Serious bodily injury or illness (e.g. fractures) and/or Lost time injury (LTI)> 2 weeks.	Category 3 - an incident that has caused moderate reversible environmental impact with short term effect requiring moderate remediation.	Local media coverage over several days. Negative impact on local economy. Persistent community complaints.	Major breach of regulation with punitive fine. Significant litigation involving many weeks of senior management time.

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Table 7-1 Consequence Categories (cont)

Rating	Financial impact US\$ EBIT	Property Damage US\$	Investment Return US\$ NPV	Health and Safety	Environment	Community/Reputation	Legal and Compliance
2	\$200 k - \$1.9 m loss or gain	\$10-\$199.9 k	\$600 k - \$5.9 m loss or gain	Medium term largely reversible injury or illness to one or more persons. Restricted work injury. LTI < 2 weeks.	Category 2 - an incident that has caused minor reversible environmental impact requiring minor remediation.	Local media coverage. Complaint to site and/or regulator.	Breach of regulation with investigation or report to authority with prosecution and/or moderate fine possible.
1	<\$200 k loss or gain	<\$10 k	<\$599.9 k loss or gain	First aid or medical treatment.	Category 1 - an incident that has caused negligible reversible environmental impact requiring very minor or no remediation.	No media coverage. No community complaints.	Minor legal issues, non-compliances and breaches of regulation.

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Table 7-2 Likelihood Categories

Level	Descriptor	Description	Guide
A	Almost Certain	The event is expected to occur on most circumstances or 'A Common or Frequent Occurrence'	Once per week
B	Likely	The event will probably occur in most circumstances or 'It has happened'	Once per month
C	Occasional	The event should occur at some time or 'I've heard of it happening'	Once per year
D	Unlikely	The event could occur at some time or 'Not likely to occur'	Once per 10 years
E	Rare	The event may occur only in exceptional circumstances or 'Practically impossible'	Once per life of facility (30 to 100 years)

By considering both the likelihood of the hazard occurring and its consequence, it is possible to categorise the risk of each scenario. For example, a hazard which is almost certain to occur and with catastrophic consequences would be rated as an extreme risk, while one that would occur rarely and have insignificant consequences would be rated as low risk. The risks have been categorised as shown in Table 7-3.

It is the nature of standard risk assessment methodology to consider all eventualities however remote their likelihood. The criterion of 'once per life of facility' is, as Table 7-2 states, a guide only. This does not mean that it will occur. It indicates the lowest likelihood of all of the scenarios assessed. Despite the expectation that such an event will not occur, it has been included in the risk assessment to ensure that adequate mitigation measures are in place. If it was not included in the risk assessment, it would not be a focus of ongoing management attention.

Table 7-3 Risk Categories

Likelihood of the Consequence		Consequence				
		Insignificant	Minor	Moderate	Major	Catastrophic
		1	2	3	4	5
Almost certain	A	11	16	20	23	25
Likely	B	7	12	17	21	24
Possible	C	4	8	13	18	22
Unlikely	D	2	5	9	14	19
Rare	E	1	3	6	10	15

Risk legend:

Extreme 18 to 25	High 10 to 17	Medium 6 to 9	Low 1 to 5
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A risk assessment was then undertaken for the Project closure by combining the consequence and likelihood of each of the identified hazards and categorising them as shown in Table 7-4. The extreme risk scenarios and the high risk scenarios (10 and above) identified by this risk assessment are shown in Table 7-3.

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All of the high and extreme risks identified and evaluated in the closure risk assessment presented below were determined to be not intolerable. The likelihood of each risk was determined with consideration of MRM's proposed mitigation strategies, management actions, controls and procedures.

MRM has a continual improvement approach to risk, and will report back on the latest developments in research and monitoring for high ranked risk through the annual MMP, Water Management Plan and the Waste Discharge Licence.

The risk assessment shown in Table 7-4 was also identified as 'preliminary', and will thus be reviewed throughout the Project's life.

The level of certainty of the controls mitigating the risk were evaluated and are listed in Table 7-4, (refer to the 'Control Effect/Certainty' column). As an example, H represents a high certainty that risk will be mitigated and results in the net likelihood of the hazard occurring reducing to a point where residual risk is low.

The primary environmental risks for the Project closure identified by the Northern Territory Government in the EIS Guidelines were:

1. seepage of contaminants and potential migration of tailings at the TSF
2. seepage of contaminants from the OEFs
3. natural disasters and extreme weather or climate conditions that may degrade the integrity of infrastructure in the long term
4. ongoing management and rehabilitation of MRM.

These risks were identified in Table 7-4.

This includes levels of uncertainty of risk estimates and the effectiveness of risk controls. These risks, with accompanying control strategies are briefly discussed below.

With the continued implementation of current risk management strategies already employed at MRM, it is considered that residual risk will not exceed generally accepted levels. Based on final detailed design and operating plans, a rigorous, more specific evaluation of closure hazards associated with the Project will be undertaken during the operational phase.

7.8.1 Overburden Emplacement Facilities

There is potential for some material mined as overburden to generate acid, resulting in high metal and salt concentrations in runoff water. The geochemical nature of the waste rock is such that there could be a risk of acidic runoff being generated from the North OEF if PAF material is exposed. Key risk mitigation strategies to prevent this are:

- only Non-Acid Forming (NAF) rock will be used for OEFs within the 1:100 year flood zone
- PAF material will be enclosed by NAF material
- although runoff from NAF material should generate non-acidic runoff with below limit metal and salt concentrations it is proposed that the runoff will be collected in sediment ponds where possible rather than being subject to uncontrolled release. Clean runoff water from the sediment ponds will occasionally overflow into receiving waters. The quality of overflow water will be monitored. Trigger levels have been established to determine if the quality of overflow waters is a potential risk to aquatic ecosystems
- implementation of the mine water management system minimises the risk of metal contamination in downstream sediments. The existing monitoring program will continue and will be augmented by including additional parameters and sampling sites.

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The strategies put in place to minimise acidic runoff during operations will apply during post closure and relinquishment. Post closure monitoring will confirm that runoff quality conforms to the relevant guidelines.

The extensive evaluation of OEF materials, the proposed OEF designs, safeguards, and the implementation of the above monitoring and corrective actions will ensure that the potential for on-going transport of metals into aquatic ecosystems from erosion of the OEF materials will be negligible.

Research and monitoring into the potential impacts of Potential Acid Forming (PAF) material and OEF management at MRM will be ongoing throughout the Project's life. Detailed testing for PAF material of each area proposed for mining will take place prior to blasting and removal. Management actions aimed at encapsulating the PAF materials will be continued and refined where necessary to accommodate the site specific issues.

This will include:

- monitoring of erosion and sedimentation during operations and during decommissioning and closure
- regular monitoring of surface and ground water quality
- awareness, encapsulation and monitoring of PAF wastes.

PAF materials need to be managed beyond mine closure therefore the risk has been identified as high. MRM are aware of the potential impacts of their operations and intend to close the site so that it may be relinquished from their care.

In order to reach this goal the development of the existing mine closure plan will be ongoing throughout the Project's life as research continues and rehabilitation trials are monitored.

The management, rehabilitation and closure of the OEFs is discussed in more detail in Draft EIS Appendix E2–Overburden Emplacement Facility Management Plan

7.8.2 Tailings Storage Facility

A high environmental risk associated with existing waste management practices is the presence of the TSF and the potential for seepage of water with high concentrations of sulphates into the surrounding groundwater and surface water. This risk has been identified and ongoing works will remedy this impact. Further management of this risk has been incorporated into the design of the TSF for the Project operations.

Predicted long-term seepage volumes are low (30 to 40 L/day/m) due to the relatively low permeability of the embankment core, the tailings and the underlying dolomitic siltstone material. The approach to managing the TSF, so that it will not impact on the receiving environment during operations, is summarised in Table 7-5 below. These management measures will also minimise impacts during the TSF closure.

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Table 7-4 Summary of High and Extreme Closure Risks Identified for the Project

Hazard No.	Gross Risk Value	Net Risk After Controls	Risk Category	Component	Task	Description of Hazard	Causes of Hazard	Consequences of Hazard	Gross Likelihood	Gross Conseq.	Controls and/or Response	Control Effect /Certainty	Net Likelihood	Net Conseq.	Improvement Required/Planned/Mitigating actions	Responsibility
1	E-21	H-14	Strategic	Open pit expansion	Geology	Lack of data	Insufficient drill density data	OEF not big enough Excess acid leach drainage Environmental impacts Cost Incorrect grade and metallurgical data	B	4	Drilling program Experience from underground mining Current reconciliation	M	D	4	Metallurgical test work Expanded drill program	Project Manager
2	E-24	H-15	Health & Safety/ Environment		Geotechnical issues - voids Pit wall management	Pit wall failure	Groundwater pressure	Injuries Cost - due to damage, delays and rework Closure issues	B	5	Design of walls based on geotechnical modelling and experience in existing pit Void management plans Prism monitoring Monitoring and inspections Engineering mining techniques Dewatering Sub-surface monitoring Surface water management Blast design	H	E	5	Consider radar monitoring	Principal Geotechnical Advisor
3	E-18	H-14	Environment		Geochemistry	OEF management Surface and groundwater contamination	Poor waste characterisation Insufficient cover material Poor water management	Possible release of AMD (Acid Mine Drainage) Rehandle and material cost Metal mine drainage and contaminants Flora and fauna impacts	C	4	More drilling More information to allow rigorous design and schedule of OEF Inspections and monitoring Leach testing Placement of lysimeters Cover trials by operations Surface water management	M	D	4	Further geochemical testing from future drilling program Increased contingency for PAF volume	Project Manager

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Table 7-4 Summary of High and Extreme Closure Risks Identified for the Project (cont)

Hazard No.	Gross Risk Value	Net Risk After Controls	Risk Category	Component	Task	Description of Hazard	Causes of Hazard	Consequences of Hazard	Gross Likelihood	Gross Conseq.	Controls and/or Response	Control Effect /Certainty	Net Likelihood	Net Conseq.	Improvement Required/Planned/Mitigating actions	Responsibility
4	E-19	H-15	Health & Safety/ Environment		Water management - groundwater	Expansion may crack the river diversion and the levee bank	Expanding pit operations	Major failure of pit due to wall collapse and/or flooding	D	5	Monitoring Dewater the wall in advance of mining Ground water and geotechnical modelling Geotechnical design	H	E	5		
5	E-22	H-15	Environment	Tailings Storage Facility (TSF)	TSF expansion	Dam wall failure	Greater pressure on the wall Liquefaction Piping	Impact on ground surface water Large fines Reputation damage Fatality	C	5	Design and monitored to ANCOLD guidelines Monitoring e.g. piezometers Annual independent inspections Survey control Dam construction e.g. quality control Build an additional TSF cell Improved water management by installation of a water management dam will decrease water in the TSF Not to be used for water storage	H	E	5	Lowering the dam with an increase in footprint Operation tailings deposition management Piping to manage seepage detection Ongoing monitoring of seepage issues	Project Manager
6	E-24	H-14	Environment		TSF expansion Monitoring	Increased ground water contamination	Increased mine operations	Seepage Impact on ground and surface water Large fines Loss of reputation	B	5	Civil/survey monitoring of the wall-surface and position Increased environmental monitoring Lining of Cell 4 due to contaminated water and loss of clay Source Cell 3 clay from Cell 4 to improve seepage control Ongoing monitoring of seepage issues	M	D	4	Consider increased seepage capture such as bentonite slurry wall around perimeter of TSF (consider alternative seepage management controls)	Project Manager

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Table 7-4 Summary of High and Extreme Closure Risks Identified for the Project (cont)

Hazard No.	Gross Risk Value	Net Risk After Controls	Risk Category	Component	Task	Description of Hazard	Causes of Hazard	Consequences of Hazard	Gross Likelihood	Gross Conseq.	Controls and/or Response	Control Effect /Certainty	Net Likelihood	Net Conseq.	Improvement Required/Planned/Mitigating actions	Responsibility
7	E-24	E-22	Financial		Mine closure	Increased footprint Increased cost of rehabilitation on TSF	Increased tailings products	Ongoing rehabilitation cost increased due to failure to relinquish lease Unable to recover security bond due to not meeting requirements	B	5	Closure plan being updated to incorporate the Project Annual security calculations in mining management plan Progressive rehabilitation	M	C	5	Must demonstrate a reliable strategy to allow relinquishment of the lease and successful closure of the operation	Project Manager
8	H-14	H-10	Health & Safety/ Environment	Overburden Emplacement Facilities (OEF)	Geotechnical stability	OEF failure i.e. slumps May take up some sediment dam capacity due to increased erosion	Increased risk due to increased height	Damage to equipment Injury/fatality Increased cost Truck tip over Landform instability	D	4	Correct design Stability monitoring and inspection - weekly & monthly PAF preparation Bunding around the OEF to capture any drainage intended or unintended Windrows Adherence to traditional owners request to keep height below 80 m Communication to traditional owners Survey and ALS imagery	H	E	4		
9	E-22	E-19	Financial/ Environmental		Mine closure	Increased footprint Increases cost of rehabilitation on OEF	Ongoing environmental impacts following the end of operations	Ongoing rehabilitation cost increased due to failure to relinquish lease Unable to recover security bond due to not meeting requirements	C	5	Closure plan being updated to incorporate the Project Annual security calculations in mining management plan Progressive rehabilitation	M	D	5		
10	E-18	H-14	Health & Safety	Infrastructure Removal		Vehicle impacts on people or structure	Vehicle /pedestrian impact	Injury Equipment damage	C	4	TMP refined for closure JSEAs Fitness for work Safety management plan Specific job site plans	H	D	4	Investigate scheduling options to reduce interactions	Project manager

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Table 7-4 Summary of High and Extreme Closure Risks Identified for the Project (cont)

Hazard No.	Gross Risk Value	Net Risk After Controls	Risk Category	Component	Task	Description of Hazard	Causes of Hazard	Consequences of Hazard	Gross Likeli-hood	Gross Conseq.	Controls and/or Response	Control Effect /Certainty	Net Likeli-hood	Net Conseq.	Improvement Required/Planned/Mitigating actions	Responsibility
11	E-18	H-10	Health & Safety		Removal of steelwork	Working at heights Lifting, slinging(rigging, craneage) Manual handling Hot work Vehicle movements Extreme weather Power tools Poor scheduling	Heights 2 m-30 m.	Injury/fatality	C	4	Barricades and edge protection Fall arrest equipment Working at heights procedures Designated access areas Inspections Dedicated safety advisor	H	E	4		

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Table 7-5 - TSF management measures

Risk	Mitigation	Monitoring	Contingency
Surface water overflow	Runoff and decant water to flow to Water Management Dam. Water Management Dam designed to be above the 1:500 year flood level. All runoff and decant water in the Water Management Dam to be reused in the processing plant, or evaporated or discharged as per the discharge licence.	Regular updating of water balance modelling of the site water management system, to minimise overflow risk. Regular inspection of the decant system, to ensure efficient operation.	Pump water from water management dam to other storages. Increase the capacity of the Water Management Dam. Discharge as per approved licence.
Failure of TSF embankment	Design in accordance with ANCOLD guidelines for high hazard dams. Engineering analysis of embankment stability has confirmed a factor of safety well in excess of minimum requirements.	Regular inspection of embankment integrity to be undertaken. Monthly piezometric monitoring of phreatic surface levels with embankment. Independent annual inspections.	Engineered remediation measures in accordance with ANCOLD guidelines.
Erosion of outer face of TSF embankment	Only hard durable NAF rock that is resistant to erosion, is to be used on outer face.	Regular inspection of integrity of rock face to be undertaken.	Replace any rocks showing signs of erosion, with more competent material.
Seepage from TSF	Embankment to have clay core with cut-off key. Ponded water in TSF to be kept away from perimeter embankment. Geo-polymer barrier to be installed around eastern embankment. Network of recovery bores installed in identified seepage area. TSF to be capped with low permeability layer, to prevent ongoing entry of water at closure. Maintain recovery bores post closure, until seepage head in TSF reaches design level.	Ongoing monitoring of seepage rates through recovery bores and observation bores. Monthly inspection of embankment and along Surprise Creek adjacent to TSF area, for evidence of seepage.	Increase the number or pumping rate of recovery bores Install seepage collection trenches.

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Other TSF risk minimisation strategies include:

- installation of an engineered liner in Cell 4
- the tailings will be deposited in a way that provides a low permeable layer between the decant water pond and the perimeter embankment
- the perimeter spigot discharge system maintains an appropriate level of saturation/moisture within the tailings limiting the generation of sulphates/acidic water
- the underlying basement sequence has significant buffering capacity
- any seepage will be contained by the low permeable clay core and cut-off key in the TSF embankment, the geo-polymer cut-off barrier and the network of recovery bores
- capping and revegetating the TSF will limit oxidation of the stored tailings, enabling clean runoff to be discharged to the surrounding environment
- operation of the recovery bores after mine closure will reduce the groundwater head within the TSF, eliminating surface seepage
- comprehensive monitoring program will be maintained over the life of the TSF and will include the following components:
 - surface water management
 - groundwater management
 - water quality
 - decant pond water
 - decant pond water quality
 - embankment condition.
- runoff from the external face of the TSF embankment will be channelled by contoured drainage to flow through sediment ponds prior to being discharged. Regulatory approval for this strategy must still be obtained.

The risk of low quality water entering the aquatic environment from the TSF embankment will be minimal because:

- only NAF materials that do not leach at bio-available concentrations exceeding ANZECC criteria will be exposed to the TSF embankment
- any uncontrolled discharge from the TSF would be in a very high rainfall scenario at which time the dilution would be such that no adverse impacts on the downstream environment would occur
- the embankment's clay core will be protected by a rock-fill face of NAF material, which will vary in thickness from 3 m to 40 m to prevent erosion of the core from both direct rainfall runoff and flooding.

To mitigate the risks associated with recovery bores after mine closure the following will be implemented:

- alternate power supplies such as solar or wind power will be installed when/ if electrical power is decommissioned

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- the design of the cap and a sustainable vegetative cover to evapo-transpire moisture from within the upper surface of the cap will ensure that rainfall does not infiltrate into the TSF surface. The ongoing efficacy of the cap will be monitored.

Research and monitoring into the potential impacts of TSF seepage at MRM will be ongoing throughout the Project's life, as is the current case. MRM are aware of the potential impacts of the TSF operations and intend to close the site so to ensure that no significant offsite impacts occur.

The management, rehabilitation and closure of the TSF is discussed in more detail in Draft EIS Appendix E1– Tailings Storage Facility Management Plan

7.8.3 Natural Disasters

Bushfire can impact people, the environment, and mine infrastructure. Fire breaks have been installed where appropriate and will be maintained. Activities at MRM will be monitored to reduce the risk of starting wildfires. Bushfire management plans will be upgraded for closure after consultation with the pastoral lease holder and the traditional land managers. Bushfires in the Tropical Savannas (the region in which MRM is situated) are relatively common, but of low intensity, resulting in wildfire risk being determined as being low.

MRM is located in tropical Australia in a monsoonal area, with pronounced dry and wet seasons. Periods of high intensity rainfall can occur which increases the risk of erosion and sedimentation runoff from mine landforms such as the OEFs and TSF.

Rehabilitation trials on the OEFs will determine the most suitable landform design and management strategies. The TSF water management dam has the capacity to contain a 1-in-500 year rainfall event. If this level was exceeded the concentration of key potentially harmful parameters would be diluted by over a 1,000 times. On closure, capping and rehabilitation of the facility will allow clean water to immediately runoff into the surrounding drainage lines.

7.8.4 Rehabilitation and Mine Closure

Poorly designed OEF decommissioning and rehabilitation activities could result in erosion and sedimentation, and could potentially uncover encapsulated PAF material. Erosion has the potential to uncover PAF materials over timeframes beyond that of the mining activities. The existing OEF design will be continued and will be reviewed and revised according to ongoing monitoring of the success of progressive rehabilitation and erosion and water management control. MRM are committed to ensuring OEFs are rehabilitated to a stable state, and perform according to design.

To ensure that the rehabilitation of disturbed areas successfully evolves into a sustainable ecosystem, trials will take place during progressive rehabilitation. Monitoring will determine those strategies, species and growth media that are successful.

Xstrata Zinc has experience with mine closure planning and has identified the aforementioned risks to be associated with rehabilitation and decommissioning of the Project at the end of mine life. To help reduce these risks, the mine closure plan will be continually updated to include advances in rehabilitation technology over the Project's mine life. The reviews will continually address the identified hazards.

7.8.5 Social Risks

MRMs social impact procedure outlines the process to effectively identify and manage social opportunities and risks resulting from operations which may impact on the local community.

Social impacts are measured using MRMs Risk and Opportunity Identification and Assessment Matrix. MRM will use this procedure to progressively assess social risks through the life of the mine to ensure that on closure, no high residual risks remain.

8 Development of Completion Criteria

Decommissioning criteria for MRM are aimed at reaching long-term stability of the site and the minimisation of off-site impacts. The decommissioning criteria have been derived from MRM commitments, the generic set of criteria developed by the DOR as guidelines for the mining industry in the Northern Territory.

MRM's closure aim is to ensure that the site is left in a condition which reflects government and community expectations. The completion criteria reflect the closure objectives (see Paragraph 6.2) summarised as:

- compliance with regulatory requirements
- compatibility with agreed post-mining land use
- physical safety
- low risk to biota
- stability
- cleanup
- revegetated or otherwise improved
- satisfactory visual amenity
- no damage to heritage and archaeological sites.

Compliance will be achieved on specified criteria above, by the methods provided in Table 8-1.

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Table 8-1 Decommissioning Criteria and Methods to Achieve Compliance

Objectives	MRM Proposed Criteria	Measurement Tools
Compliance		
Australian and NT Government closure requirements met	- Maintaining a commitments register - Maintaining a commitments action plan	Audits of register and action plan
Landforms and Rechannels		
Channel – construct a stable landform and host native vegetation	Engineering design promoting stability, minimal erosion, minimal downstream impact and sustaining native vegetation	- Erosion reports - Annual monitoring vegetation structure, richness and cover via aerial photographic data and field work in June - Factors to be assessed include the condition of the plot: rock movement, erosion and the presence of debris numbers and species of tube stock and measures of survival and growth extent of seed regeneration vegetation growth and weed composition
TSF – construct a stable landform and host native vegetation	Engineering and capping designs promoting stability, minimal erosion and seepage with acceptable run-off quality	- As built design reports - Survey plans - Stability/erosion monitoring reports - Regular monitoring of performance of capping materials and depth topsoil cover (i.e. evidence of topsoil erosion and loss) vegetation cover species and resilience integrity of constructed drainage, erosion and silt accumulation in constructed drainages, net sediment loss rates tonnes/ha/year) sediment quality, and runoff quality

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Table 8-1 Decommissioning Criteria and Methods to Achieve Compliance (cont)

Objectives	MRM Proposed Criteria	Measurement Tools
OEF – construct a stable landform and host native vegetation	- Maximum height 80m - Engineering and capping designs promoting stability, minimal erosion, and seepage with acceptable run-off quality. The design will ensure that limited rainfall and oxygen infiltrate the facility - Block modelling of waste rock will ensure that AMD material are encapsulated	- Cover trial reports - Annual monitoring - Material movement schedule with matching OEF placement schedule
Bing Bong Spoil	Stable design hosting native vegetation with similar values to local ecosystem	Annual stability/erosion, flora and fauna monitoring of internally drained spoil
Physical safety		
Employee safety during infrastructure removal	- Safety Management Plan - Risk assessments	- Audit reports - Inspection reports
Evacuations and subsidence to be rendered safe	- Inspection to demonstrate all excavations are complete - Geotechnical stability - Risk assessment will include subsidence, however it is not expected - Shafts rehabilitated in a safe and stable manner	- Inspection report - Geotechnical stability report - Risk assessments - Shaft inspection
All drill holes, shafts and other openings to be made safe. securely capped, filled or otherwise	All openings to be capped, filled or otherwise made safe	- Inspection and expense records - Capped drill sites will be mapped
Access of people and livestock to be restricted as appropriate to site conditions	- Agreed dams, roads and infrastructure will remain and be maintained by the post mining landowner. All other disturbance will be rehabilitated - TSF, the open pit and Barney Hill hardstand areas will be fenced and a permanent fire break established - Underground entrances will be sealed permanently as approved	- Inspection records - Fencing contracts - Documented agreements with landowners

Appendix E4 – Mine Closure Plan

Table 8-1 Decommissioning Criteria and Methods to Achieve Compliance (cont)

Objectives	MRM Proposed Criteria	Measurement Tools
Low risk to biota		
The quality of water leaving the site should be such as to cause no significant deterioration of water quality to the downstream beneficial use(s) of water quality objectives of the receiving waters declared under Section 73 of the <i>Water Act 1992</i>	• Surface water will be monitored until relinquishment (eight years after proposed closure) • Contaminated areas will be capped with a capillary layer and erosion resistant material or disposed of in the TSF or placed in the open pit, with clean material replaced and rehabilitated • Trials will be undertaken to confirm capillary layer, surface cover material and revegetation requirements • The refuse facility will be capped and revegetated • No contaminated areas will be left uncovered • Sediment traps will be utilised to minimise off-site suspended solids being discharged off-site where appropriate	• A risk assessments • Management plans • Audits • Inspections • Post closure water and rehabilitation monitoring records • Trial results and reports
Production of groundwater should be minimised, and water quality trends should indicate improvement	• Groundwater quality will improve within specified guidelines (long-term results) • An approved groundwater monitoring program for mine relinquishment will be implemented	• Groundwater monitoring program • Monitoring results
Production of polluted surface water (e.g. metals, acid or caustic runoff from pits, stockpiles, waste rock or tailings) should be minimised and controlled and trends should indicate improvement	• Mine surface water quality will improve within specified guidelines (long-term results) • An approved surface monitoring program for mine relinquishment will be implemented • All sources of low quality water will be capped with an appropriate mitigating capillary layer, and erosion reducing material, and revegetated	• Surface water monitoring program • Monitoring results • NAF, PAF and capping scheduling for the OEFs • Inspections • Rehabilitation monitoring results

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Table 8-1 Decommissioning Criteria and Methods to Achieve Compliance (cont)

Objectives	MRM Proposed Criteria	Measurement Tools
TSF Seepage post closure will have no environmental impact on water quality or biota	- Designed to ANCOLD criteria - Capped and rehabilitated - Install clay liner in Cell 3 - Install engineered liner in Cell 4	- As built design reports - Rehabilitation monitoring reports
Continuing active intervention should not be required for site water management	- Ongoing site water management not required allowing for full availability of water for local values - Groundwater contamination will not impact on the potential post-mining land use and will pose no risk to biota following rehabilitation	Groundwater monitoring
All sources of radioactivity should be decontaminated, removed or encapsulated such that levels of radioactivity on site conform to contemporary criteria	Radioactive measuring equipment will be disposed off-site in an approved manner	Removal records
Stability		
All disturbed areas should be stabilised, including the construction of stable landforms	A stable landform will be characterised by minimal erosion and presence of a stable and increasing vegetative cover. These features will be measured via visual interpretation and ground data	- Erosion monitoring - Rehabilitation monitoring
Drainage should be consistent with post-mining land use (re-establishment of natural drainage patterns where appropriate)	The existing drainage supports the post mining land use of establishment of native vegetation and stable landforms	Annual mine plan
Erosion by wind and water should be at least comparable with background levels of the area	- Local deposition gauges are used to detect dust emissions - Visual appraisal will be used to determine areas of excessive water erosion - Where identified, rock armouring will be placed to mitigate water forces	- Dust monitoring - Erosion monitoring - Surface water monitoring

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Table 8-1 Decommissioning Criteria and Methods to Achieve Compliance (cont)

Objectives	MRM Proposed Criteria	Measurement Tools
Water storage's left in situ should be stable (providing an adequate margin of safety which is dependent on material stored) against floods, erosion and subsidence	Flooding, erosion, wall failure and subsidence will be assessed for risk (by an independent panel) and modelled. These results will be reported and acceptable risk level agreed	- Modelling results - Risk assessment report
Clean up		
Facilities and equipment to be decommissioned and removed unless they are to remain for an agreed future use	This criterion is core to the other closure elements. Consultation of closure criteria and practices will be undertaken during the mine life and at closure	Documented agreement with landowners
No rubbish should remain at the surface, or at risk of being exposed through erosion	- Domestic and industrial rubbish has been disposed of according to the waste management plan. Rehabilitation works will continue to ensure that there is no remaining evidence of domestic and industrial rubbish - All drill sumps rehabilitated and rubbish and cuttings removed or buried - All holes capped - Water management structures to stabilise waste related disturbance will be implemented if required - The position of buried hazards will be mapped and physically marked	- Waste Management Plan - Audits - Inspections
Revegetated or otherwise improved		
Available disturbed areas will be progressively rehabilitated	Annual plan and budget	Rehabilitation reports

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Table 8-1 Decommissioning Criteria and Methods to Achieve Compliance (cont)

Objectives	MRM Proposed Criteria	Measurement Tools
Salts will not rise through the cap profile to the surface on tailings or contaminated hardstand areas	- Profile sampling will be conducted to determine the extent of leaching through the profile over time in rehabilitated areas until rehabilitation criteria have been met - The data should show that a balance of salt level within the capillary layer had occurred on rehabilitated areas and that salt levels do not impact plant establishment - Trials will be established to confirm this and the subsequent establishment techniques	- Sampling records - Trial reports
The established of a revegetated, stable landform with equivalent values as surrounding ecosystems	Seed mix, collected locally, will be representative of surrounding ecosystems	- Rehabilitation monitoring - Soil monitoring - Seed mix
Vegetation should be able to survive the local fire regime	- Native species known for their fire tolerance will continue to be used in seed mixtures - Permanent firebreaks will be established	- Seed mix - Fire Management Plan - MMP
The introduction and spread of weeds and pests should be prevented and an active program in place to minimise their presence	MRM has a Weed Management Plan to manage weeds on the Mineral Leases. The post- mining landowner will be responsible for weed management once the lease has been relinquished	- Weed Management Plan
Visual amenity		
Long-term visual impact should be minimised by creating acceptable landforms, preferably compatible with the adjacent landscape	Visual impact of landforms like the OEFs and TSF will be minimised through the establishment of vegetation on disturbed areas as indicated by visual interpretation of ortho-photos and ground monitoring data	- Seed mix - Construction designs

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Table 8-1 Decommissioning Criteria and Methods to Achieve Compliance (cont)

Objectives	MRM Proposed Criteria	Measurement Tools
Heritage and archaeological sites		
Condition of heritage and archaeological sites should meet the requirements of relevant authorities	• No significant archaeological sites exist on the disturbed areas • Traditional owners will be consulted in the decommissioning plan where there will be opportunity to discuss post-mining management of identified sites • Historical sites will be determined in consultation with stakeholders and will largely reflect the finalised post-mining land use	

Appendix E4 – Mine Closure Plan

9 Financial Provisioning for Closure

These mine closures costs represent the total expected cost of rehabilitation and decommissioning after the cessation of mining. The Annual Mining Management Plan (MMP) will continue to include calculations for rehabilitation and decommissioning at their respective stages of development. Exclusive of the closure costs the mine will spend approximately \$226 million on progressive rehabilitation during the mine life.

MRM uses the security calculation spreadsheet provided by DOR to calculate closure provisioning. For specialist tasks, the NT government provides a range of suggested values and MRM uses relevant values.

Earthworks, people and equipment productivities (and hence costs) required to complete a task for a given area (eg topsoil rehandle and spreading on the NOEF) are evaluated. This generates a unit cost. This unit cost is multiplied by the quantity required to generate a total cost.

Table 9-1 Financial Provisioning for Closure

Item	Unit	Quantity	Cost per unit of measure (\$)	Item Total (\$)	Comments
Infrastructure					
Mill					
Disconnect and terminate services	Lot	1	\$27,500	\$27,500	
Disconnect and terminate powerlines	each	3	\$11,000	\$33,000	
Demolish and remove industrial buildings	each	1	\$136,200	\$136,200	
Demolish and remove Mill/Processing Plant	Lot	2	\$880,000	\$1,760,000	
Demolish and remove conveyors and gantries	each	17	\$30,000	\$510,000	To remove off site
Demolish and relocate crushers	each	5	\$35,000	\$175,000	To remove off site
Remove concrete pads and footings	cubic metres	30,000	\$50	\$1,500,000	based on being dumped in the open pit

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Table 9-1 Financial Provisioning for Closure (cont)

Item	Unit	Quantity	Cost per unit of measure (\$)	Item Total (\$)	Comments
Main Workshops					
Disconnect and terminate services	Lot	1	\$5,500	\$5,500	
Demolish and remove small buildings	each	7	\$3,500	\$24,500	removed off site/demountables
Demolish and remove industrial buildings	each	7	\$6,500	\$45,500	demolished and removed
Remove concrete pads, footings and bitumen	cubic metres	11000	\$50	\$550,000	based on being dumped in the open pit
Removal of Hydrocarbon storage area and tanks	quantity	4	\$10,000	\$40,000	taken off site
Rip	ha	50	\$225	\$11,250	with grader
Direct seed	ha	50	\$900	\$45,000	
Remove contaminated material to tailings dam	cubic metres	50,000	\$7	\$325,000	based on top 100mm being contaminated
Replace topsoil	cubic metres	50,000	6.5	\$325,000	based on applying 100mm
Administration					
Disconnect and terminate services	Lot	1	\$5,500	\$5,500	
Dismantle and remove offices	each	6	\$6,500	\$39,000	demolished and remove
Remove concrete pads, footings and bitumen	cubic metres	1000	\$50	\$50,000	based on being dumped in the pit

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Table 9-1 Financial Provisioning for Closure (cont)

Item	Unit	Quantity	Cost per unit of measure (\$)	Item Total (\$)	Comments
Sewerage Treatment Plant					
Disconnect and terminate services	Lot	1	\$2,750	\$2,750	
Demolish and remove small buildings/tanks	each	2	\$3,500	\$7,000	taken off site
Accommodation Village					
Dismantle and remove all buildings	each	97	\$4,500	\$436,500	taken off site
Fill in swimming pool	each	1	\$3,000	\$3,000	
Civil crib rooms in the field	each	4	\$1,000	\$4,000	
Rip	ha	15	\$225	\$3,375	all areas of infrastructure
Direct Seed	ha	15	\$900	\$13,500	all areas of infrastructure
Total infrastructure:				\$6,078,075	
Tailings Storage Facility					
Cell 2 - earthworks (2028)	Ha	0	\$235,000.00	\$0	Rock, clay caps and topsoil
Cell 2 - revegetation	Ha	0	\$1,000.00	\$0	Hydroseeding
Cell 2 - contingency	%	0		0	
Cell 3 - earthworks (2030)	Ha	0	\$235,000.00	\$0	Rock, clay caps and topsoil
Cell 3 - revegetation	Ha	0	\$1,000.00	\$0	Hydroseeding
Cell 3 - contingency	%	0		0	

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Table 9-1 Financial Provisioning for Closure (cont)

Item	Unit	Quantity	Cost per unit of measure (\$)	Item Total (\$)	Comments
Cell 4 - earthworks (2036)	Ha	62	\$235,000	\$14,570,000	Rock, clay caps and topsoil
Cell 4 - revegetation	Ha	62	\$1,000	\$62,000	Hydroseeding
Cell 4 - contingency	%	10%		\$1,463,200	
Seepage management	Years	40	\$100,000	\$4,000,000	
Total Tailings Storage Facility:				\$20,095,200	
McArthur River Channel					
					all earthworks completed
Direct seed	ha	0	0	\$0	
Tube stock (1 per 10 square metres)	each	0	\$2.50	\$0	
Total McArthur River Channel:				\$0	
Barney Creek Channel					
All earthworks have been completed and thus this area would be returned to natural surroundings					
Tubestock (1 per 10 square metres)	each	0	\$2.50	\$0	
Direct seed	ha	0	0	\$0	

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Table 9-1 Financial Provisioning for Closure (cont)

Item	Unit	Quantity	Cost per unit of measure (\$)	Item Total (\$)	Comments
Total Barney Creek Channel:				\$0	
Southern Mine Levee Wall					
Place rock back from Mine Levee Wall	cubic metres	0	\$4.80	\$0	New closure keeps levee intact
Place waste and topsoil back from MLW	cubic metres	0	\$4.80	\$0	New closure keeps levee intact
Place clay back from MLW	cubic metres	0	\$4.80	\$0	New closure keeps levee intact
Rip	ha	0	\$225	\$0	New closure keeps levee intact
Direct seed	ha	0	\$900	\$0	New closure keeps levee intact
Total Southern Mine Levee Wall:				\$0	
Northern Mine Levee Wall					
Flatten northern mine levee wall from 12 metres high to 6 metres high, shape to become more natural. Complete with dozers.					
Clay in this section	cubic metres	0	\$3.00	\$0	New closure keeps levee intact
Rock in this section	cubic metres	0	\$3.00	\$0	New closure keeps levee intact
Total Northern Mine Levee Wall:				\$0	
Bing Bong					
Site runoff pond	ha	0.8	\$103,550	\$82,840	
rip area	ha	9.7	\$225	\$2,183	with grader
direct seed	ha	9.7	\$900	\$8,730	
Remove camp	each	15.0	\$1,000	\$15,000	demountables

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Table 9-1 Financial Provisioning for Closure (cont)

Item	Unit	Quantity	Cost per unit of measure (\$)	Item Total (\$)	Comments
Remove storage shed and infrastructure	each	1	\$150,000	\$150,000	
Dredge spoil					
rip area	ha	90	\$225	\$20,250	with grader
direct seed	ha	90	\$900	\$81,000	
Weed management	ha	90	\$500	\$45,000	
Total Bing Bong:				\$405,003	
Open Pit and OEFs - 2036 to 2039					
OEF - Topsoil stripping	lump sum		Varies	\$584,250	Clay borrow pits at NOEF for capping
OEF - Earthworks	lump sum		Varies	\$69,916,309	2 ha already completed/wall completed all around
OEF - PAF Dam works	lump sum		Varies	\$0	Rehab covered in earthworks
OEF - Specialised works	lump sum		Varies	\$1,420,964	based on size at the end of 2008 (URS)
OEF - Indirects	lump sum		Varies	\$41,575,107	
Pit - scaling of batters	m	5,800	\$2.85	\$16,530	
Pit - Ripping	Ha	11.6	\$378.59	\$4,392	
Pit - topsoil alluvial batters and benches	m3	28,437	\$4.33	\$123,010	
Ramp Closure	m	160	\$5.00	\$800	
Revegetation of top batters and benches	Ha	28	\$1,200	\$34,125	

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Table 9-1 Financial Provisioning for Closure (cont)

Item	Unit	Quantity	Cost per unit of measure (\$)	Item Total (\$)	Comments
Total Pit and OEFs				\$113,675,487	
Miscellaneous					
Ponds	ha	0	\$111,000	\$0	based on draining/removal of contaminants to TSF and topsoil - covered in OEF costs
ROM Pad	cubic metres	0	\$136,000	\$0	removed to pit - covered in OEF costs
Closure of Underground	each	2	\$2,500	\$5,000	mesh barriers
Fresh water dams and turkey nests					these will remain for the pastoralist
Signage for remainder of site	each	20	\$50	\$1,000	
Total Miscellaneous:				\$6,000	
Other					
Closure monitoring and reporting	Lot	1	\$1,615,380	\$1,615,380	
Total Other:				\$1,615,380	
Total				\$141,875,144	
20% contingency				\$28,375,029	
Overall total				\$170,250,173	

10 Closure Implementation

10.1 Research, investigation and trials

Progressive rehabilitation will allow small scale (relative to final closure) trials of rehabilitation and revegetation strategies. The Proponent intends to maintain a flexible rehabilitation strategy that will be reviewed and amended as the results of progressive rehabilitation become available or new rehabilitation techniques emerge.

10.1.1 Kinetic Leach testing

Kinetic leach tests are ongoing both on-site and in laboratory conditions. Samples are taken from both the tailings and overburden – the two largest waste streams on-site. The final events of the current program were completed in October 2011, and a report will be produced incorporating and comparing the 2010-2011 and the 2009-2010 wet season samples. It is intended that Kinetic leach tests will continue and will form a part of the annual monitoring program for the Project. The results of this testing will inform MRM's OEF and TSF capping, rehabilitation and water management programmes.

10.1.2 Further Geochemical Investigation

A new drilling program commenced in September 2011 to conduct a detailed geochemical analysis of the Project overburden material to increase confidence in predicting the occurrence of PAF during mining and to improve the efficiency with which the material can be separated from NAF/AC material.

10.2 Rehabilitation Strategy

The Proponent maintains a strategy to ensure that rehabilitation will be sustainable and, where operationally practicable, undertakes ongoing rehabilitation and contaminated site remediation. Estimates of costs to remediate contaminated land and to close the operation have been made. Financial provision for rehabilitation and closure is reviewed annually.

To achieve the above objectives for rehabilitation and ultimate closure, MRM has established the following measures:

- an unplanned and Life of Mine Completion Plan (LOM)
- rehabilitation requirements, plans and timelines, which are annually reviewed
- security and decommissioning life of mine costs which are calculated annually
- a rehabilitation accrual, which is annually reviewed
- post-mining land use objectives, which are reviewed annually.

10.3 Rehabilitation Objectives

The main objectives of the MRM rehabilitation programme are to:

- plan the placement of materials in a strategic manner to facilitate progressive rehabilitation and to minimise material handling costs
- conduct studies that will enable effective techniques to be implemented when carrying out rehabilitation
- carry out construction and rehabilitation works that will, at the completion of the mining project, result in stable stream channels having minimal impact on the surrounding environment

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- carry out rehabilitation works that will, at the completion of the mining project, result in a stable, self-sustaining (or with agreed post-mining maintenance) vegetated landscape having minimal impact on the surrounding environment
- create a landform with a land use capability similar to that prior to disturbance unless other appropriate land uses are pre-determined and agreed.

Clean disturbed areas will be returned to native bushland, which will be stable enough to tolerate intermittent grazing, as was the pre-mining land use.

The rehabilitation strategy will remain flexible and will be amended as new rehabilitation techniques emerge and as environmental investigations progress.

10.4 Rehabilitation Design Criteria

Rehabilitation design will be based on the following criteria:

- all areas significantly disturbed by mining activities will be rehabilitated to a stable landform with a self-sustaining vegetation cover
- outer OEF slopes will be designed at no greater than a 1(V):4(H) overall slope
- the OEF will have a 600 mm layer of growth media (mix of NAF rock, alluvials and soils) to provide a layer for storing water and nourishing vegetation
- the surface of the OEFs will be shaped with a gentle slope of 1(V):100(H) and will be directed towards drop chutes to transport water down to ground level
- the walls of the open pit will remain benched as long as the rock is geotechnically stable under these conditions. The pit will drain internally into the final void
- the open pit walls, if geotechnically stable, will remain at the final batter angles and made safe to ensure humans and animals do not harm themselves
- until further geotechnical and geochemical assessments are completed, PAF cells must have at least 20 m of NAF surrounding them at the end of construction. No PAF material shall be placed below the 1-in-100 year flood level in any ex-pit OEFs
- perimeter stormwater diversions will be designed and constructed to meet appropriate standards
- appropriate fencing will be utilised to restrict access where required.

10.5 Unexpected closure or temporary closure

Mining Management Plans (MMP) will continue to be submitted annually. The MMP will contain an up-to-date summary of the disturbed areas and the progressive rehabilitation status as well as the planned disturbance and rehabilitation planned for the following 12 month period. Closure costs will be calculated yearly and be included in the MMP, providing a detailed allocation of the decommissioning and rehabilitation costs, including a contingency. Closure costs provide the basis for the security bond.

In the event of unexpected closure, all contaminated material will be relocated from hardstand areas to either the TSF or the PAF cell of the OEF as appropriate. All infrastructure will also be removed. The TSF and OEFs will be rehabilitated in accordance with their respective management plans.

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10.6 Rehabilitation and Decommissioning Guidelines

The proposed rehabilitation and decommissioning strategy for the Project will meet be guided by:

- Guidelines for Preparing Mine Closure Plans (Western Australia Department of Mines and Petroleum 2011)
- Leading Practice Sustainable Development Program for the Mining Industry – Mine Closure and Completion (Department of Resources, Energy and Tourism 2006)
- Leading Practice Sustainable Development Program for the Mining Industry - Mine Rehabilitation (Department of Resources, Energy and Tourism, 2006)
- Leading Practice Sustainable Development Program for the Mining Industry - Landform Design for Rehabilitation (Environment Australia, 1998)
- Northern Territory Department of Resources - Mine Close-out Objectives, Life of Mine Planning Objectives.

10.7 Decommissioning

Decommissioning will occur at the cessation of mining operations but prior to formal mine closure and will involve the removal of mine infrastructure and services, and the remediation of remaining disturbed areas.

The primary post-mining objective will be to stabilise disturbed land and make all areas safe. After this is achieved, secondary values, including the promotion of ecological values and the enhancement of local economically sustainable development industries such as native bushland, grazing and tourism will be promoted. Consultation with government and local stakeholders is expected to continue over the next five years for the development of post-mining land-use strategies for the Project.

Decommissioning and rehabilitation of the Project will be undertaken in a manner that prevents environmental harm and risk to human health. Any dangerous goods or chemicals will be removed from site and any contaminated areas will be managed and rehabilitated to ensure that there is no danger posed to the wider public.

Controls to protect the community include warning signs, fencing-off potentially hazardous areas and safety rills to prevent travel over embankments. The risk to community safety will be low, given that the area will be located on privately owned property and in an isolated area.

A primary risk for the decommissioned mine site is unstable areas having causing off-site impacts. It is expected that the TSF, OEF, hardstand areas and open-cut pit may fall into this category and thus their rehabilitation will focus on minimising potential instability and not vegetation regrowth.

Different strategies will be used to rehabilitate contaminated and clean areas that both meeting the post-mining criteria and leaving a sustainable post-mining land use that does not require continual post-mining management. It is envisaged that weed control, fire control, monitoring, pump maintenance and fence maintenance will require post-mining attention.

Closure and Decommissioning objectives are detailed in Section 6.2

10.7.1 McArthur River and Barney Creek Channels

The McArthur River Channel is approximately 5.5 km long and is the main channel directing the natural McArthur River away from the ore body situated in the vicinity of the open pit.

Barney Creek Channel is approximately 2.5 km long and was re channelled to enable the construction of the Mine Levee wall. The haul road crosses the Barney Creek Channel via two bridges which are used for access to the OEF.

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Riparian and riverine species will be used to revegetate the channels. These will either be planted as tubestock or direct seeded (or both). Other locally occurring species may be used after further site investigation. (See Section 4.5.6 for species list)

Tube stock propagation and planting will focus on large, long lived tree species which are unsuitable for direct seeding. This includes *Barringtonia actangulata* a key species for the McArthur Channel area and *Nauclea*. The two grass species will be similarly propagated as tube stock. Tree seeding will therefore focus on *Melaleucas*, eucalypts and shorter lived *Acacia* species.

Species will be planted on the slopes in similar locations to where they occur naturally.

Vegetation growth will be dynamic for at least 10 years as natural recruitment occurs after flood flow and as direct-seeded stands mature. Proposed monitoring will highlight the evolution of the new ecosystem over time.

In addition to slope revegetation it is also proposed that, where practical, vegetation be established along a 20 m wide strip above the batter slopes (as the extension of batter slope vegetation) assisting the transition of slope vegetation into surrounding undisturbed vegetation.

To facilitate faster growth rates and better survival rates over the dry season MRM employ a water sled with irrigation sprinklers to ensure a more successful rate of germination for direct seeding. Water will be obtained from the channel itself and thus will be recycled.

Weeds will be controlled with non soil-residual herbicides. The need for a fertilizer application to maintain growth will be assessed as vegetation develops.

The McArthur River Channel and Barney Creek Channel works are protected by rock lining. Rock chutes have been designed in several areas along both channels limiting the amount of clearing required.

All revegetated areas will be protected with stock proof fencing (with regular access gates for maintenance) until trees mature and are safe from damage.

Monitoring will measure the effectiveness of revegetation works in the channels as well as the extent of natural regeneration and the characteristics of the evolving ecosystem.

10.7.2 Open Pit

The final open pit foot print will be 210 hectares. The pit will be stabilised, with rock armour placed over the alluvial materials where water will flow back into the open pit. The pit wall will be fenced off to restrict access for humans and livestock and allowed to flood. The open pit will be left to fill naturally from groundwater inflows, direct rainfall, surface water flow off the area inside the mine levee wall together with TSF seepage pumped to the open pit. No surface water inflows to the open pit from the McArthur River will occur.

Evaporation of the open pit water will prevent the open pit from filling to the regional groundwater level (approximately 20 m below the pit rim). URS (2012) modelled the predicted infill of the open pit void using an evaporation co-efficient of 70%. Results indicate that it will take 300-400 years for water levels to stabilise where the inflow rates of groundwater seepage and direct rainfall will be equal to that of evaporation. An advantage of this scenario is that the open pit will never overflow as a result of seepage inflow and direct rainfall alone.

Flood modelling of the McArthur River Channel and the open pit suggests the flood protection bunding currently in place around the open-cut pit will not be breached in a 1-in-500 year flood event. As this is a very significant flood event and no flooding is expected to enter the open pit, this closure option is expected to present the least risk.

The open pit walls will contain exposed PAF material which could influence the pit water quality. A scheduled drilling program will improve the geochemistry knowledge of PAF predictions in the open pit

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walls to determine the influence on pit water. Pit water quality modelling was undertaken as part of the open pit project Draft EIS in 2005. The closure scenario of having the open pit fill naturally from groundwater inflows and direct rainfall was modelled.

A disadvantage is that water quality in the open pit will continuously decline as a result of concentration by evaporation, with sulphate concentrations (and concentrations of other ions and metals) gradually increasing with time. The 2005 modelling showed that sulphate concentrations would increase to approximately 2,800 mg/L after 33 years, and be in the order of 4,900 mg/L after 99 years. Open pit water quality is expected to be similar for the Project. As mentioned previously, further geochemical investigations will verify the final pit wall geochemistry, which is expected to be largely acid neutralising because of abundance of a large dolomite rock unit.

The open pit will be stabilised, with rock armour placed over the alluvial materials where water will flow back into the pit. The pit will also be fenced off to restrict access for humans and livestock.

10.7.3 Roads and Access Tracks

There are currently 5.2 kilometres of sealed roads and approximately 25 kilometres of unsealed access roads on the mine site and at Bing Bong. It is assumed that most of these roads will be rehabilitated to blend in with the surrounding landscape, with the balance remaining for post-mining requirements, such as for tourism, or pastoralist or military use. Roads around the TSF and mine site hardstand areas will be compacted to provide a permanent firebreak. Bitumen roads around the accommodation village and main road will be ripped and covered with topsoil. Bitumen removed will be placed at the TSF.

10.7.4 Overburden Emplacement Facility

The overall footprint of all the OEFs will be 860 hectares. The North OEF will contain both potentially acid forming (PAF) material and non-acid forming (NAF) material, with the PAF material encapsulated with benign material in a dedicated cell in the core of the North OEF. In order to provide a rehabilitated land form that achieves the final land use criteria the OEF will require capping to establish vegetation.

Where the OEF comprises only NAF materials, the cap is required to establish a vegetative cover. However the cap above the PAF cell is required to limit infiltration of water to the potentially acidic material. This cap will behave as a store and release cover, which is also referred to as an evapotranspiration (ET) cover.

An ET cover is designed to temporarily store infiltrated rainfall, which is subsequently removed from the cover soils by evaporation directly from the soil surface and by plant transpiration where soil moisture is drawn into the plant roots and conveyed up into the leaves of the plants.

Conceptual rehabilitation options/strategies have been developed for the OEFs and MRM will prepare detailed rehabilitation plans throughout the mine life. The plan will be designed to ensure that the rehabilitated OEF will be a stable self-sustaining landform with no downstream contamination from sediment or metals.

Current best practice across Australia and internationally (particularly in tropical climates) is to develop detailed rehabilitation plans with sound data and knowledge of performance characteristics of the relevant materials determined from site-specific rehabilitation trials. Detailed rehabilitation design for the OEF will be developed when conceptual strategies and supporting studies have been confirmed with pilot rehabilitation trials.

A detailed rehabilitation strategy will be developed throughout the mine life and during the construction of the OEFs, including a series of trials of various landform profiles, outer batter material types, revegetation strategies, erosion minimisation and surface water management systems.

Refer to the Draft EIS Appendix E2- Overburden Emplacement Facility Management Plan for more details on the design and management of the OEFs.

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10.7.5 Tailings Storage Facility

The final TSF area will be 460 hectares. At the completion of mining, the TSF will be decommissioned.

The typical objectives to be adopted for rehabilitation of the TSF would be to create a landform that is:

- stable and sustainable
- compatible with the surrounding landform
- of minimum long term environmental impact (i.e. non-polluting).

The main rehabilitation and decommissioning objectives of the TSF are:

- profiling of the final tailings surface to prevent ponding and facilitate surface runoff
- construction of a low-permeability cap across the TSF to limit infiltration and prevent oxidation of PAF material
- revegetating the surface of the cover with native grasses and shallow rooted shrub species, thus stabilising the cover surface and assisting in the removal of water stored within the cover
- collect clean rainwater that falls within the TSF and discharge it to the environment without erosion of the TSF
- MRM will manage and mitigate any deleterious impacts of groundwater seepage
- further monitor groundwater levels for five years after the seepage recovery systems have been decommissioned to confirm the mitigation of seepage from the TSF.

Based on the TSF Rehabilitation objectives, a closure concept for the TSF, including Cell 4, is as follows:

Landform Development

The final TSF landform will comprise long-term stable external batters where ponding is substantially avoided. This would therefore necessitate a final campaign of targeted tailings deposition within each cell to infill any significant depression. Final drainage channelling along the internal embankment alignment may then be formed, as required.

Tailings Surface Capping

At this stage, the planned surface cover of the TSF will be 2,100 mm thick. The three layers of the TSF will consist of:

- 500 mm of low-permeability clay to limit infiltration and capillary rise of salts into the cover layer
- 1,500 mm of NAF rocks
- 100 mm of topsoil (minimum thickness).

Revegetation

The TSF will be revegetated with native grasses and shallow-rooted shrubs that will stabilise the surface against erosion and reduce water stored within the cover. Water management systems will be reassessed following the establishment of vegetation. The TSF will remain fenced post mining to prevent ingress of cattle should the surrounding land be returned to light grazing use. Permanent fire breaks will be constructed around the perimeter.

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The pipeline corridor will be stripped of potentially contaminated material which will be encapsulated in either the PAF cells at the North OEF, in one of two 3 m deep bunded pits at the southern end of the Water Management Dam (Cell 3) or in the open pit. The corridor will be seeded to facilitate revegetation.

Seepage Recovery Bores

Seepage recovery bores will continue to function post-closure to mitigate the environmental impacts of seepage. It is currently estimated that seepage reclamation will occur for at least 30 years after decommissioning before the potentiometric head in the TSF is reduced sufficiently that seepage will not be expressed at the surface.

After mining activities have ceased, seepage water collected from the recovery bores will be pumped to the open pit void. After site closure the pit void will be allowed to fill with groundwater inflow and immediate surface water drainage. Discharging the TSF seepage water into the pit will increase the depth of water in the pit over a year by less than 10 cm which will be insignificant in an open pit that will be over 400 m deep.

Refer to the Draft EIS Appendix E1- Tailings Storage Facility Management Plan for more details on the design and management of the OEFs.

10.7.6 Chemical Contaminated Sites

Contaminated soil and aggregate will be taken to the designated area of the TSF. A 500 mm layer of ungraded material will be placed over the areas and topsoiled, ripped and direct seeded with applicable species.

10.7.7 Hard Stand Areas

The remaining hardstand areas, not on waste rock and in contaminated areas, including borrow pits and stores, electrical and metallurgical lay down areas will be topsoiled, ripped and seeded. Some minor profiling may be required to improve stability and drainage.

10.7.8 Infrastructure

Infrastructure on site will be sold and removed with the exception of roads, the airstrip and the bridges. It is anticipated that these items will remain and will be utilised for future land assets by the pastoralist.

Infrastructure such as the mill and crushing facilities will be dismantled and removed off site. All hydrocarbon storage tanks will be removed off site.

Where permanent footings exist they will be removed and the material placed either in the open pit or at the OEF site.

10.7.9 Bing Bong concentrate storage and ship loading facility

It is anticipated that the Bing Bong concentrate storage and ship loading facility (Bing Bong) will be of future value for the Northern Territory Government, tourism, and fishing, or as a military or commercial cattle port. Despite this for the purposes of closure cost calculations, it has been assumed that the area will be decommissioned to the same level as the mine site.

All above-ground infrastructure will be removed and disposed of, or sold, and the topography will be re-contoured to drain all possible areas through the Bing Bong Runoff Pond. As rehabilitation would destroy the post-mining values of the port and create additional unnecessary disturbance, the dredged channel will be left as is. Any significant residual contamination will be dredged and disposed of appropriately.

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Roads will remain only at the request of the post-mining landowner. However, for the purposes of financial calculations, the access road will not be decommissioned to allow the local community access for fishing. Sealed and unsealed roads will be rehabilitated as per the mine site rehabilitation plan.

Contaminated material will be cleaned out of all the runoff ponds, which will remain as the site catchment and discharge point. The pond will collect contaminants and sediments from erosion. It is not intended that these pond be used for post-mining pastoralist values, as cattle are not currently grazed in the area. If required, the ponds will be cleaned out for the first three years after the area is rehabilitated.

Contaminated soil will be disposed of at the MRM mine site and the areas ripped and seeded with native species. Other surface areas that are disturbed and not used for roads or hardstand will only require ripping, fertilising and revegetation.

Over the last several years the Bing Bong dredge spoil had been rehabilitated to an extent, although due to further dredging, a large area of the spoil was re-covered with marine sediment. Rehabilitation of this area now will initially focus on areas close to the Mule Creek Boat ramp although the end strategy will be to increase water infiltration through the spoil for leaching purposes and the subsequent establishment of native vegetation.

10.7.10 Water Storage Ponds

Contaminated material in storage ponds such as the APP, CRP, Pete's Pond and Van Duncan's Dam will be removed, placed in the TSF or final void and the ponds back filled or pushed over and rehabilitated. Other dams such as Emu and Donkey dam will be retained for pastoral use. The Turkeys Nest Dam constructed for the storage of bore water required for the civil works will remain as a livestock dam. The removal of pipe work will be negotiated with the landholder. All of the dams at the OEF will remain in place.

10.7.11 Accommodation Village

Transportable buildings and equipment will be sold and the area rehabilitated. Any remaining structures will be dismantled and buried. Once all infrastructure is removed the area will be ripped and allowed to rehabilitate naturally once a suitable seed mix has been applied.

10.7.12 Airport

The airstrip will not be rehabilitated as it is assumed that, as it is currently the third largest runway in the Northern Territory, there will be post-mine interest in this facility. Currently discussions have been established with the pastoralist from McArthur River Station and at this point in time it has been agreed to leave the runway.

10.7.13 Fences and Groundwater Bores

Fences and groundwater bores not required after closure will be removed. Fences required by McArthur River Station, to exclude stock from rehabilitated areas, will be retained.

10.7.14 Exploration Holes, Pads and Sumps

Exploration areas will be rehabilitated in accordance with Northern Territory legislation.

Exploration holes on the outer leases will be plugged with concrete plugs once their collars have been removed. Aggregate and topsoil will be placed back over the plug to ensure that no access can be gained or erosion does not occur at the surface.

Exploration holes near the pit will be temporarily capped with the use of concrete plugs and not buried as they will be consumed by the expansion of the project.

Sumps will be filled in and will be no bigger than 3x4 metres with a maximum depth of 2 metres. Pads will be ripped in order to promote growth and allowed to rehabilitate naturally.

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10.7.15 Mine Levee Wall

The mine levee wall was constructed with a clay core and an external 1 in 4 batter slope constructed with NAF material. Rehabilitation of the mine levee wall will be by direct seeding.

10.7.16 Underground and Associated Infrastructure including decline and vent raises

The former underground workings that will be mined through as part of the Project will be transformed into the open pit. Further underground workings will remain beyond the final pit limits. No remedial actions will be required for these as they will be flooded as the open pit is inundated.

10.7.17 Contaminated Sites

Contaminated soil and aggregate will be taken to the TSF and the area will be ripped and direct seeded with applicable species.

10.7.18 Refuse Facility

Uncontaminated general wastes are currently disposed of at the site refuse facility which is located above the 1 in 100 year flood level. The decommissioning of the refuse facility will be in accordance to the *Guidelines for the Siting, Design, and Management of Solid Waste Disposal Sites Northern Territory (2003)*.

10.7.19 Water Management Dam

The water management dam adjacent to Cell 3 will be decommissioned unless required by the landholder

10.7.20 Power Station and Gas Pipeline Corridor

The power stations is currently owned by EDL. NT Gas owns the gas pipeline and corridor. The owners of both these pieces of infrastructure will be required to remove infrastructure and rehabilitate to approved closure criteria and post mining land use.

10.7.21 Borefields

The borefields will remain in place for post-mining pastoral land use.

10.7.22 Closure Monitoring and Maintenance

A suitably qualified team of personnel will be employed to undertake decommissioning activities. These would include management, consultants, specialist contracts (such as demolition and rehabilitation companies) as well as machine operators for bulk earthworks required on the North OEF. Any management requirements beyond five years (e.g. TSF) would be staffed as necessary.

10.7.23 Consultation with stakeholders

MRM will consult regularly with stakeholders throughout the post closure phase and provide them with an annual monitoring report.

10.7.24 Monitoring Meeting Closure Objectives and Caretaking

Following mine closure, an eight-year monitoring program (water, dust, rehabilitation and progress monitoring and reporting on meeting completion criteria.) will be conducted. The need for any ongoing monitoring will be reassessed at the end of the eight years.

Rehabilitation will be monitored during operations and after final rehabilitation has been completed to validate rehabilitation performance and identify any additional work required to meet success criteria. Monitoring will include an assessment of:

- plant establishment, growth, diversity and cover
- evidence and type of erosion.

Appendix E4 – Mine Closure Plan

Rehabilitation performance criteria will be submitted to the Northern Territory Government for review and comment. The criteria may change as research and development findings and monitoring trends evolve.

Monitoring parameters and locations will be the similar to the operational phase. The location, frequency and parameters of monitoring will be confirmed with the Commonwealth and Northern Territory Government during decommissioning and closure planning. The proposed monitoring criteria for closure presented below.

a) Surface water monitoring

Location: Monitoring is planned for locations representative of the surface water regime, upstream and downstream of the operation and will include:

- Surprise Creek
- Barney Creek and the Barney Creek Channel
- McArthur River and McArthur River Channel
- Glyde River
- Djirrinmini Waterhole.

Frequency and monitoring parameters:

Year 1 and 2 post closure:

- Monthly monitoring of:
 - pH, Temp, DO, EC, ORP, and turbidity (field meter)
 - TDS, TSS
 - Total and filtered metals (As, Cd, Cu, Pb, Zn)
 - Total and filtered major cations (Ca, K, Mg, Na)
 - Soluble Cl and SO₄²⁻
 - Hardness
 - N, P
- Bi-annual monitoring of:
 - Multi-element ICPMS scan (Inc. Hg)
 - chlorophyll 'a'.

Year 3 until closure objectives have been met

- Quarterly monitoring of:
 - pH, Temp, DO, EC, ORP, and turbidity (field meter)
 - TDS, TSS
 - Total and filtered metals (As, Cd, Cu, Pb, Zn)
 - Total and filtered major cations (Ca, K, Mg, Na)
 - Soluble Cl and SO₄²⁻
 - Hardness

Appendix E4 – Mine Closure Plan

- N, P
- Annual monitoring of:
 - Multi-element ICPMS scan (Inc. Hg)
 - chlorophyll 'a'.

Monitoring locations will be reviewed and defined during the decommissioning and closure planning phases of the mine.

b) Seawater monitoring

Seawater monitoring will be conducted at the following locations:

- midway between West Island and channel
- within the shipping channel
- within the swing basin.

Monitoring locations will be reviewed and defined during the decommissioning and closure planning phases of the mine.

Frequency and monitoring parameters:

Year 1 and 2 post closure

- Monthly monitoring of:
 - pH, EC, Turbidity (field meter)
 - TDS/TSS
 - Total and filtered metals (As, Cd, Cu, Fe, Pb, Zn)
- Bi-Annual monitoring of:
 - Multi-element ICP-MS scan (Inc. Hg).

Year 3: until closure objectives have been met

- Quarterly monitoring of:
 - pH, EC, Turbidity (field meter)
 - TDS/TSS
 - Total and filtered metals (As, Cd, Cu, Fe, Pb, Zn)
- Annual monitoring of:
 - Multi-element ICPMS scan (Inc. Hg)

c) Groundwater monitoring

Location: Monitoring will be conducted at locations representative of the ground water regime associated with mining operation. Groundwater monitoring is planned for the following locations:

- mine Site
- tailings storage facility and
- water management dam.

Appendix E4 – Mine Closure Plan

It is noted that the monitoring will be conducted at sites relative to the above, since these areas will be decommissioned / rehabilitated during closure.

Frequency and monitoring parameters:

Year 1 and 2 post closure

- Monthly monitoring of:
 - Standing water level
 - pH, Temp, EC and ORP (field meter)
 - TDS/TSS
 - filtered metals (As, Cd, Cu, Pb, Zn)
 - filtered major cations (Ca, Mg, Na, K)
 - Soluble Cl⁻ and SO₄²⁻
 - Hardness
- Bi-annual monitoring of:
 - Total metals (As, Cd, Cu, Pb, Zn)
 - Total major cations (Ca, Mg, Na, K)
 - Multi-element ICP-MS scan (Inc. Hg)

Year 3 until closure objectives have been met.

- Quarterly monitoring of:
 - Standing water level
 - pH, Temp, EC and ORP (field meter)
 - TDS/TSS
 - filtered metals (As, Cd, Cu, Pb, Zn)
 - filtered major cations (Ca, Mg, Na, K)
 - Soluble Cl⁻ and SO₄²⁻
 - Hardness
- Annual monitoring of:
 - Total metals (As, Cd, Cu, Pb, Zn)
 - Total major cations (Ca, Mg, Na, K)
 - Multi-element ICP-MS scan (Inc. Hg).

d) Fluvial sediment monitoring

Location: Monitoring is planned to be conducted at:

- Sites corresponding to natural surface water sites.

Frequency and monitoring parameters:

Year 1 and 2 post closure

Appendix E4 – Mine Closure Plan

- Bi-annual monitoring of:
 - Paste pH, EC
 - Particle size distribution
 - Major cations (Ca, Mg, Na, K)
 - As, Cd, Cu, Pb, Zn (total and 63µm fraction for one year then review).

Year 3: until closure objectives have been met.

- Annual monitoring of:
 - Paste pH, EC
 - Particle size distribution
 - Major cations (Ca, Mg, Na, K)
 - As, Cd, Cu, Pb, Zn (total and 63µm fraction for one year then review).

Rehabilitation will be monitored during operations and after final rehabilitation has been completed, to validate rehabilitation performance and identify any additional work required to meet success criteria.

The rehabilitation success criteria developed for the Project may change as research and development findings and monitoring trends of past rehabilitation areas evolve.

10.7.25 Final Site Relinquishment and Handover of Infrastructure

Closure criteria are aimed at reaching long-term stability of the site and the minimisation of off-site impacts. Reports on progress towards mine closure criteria will be issued to stakeholders annually and a summary report in year eight. The Proponent will then seek to relinquish the Mineral Leases after this period.

McArthur River Mining

Licence, Legislation and Codes of Practice Register

- Licence Agreements
- Legislation Register
- Codes of Practice Register

Appendix 1 – Licence Agreements

License Agreements

MRM LICENCE AGREEMENTS

MRM LICENCE AGREEMENTS					
Document Type	Document Name	Related Legislation	Reporting Requirements	Report Frequency	Date of Approval
Lease Approval	MLN1121	<i>Mining Act</i>	As per grant and renewal conditions	October - Annually	5/01/1993
Lease Approval	MLN1122	<i>Mining Act</i>	As per grant and renewal conditions	October - Annually	5/01/1993
Lease Approval	MLN1123	<i>Mining Act</i>	As per grant and renewal conditions	October - Annually	5/01/1993
Lease Approval	MLN1124	<i>Mining Act</i>	As per grant and renewal conditions	October - Annually	5/01/1993
Lease Approval	MLN1125	<i>Mining Act</i>	As per grant and renewal conditions	October - Annually	5/01/1993
Lease Approval	MLN1126	<i>Mining Act</i>	As per grant and renewal conditions	October - Annually	5/01/1993
Crown Lease	Crown Lease Term 1086		N/A	N/A	21/09/1992

Appendix 1 – Licence Agreements

MRM LICENCE AGREEMENTS					
Document Type	Document Name	Related Legislation	Reporting Requirements	Report Frequency	Date of Approval
Crown Lease	Crown Lease Perpetual 430		N/A	N/A	11/08/1986
Crown Lease	Crown Lease Perpetual 1476		N/A	N/A	27/03/1995
Crown Lease	Crown Lease Perpetual 429		N/A	N/A	11/08/1986
Dangerous Goods License 33155	License to process/ store dangerous goods	<i>NT Dangerous Goods Act</i>	As per grant and review conditions	Annually	1/10/2010
Dangerous Goods License 33158	License to process/ store dangerous goods	<i>NT Dangerous Goods Act</i>	As per grant and review conditions	Annually	3/10/2010
Dangerous Goods License 33159	License to process/ store dangerous goods	<i>NT Dangerous Goods Act</i>	As per grant and review conditions	Annually	3/10/2010
Dangerous Goods License 33614	License to process/ store dangerous goods	<i>NT Dangerous Goods Act</i>	As per grant and review conditions	Annually	1/04/2011
Exploration Lease	AN366 - Emu Fault	<i>Mining Act</i>	Submission of report on activity	As required	5/06/1994
Non Pastoral Lease	PPL1051 - McArthur River Station		N/A	N/A	23/12/2005

Appendix 1 – Licence Agreements

MRM LICENCE AGREEMENTS					
Document Type	Document Name	Related Legislation	Reporting Requirements	Report Frequency	Date of Approval
Permit	Permit Letter from M Scrymgour - Permission to Disturb Archeological Site MRM1 and MRM2	<i>Heritage Conservation Act</i>	Report submitted to obtain permit	Completed	1/07/2005
Permit 40083	Permit to Take Wildlife	<i>Territory Wildlife Regulations</i>	N/A	November - Annually	1/02/2011
Registered Plant Licenses	Certificate of registrators	<i>Workplace Health and Safety Regulations</i>	As per grant and review conditions	Ongoing	Varies for different type of equipment
Authorisation to possess poisons in medical kit K452MK	Authorisation to possess poisons in medical kit	<i>Poisons and Dangerous Goods Act</i>	As per grant and review conditions	Every 2 years	9/06/2010
Aboriginal Areas Protection Authority Certificate	AAPA Cert No C92/94	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i>	N/A	N/A	29/06/1992
Aboriginal Areas Protection Authority Certificate	AAPA Cert No C92/91	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1985</i>	N/A	N/A	31/12/1992

Appendix 1 – Licence Agreements

MRM LICENCE AGREEMENTS					
Document Type	Document Name	Related Legislation	Reporting Requirements	Report Frequency	Date of Approval
Aboriginal Areas Protection Authority Certificate	AAPA Cert No C92/92	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1986</i>	N/A	N/A	29/06/1992
Aboriginal Areas Protection Authority Certificate	AAPA Cert No C93/46	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1987</i>	N/A	N/A	29/06/1993
Aboriginal Areas Protection Authority Certificate	AAPA Cert No C92/91	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1988</i>	N/A	N/A	29/06/1992
Aboriginal Areas Protection Authority Certificate	AAPA Cert No C93/47	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1989</i>	N/A	N/A	29/04/1993
Aboriginal Areas Protection Authority Certificate	AAPA Cert No C93/123	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1990</i>	N/A	N/A	2/09/1993
Aboriginal Areas Protection Authority Certificate	AAPA Cert No C93/95	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1991</i>	N/A	N/A	10/06/1993

Appendix 1 – Licence Agreements

MRM LICENCE AGREEMENTS					
Document Type	Document Name	Related Legislation	Reporting Requirements	Report Frequency	Date of Approval
Authorisation 0059-02	Authorisation 0059-02	<i>Mining Management Act Regulation 3</i>	Worksafe monthly safety report (employment + injury summary)	Monthly	N/A
Authorisation 0059-03	Authorisation 0059-02	<i>Mining Management Act Regulation 4</i>	Monthly production reporting figures	Monthly	N/A
Letter	All correspondence for MMP Amendment approvals	<i>Mining Management Act</i>	As per GEN-HSE-STD-6040-0004 and GEN-HSE-STD-6040-0017	As required	As required
SD Mining Management Plan	MRM SD MMP	<i>Mining Management Act</i>	As per GEN-HSE-STD-6040-0004 and GEN-HSE-STD-6040-0018	October - Annually	
SD Water Management Plan	MRM SD WMP	<i>Mining Management Act</i>		3 months prior to MMP	
Risk Management Plan	NT Work Safe	<i>Workplace Health and Safety Act</i>		Every 5 years	
Licence	Liquor Licence	<i>Liquor Act/Regulations</i>			
Licence	Radiation Health Section	<i>Radiation Safety Control Act</i>	List of radiation gauges	Annually	12/05/2010

Appendix 1 – Licence Agreements

MRM LICENCE AGREEMENTS					
Document Type	Document Name	Related Legislation	Reporting Requirements	Report Frequency	Date of Approval
Letter of authorisation.	Commonwealth Approval for MRM Open Cut Project	<i>EPBC Act</i>	Submit by July each year reports from Migratory Bird Survey and Fish Survey.	October each year.	30/03/2009
Licence to Discharge WDL - 174-1	Discharge licence	<i>Water Act</i>	Annual reports	Wet season	15/12/2010
License	Firearms Registration License 1032863 - Permit # 8427	<i>Firearms Act</i>	License for Miroku Firearm MK70 Shotgun		20/05/2011
Certificate of Survey 14042	Marine Survey Regulations	<i>Marine Act</i>	Sawfish Vessel		20/04/2011

Appendix 1 – Legislation Register

Legislation Register

HSEC Legislation

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Aboriginal Land Act 1976</i>	Low	NT	
<i>Biological Resources Act 2006</i>	Low	NT	
<i>Bushfires Act</i>	Low	Bushfires NT	
<i>Building Act</i>	Moderate	NT	
<i>Community Welfare Act</i>	Low	NT	
<i>Compensation (Fatal Injuries) Act 1970</i>	Moderate	NT	
<i>Coroners Act</i>	Low	NT	
<i>Dangerous Goods (Road and Rail Transport) Act</i>	High	NT	
<i>Dangerous Goods Act 1998</i>	Low	NT Worksafe	
<i>Dangerous Goods Regulations</i>	Low	NT Worksafe	

Appendix 1 – Legislation Register

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Disasters Act</i>	Low	NT	
<i>Energy Resource Consumption Levy (Waiver of Levy) Act 1998</i>	Low	NT	
<i>Energy Resource Consumption Levy Act 1985</i>	Low	NT	
<i>Electrical Workers and Contractors Act 1978</i>	Moderate	NT Worksafe	
<i>Environmental Protection Authority Act 2007</i>	High	NT	
<i>Environmental Assessment Act</i>	Moderate	NRETAS	
<i>Environmental assessment Administrative Procedures</i>	Moderate	NRETAS	
<i>Environmental Offences and Penalties Act 1996</i>	Moderate	NRETAS	
<i>Fire and Emergency Act</i>	Low	NT Fire & Rescue Service	
<i>Fire and Emergency Regulations</i>	Low	NT Fire & Rescue Service	
<i>Firearms Act</i>	Low	NT Police	

Appendix 1 – Legislation Register

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Gas Pipeline Access Act 1998</i>	Low	NT	
<i>Health & Community Services Complaints Act</i>	Low	NT	
<i>Health Practitioners Act</i>	Low	NT	
<i>Heritage Conservation Act</i>	Moderate	NRETAS	
<i>Land Title Act</i>	Low	NT	
<i>Land Acquisition (Pastoral Lease) Act 1982</i>	Low	NT	
<i>Lands, Planning and Mining Tribunal Act</i>	Low	NT	
<i>Liquor Act</i>	Moderate	NT	
<i>Litter Act</i>	Moderate	NT	
<i>Marine Act</i>	Low	NT	
<i>Marine (Safety) Regulations</i>	Low	NT	
<i>Marine Pollution Act 2003</i>	Low	NT	

Appendix 1 – Legislation Register

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>McArthur River Project Agreement Ratification Act</i>	High	NT DOR	
<i>Mining Act</i>	Moderate	NT DOR	
<i>Mining Management Act</i>	High	NT DOR	
<i>Mining Management Regulations</i>	Moderate	NT DOR	
<i>Mining Regulations</i>	Moderate	NT DOR	
<i>Motor Vehicles Act</i>	Low	NT	
<i>Northern Territory Aboriginal Sacred Sites Act</i>	Moderate	NT	
<i>Notifiable Diseases Act</i>	Low	NT	
<i>Ozone Protection Act</i>	Low	NT	
<i>Ozone Protection Regulations 1995</i>	Low	NT	
<i>Personal Injuries (Civil Claims) Act</i>	Low	NT	
<i>Personal Injuries (Liabilities and Damages) Act</i>	Low	NT	

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Plant Diseases Control Act</i>	Low	NT	
<i>Poisonous and Dangerous Drugs Act</i>	Low	NT	
<i>Public Health Act</i>	Low	NT	
<i>Soil Conservation and Land Utilization Act</i>	Low	NT	
<i>Territory Parks and Wildlife Conservation Act</i>	Moderate	NT	
<i>Territory Wildlife Regulations 1997</i>	Low	NT	
<i>Traffic Act</i>	Low	NT	
<i>Waste Management and Pollution Control Act</i>	Low	NRETAS	
<i>Water Act</i>	Moderate	NRETAS	
<i>Weeds Management Act 2001</i>	Low	NRETAS	
<i>Workplace Health and Safety Act 2007</i>	High	NT Worksafe	<i>National Standard for Construction Work</i>
<i>Workplace Health and Safety Act 2007</i>	High	NT Worksafe	<i>National Standard for the Control of Major Hazard Facilities 2002</i>

Appendix 1 – Legislation Register

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Workplace Health and Safety Act 2007</i>	High	NT Worksafe	<i>National Standard for Occupational Noise</i>
<i>Work Health Act (except Part 4 OH&S)</i>	Moderate	NT Worksafe	
<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i>	Moderate	CTH	
<i>Australian Radiation Protection and Nuclear Safety Act 1998</i>	Low	CTH	
<i>Australian Radiation Protection and Nuclear Safety Regulations 1999</i>	Low	CTH	<i>AS/NZS 2211.1:2004 Safety of laser products - Equipment classification, requirements and user's guide (IEC 60825-1:2001, MOD)</i>
			<i>AS/NZS 2211.2:2006 Safety of Laser Products, Part 2: Safety of Optical Fibre Communications Systems (OFCS)</i>
			<i>AS 3786:1993 Smoke alarms</i>
<i>Australian Radiation Protection and Nuclear Safety (Licence Charges) Act 1998</i>	Low	CTH	
<i>Australian Radiation Protection and Nuclear Safety (Licence Charges) Regulations 2000</i>	Low	CTH	<i>AS/NZS 2211.1:2004 Safety of laser products - Equipment classification, requirements and user's guide (IEC 60825-1:2001, MOD)</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			AS/NZS 2211.2:2006 Safety of Laser Products, Part 2: Safety of Optical Fibre Communications Systems (OFCS)
<i>Australian Workplace Safety Standards Act 2005</i>	High	CTH	
<i>Australian Workplace Safety Standards Regulations 2005</i>	High	CTH	
<i>Building and Construction Industry Improvement Act 2005 (For Reference Only)</i>	Low	CTH	
<i>Building and Construction Industry Improvement (Accreditation Scheme) Regulations 2005 (For Reference Only)</i>	Low	CTH	AS 1885.1:1990 Measurement of occupational health and safety performance - Describing and reporting occupational injuries and disease (known as the national standard for workplace injury and disease recording)
			AS/NZS 4801:2001 Occupational health and safety management systems - Specification with guidance for use
<i>Energy Efficiency Opportunities Act 2006</i>	Moderate	CTH	
<i>Energy Efficiency Opportunities Regulations 2006</i>	Moderate	CTH	

Appendix 1 – Legislation Register

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Environmental and Natural Resource Management Guidelines in relation to the establishment of trees for the purposes of carbon sequestration 2008</i>	Moderate	CTH	
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	High	CTH	
<i>Environment Protection and Biodiversity Conservation Regulations 2000</i>	High	CTH	
<i>Explosives Areas Regulations 2003</i>	Moderate	CTH	
<i>Explosives Transport Regulations 2002</i>	Moderate	CTH	
<i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i>	Low	CTH	
<i>Hazardous Waste (Regulation of Exports and Imports) Regulations 1996</i>	Low	CTH	
<i>Industrial Chemicals (Notification and Assessment) Act 1989</i>	Low	CTH	
<i>Industrial Chemicals (Notification and Assessment) Regulations 1990</i>	Low	CTH	
<i>National Environment Protection Measures (Implementation) Act 1998</i>	Low	CTH	

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>National Environment Protection (National Pollutant Inventory) Measure 1998</i>	High	CTH	
<i>National Greenhouse and Energy Reporting Act 2007</i>	High	CTH	
<i>National Greenhouse and Energy Reporting Regulations 2008</i>	High	CTH	
<i>Native Title Act 1993</i>	Moderate	CTH	
<i>Native Title (Tribunal) Regulations 1993</i>	Moderate	CTH	
<i>Occupational Health and Safety Act 1991</i>	High	CTH	
<i>Occupational Health and Safety (Safety Standards) Regulations 1994</i>	High	CTH	<i>AS/NZS 1269.1:2005 Occupational noise management - Measurement and assessment of noise emission and exposure</i>
			<i>AS 1259.1:1990 Acoustics - Sound level meters - Non-integrating (Superseded by: AS IEC 61672.2:2004 (in part) Electroacoustics - Sound level meters - Pattern evaluation tests and AS IEC 61672.1:2004 (in part) Electroacoustics - Sound level meters</i>
			<i>AS IEC 61672.1:2004 Electroacoustics - Sound level meters - Specifications</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			AS/NZS 1270:2002 Acoustics - Hearing protectors
			AS/NZS 1269.3:1998 Occupational noise management - Hearing protector program (superseded by: AS/NZS 1269.3:2005 Occupational noise management - Hearing protector program)
			AS/NZS 3000:2007 Electrical installations (known as the Australian/New Zealand Wiring Rules)
			AS/NZS 1576.1:1995 Scaffolding - General requirements
			AS 1576.2:1991 Scaffolding - Couplers and accessories
			AS/NZS 1576.3:1995 Scaffolding - Prefabricated and tube-and-coupler scaffolding
			AS 1576.4:1991 Scaffolding - Suspended scaffolding
			AS/NZS 1576.5:1995 Scaffolding - Prefabricated splitheads and trestles
			AS/NZS 1576.6:2000 Scaffolding - Metal tube-and-coupler scaffolding - Deemed to comply with AS/NZS 1576.3

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			AS 2030.1:1999 The verification, filling, inspection, testing and maintenance of cylinders for storage and transport of compressed gases - Cylinders for compressed gases other than acetylene (superseded by: AS 2030.5:2009 (in part) Gas cylinders - Filling
			AS 2030.2:1996 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Cylinders for dissolved acetylene
			AS 2030.4:1985 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Welded cylinders - Insulated
			AS 2337.1:2004 Gas cylinder test stations - General requirements, inspection and tests - Gas cylinders
			AS 2337.2:1990 Gas cylinder test stations - LP gas fuel vessels for automotive use (superseded by: AS 2337.2-2004 Gas cylinder test stations - LP Gas fuel vessels for automotive use)
			AS 2337.3:1998 Gas cylinder test stations - Inspection and testing of fibre reinforced plastics (FRP) gas cylinders (superseded by: AS 2337.3:2006 Gas cylinder test stations - Transportable gas cylinders - Periodic inspection and testing of composite gas)

Appendix 1 – Legislation Register

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			AS/NZS 1200:2000 Pressure equipment
			AS/NZS 3788:2001 Pressure equipment - In-service inspection (superseded by: AS/NZS 3788:2006 Pressure equipment - In-service inspection)
			AS 1636.1:1996 Tractors - Roll-over protective structures - Criteria and tests - Conventional tractors
			AS 1636.2:1996 Tractors - Roll-over protective structures - Criteria and tests - Rear-mounted for narrow-track tractors
			AS 1636.3:1996 Tractors - Roll-over protective structures - Criteria and tests - Mid-mounted for narrow-track tractors
			AS 2294.1:1997 Earth-moving machinery - Protective structures - General
			AS 2294.2:1997 Earth-moving machinery - Protective structures - Laboratory tests and performance requirements for roll-over protective structures (withdrawn)
			AS 2294.3:1997 Earth-moving machinery - Protective structures - Laboratory tests and performance requirements for falling-object protective structures (withdrawn)

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			<i>AS 2294.4:1997 Earth-moving machinery - Protective structures - Specifications for deflection-limiting volume (withdrawn)</i>
			<i>AS/NZS 2211.1:2004 Safety of laser products - Equipment classification, requirements and user's guide (IEC 60825-1:2001, MOD)</i>
			<i>AS 2397:1993 Safe use of lasers in the building and construction industry</i>
			<i>AS/NZS 1715:1994—Selection, use and maintenance of respiratory protective devices (Superseded by: AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment)</i>
			<i>AS/NZS 1716:2003 - Respiratory protective devices</i>
			<i>AS/NZS 2865 Set:2005 Safe working in a confined space set</i>
			<i>AS 1940:2004 The storage and handling of flammable and combustible liquids</i>
			<i>AS/NZS 2430.3.1:2004 Classification of hazardous areas - Examples of area classification - General</i>

Appendix 1 – Legislation Register

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			<i>AS/NZS 2243.3:2002 Safety in Laboratories: Microbiological aspects and containment facilities</i>
			<i>AS/NZS 3000:2000 Electrical installations (known as the Australian/New Zealand Wiring Rules) (superseded by AS/NZS 3000:2007 (Paperback / PDF) Electrical installations (known as the Australian/New Zealand Wiring Rules)</i>
			<i>AS 2030.5:2009 Gas cylinders - Filling, inspection and testing of refillable cylinders</i>
			<i>AS 1418.1:2002 Cranes, hoists and winches - General requirements</i>
			<i>AS 1418.2:1997 Cranes (including hoists and winches) - Serial hoists and winches</i>
			<i>AS 1418.3:1997 Cranes, hoists and winches - Bridge, gantry, portal (including container cranes) and jib cranes</i>
			<i>AS 1418.4:2004 Cranes, hoists and winches - Tower cranes</i>
			<i>AS 1418.5:2002 Cranes, hoists and winches - Mobile cranes</i>

Appendix 1 – Legislation Register

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			AS 1418.6:1988 Cranes (including hoists and winches) (known as the SAA Crane Code) - Guided storing and retrieving appliances (superseded by: AS 1418.6:2004 Cranes, hoists and winches - Guided storing and retrieving appliances)
			AS 1418.7:1999 Cranes (including hoists and winches) - Builders hoists and associated equipment
			AS 1418.8:2002 Cranes, hoists and winches - Special purpose appliances (superseded by: AS 1418.8:2008 Cranes, hoists and winches - Special purpose appliances)
			AS/NZS 1418.9:1996 Cranes (including hoists and winches) - Vehicle hoists
			AS 1418.10:1996 Cranes (including hoists and winches) - Elevating work platforms (superseded by: AS 1418.10(Int):2004 Cranes, hoists and winches - Elevating work platforms)
			AS 1418.12:1991 Cranes (including hoists and winches) - Crane collector systems
			AS 1418.13:1996 Cranes (including hoists and winches) - Building maintenance units

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			AS 1418.14:1996 Cranes (including hoists and winches) - Requirements for cranes subject to arduous working conditions
			AS 1418.15:1994 Cranes (including hoists and winches) - Concrete placing equipment
			AS 1418.16:1997 Cranes (including hoists and winches) - Mast climbing work platforms
			AS 1418.17:1996 Cranes (including hoists and winches) - Design and construction of workboxes
			AS 1418.18:2001 Cranes, hoists and winches - Crane runways and monorails
			AS/NZS 3509:2003 LP Gas fuel vessels for automotive use (superseded by: AS/NZS 3509:2009 LP Gas fuel vessels for automotive use)
			AS 3920.1:1993 Assurance of product quality - Pressure equipment manufacture (superseded by: AS 4343:2005 Pressure equipment - Hazard levels)
			AS 4343:1999 Pressure equipment - Hazard levels (superseded by: AS 4343-2005 Pressure equipment - Hazard levels)

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			AS 2971:2007 Serially produced pressure vessels
			AS 2700-1996 Colour standards for general purposes
			AS/NZS 1269.1:1998 Occupational noise management - Measurement and assessment of noise emission and exposure (superseded by AS/NZS 1269.1:2005 Occupational noise management - Measurement and assessment of noise emission and exposure)
Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (For Reference Only)	Low	CTH	
Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995 (For Reference Only)	Low	CTH	AS/NZS 1571:1995 Copper - Seamless tubes for airconditioning and refrigeration
			AS 3864:1997 Medical refrigeration equipment - For the storage of blood and blood products
			AS 4211.1-1996 Gas recovery or combined recovery and recycling equipment – Fluorocarbon refrigerants from automotive air conditioning systems

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			AS 4211.3-1996 Gas recovery or combined recovery and recycling equipment – Fluorocarbon refrigerants from commercial/domestic refrigeration and airconditioning systems
			AS 4484:2004 Gas cylinders for industrial, scientific, medical and refrigerant use – Labelling and colour coding
			AS 1210:1997 Pressure vessels
			AS 2030.1:1999 The verification, filling, inspection, testing and maintenance of cylinders for storage and transport of compressed gases - Cylinders for compressed gases other than acetylene (superseded by: AS 2030.5:2009 (in part) Gas cylinders - Filling
			AS 2030.2:1996 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Cylinders for dissolved acetylene
			AS 4332:2004 The storage and handling of gases in cylinders
			AS 4041:1998 Pressure piping (superseded by: AS 4041:2006 Pressure piping)
			AS/NZS 1677.1:1998 Refrigerating systems - Refrigerant classification

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			AS/NZS 1677.2:1998 Refrigerating systems - Safety requirements for fixed applications
			AS/NZS 3350.2.40:2001 Safety of household and similar electrical appliances – Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers (IEC 60335-2-40:1995,MOD)
			AS/NZS 3823.1.1:1998 Performance of electrical appliances - Airconditioners and heat pumps - Test Methods - Non-ducted airconditioners and heat pumps - Testing and rating for performance
			AS/NZS 3823.1.2:2001 Performance of electrical appliances - Airconditioners and heat pumps - Test methods - Ducted airconditioners and air-to-air heat pumps - Testing and rating for performance
			AS 2823-1985 (withdrawn) Agricultural tractors and self-propelled machines - Test procedure for performance of air-conditioning systems
			AS 1167.1:1993 Welding and brazing – Filler metals – Filler metal for brazing and braze welding (superseded by: AS/NZS 1167.1:2005 Welding and brazing - Filler metals - Filler metal for brazing and braze welding)

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			AS 1167.2:1999 Welding and brazing – Filler metals – Filler metal for welding
			AS 1851:2005 (A4) Maintenance of fire protection systems and equipment
			AS 4214:2002 Gaseous fire extinguishing systems
			AS 4077.1:1992 (withdrawn) Fire protection - Fire extinguishing media - Halogenated hydrocarbons - Specifications for halon 1211 and halon 1301
			AS 4077.2:1992 Fire protection - Fire extinguishing media - Halogenated hydrocarbons - Code of practice for safe handling and transfer procedures of halon 1211 and halon 1301
			AS/NZS 4360:2004 Risk management
Protection of Movable Cultural Heritage Act 1986	Moderate	CTH	
Renewable Energy (Electricity) Act 2000	Low	CTH	

Appendix 1 – Legislation Register

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Renewable Energy (Electricity) Regulations 2001</i>	Low	CTH	<i>AS 4708:2007 Forest management - Economic, social, environmental and cultural criteria and requirements for wood production (known as The Australian Forestry Standard)</i>
			<i>AS/NZS 2535.1:2007 Test methods for solar collectors - Thermal performance of glazed liquid heating collectors including pressure drop (ISO 9806-1:1994, MOD)</i>
			<i>AS 4234:1994 Solar water heaters - Domestic and heat pump - Calculation of energy consumption (superseded by: AS/NZS 4234:2008 Heated water systems - Calculation of energy consumption)</i>
			<i>AS/NZS 4692.1:2005 Electric water heaters - Energy consumption, performance and general requirements</i>
<i>Road Transport Reform (Dangerous Goods) Act 1995</i>	High	CTH	
<i>Road Transport Reform (Dangerous Goods) Regulations 1997</i>	High	CTH	<i>AS 3711.1:2000 Freight containers - Classification, dimensions and ratings</i>
			<i>AS/NZS 3711.2:1993 Freight containers - Terminology</i>
			<i>AS/NZS 3711.3:1993 Freight containers - Corner fittings</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
			AS/NZS 3711.4:1993 Freight containers - General purpose containers
			AS 3711.5:2000 Freight containers - Thermal containers
			AS 3711.6:2000 Freight containers - Tank containers
			AS/NZS 3711.7:1993 Freight containers - Dry bulk containers
			AS 3711.8:2000 Freight containers - Platform containers
			AS 3711.9:2000 Freight containers - Coding, identification and marking

Appendix 1 – Legislation Register

Corporate and Finance Legislation Register

CORPORATE AND FINANCE LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Audit Act 1995</i>	Low	NT	
<i>Construction Contracts (Security of Payments) Act</i>	Low	NT	
<i>Consumer Affairs and Fair Trading Act</i>	Low	NT	
<i>Contracts Act 1978</i>	Moderate	NT	
<i>Control of Roads Act</i>	Moderate	NT Dep't of Planning & Infrastructure	
<i>Electronic Transactions Act 2000</i>	Low	NT	
<i>Payroll Tax Act 2009</i>	Moderate	NT	
<i>Planning Act</i>	Low	NT	
<i>Sea Carriage Documents Act 1998</i>	Low	NT	
<i>Special Purposes Leases Act</i>	Low	NT	

Appendix 1 – Legislation Register

CORPORATE AND FINANCE LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Taxation Administration Act</i>	Low	NT	
<i>Trade Measurement Act</i>	Low	NT	
<i>Mineral Royalty Act 1982</i>	Moderate	NT	
<i>A New Tax System (Goods and Services Tax) Act 1999</i>	Low	CTH	
<i>A New Tax System (Goods and Services Tax Imposition - Customs) Act 1999</i>	Low	CTH	
<i>A New Tax System (Goods and Services Tax Imposition - Excise) Act 1999</i>	Low	CTH	
<i>A New Tax System (Goods and Services Tax Imposition - General) Act 1999</i>	Low	CTH	
<i>A New Tax System (Goods and Services Tax Imposition (Recipients) - Customs) Act 2005</i>	Low	CTH	
<i>A New Tax System (Goods and Services Tax Imposition (Recipients) - Excise) Act 2005</i>	Low	CTH	
<i>A New Tax System (Goods and Services Tax Imposition (Recipients) - General) Act 2005</i>	Low	CTH	
<i>A New Tax System (Goods and Services Tax) Regulations 1999</i>	Low	CTH	
<i>A New Tax System (Medicare Levy Surcharge - Fringe Benefits) Act 1999</i>	Low	CTH	

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CORPORATE AND FINANCE LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Anti-Money Laundering and Counter-Terrorism Financing Act 2006</i>	Low	CTH	
<i>Anti-Money Laundering and Counter-Terrorism Financing Regulations 2008</i>	Low	CTH	
<i>Corporations Act 2001</i>	Low	CTH	
<i>Corporations (Change of Incorporation) Regulations 2001</i>	Low	CTH	
<i>Corporations Regulations 2001</i>	Low	CTH	
<i>Export Control Act 1982</i>	Low	CTH	
<i>Fringe Benefits Tax Act 1986</i>	Low	CTH	
<i>Fringe Benefits Tax Assessment Act 1986</i>	Low	CTH	
<i>Fringe Benefits Tax Regulations 1992</i>	Low	CTH	
<i>Income Tax Act 1986</i>	Low	CTH	
<i>Income Tax Assessment Act 1936</i>	Low	CTH	
<i>Income Tax Assessment Regulations 1936</i>	Low	CTH	

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CORPORATE AND FINANCE LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Income Tax Assessment Act 1997</i>	Low	CTH	
<i>Income Tax Assessment Regulations 1997</i>	Moderate	CTH	
<i>Income Tax (Bearer Debentures) Act 1971</i>	Low	CTH	
<i>Income Tax (Deferred Interest Securities) (Tax File Number Withholding Tax) 1991</i>	Low	CTH	
<i>Income Tax (Diverted Income) Act 1981</i>	Low	CTH	
<i>Income Tax (Dividends, Interest and Royalties Withholding Tax) Act 1974</i>	Low	CTH	
<i>Income Tax (Excluded STBs) Regulations 1997</i>	Low	CTH	
<i>Income Tax (Franking Deficit) Act 1987</i>	Low	CTH	
<i>Income Tax (Fund Contributions) Act 1989</i>	Low	CTH	
<i>Income Tax (Mining Withholding Tax) Act 1979</i>	High	CTH	
<i>Income Tax Rates Act 1986</i>	Moderate	CTH	
<i>Income Tax (Securities and Agreements) (Withholding Tax) Act 1986</i>	Low	CTH	

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CORPORATE AND FINANCE LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Income Tax (Transitional Provisions) Act 1997</i>	Low	CTH	
<i>Income Tax (Withholding Tax Recoupment) Act 1971</i>	Low	CTH	
<i>Insurance Contracts Act 1984</i>	Low	CTH	
<i>International Tax Agreements Act 1953</i>	Low	CTH	
<i>Taxation Administration Act 1953</i>	Low	CTH	
<i>Taxation Administration Regulations 1976</i>	Low	CTH	
<i>Taxation (Interest on Overpayment and Early Payments) Act 1983</i>	Low	CTH	
<i>Taxation (Interest on Overpayments and Early Payments) Regulations 1992</i>	Low	CTH	
<i>Taxation Laws (Miscellaneous Provisions) Act 1986</i>	Low	CTH	
<i>Taxation (Unpaid Company Tax) Assessment Act 1982</i>	Low	CTH	
<i>Trade Practices Act 1974</i>	Low	CTH	
<i>Trade Practices Regulations 1974</i>	Low	CTH	

Appendix 1 – Legislation Register

Human Resources and Industrial Relations Legislation Register

HUMAN RESOURCES AND INDUSTRIAL RELATIONS LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Workers Rehabilitation and Compensation Act</i>	Moderate	NT	
<i>Workers rehabilitation and Compensation Regulations 1987</i>	Moderate	NT	
<i>Annual Leave Act 1974</i>	Moderate	NT	
<i>Anti-Discrimination Act</i>	Moderate	NT	
<i>Long Service Leave Act</i>	Low	NT	
<i>Northern Territory Employment and Training Act</i>	Moderate	NT	
<i>Public Holidays Act</i>	Low	NT	
<i>Sexual Offences (Evidence and Procedure) Act</i>	Moderate	NT	
<i>Superannuation Act</i>	Moderate	NT	
<i>Superannuation (Guarantee) Act</i>	Moderate	NT	
<i>Age Discrimination Act 2004</i>	Moderate	CTH	

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HUMAN RESOURCES AND INDUSTRIAL RELATIONS LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Building and Construction Industry Improvement Act 2005</i>	Low	CTH	
<i>Crimes Act 1914</i>	Low	CTH	
<i>Disability Discrimination Act 1992</i>	Moderate	CTH	
<i>Equal Opportunity for Women in the Workplace Act 1999</i>	Moderate	CTH	
<i>Fair Work Act 2009</i>	Moderate	CTH	
<i>Fair Work (Transitional Provisions and Consequential Amendments) Act 2009</i>	Moderate	CTH	
<i>Fair Work (Transitional Provisions and Consequential Amendments) Regulations 2009</i>	Moderate	CTH	
<i>Fair Work Regulations 2009</i>	Moderate	CTH	
<i>Fair Work (Registered Organisations) Act 2009 1988</i>	Low	CTH	
<i>Occupational Health and Safety Act 1991</i>	High	CTH	
<i>Privacy Act 1988</i>	Moderate	CTH	
<i>Privacy Regulations 2006</i>	Moderate	CTH	

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HUMAN RESOURCES AND INDUSTRIAL RELATIONS LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Privacy (Private Sector) Regulations 2001</i>	Moderate	CTH	
<i>Race Discrimination Act 1975</i>	Moderate	CTH	
<i>Sex Discrimination Act 1984</i>	Moderate	CTH	
<i>Safety, Rehabilitation and Compensation Act 1988</i>	Moderate	CTH	
<i>Safety, Rehabilitation and Compensation Regulations 2002</i>	Moderate	CTH	
<i>Tradesmen's Rights Regulation Act 1946</i>	Moderate	CTH	
<i>Tradepersons' Rights Regulations 1992</i>	Moderate	CTH	
<i>Tradepersons' Rights (Cost Recovery) Regulations 1993</i>	Moderate	CTH	
<i>Workplace Relations Regulations 2006</i>	Moderate	CTH	

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Information Systems Legislation Register

INFORMATION SYSTEMS LEGISLATION REGISTER			
Legislation Name	Impact on MRM	Jurisdiction	Referenced Standards
<i>Designs Act 2003</i>	Low	CTH	
<i>Designs Regulations 2004</i>	Low	CTH	
<i>Patents Act 1990</i>	Low	CTH	
<i>Patents Regulations 1991</i>	Low	CTH	
<i>Privacy Act 1988</i>	Moderate	CTH	
<i>Privacy Regulations 2006</i>	Moderate	CTH	
<i>Privacy (Private Sector) Regulations 2001</i>	Moderate	CTH	
<i>Spam Act 2003</i>	Low	CTH	
<i>Spam Regulations 2004</i>	Low	CTH	
<i>Trade Marks Act 1995</i>	Low	CTH	
<i>Trade Marks Regulations 1995</i>	Low	CTH	

Appendix 1 – Codes of Practice Register

Codes of Practice

Health, Safety, Environment and Community Codes of Practice Register

HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
The Australia and New Zealand Refrigerant Handling Code of Practice 2007, Part 1 — Self-contained low charge systems (referenced by the Commonwealth Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995)	CTH	<i>Ozone Protection and Synthetic Greenhouse Gas Management Act 1989</i>	<i>AS/NZS 1200:2000 Pressure equipment</i>
			<i>AS/NZS 1677.2:1998 Refrigerating systems - Safety requirements for fixed applications</i>
			<i>AS 2030.1:2009 Gas cylinders - General requirements</i>
			<i>AS 4211.3-1996 Gas recovery or combined recovery and recycling equipment - Fluorocarbon refrigerants from commercial/domestic refrigeration and airconditioning systems</i>
			<i>AS 4484:2004 Gas cylinders for industrial, scientific, medical and refrigerant use – Labelling and colour coding</i>
The Australia and New Zealand Refrigerant Handling Code of Practice 2007, Part 2 — Systems other than self-contained low charge systems (referenced by the Commonwealth Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995)	CTH	<i>Ozone Protection and Synthetic Greenhouse Gas Management Act 1989</i>	<i>AS/NZS 1200:2000 Pressure equipment</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1571:1995 Copper - Seamless tubes for airconditioning and refrigeration</i>
			<i>AS/NZS 1677.2:1998 Refrigerating systems - Safety requirements for fixed applications</i>
			<i>AS/NZS 3823.1.1:1998 Performance of electrical appliances - Airconditioners and heat pumps - Test Methods - Non-ducted airconditioners and heat pumps - Testing and rating for performance</i>
			<i>AS 1210:1997 (Hardbound) Pressure vessels</i>
			<i>AS 2030.1:2009 Gas cylinders - General requirements</i>
			<i>AS 4041:2006 Pressure piping</i>
			<i>AS 4211.3-1996 Gas recovery or combined recovery and recycling equipment - Fluorocarbon refrigerants from commercial/domestic refrigeration and airconditioning systems</i>
			<i>AS 4484:2004 Gas cylinders for industrial, scientific, medical and refrigerant use – Labelling and colour coding</i>
http://www.arpana.gov.au			

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
Code of Practice and Safety Guide for Portable Density/Moisture Gauges Containing Radioactive Sources (2004)	CTH	<i>Australian Radiation Protection and Nuclear Safety Act 1998</i>	<i>AS 1319:1994 Safety signs for the occupational environment</i>
			<i>AS 2342-1992 Development, testing and implementation of information and safety symbols and symbolic signs</i>
Code of Practice and Safety Guide for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing (2005)	CTH	<i>Australian Radiation Protection and Nuclear Safety Act 1998</i>	<i>AS/NZS ISO 14001:2004 Environmental management systems - Requirements with guidance for use</i>
			<i>AS/NZS ISO 9001:2008 Quality management systems - Requirements</i>
			<i>AS/NZS 4801:2001 Occupational health and safety management systems - Specification with guidance for use</i>
			<i>AS/NZS 4804:2001 Occupational health and safety management systems - General guidelines on principles, systems and supporting techniques</i>
Code of Practice and Safety Guide for Safe Use of Fixed Radiation Gauges 2007	CTH	<i>Australian Radiation Protection and Nuclear Safety Act 1998</i>	<i>AS 2205.1-2003 Methods for destructive testing of welds in metal - General requirements for tests</i>
			<i>AS 2205.10.1-2003 Methods for destructive testing of welds in metal - Corrosion test for welded austenitic stainless steel</i>
			<i>AS 2205.2.1-2003 Methods for destructive testing of welds in metal - Transverse butt tensile tests</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2205.2.2-2003 Methods for destructive testing of welds in metal – All-weld-metal tensile test</i>
			<i>AS 2205.2.3-2003 Methods for destructive testing of welds in metal - Transverse joggle-butt tensile test</i>
			<i>AS 2205.3.1-2003 Methods for destructive testing of welds in metal - Transverse guided bend test</i>
			<i>AS 2205.3.2-2003 Methods for destructive testing of welds in metal - Transverse free bend test</i>
			<i>AS 2205.3.3-2003 Methods for destructive testing of welds in metal - Longitudinal guided bend test</i>
			<i>AS 2205.3.4-2003 Methods for destructive testing of welds in metal - Transverse joggle-butt wrap-around bend test</i>
			<i>AS 2205.3.5-2003 Methods for destructive testing of welds in metal - Tongue bend test</i>
			<i>AS 2205.4.1-2003 Methods for destructive testing of welds in metal - Nick-break test</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2205.4.2-2003 Methods for destructive testing of welds in metal - Fillet break test</i>
			<i>AS 2205.5.1-2003 Methods for destructive testing of welds in metal - Macro metallographic test for cross-section examination</i>
			<i>AS 2205.6.1-2003 Methods for destructive testing of welds in metal - Weld joint hardness test</i>
			<i>AS 2205.7.1-2003 Methods for destructive testing of welds in metal - Charpy V-notch impact fracture toughness test</i>
			<i>AS 2205.7.2-2003 Methods for destructive testing of welds in metal - Dropweight fracture toughness test for nil-ductility transition temperature</i>
			<i>AS 2205.7.3-2003 Methods for destructive testing of welds in metal - Fracture mechanics toughness tests (K_{Ic}), critical CTOD and critical J values)</i>
			<i>AS 2205.8.1-2003 Methods for destructive testing of welds in metal - Longitudinal fillet shear test</i>
			<i>AS 2205.8.2-2003 Methods for destructive testing of welds in metal - Transverse fillet shear test</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2205.9.1-2003 Methods for destructive testing of welds in metal - Hot cracking test</i>
			<i>AS 60068.2.6-2003 Environmental testing - Tests - Test Fc: Vibration (sinusoidal)</i>
			<i>AS 60068.2.52-2003 Environmental testing - Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)</i>
			<i>AS 60068.2.42-2004 Environmental testing - Tests - Test Kc: Sulphur dioxide test for contacts and connections</i>
			<i>AS 60068.2.43-2004 Environmental testing - Tests - Test Kd: Hydrogen sulphide test for contacts and connections</i>
			<i>AS 1319:1994 Safety signs for the occupational environment</i>
			<i>AS 2342-1992 Development, testing and implementation of information and safety symbols and symbolic signs</i>
Code of Practice for the Safe Transport of Radioactive Material (2008)	CTH	<i>Australian Radiation Protection and Nuclear Safety Act 1998</i>	

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
Code of Practice for the Security of Radioactive Sources 2007	CTH	<i>Australian Radiation Protection and Nuclear Safety Act 1998</i>	<i>AS/NZS 2201.1:2007 Intruder alarm systems - Client's premises - Design, installation, commissioning and maintenance</i>
			<i>AS/NZS 3749.1:2003 Intruder alarm systems - Road vehicles - Performance requirements</i>
			<i>AS/NZS 4360 SET Risk Management Set</i>
https://www.abcb.gov.au			
Building Code of Australia 2009	CTH		
http://www.comlaw.gov.au			
Occupational Health and Safety Code of Practice 2008	CTH	<i>Occupational Health and Safety Act 1991</i>	<i>AS/NZS 3931:1998 Risk analysis of technological systems - Application guide</i>
			<i>AS/NZS 4360:2004 Risk management</i>
			<i>AS IEC 61672.1:2004 Electroacoustics - Sound level meters - Specifications</i>
			<i>AS 1319:1994 Safety signs for the occupational environment</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1269.0:2005 Occupational noise management - Overview and general requirements</i>
			<i>AS/NZS 1269.1:2005 Occupational noise management - Measurement and assessment of noise emission and exposure</i>
			<i>AS/NZS 1269.2:2005 Occupational noise management - Noise control management</i>
			<i>AS/NZS 1269.3:2005 Occupational noise management - Hearing protector program</i>
			<i>AS/NZS 1269.4:2005 Occupational noise management - Auditory assessment</i>
			<i>AS/NZS 1270:2002 Acoustics - Hearing protectors</i>
			<i>AS 2670.1:2001 Evaluation of human exposure to whole-body vibration - General requirements</i>
			<i>AS 2763-1988 Vibration and shock - Hand-transmitted vibration - Guidelines for measurement and assessment of human exposure</i>
			<i>AS/NZS 2865 Set:2005 Safe working in a confined space Set</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment</i>
			<i>AS 1668.2:2002 The use of ventilation and airconditioning in buildings - Ventilation design for indoor air contaminant control</i>
			<i>AS/NZS 3666 Set:2006 Air-handling and water systems of buildings Set</i>
			<i>AS/NZS 2982.1:1997 Laboratory design and construction - General requirements</i>
			<i>AS/NZS 2243 Set:2006 Safety in laboratories set</i>
			<i>AS 1940:2004 The storage and handling of flammable and combustible liquids</i>
			<i>AS 2444:2001 Portable fire extinguishers and fire blankets - Selection and location</i>
			<i>AS 3640-2004 Workplace atmospheres - Method for sampling and gravimetric determination of inhalable dust</i>
			<i>AS/NZS 1716:2003 Respiratory protective devices</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 2843.1:2006 Timber preservation plants - Timber preservation plant site design</i>
			<i>AS 2636-1994 Sampling of venous and capillary blood for the determination of lead or cadmium concentration 2636</i>
			<i>AS 2411-1993 Venous blood - Determination of lead content - Flame atomic absorption spectrometric method</i>
			<i>AS 1210:1997 (Hardbound) Pressure vessels</i>
			<i>AS 2030.1:2009 Gas cylinders - General requirements</i>
			<i>AS 2030.2:1996 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Cylinders for dissolved acetylene</i>
			<i>AS 2030.4:1985 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Welded cylinders - Insulated</i>
			<i>AS 2030.5:2009 Gas cylinders - Filling, inspection and testing of refillable cylinders</i>
			<i>AS/NZS 4399:1996 Sun protective clothing - Evaluation and classification</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1067:2003 Sunglasses and fashion spectacles</i>
			<i>AS/NZS 2299.1:2007 Occupational diving operations - Standard operational practice</i>
			<i>AS/NZS 2381.1:2005 Electrical equipment for explosive gas atmospheres - Selection, installation and maintenance - General requirements</i>
			<i>AS 2268:1979 Electrostatic paint and powder sprayguns for explosive atmospheres</i>
			<i>AS 2985-2004 Workplace atmospheres - Method for sampling and gravimetric determination of respirable dust</i>
Vehicle Standard (Australian Design Rule 83/00 - External Noise) 2005	CTH	<i>Motor Vehicle Standards Act 1989</i>	
http://www.ephc.gov.au/			
National Environmental Protection (Assessment of Site Contamination) Measure 1999	CTH	<i>National Environment Protection Council Act 1994</i>	

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
National Environment Protection Measures - Movement of Controlled Waste Between States and Territories 2004	CTH	<i>National Environment Protection Council Act 1994</i>	
National Environment Protection (National Pollutant Inventory) Measure 1998	CTH	<i>National Environment Protection Council Act 1994</i>	
National Environment Protection Measure - Used Packaging Materials 1999	CTH	<i>National Environment Protection Council Act 1994</i>	
http://www.ntc.gov.au			
Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) (7th Edition) 1980	CTH	<i>National Transport Commission Act 2003</i>	<i>AS 1940:2004 The storage and handling of combustible liquids</i>
			<i>AS 3711.1-2000 : Freight containers - Classification, dimensions and ratings</i>
			<i>AS/NZS 3711.2:1993 Freight containers - Terminology</i>
			<i>AS/NZS 3711.3:1993 Freight containers - Corner fittings</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 3711.4:1993 Freight containers - General purpose containers</i>
			<i>AS 3711.5:2000 Freight containers - Thermal containers</i>
			<i>AS 3711.6:2000 Freight containers - Tank containers</i>
			<i>AS/NZS 3711.7:1993 Freight containers - Dry bulk containers</i>
			<i>AS 3711.8:2000 Freight containers - Platform containers</i>
			<i>AS 3711.9:2000 Freight containers - Coding, identification and marking</i>
			<i>AS 3711.10:2000 Freight containers - Handling and securing</i>
			<i>AS 1580.301.1-2005 Paints and related materials - Methods of test - Non-volatile content by mass</i>
			<i>AS ISO 16103-2007 Transport packaging for dangerous goods - Recycled plastics material</i>
			<i>AS/NZS 1715:1994 Selection, use and maintenance of respiratory protective devices (Superseded by: AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment)</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 60079.10:2004 Electrical apparatus for explosive gas atmospheres - Classification of hazardous areas (IEC 60079-10:2002 MOD)</i>
			<i>AS/NZS 2430.3.1:2004 Classification of hazardous areas - Examples of area classification - General</i>
			<i>AS/NZS 2430.3.2:2004 Classification of hazardous areas - Examples of area classification - Vehicle workshops, vehicle parking, fuel dispensing stations and aircraft hangars</i>
			<i>AS/NZS 2430.3.3:2004 Classification of hazardous areas - Examples of area classification - Flammable liquids</i>
			<i>AS/NZS 2430.3.4:2004 Classification of hazardous areas - Examples of area classification - Flammable gases</i>
			<i>AS/NZS 2430.3.5:2004 Classification of hazardous areas - Examples of area classification - Refineries and major processing plants</i>
			<i>AS/NZS 2430.3.6:2004 Classification of hazardous areas - Examples of area classification - Laboratories, including fume cupboards and flammable medical agents</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 2430.3.7:2004 Classification of hazardous areas - Examples of area classification - Landfill gas, sewage treatment and sewage pumping plants</i>
			<i>AS/NZS 2430.3.8:2004 Classification of hazardous areas - Examples of area classification - Surface coatings and adhesives</i>
			<i>AS/NZS 2430.3.9:2004 Classification of hazardous areas - Examples of area classification - Miscellaneous</i>
			<i>AS 2106.0-2005 Methods for the determination of the flash point of flammable liquids (closed cup) - General</i>
			<i>AS/NZS 2106.1:1999 Methods for the determination of the flash point of flammable liquids (closed cup) - Abel closed cup method</i>
			<i>AS 2106.2-2005 Methods for the determination of the flash point of flammable liquids (closed cup) - Determination of flash point - Pensky-Martens closed cup method</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			AS 2106.3-2005 <i>Methods for the determination of the flash point of flammable liquids (closed cup) - Determination of flash/no flash - Rapid equilibrium closed cup method</i>
			AS 2106.4-2005 <i>Methods for the determination of the flash point of flammable liquids (closed cup) - Determination of flash point - Rapid equilibrium closed cup method</i>
			AS 2106.5-2005 <i>Methods for the determination of the flash point of flammable liquids (closed cup) - Determination of flash/no flash - Closed cup equilibrium method</i>
			AS 2106.6-2005 <i>Methods for the determination of the flash point of flammable liquids (closed cup) - Determination of flash point - Closed cup equilibrium method</i>
			AS/NZS 1596:2002 <i>The storage and handling of LP Gas</i> (Superseded by: AS/NZS 1596:2008 <i>The storage and handling of LP Gas</i>)
			AS 2854-2004 <i>Tinplate cans for general use</i>
			AS/NZS ISO 9001:2008 <i>Quality management systems - Requirements</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 4031:1992 Non-reusable containers for the collection of sharp medical items used in health care areas</i>
			<i>AS/NZS 4261:1994 Reusable containers for the collection of sharp items used in human and animal medical applications</i>
			<i>AS 4939-2001 Non-reusable personal use containers for the collection and disposal of hypodermic needles and syringes</i>
			<i>AS 2030.1:2009 Gas cylinders - General requirements</i>
			<i>AS 2030.2-1996 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Cylinders for dissolved acetylene</i>
			<i>AS 2030.4-1985 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Welded cylinders - Insulated</i>
			<i>AS 2030.5-2009 Gas cylinders - Filling, inspection and testing of refillable cylinders</i>
			<i>AS 2809 Set-2008 Road tank vehicles for dangerous goods set</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2278.1-2008 Aerosol containers - Metal aerosol dispensers of capacity 50 mL to 1000 mL inclusive</i>
			<i>AS ISO 16106-2007 Transport packages for dangerous goods - Dangerous goods packagings, intermediate bulk containers (IBCs) and large packagings - Guidelines for the application of ISO 9001</i>
			<i>AS/NZS 1595:1998 Cold-rolled, unalloyed, steel sheet and strip</i>
			<i>AS/NZS 1301.411s:2004 Methods of test for pulp and paper - Water absorptiveness of paper and paperboard (Cobb test)</i>
			<i>AS 1210:1997 Pressure vessels</i>
			<i>AS 3711.1:2000 Freight containers - Classification, dimensions and ratings</i>
			<i>AS/NZS 3711.2:1993 Freight containers - Terminology</i>
			<i>AS/NZS 3711.3:1993 Freight containers - Corner fittings</i>
			<i>AS/NZS 3711.4:1993 Freight containers - General purpose containers</i>
			<i>AS 3711.5:2000 Freight containers - Thermal containers</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 3711.6:2000 Freight containers - Tank containers</i>
			<i>AS/NZS 3711.7:1993 Freight containers - Dry bulk containers</i>
			<i>AS 3711.8:2000 Freight containers - Platform containers</i>
			<i>AS 3711.9:2000 Freight containers - Coding, identification and marking</i>
			<i>AS/NZS 1869:1996 Hose and hose assemblies for liquefied petroleum gases (LP Gas), natural gas and town gas</i>
			<i>AS/NZS 1596:2002 The storage and handling of LP Gas (Superseded by: AS/NZS 1596:2008 The storage and handling of LP Gas)</i>
			<i>AS/NZS 2022:2003 Anhydrous ammonia - Storage and handling</i>
			<i>AS 2683-2000 Hose and hose assemblies for distribution of petroleum and petroleum products (excepting LPG)</i>
			<i>AS 2594-1983 Hose and hose assemblies for liquid chemicals</i>
			<i>AS 1180.13B-1987 Methods of test for hose made from elastomeric materials - Determination of electrical resistance of hose assembly</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1180.13C-1983 Methods of test for hose made from elastomeric materials - Determination of electrical continuity of a hose assembly with reinforcing wire(s)</i>
			<i>AS/NZS 60079.10:2004 Electrical apparatus for explosive gas atmospheres - Classification of hazardous areas (IEC 60079-10:2002 MOD)</i>
			<i>AS/NZS 2430.3.3:2004 Classification of hazardous areas - Examples of area classification - Flammable liquids</i>
			<i>AS/NZS 2430.3.4:2004 Classification of hazardous areas - Examples of area classification - Flammable gases</i>
			<i>AS 1940:2004 The storage and handling of flammable and combustible liquids</i>
			<i>AS 1692-2006 Steel tanks for flammable and combustible liquids</i>
			<i>AS 2809.2:2008 Road tank vehicles for dangerous goods - Road tank vehicles for flammable liquids</i>
			<i>AS 2809.1:2008 Road tank vehicles for dangerous goods - General requirements for all road tank vehicles</i>
			<i>AS 3790-1992 Portable warning triangles for motor vehicles</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1841.1:2007 Portable fire extinguishers - General requirements</i>
			<i>AS/NZS 1850:1997 Portable fire extinguishers - Classification, rating and performance testing (superseded by: AS/NZS 1850:2009 Portable fire extinguishers - Classification, rating and performance testing)</i>
			<i>AS/NZS 1841.4:2007 Portable fire extinguishers - Specific requirements for foam type extinguishers</i>
			<i>AS/NZS 1841.5:2007 Portable fire extinguishers - Specific requirements for powder type extinguishers</i>
			<i>AS/NZS 1841.6:2007 Portable fire extinguishers - Specific requirements for carbon dioxide type extinguishers</i>
			<i>AS/NZS 1841.7:2007 Portable fire extinguishers - Specific requirements for vaporizing liquid type extinguishers</i>
			<i>AS/NZS 60079.11:2006 Explosive atmospheres - Equipment protection by intrinsic safety</i>
			<i>AS 2809.1:2008 Road tank vehicles for dangerous goods - General requirements for all road tank vehicles</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2809.5:2001 Road tank vehicles for dangerous goods - Tankers for bitumen-based products</i>
http://www.safeworkaustralia.gov.au			
Australian Code for the Transport of Explosives by Road and Rail (AE Code) (2nd Edition) 1999	CTH		<i>AS 1940:2004 The storage and handling of flammable and combustible liquids</i>
			<i>AS 3711.1:2000 Freight containers - Classification, dimensions and ratings</i>
			<i>AS/NZS 3711.2:1993 Freight containers - Terminology</i>
			<i>AS/NZS 3711.3:1993 Freight containers - Corner fittings</i>
			<i>AS/NZS 3711.4:1993 Freight containers - General purpose containers</i>
			<i>AS 3711.5:2000 Freight containers - Thermal containers</i>
			<i>AS 3711.6:2000 Freight containers - Tank containers</i>
			<i>AS/NZS 3711.7:1993 Freight containers - Dry bulk containers</i>
			<i>AS 3711.8:2000 Freight containers - Platform containers</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 3711.9:2000 Freight containers - Coding, identification and marking</i>
			<i>AS/NZS 2430.3.1:2004 Classification of hazardous areas - Examples of area classification - General</i>
			<i>AS/NZS 2430.3.2:2004 Classification of hazardous areas - Examples of area classification - Vehicle workshops, vehicle parking, fuel dispensing stations and aircraft hangars</i>
			<i>AS/NZS 2430.3.3:2004 Classification of hazardous areas - Examples of area classification - Flammable liquids</i>
			<i>AS/NZS 2430.3.4:2004 Classification of hazardous areas - Examples of area classification - Flammable gases</i>
			<i>AS/NZS 2430.3.5:2004 Classification of hazardous areas - Examples of area classification - Refineries and major processing plants</i>
			<i>AS/NZS 2430.3.6:2004 Classification of hazardous areas - Examples of area classification - Laboratories, including fume cupboards and flammable medical agents</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 2430.3.7:2004 Classification of hazardous areas - Examples of area classification - Landfill gas, sewage treatment and sewage pumping plants</i>
			<i>AS/NZS 2430.3.8:2004 Classification of hazardous areas - Examples of area classification - Surface coatings and adhesives</i>
			<i>AS/NZS 2430.3.9:2004 Classification of hazardous areas - Examples of area classification - Miscellaneous</i>
			<i>AS D26-1972 Tube fittings with Dryseal American standard taper pipe and unified threads for automotive and industrial use</i>
			<i>AS 1210:1997 Pressure vessels</i>
			<i>AS 1744:1975 Forms of letters and numerals for road signs (known as Standard alphabets for road signs)</i>
			<i>AS/NZS 1841.1:2007 Portable fire extinguishers - General requirements</i>
			<i>AS/NZS 1850:1997 Portable fire extinguishers - Classification, rating and performance testing (superseded by: AS/NZS 1850:2009 Portable fire extinguishers - Classification, rating and performance testing)</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1851.1:1995 Maintenance of fire protection equipment - Portable fire extinguishers and fire blankets (superseded by: AS 1851-2005 Maintenance of fire protection systems and equipment)</i>
			<i>AS 1940:2004 The storage and handling of flammable and combustible liquids</i>
			<i>AS/NZS 2053.1:2001 Conduits and fittings for electrical installations - General requirements</i>
			<i>AS 2187.1:1998 Explosives - Storage, transport and use - Storage</i>
			<i>AS/NZS 2271:2004 Plywood and blockboard for exterior use</i>
			<i>AS/NZS 2430.3.1:2004 Classification of hazardous areas - Examples of area classification - General</i>
			<i>AS 2700-1996 Colour Standards for general purposes</i>
			<i>AS 2809.1:2008 Road tank vehicles for dangerous goods - General requirements for all road tank vehicles</i>
			<i>AS 2809.4-2001 Road tank vehicles for dangerous goods - Tankers for toxic and corrosive cargoes</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 3711.1:2000 Freight containers - Classification, dimensions and ratings</i>
			<i>AS/NZS 3711.2:1993 Freight containers - Terminology</i>
			<i>AS/NZS 3711.3:1993 Freight containers - Corner fittings</i>
			<i>AS/NZS 3711.4:1993 Freight containers - General purpose containers</i>
			<i>AS 3711.5:2000 Freight containers - Thermal containers</i>
			<i>AS 3711.6:2000 Freight containers - Tank containers</i>
			<i>AS/NZS 3711.7:1993 Freight containers - Dry bulk containers</i>
			<i>AS 3711.8:2000 Freight containers - Platform containers</i>
			<i>AS 3711.9:2000 Freight containers - Coding, identification and marking</i>
			<i>AS 3790-1992 Portable warning triangles for motor vehicles</i>
			<i>AS 4145.1-2008 Locksets and hardware for doors and windows - Glossary of terms and rating system</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 4145.4-2002 Locksets - Padlocks</i>
			<i>AS/NZS 4255.1:1994 Security seals - Classification</i>
			<i>AS/NZS 4255.2:1994 Security seals - Use</i>
			<i>AS/NZS 60079.11:2006 Explosive atmospheres - Equipment protection by intrinsic safety i</i>
National Code of Practice for Noise Management and Protection of Hearing at Work - 3rd Edition [NOHSC:2009(2004)]	CTH	<i>Occupational Health and Safety Act 1991</i>	<i>AS 1259.1:1990 Acoustics - Sound level meters - Non-integrating (Superseded by AS IEC 61672.2:2004 (in part) Electroacoustics - Sound level meters - Pattern evaluation tests and AS IEC 61672.1:2004 (in part) Electroacoustics - Sound level meters - Specif</i>
			<i>AS/NZS 1269 Set:2005 Occupational Noise Management Set</i>
			<i>AS 1319:1994 Safety signs for the occupational environment</i>
			<i>AS/NZS 2399:1998 Acoustics - Specifications for personal sound exposure meters</i>
			<i>AS 2659.1-1988 (Withdrawn) Guide to the use of sound measuring equipment - Portable sound level meters</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1270:2002 Acoustics - Hearing protectors</i>
National Code of Practice for Precast, Tilt-up and Concrete Elements in Building Construction 2008	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS 3850:2003 Tilt-up concrete construction</i>
			<i>AS 1111.1-2000 ISO metric hexagon bolts and screws - Product grade C - Bolts</i>
			<i>AS/NZS 1252:1996 High strength steel bolts with associated nuts and washers for structural engineering</i>
			<i>AS 3600:2001 Concrete structures</i>
			<i>AS/NZS 1170.2:2002 Structural design actions - Wind actions</i>
			<i>AS 3610:1995 Formwork for concrete</i>
			<i>AS 1012.1-1993 Methods of testing concrete - Sampling of fresh concrete</i>
			<i>AS 1012.2-1994 Methods of testing concrete - Preparation of concrete mixes in the laboratory</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1012.3.1-1998 Methods of testing concrete - Determination of properties related to the consistency of concrete - Slump test</i>
			<i>AS 1012.3.2-1998 Methods of testing concrete - Determination of properties related to the consistency of concrete - Compacting factor test</i>
			<i>AS 1012.3.3-1998 Methods of testing concrete - Determination of properties related to the consistency of concrete - Vebe test</i>
			<i>AS 1012.3.4-1998 Methods of testing concrete - Determination of properties related to the consistency of concrete - Compactibility index</i>
			<i>AS 1012.4.1-1999 Methods of testing concrete - Determination of air content of freshly mixed concrete - Measuring reduction in concrete volume with increased air pressure</i>
			<i>AS 1012.4.2-1999 Methods of testing concrete - Determination of air content of freshly mixed concrete - Measuring reduction in air pressure in chamber above concrete</i>
			<i>AS 1012.4.3-1999 Methods of testing concrete - Determination of air content of freshly mixed concrete - Measuring air volume when concrete dispersed in water</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1012.5-1999 Methods of testing concrete - Determination of mass per unit volume of freshly mixed concrete</i>
			<i>AS 1012.6-1999 Methods of testing concrete - Method for the determination of bleeding of concrete</i>
			<i>AS 1012.8.1-2000 Methods of testing concrete - Method of making and curing concrete - Compression and indirect tensile test specimens</i>
			<i>AS 1012.8.2-2000 Methods of testing concrete - Method of making and curing concrete - Flexure test specimens</i>
			<i>AS 1012.9-1999 Methods of testing concrete - Determination of the compressive strength of concrete specimens</i>
			<i>AS 1012.10-2000 Methods of testing concrete - Determination of indirect tensile strength of concrete cylinders ('Brasil' or splitting test)</i>
			<i>AS 1012.11-2000 Methods of testing concrete - Determination of the modulus of rupture</i>
			<i>AS 1012.12.1-1998 Methods of testing concrete - Determination of mass per unit volume of hardened concrete - Rapid measuring method</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1012.12.2-1998 Methods of testing concrete - Determination of mass per unit volume of hardened concrete - Water displacement method</i>
			<i>AS 1012.13-1992 Methods of testing concrete - Determination of the drying shrinkage of concrete for samples prepared in the field or in the laboratory</i>
			<i>AS 1012.14-1991 Methods of testing concrete - Method for securing and testing cores from hardened concrete for compressive strength</i>
			<i>AS 1012.16-1996 Methods of testing concrete - Determination of creep of concrete cylinders in compression</i>
			<i>AS 1012.17-1997 Methods of testing concrete - Determination of the static chord modulus of elasticity and Poisson's ratio of concrete specimens</i>
			<i>AS 1012.18-1996 Methods of testing concrete - Determination of setting time of fresh concrete, mortar and grout by penetration resistance</i>
			<i>AS 1012.19.1-2000 Methods of testing concrete - Accelerated curing of concrete compression test specimens - Hot water method</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1012.19.2-2000 Methods of testing concrete - Accelerated curing of concrete compression test specimens - Warm water method</i>
			<i>AS 1012.20-1992 Methods of testing concrete - Determination of chloride and sulphate in hardened concrete and concrete aggregates</i>
			<i>AS 1012.21-1999 Methods of testing concrete - Determination of water absorption and apparent volume of permeable voids in hardened concrete</i>
			<i>AS 3799-1998 Liquid membrane-forming curing compounds for concrete</i>
			<i>AS 2550 Set:2008 Cranes, hoists and winches - safe use set</i>
			<i>AS 1418.10(Int):2004 Cranes, hoists and winches - Elevating work platforms</i>
			<i>AS 3828:1998 Guidelines for the erection of building steelwork</i>
			<i>AS 4991:2004 Lifting devices</i>
			<i>AS/NZS 1554 Set:2008 Structural steel welding set</i>
			<i>AS 2601:2001 Demolition of structures</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
National Code of Practice for the Control and Safe Use of Inorganic Lead at Work 1994	CTH		AS 2636-1994 Sampling of venous and capillary blood for the determination of lead or cadmium concentration2636
			AS 2411-1993 Venous blood - Determination of lead content - Flame atomic absorption spectrometric method
			AS/NZS 1716:2003 Respiratory protective devices
			AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment
			AS 1319:1994 Safety signs for the occupational environment
			AS 3640:2004 Workplace atmospheres - Method for sampling and gravimetric determination of inhalable dust
			AS 1345:1995 Identification of the contents of pipes, conduits and ducts
			AS/NZS 1337:1992 Eye protectors for industrial applications
			AS/NZS 1336:1997 Recommended practices for occupational eye protection
			AS/NZS 2161 Set:2008 Occupational protective gloves set

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 2210.1:1994 Occupational protective footwear - Guide to selection, care and use</i>
			<i>AS/NZS 1801:1997 Occupational protective helmets</i>
			<i>AS 3765.1-1990 (Superseded) Clothing for protection against hazardous chemicals - Protection against general or specific chemicals</i>
			<i>AS 2985-2004 Workplace atmospheres - Method for sampling and gravimetric determination of respirable dust</i>
			<i>AS/NZS 1800:1998 Occupational protective helmets - Selection, care and use</i>
National Code of Practice for the Control of Major Hazard Facilities [NOHSC:2016 (1996)]	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS/NZS 2243.3:2002 Safety in laboratories - Microbiological aspects and containment facilities</i>
			<i>AS 3745-2002 Emergency control organization and procedures for buildings, structures and workplaces</i>
National Code of Practice for the Control of Scheduled Carcinogenic Substances [NOHSC:2014(1995)]	CTH		

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
National Code of Practice for the Prevention of Falls in General Construction 2008	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS/NZS 4576:1995 Guidelines for scaffolding</i>
			<i>AS 1657:1992 Fixed platforms, walkways, stairways and ladders - Design, construction and installation</i>
			<i>AS/NZS 1576.1:1995 Scaffolding - General requirements</i>
			<i>AS 1577-1993 Scaffold planks</i>
			<i>AS 2550.1:2002 Cranes, hoists and winches - Safe use - General requirements</i>
			<i>AS 2550.16-1997 Cranes- Safe use - Mast climbing work platforms</i>
			<i>AS 1418.17:1996 Cranes (including hoists and winches) - Design and construction of workboxes</i>
			<i>AS/NZS 1891.4:2000 Industrial fall-arrest systems and devices - Selection, use and maintenance</i>
			<i>AS/NZS 4994.1(Int):2004 Temporary roof edge protection for housing and residential buildings - General requirements</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 4994.2(Int):2004 Temporary roof edge protection for housing and residential buildings - Installation and dismantling</i>
			<i>AS/NZS 4488.1:1997 Industrial rope access systems - Specifications</i>
			<i>AS/NZS 1892.1:1996 Portable ladders - Metal</i>
			<i>AS 1319:1994 Safety signs for the occupational environment</i>
			<i>AS/NZS 4389:1996 Safety mesh</i>
National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	
National Code of Practice for the Management and Control of Asbestos in the Workplace [NOHSC:2018(2005)]	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS 1319:1994 Safety signs for the occupational environment</i>
			<i>AS/NZS 1716:2003 Respiratory protective devices</i>
			<i>AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 3544:1988 Industrial vacuum cleaners for particulates hazardous to health (superseded by: AS/NZS 60335.2.69:2003 Household and Similar Electrical Appliances - Safety - Particular requirements for wet and dry vacuum cleaners, including power brush, for</i>
			<i>AS 4260:1997 High Efficiency Particulate Air Filters (HEPA) – Classification, Construction and Performance</i>
National Code of Practice for the Prevention of Musculoskeletal Disorders from Performing Manual Tasks at Work 2007	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS 2670.1:2001 Evaluation of human exposure to whole-body vibration - General requirements</i>
			<i>AS 2763:1988 Vibration and shock - Hand-transmitted vibration - Guidelines for measurement and assessment of human exposure</i>
National Code of Practice for the Preparation of Material Safety Data Sheets (2nd Edition) 2007	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS 1940:2004 The storage and handling of flammable and combustible liquids</i>
			<i>AS/NZS 1596:2002 The storage and handling of LP Gas (Superseded by: AS/NZS 1596:2008 The storage and handling of LP Gas)</i>
			<i>AS 1894-1997 The storage and handling of non-flammable cryogenic and refrigerated liquids</i>
			<i>AS/NZS 2022:2003 Anhydrous ammonia - Storage and handling</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 2927:2001 The storage and handling of liquefied chlorine gas</i>
			<i>AS 3961-2005 The storage and handling of liquefied natural gas</i>
			<i>AS 4332-2004 The storage and handling of gases in cylinders</i>
			<i>AS/NZS 2914:2007 Textile floor coverings - Informative labelling</i>
			<i>AS 2714-2008 The storage and handling of organic peroxides</i>
			<i>AS 4326-2008 The storage and handling of oxidizing agents</i>
			<i>AS/NZS 4452:1997 The storage and handling of toxic substances</i>
			<i>AS/NZS 4081:2001 The storage and handling of liquid and liquefied polyfunctional isocyanates</i>
			<i>AS 3780-2008 The storage and handling of corrosive substances</i>
			<i>AS/NZS 4681:2000 The storage and handling of Class 9 (miscellaneous) dangerous goods and articles</i>
			<i>AS/NZS 3833:2007 The storage and handling of mixed classes of dangerous goods, in packages and intermediate bulk containers</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
National Code of Practice for the Safe Removal of Asbestos 2nd Edition [NOHSC:2002(2005)]	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS 1319:1994 Safety signs for the occupational environment</i>
			<i>AS/NZS 3000:2007 (Paperback / PDF) Electrical installations (known as the Australian/New Zealand Wiring Rules)</i>
			<i>AS/NZS 3012:2003 Electrical installations - Construction and demolition sites</i>
			<i>AS 3544:1988 Industrial vacuum cleaners for particulates hazardous to health (superseded by: AS/NZS 60335.2.69:2003 Household and Similar Electrical Appliances - Safety - Particular requirements for wet and dry vacuum cleaners, including power brush, for</i>
			<i>AS 4260:1997 High Efficiency Particulate Air Filters (HEPA) – Classification, Construction and Performance</i>
			<i>AS/NZS 1716:2003 Respiratory protective devices</i>
National Code of Practice for the Safe Use of Synthetic Mineral Fibres 1990 [NOHSC:2006(1990)] (For Reference Only)	CTH	<i>Australian Safety Standards Act 2005</i>	<i>AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment</i>
			<i>AS/NZS 1716:2003 Respiratory protective devices</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			AS 3640:2004 Workplace atmospheres - Method for sampling and gravimetric determination of inhalable dust
			AS 1319:1994 Safety signs for the occupational environment
National Code of Practice for the Storage and Handling of Dangerous Goods [NOHSC:2017(2001)]	CTH	Australian Workplace Safety Standards Act 2005	AS 1940:2004 The storage and handling of flammable and combustible liquids
			AS/NZS 2906:2001 Fuel containers - Portable-plastic and metal
			AS 2030.1:2009 Gas cylinders - General requirements
			AS 2030.2:1996 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Cylinders for dissolved acetylene
			AS 2030.4:1985 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Welded cylinders - Insulated
			AS 2030.5:2009 Gas cylinders - Filling, inspection and testing of refillable cylinders

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1692-2006 Steel tanks for flammable and combustible liquids</i>
			<i>AS/NZS 4360:2004 Risk management</i>
			<i>AS 1530.4:2005 Methods for fire tests on building materials, components and structures - Fire-resistance test of elements of construction</i>
			<i>AS/NZS 3833:2007 The storage and handling of mixed classes of dangerous goods, in packages and intermediate bulk containers</i>
			<i>AS 2419.1:2005 Fire hydrant installations - System design, installation and commissioning</i>
			<i>AS 1319:1994 Safety signs for the occupational environment</i>
			<i>AS/NZS 1221:1997 Fire hose reels</i>
			<i>AS 2441-2005 Installation of fire hose reels</i>
			<i>AS 2118.1:2006 (A4) Automatic fire sprinkler systems - General systems</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1851.1:1995 Maintenance of fire protection equipment - Portable fire extinguishers and fire blankets (superseded by: AS 1851-2005 Maintenance of fire protection systems and equipment)</i>
			<i>AS 1851.3-1997 Maintenance of fire protection equipment - Automatic fire sprinkler systems</i>
			<i>AS 2444:2001 Portable fire extinguishers and fire blankets - Selection and location</i>
			<i>AS 2430.1:1987 Classification of hazardous areas - Explosive gas atmospheres (superseded by: AS/NZS 60079.10:2004 Electrical apparatus for explosive gas atmospheres - Classification of hazardous areas (IEC 60079-10:2002 MOD)</i>
			<i>AS/NZS 61241.3:1999 (Superseded) Electrical apparatus for use in the presence of combustible dust - Classification of areas where combustible dusts are or may be present</i>
			<i>AS/NZS 3000:2007 (Paperback / PDF) Electrical installations (known as the Australian/New Zealand Wiring Rules)</i>
			<i>AS/NZS 1020:1995 The control of undesirable static electricity</i>
			<i>AS/NZS 2865 Set:2005 Safe working in a confined space Set</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1680.0:1998 Interior lighting - Safe movement</i>
			<i>AS/NZS 1680.1:2006 Interior and workplace lighting - General principles and recommendations</i>
			<i>AS/NZS 1680.2.1:2008 Interior and workplace lighting - Specific applications - Circulation spaces and other general areas</i>
			<i>AS/NZS 1680.2.2:2008 Interior and workplace lighting - Specific applications - Office and screen-based tasks</i>
			<i>AS/NZS 1680.2.3:2008 Interior and workplace lighting - Specific applications - Educational and training facilities</i>
			<i>AS/NZS 1680.2.4:1997 Interior lighting - Industrial tasks and processes</i>
			<i>AS/NZS 1680.2.5:1997 Interior lighting - Hospital and medical tasks</i>
			<i>AS 1345:1995 Identification of the contents of pipes, conduits and ducts</i>
			<i>AS/NZS 1596:2002 The storage and handling of LP Gas (Superseded by: AS/NZS 1596:2008 The storage and handling of LP Gas)</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 2243.3:2002 Safety in laboratories - Microbiological aspects and containment facilities</i>
			<i>AS 1894-1997 The storage and handling of non-flammable cryogenic and refrigerated liquids</i>
			<i>AS/NZS 2022:2003 Anhydrous ammonia - Storage and handling</i>
			<i>AS 2090.1-1979 (Superseded) Uninsulated road tank vehicles for compressed liquefied gases - General requirements</i>
			<i>AS 2090.2-1979 (Superseded) Uninsulated road tank vehicles for compressed liquefiable gases - Tankers for flammable gas</i>
			<i>AS 2090.3-1979 (Superseded) Uninsulated road tank vehicles for compressed liquefiable gases - Tankers for anhydrous ammonia</i>
			<i>AS 2337.1:2004 Gas cylinder test stations - General requirements, inspection and tests - Gas cylinders</i>
			<i>AS 2337.2:2004 Gas cylinder test stations - LP Gas fuel vessels for automotive use</i>
			<i>AS/NZS 2927:2001 The storage and handling of liquefied chlorine gas</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 3961-2005 The storage and handling of liquefied natural gas</i>
			<i>AS 4332-2004 The storage and handling of gases in cylinders</i>
			<i>AS 4289-1995 Oxygen and acetylene gas reticulation systems</i>
			<i>AS 2106.0-2005 Methods for the determination of the flash point of flammable liquids (closed cup) - General</i>
			<i>AS/NZS 2106.1:1999 Methods for the determination of the flash point of flammable liquids (closed cup) - Abel closed cup method</i>
			<i>AS 2106.2-2005 Methods for the determination of the flash point of flammable liquids (closed cup) - Determination of flash point - Pensky-Martens closed cup method</i>
			<i>AS 2106.3-2005 Methods for the determination of the flash point of flammable liquids (closed cup) - Determination of flash/no flash - Rapid equilibrium closed cup method</i>
			<i>AS 2106.4-2005 Methods for the determination of the flash point of flammable liquids (closed cup) - Determination of flash point - Rapid equilibrium closed cup method</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2106.5-2005 Methods for the determination of the flash point of flammable liquids (closed cup) - Determination of flash/no flash - Closed cup equilibrium method</i>
			<i>AS 2106.6-2005 Methods for the determination of the flash point of flammable liquids (closed cup) - Determination of flash point - Closed cup equilibrium method</i>
			<i>AS 2714-2008 The storage and handling of organic peroxides</i>
			<i>AS 4326-2008 The storage and handling of oxidizing agents</i>
			<i>AS/NZS 4452:1997 The storage and handling of toxic substances</i>
			<i>AS/NZS 4081:2001 The storage and handling of liquid and liquefied polyfunctional isocyanates</i>
			<i>AS 3780-2008 The storage and handling of corrosive substances</i>
			<i>AS 2507-1998 The storage and handling of agricultural and veterinary chemicals</i>
			<i>AS 3846:2005 The handling and transport of dangerous cargoes in port areas</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2809.1:1999 - Road Tank Vehicles for Dangerous Goods (superseded by: AS 2809.1:2008 Road tank vehicles for dangerous goods - General requirements for all road tank vehicles)</i>
			<i>AS 3873:2001 Pressure equipment - Operation and maintenance</i>
			<i>AS 1603.5:1996 Automatic fire detection and alarm systems - Manual call points</i>
			<i>AS 1670.1:2004 Fire detection, warning, control and intercom systems - System design, installation and commissioning - Fire</i>
			<i>AS 1670.3:2004 Fire detection, warning, control and intercom systems - System design, installation and commissioning - Fire alarm monitoring</i>
			<i>AS 1670.4:2004 Fire detection, warning, control and intercom systems - System design, installation and commissioning - Sound systems and intercom systems for emergency purposes</i>
			<i>AS 1670.6:1997 Fire detection, warning, control and intercom systems - System design, installation and commissioning - Smoke alarms</i>
			<i>AS 2941-2008 Fixed fire protection installations - Pumpset systems</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1841.1:2007 Portable fire extinguishers - General requirements</i>
			<i>AS/NZS 1841.2:2007 Portable fire extinguishers - Specific requirements for water type extinguishers</i>
			<i>AS/NZS 1841.3:2007 Portable fire extinguishers - Specific requirements for wet chemical type extinguishers</i>
			<i>AS/NZS 1841.4:2007 Portable fire extinguishers - Specific requirements for foam type extinguishers</i>
			<i>AS/NZS 1841.5:2007 Portable fire extinguishers - Specific requirements for powder type extinguishers</i>
			<i>AS/NZS 1841.6:2007 Portable fire extinguishers - Specific requirements for carbon dioxide type extinguishers</i>
			<i>AS/NZS 1841.7:2007 Portable fire extinguishers - Specific requirements for vaporizing liquid type extinguishers</i>
			<i>AS/NZS 1841.8:2007 Portable fire extinguishers - Specific requirements for non-rechargeable type extinguishers</i>
			<i>AS 4265:1995 Wheeled fire extinguishers</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1850:2009 Portable fire extinguishers - Classification, rating and performance testing</i>
			<i>AS 1851 Set:2005 Maintenance of fire protection systems and equipment Set</i>
			<i>AS 1915-1992 Electrical equipment for explosive atmospheres - Battery-operated vehicles</i>
			<i>AS 2359.1:1995 Powered industrial trucks - General requirements</i>
National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC:2007(1994)]	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS 1319:1994 Safety signs for the occupational environment</i>
			<i>AS 1345:1995 Identification of the contents of pipes, conduits and ducts</i>
			<i>AS/NZS 1337:1992 Eye protectors for industrial applications</i>
			<i>AS/NZS 1336:1997 Recommended practices for occupational eye protection</i>
			<i>AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1716:2003 Respiratory protective devices</i>
			<i>AS/NZS 2161 Set:2008 Occupational protective gloves Set</i>
			<i>AS/NZS 2210.1:1994 Occupational protective footwear - Guide to selection, care and use</i>
			<i>AS/NZS 1800:1998 Occupational protective helmets - Selection, care and use</i>
			<i>AS/NZS 1801:1997 Occupational protective helmets</i>
			<i>AS 3765.1-1990 (Superseded) Clothing for protection against hazardous chemicals - Protection against general or specific chemicals</i>
			<i>AS 3640:2004 Workplace atmospheres - Method for sampling and gravimetric determination of inhalable dust</i>
			<i>AS 2985-2004 Workplace atmospheres - Method for sampling and gravimetric determination of respirable dust</i>
			<i>AS 2986.1-2003 Workplace air quality - Sampling and analysis of volatile organic compounds by solvent desorption/gas chromatography - Pumped sampling method</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
National Code of Practice for the Control of Work-related Exposure to Hepatitis and HIV (blood-borne) Viruses 2003	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS 4031:1992 Non-reusable containers for the collection of sharp medical items used in health care areas</i>
			<i>AS/NZS 4261:1994 Reusable containers for the collection of sharp items used in human and animal medical applications</i>
			<i>AS/NZS 4187:2003 Cleaning, disinfecting and sterilizing reusable medical and surgical instruments and equipment, and maintenance of associated environments in health care facilities</i>
			<i>AS/NZS 4815:2006 Office-based health care facilities - Reprocessing of reusable medical and surgical instruments and equipment, and maintenance of the associated environment</i>
			<i>AS/NZS 4146:2000 Laundry practice</i>
			<i>AS/NZS 3816:1998 Management of clinical and related wastes</i>
National Code of Practice for the Prevention of Occupational Overuse Syndrome 1994	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS 3590.1-1990 Screen-based workstations - Visual display units</i>
			<i>AS 3590.2-1990 Screen-based workstations - Workstation furniture</i>
			<i>AS 3590.3-1990 Screen-based workstations - Input devices</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
National Exposure Standards For Atmospheric Contaminants In The Occupational Environment [NOHSC:1003(1995)]	CTH		
National Model Regulation for the Control of Scheduled Carcinogenic Substances [NOHSC:1011(1995)]	CTH		
National Occupational Health and Safety Certification Standard for Users and Operators of Industrial Equipment 2001	CTH		
National Standard for Construction Work [NOHSC:1016(2005)]	CTH	Australian Workplace Safety Standards Act 2005	AS/NZS 2299.1:2007 Occupational diving operations - Standard operational practice
			AS/NZS 3012:2003 Electrical installations - Construction and demolition sites
			AS/NZS 61008.1:2004 Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) - General rules (IEC 61008-1 Ed. 2.1 (2002) MOD)
			AS/NZS 61009.1:2004 Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) - General rules (IEC 61009-1 Ed. 2.1 (2003) MOD)

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
National Standard for Licensing Persons Performing High Risk Work 2006	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS 2593:2004 Boilers - Safety management and supervision systems</i>
National Standard for Limiting Occupational Exposure to Ionizing Radiation [NOHSC:1013(1995)]	CTH		
National Standard for Manual Tasks 2007	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	
National Standard for Occupational Noise [NOHSC:1007(2000)]	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS/NZS 1269 Set:2005 Occupational Noise Management Set</i>
			<i>AS 1259.1:1990 Acoustics - Sound level meters - Non-integrating (Superseded by AS IEC 61672.2:2004 (in part) Electroacoustics - Sound level meters - Pattern evaluation tests and AS IEC 61672.1:2004 (in part) Electroacoustics - Sound level meters - Specif</i>
National Standard for Plant 1994	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS 2030.1:2009 Gas cylinders - General requirements</i>
			<i>AS 2030.2:1996 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Cylinders for dissolved acetylene</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2030.4:1985 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Welded cylinders - Insulated</i>
			<i>AS 2030.5:2009 Gas cylinders - Filling, inspection and testing of refillable cylinders</i>
			<i>AS/NZS 1200:2000 Pressure equipment</i>
			<i>AS 3920.1:1993 Assurance of product quality - Pressure equipment manufacture</i>
			<i>AS/NZS 3000:2007 (Paperback / PDF) Electrical installations (known as the Australian/New Zealand Wiring Rules)</i>
			<i>AS/NZS 1576.1:1995 Scaffolding - General requirements</i>
			<i>AS/NZS 3788:2006 Pressure equipment - In-service inspection</i>
			<i>AS 3873:2001 Pressure equipment - Operation and maintenance</i>
			<i>AS 2593:2004 Boilers - Safety management and supervision systems</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2337.1:2004 Gas cylinder test stations - General requirements, inspection and tests - Gas cylinders</i>
			<i>AS 2337.2:2004 Gas cylinder test stations - LP Gas fuel vessels for automotive use</i>
			<i>AS 1636.1:1996 Tractors - Roll-over protective structures - Criteria and tests - Conventional tractors</i>
			<i>AS 1636.2:1996 Tractors - Roll-over protective structures - Criteria and tests - Rear-mounted for narrow-track tractors</i>
			<i>AS 1636.3:1996 Tractors - Roll-over protective structures - Criteria and tests - Mid-mounted for narrow-track tractors</i>
			<i>AS 2294.1:1997 Earth-moving machinery - Protective structures - General</i>
			<i>AS/NZS 1891.1:2007 Industrial fall-arrest systems and devices - Harnesses and ancillary equipment</i>
			<i>AS/NZS 1891.2:2001 Industrial fall-arrest systems and devices - Horizontal lifeline and rail systems</i>
			<i>AS/NZS 1891.3:1997 Industrial fall-arrest systems and devices - Fall-arrest devices</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1891.4:2000 Industrial fall-arrest systems and devices - Selection, use and maintenance</i>
			<i>AS 2550 Set:2008 Cranes, hoists and winches - Safe use Set</i>
			<i>AS 1418.10(Int):2004 Cranes, hoists and winches - Elevating work platforms</i>
			<i>AS/NZS 2211.1:2004 Safety of laser products - Equipment classification, requirements and user's guide (IEC 60825-1:2001, MOD)</i>
			<i>AS/NZS 2211.10:2004 Safety of laser products - Application guidelines and explanatory notes to AS/NZS 2211.1 (IEC TR 60825-10:2002, MOD)</i>
			<i>AS/NZS 2211.12:2006 Safety of laser products - Safety of free space optical communication systems used for transmission of information</i>
			<i>AS/NZS 2211.2:2006 Safety of laser products - Safety of optical fibre communication systems (OFCS)</i>
			<i>AS/NZS 2211.3:2002 Safety of laser products - Guidance for laser displays and shows</i>
			<i>AS/NZS 2211.4:2002 Safety of laser products - Laser guards</i>

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Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 2211.5:2006 Safety of laser products - Manufacturer's checklist for AS/NZS 2211.1</i>
			<i>AS/NZS 2211.6:2002 Safety of laser products - Safety of products with optical sources, exclusively used for visible information transmission to the human eye</i>
			<i>AS/NZS 2211.7:2002 Safety of laser products - Safety of products emitting infrared optical radiation, exclusively used for wireless 'free air' data transmission and surveillance</i>
			<i>AS/NZS 2211.9:2002 Safety of laser products - Compilation of maximum permissible exposure to incoherent optical radiation</i>
			<i>AS 2397:1993 Safe use of lasers in the building and construction industry</i>
			<i>AS 1735.1:2003 Lifts, escalators and moving walks - General requirements</i>
			<i>AS 1735.2:2001 Lifts, escalators and moving walks - Passenger and goods lifts - Electric</i>
			<i>AS 1735.3:2002 Lifts, escalators and moving walks - Passenger and goods lifts - Electrohydraulic</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1735.4:1986 Lifts, escalators and moving walks (known as the SAA Lift Code) - Service lifts - Power-operated</i>
			<i>AS 1735.5:2003 Lifts, escalators and moving walks - Escalators and moving walks (BS EN 115:1995, MOD)</i>
			<i>AS 1735.8:1986 Lifts, escalators and moving walks (known as the SAA Lift Code) - Inclined lifts</i>
			<i>AS 1735.9:1994 Lifts, escalators and moving walks - Special purpose industrial lifts</i>
			<i>AS 1735.12:1999 Lifts, escalators and moving walks - Facilities for persons with disabilities</i>
			<i>AS 1735.14:1998 Lifts, escalators and moving walks - Low-rise platforms for passengers</i>
			<i>AS 1735.15:2002 Lifts, escalators and moving walks - Low rise passenger lifts - Non-automatically controlled</i>
			<i>AS/NZS 1735.18:2002 Lifts, escalators and moving walks - Passenger lifts for private residence - Automatically controlled</i>
			<i>AS/NZS 3509:2009 LP Gas fuel vessels for automotive use</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			AS 2971:2007 Serially produced pressure vessels
			AS 1121.1:2007 Agricultural tractor power take-offs - Rear-mounted power take-off types 1, 2 and 3 - General specifications, safety requirements, dimensions for master shield and clearance zone
			AS 1121.2:2007 Agricultural tractor power take-offs - Rear-mounted power take-off types 1, 2 and 3 - Narrow-track tractors, dimensions for master shield and clearance zone
			AS 1121.3:2007 Agricultural tractor power take-offs - Rear-mounted power take-off types 1, 2 and 3 - Main PTO dimensions and spline dimensions, location of PTO
			AS 1121.4:2007 Agricultural tractor power take-offs - Guards for power take-off (PTO) drive-shafts - Strength and wear tests and acceptance criteria
			AS/NZS 1200:2000 Pressure equipment
			AS 1219 Power Presses – Safety Requirements (superseded by AS 4024.3001:2009 Safety of machinery - Materials forming and shearing - Mechanical power presses)

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1418.10(Int):2004 Cranes, hoists and winches - Elevating work platforms</i>
			<i>AS 1473-1991 Guarding and safe use of woodworking machinery</i>
			<i>AS/NZS 1576.1:1995 Scaffolding - General requirements</i>
			<i>AS 1576.2-1991 Scaffolding - Couplers and accessories</i>
			<i>AS/NZS 1576.3:1995 Scaffolding - Prefabricated and tube-and-coupler scaffolding</i>
			<i>AS 1576.4-1991 Scaffolding - Suspended scaffolding</i>
			<i>AS/NZS 1576.5:1995 Scaffolding - Prefabricated splitheads and trestles</i>
			<i>AS/NZS 1576.6:2000 Scaffolding - Metal tube-and-coupler scaffolding - Deemed to comply with AS/NZS 1576.3</i>
			<i>AS 1577-1993 Scaffold planks</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1657:1992 Fixed platforms, walkways, stairways and ladders - Design, construction and installation</i>
			<i>AS 1735.1:2003 Lifts, escalators and moving walks - General requirements</i>
			<i>AS 1735.2:2001 Lifts, escalators and moving walks - Passenger and goods lifts - Electric</i>
			<i>AS 1735.3:2002 Lifts, escalators and moving walks - Passenger and goods lifts - Electrohydraulic</i>
			<i>AS 1735.4:1986 Lifts, escalators and moving walks (known as the SAA Lift Code) - Service lifts - Power-operated</i>
			<i>AS 1735.5:2003 Lifts, escalators and moving walks - Escalators and moving walks (BS EN 115:1995, MOD)</i>
			<i>AS 1735.8:1986 Lifts, escalators and moving walks (known as the SAA Lift Code) - Inclined lifts</i>
			<i>AS 1735.9:1994 Lifts, escalators and moving walks - Special purpose industrial lifts</i>
			<i>AS 1735.12:1999 Lifts, escalators and moving walks - Facilities for persons with disabilities</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 1735.14:1998 Lifts, escalators and moving walks - Low-rise platforms for passengers</i>
			<i>AS 1735.15:2002 Lifts, escalators and moving walks - Low rise passenger lifts - Non-automatically controlled</i>
			<i>AS/NZS 1735.18:2002 Lifts, escalators and moving walks - Passenger lifts for private residence - Automatically controlled</i>
			<i>AS 1755:2000 Conveyors - Safety requirements</i>
			<i>AS 1788.1:1987 Abrasive wheels - Design, construction, and safeguarding</i>
			<i>AS 1788.2:1987 Abrasive wheels - Selection, care, and use</i>
			<i>AS/NZS 1891.1:2007 Industrial fall-arrest systems and devices - Harnesses and ancillary equipment</i>
			<i>AS/NZS 1891.2:2001 Industrial fall-arrest systems and devices - Horizontal lifeline and rail systems</i>
			<i>AS/NZS 1891.3:1997 Industrial fall-arrest systems and devices - Fall-arrest devices</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1891.4:2000 Industrial fall-arrest systems and devices - Selection, use and maintenance</i>
			<i>AS/NZS 1892.1:1996 Portable ladders - Metal</i>
			<i>AS 1892.2-1992 Portable ladders - Timber</i>
			<i>AS/NZS 1892.3:1996 Portable ladders - Reinforced plastic</i>
			<i>AS/NZS 1892.5:2000 Portable ladders - Selection, safe use and care</i>
			<i>AS 1893-1977 Code of practice for the guarding and safe use of metal and paper cutting guillotines</i>
			<i>AS 2030.1:2009 Gas cylinders - General requirements</i>
			<i>AS 2030.2:1996 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Cylinders for dissolved acetylene</i>
			<i>AS 2030.4:1985 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Welded cylinders - Insulated</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2030.5:2009 Gas cylinders - Filling, inspection and testing of refillable cylinders</i>
			<i>AS/NZS 2211.1:2004 Safety of laser products - Equipment classification, requirements and user's guide (IEC 60825-1:2001, MOD)</i>
			<i>AS/NZS 2211.10:2004 Safety of laser products - Application guidelines and explanatory notes to AS/NZS 2211.1 (IEC TR 60825-10:2002, MOD)</i>
			<i>AS/NZS 2211.12:2006 Safety of laser products - Safety of free space optical communication systems used for transmission of information</i>
			<i>AS/NZS 2211.2:2006 Safety of laser products - Safety of optical fibre communication systems (OFCS)</i>
			<i>AS/NZS 2211.3:2002 Safety of laser products - Guidance for laser displays and shows</i>
			<i>AS/NZS 2211.4:2002 Safety of laser products - Laser guards</i>
			<i>AS/NZS 2211.5:2006 Safety of laser products - Manufacturer's checklist for AS/NZS 2211.1</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 2211.6:2002 Safety of laser products - Safety of products with optical sources, exclusively used for visible information transmission to the human eye</i>
			<i>AS/NZS 2211.7:2002 Safety of laser products - Safety of products emitting infrared optical radiation, exclusively used for wireless 'free air' data transmission and surveillance</i>
			<i>AS/NZS 2211.9:2002 Safety of laser products - Compilation of maximum permissible exposure to incoherent optical radiation</i>
			<i>AS 2294.1:1997 Earth-moving machinery - Protective structures - General</i>
			<i>AS 2359.1:1995 Powered industrial trucks - General requirements</i>
			<i>AS 2359.2:1985 Industrial trucks (known as the SAA Industrial Truck Code) - Operation</i>
			<i>AS 2359.3:1995 Powered industrial trucks - Counterbalanced fork-lift trucks - Stability tests</i>
			<i>AS 2359.4:1995 Powered industrial trucks - Reach and straddle fork-lift trucks - Stability tests</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2359.5:2005 Powered industrial trucks - Symbols for operator controls and other displays</i>
			<i>AS 2359.6:1995 Powered industrial trucks - Safety code</i>
			<i>AS 2359.7:1995 Powered industrial trucks - Terminology</i>
			<i>AS 2359.8:1995 Powered industrial trucks - Pallet stackers and high-lift platform trucks - Stability tests</i>
			<i>AS 2359.9:2006 Powered industrial trucks - Overhead guards - Specification and testing (ISO 6055:2004, MOD)</i>
			<i>AS 2359.10:1995 Powered industrial trucks - Fork-lift trucks - Hook-on type fork arms - Vocabulary</i>
			<i>AS 2359.11:1995 Powered industrial trucks - Fork-lift trucks - Hook-on type fork arms and fork carriers - Mounting dimensions</i>
			<i>AS 2359.12:1996 Powered industrial trucks - Hazardous areas</i>
			<i>AS 2359.13:2005 Powered industrial trucks - Brake performance and component strength</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2359.14:2005 Powered industrial trucks - Fork arms - Technical characteristics and testing</i>
			<i>AS 2359.15:2005 Powered industrial trucks - Fork-arm extensions and telescopic fork arms - Technical characteristics and strength requirements</i>
			<i>AS 2359.16:2005 Powered industrial trucks - Safety signs and hazard pictorials - General principles</i>
			<i>AS 2359.17:2008 Powered industrial trucks - Stability tests for rough terrain trucks (ISO 8379:1998, MOD)</i>
			<i>AS 2359.18:2008 Powered industrial trucks - Stability tests for industrial variable-reach trucks</i>
			<i>AS 2359.19:2008 Powered industrial trucks - Additional stability tests for industrial variable-reach trucks handling freight containers of length 6 m and above</i>
			<i>AS 2939:1987 Industrial robot systems - Safe design and usage (superseded by AS 4024.3301-2009 Safety of machinery - Robots for industrial environments - Safety requirements)</i>
			<i>AS 2971:2007 Serially produced pressure vessels</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 3000:2007 (Paperback / PDF) Electrical installations (known as the Australian/New Zealand Wiring Rules)</i>
			<i>AS/NZS 3509:2009 LP Gas fuel vessels for automotive use</i>
			<i>AS 3533.3:2003 Amusement rides and devices - In-service inspection</i>
			<i>AS 3920.1:1993 Assurance of product quality - Pressure equipment manufacture</i>
			<i>AS/NZS 3913:1992 (Superseded) Quality manuals - Guide to preparation</i>
			<i>AS 5062-2006 Fire protection for mobile and transportable equipment</i>
National Standard for Safe Working in a Confined Space 1986	CTH	-	<i>AS 1319:1994 Safety signs for the occupational environment</i>
			<i>AS 2430.1:1987 Classification of hazardous areas - Explosive gas atmospheres (superseded by: AS/NZS 60079.10:2004 Electrical apparatus for explosive gas atmospheres - Classification of hazardous areas (IEC 60079-10:2002 MOD)</i>
			<i>AS/NZS 1020:1995 The control of undesirable static electricity</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1716:2003 Respiratory protective devices</i>
			<i>AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment</i>
			<i>AS 1819-1976 (Superseded) Corespun cotton/polyester duck</i>
			<i>AS 2626:1983 Industrial safety belts and harnesses - Selection, use and maintenance (superseded by: AS/NZS 1891.4:2000 Industrial fall-arrest systems and devices - Selection, use and maintenance)</i>
			<i>AS/NZS 3100:2002 Approval and test specification - General requirements for electrical equipment</i>
			<i>AS/NZS 3000:2007 (Paperback / PDF) Electrical installations (known as the Australian/New Zealand Wiring Rules)</i>
			<i>AS/NZS 3108:1994 (Superseded) Approval and test specification - Particular requirements for isolating transformers and safety isolating transformers</i>
			<i>AS/NZS 3190:2009 Approval and test specification - Residual current devices (current-operated earth-leakage devices)</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 3191:2008 Electric flexible cords</i>
			<i>AS 2380.7-1987 (Superseded) Electrical equipment for explosive atmospheres - Explosion-protection techniques - Intrinsic safety i</i>
			<i>AS/NZS 1892.1:1996 Portable ladders - Metal</i>
			<i>AS 1210:1997 (Hardbound) Pressure vessels</i>
			<i>AS 1228-2006 Pressure equipment - Boilers</i>
			<i>AS/NZS 1270:2002 Acoustics - Hearing protectors</i>
			<i>AS/NZS 1336:1997 Recommended practices for occupational eye protection</i>
			<i>AS 1657:1992 Fixed platforms, walkways, stairways and ladders - Design, construction and installation</i>
			<i>AS 1674 Set-2007 Safety in welding and allied processes Set</i>
			<i>AS/NZS 1680.0:1998 Interior lighting - Safe movement</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1680.1:2006 Interior and workplace lighting - General principles and recommendations</i>
			<i>AS/NZS 1680.2.1:2008 Interior and workplace lighting - Specific applications - Circulation spaces and other general areas</i>
			<i>AS/NZS 1680.2.2:2008 Interior and workplace lighting - Specific applications - Office and screen-based tasks</i>
			<i>AS/NZS 1680.2.3:2008 Interior and workplace lighting - Specific applications - Educational and training facilities</i>
			<i>AS/NZS 1680.2.4:1997 Interior lighting - Industrial tasks and processes</i>
			<i>AS/NZS 1680.2.5:1997 Interior lighting - Hospital and medical tasks</i>
			<i>AS 1680.3:1991 Interior lighting - Measurement, calculation and presentation of photometric data</i>
			<i>AS/NZS 1680.4:2001 Interior lighting - Maintenance of electric lighting systems</i>
			<i>AS/NZS 1800:1998 Occupational protective helmets - Selection, care and use</i>

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1801:1997 Occupational protective helmets</i>
			<i>AS/NZS 1891.1:2007 Industrial fall-arrest systems and devices - Harnesses and ancillary equipment</i>
			<i>AS 2225:1994 Insulating gloves for electrical purposes</i>
			<i>AS 2275.1-1979 (Superseded) Combustible gas detection instruments for use in explosive atmospheres - General requirements for explosion protection of electrical apparatus and systems</i>
			<i>AS 2275.2-1979 (Superseded) Combustible gas detection instruments for use in explosive atmospheres - Performance requirements</i>
			<i>AS 2380.7-1987 (Superseded) Electrical equipment for explosive atmospheres - Explosion-protection techniques - Intrinsic safety i</i>
			<i>AS/NZS 2381 Set:2008 Electrical equipment for explosive gas atmospheres - Selection, installation and maintenance Set</i>
National Standard for the Control of Inorganic Lead at Work 1994	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	-

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HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
National Standard for the Control of Major Hazard Facilities [NOHSC:1014(2002)]	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS/NZS 2243.3:2002 Safety in laboratories - Microbiological aspects and containment facilities</i>
			<i>AS 3745-2002 Emergency control organization and procedures for buildings, structures and workplaces</i>
National Standard for the Storage and Handling of Workplace Dangerous Goods [NOHSC:1015(2001)]	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	<i>AS 1940:2004 The storage and handling of flammable and combustible liquids</i>
			<i>AS 2430.1:1987 Classification of hazardous areas - Explosive gas atmospheres (superseded by: AS/NZS 60079.10:2004 Electrical apparatus for explosive gas atmospheres - Classification of hazardous areas (IEC 60079-10:2002 MOD)</i>
			<i>AS/NZS 2430.3.1:2004 Classification of hazardous areas - Examples of area classification - General</i>
			<i>AS/NZS 61241.3:1999 (Superseded) Electrical apparatus for use in the presence of combustible dust - Classification of areas where combustible dusts are or may be present</i>
Workplace Injury and Disease Recording Standard in the Workplace 1990	CTH	<i>Australian Workplace Safety Standards Act 2005</i>	

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Human Resources and Industrial Relations Codes of Practice Register

HUMAN RESOURCES AND INDUSTRIAL RELATIONS CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
Occupational Health and Safety Code of Practice 2008	CTH	<i>Occupational Health and Safety Act 1991</i>	<i>AS/NZS 3931:1998 Risk analysis of technological systems - Application guide</i>
			<i>AS/NZS 4360:2004 Risk management</i>
			<i>AS IEC 61672.1:2004 Electroacoustics - Sound level meters - Specifications</i>
			<i>AS 1319:1994 Safety signs for the occupational environment</i>
			<i>AS/NZS 1269.0:2005 Occupational noise management - Overview and general requirements</i>
			<i>AS/NZS 1269.1:2005 Occupational noise management - Measurement and assessment of noise emission and exposure</i>
			<i>AS/NZS 1269.2:2005 Occupational noise management - Noise control management</i>
			<i>AS/NZS 1269.3:2005 Occupational noise management - Hearing protector program</i>

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HUMAN RESOURCES AND INDUSTRIAL RELATIONS CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 1269.4:2005 Occupational noise management - Auditory assessment</i>
			<i>AS/NZS 1270:2002 Acoustics - Hearing protectors</i>
			<i>AS 2670.1:2001 Evaluation of human exposure to whole-body vibration - General requirements</i>
			<i>AS 2763-1988 Vibration and shock - Hand-transmitted vibration - Guidelines for measurement and assessment of human exposure</i>
			<i>AS/NZS 2865 Set:2005 Safe working in a confined space Set</i>
			<i>AS/NZS 1715:2009 Selection, use and maintenance of respiratory protective equipment</i>
			<i>AS 1668.2:2002 The use of ventilation and airconditioning in buildings - Ventilation design for indoor air contaminant control</i>
			<i>AS/NZS 3666 Set:2006 Air-handling and water systems of buildings Set</i>
			<i>AS/NZS 2982.1:1997 Laboratory design and construction - General requirements</i>

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HUMAN RESOURCES AND INDUSTRIAL RELATIONS CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS/NZS 2243 Set:2006 Safety in laboratories Set</i>
			<i>AS 1940:2004 The storage and handling of flammable and combustible liquids</i>
			<i>AS 2444:2001 Portable fire extinguishers and fire blankets - Selection and location</i>
			<i>AS 3640-2004 Workplace atmospheres - Method for sampling and gravimetric determination of inhalable dust</i>
			<i>AS/NZS 1716:2003 Respiratory protective devices</i>
			<i>AS/NZS 2843.1:2006 Timber preservation plants - Timber preservation plant site design</i>
			<i>AS 2636-1994 Sampling of venous and capillary blood for the determination of lead or cadmium concentration2636</i>
			<i>AS 2411-1993 Venous blood - Determination of lead content - Flame atomic absorption spectrometric method</i>
			<i>AS 1210:1997 (Hardbound) Pressure vessels</i>
			<i>AS 2030.1:2009 Gas cylinders - General requirements</i>

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HUMAN RESOURCES AND INDUSTRIAL RELATIONS CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2030.2:1996 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Cylinders for dissolved acetylene</i>
			<i>AS 2030.4:1985 The verification, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gases - Welded cylinders - Insulated</i>
			<i>AS 2030.5:2009 Gas cylinders - Filling, inspection and testing of refillable cylinders</i>
			<i>AS/NZS 4399:1996 Sun protective clothing - Evaluation and classification</i>
			<i>AS/NZS 1067:2003 Sunglasses and fashion spectacles</i>
			<i>AS/NZS 2299.1:2007 Occupational diving operations - Standard operational practice</i>
			<i>AS/NZS 2381.1:2005 Electrical equipment for explosive gas atmospheres - Selection, installation and maintenance - General requirements</i>
			<i>AS 2268:1979 Electrostatic paint and powder sprayguns for explosive atmospheres</i>

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HUMAN RESOURCES AND INDUSTRIAL RELATIONS CODES OF PRACTICE REGISTER			
Code of Practice Name	Jurisdiction	Made Under	Referenced Standards
			<i>AS 2985-2004 Workplace atmospheres - Method for sampling and gravimetric determination of respirable dust</i>