Permit

Environmental Protection Act 1994

Environmental authority EPML00876013

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EPML00876013

Environmental authority takes effect on 7 November 2025.

The anniversary date of this environmental authority is 26 April each year.

Environmental authority holder

Name	Registered address
TNC MINING PTY LTD	Great Australia Mine, Round Oak Road CLONCURRY QLD 4824

Environmentally relevant activity and location details

Environmentally relevant activities	Locations
Schedule 3 - 17 - Mining copper ore Ancillary 08 - Chemical Storage - 3 - Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c) Ancillary 08 - Chemical Storage - 4 - storing 200t or more of chemicals that are solids or gases, other than chemicals mentioned in items 1 to 3, under subsection (1)(d) Ancillary 31 - Mineral processing - 2(a) - Processing, in a year, the following quantities of mineral products, other than coke - 1000t to 100,000t Ancillary 60 - Waste disposal - 1(a) - Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) - less than 50,000t Ancillary 62 - Resource recovery and transfer facility operation - 1(c) - Operating a facility for receiving and sorting, dismantling, baling or temporarily storing category 2 regulated waste Ancillary 62 - Resource recovery and transfer facility operation - 1(d) - Operating a facility for receiving and sorting, dismantling, baling or temporarily storing	ML90065 ML90108

Environmentally relevant activities	Locations
category 1 regulated waste	

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Mobile and temporary activities

If you operate a mobile and temporary environmentally relevant activity (ERA), other than regulated waste transport, you are required to maintain a work diary. You must:

- use the approved form for a work diary (ESR/2015/1696);
- keep the work diary records for 2 years after the last entry;
- inform the administering authority within 7 days of the work diary being lost or stolen;
- record the information required in the work diary for each location within 1 day of leaving the location.

Contaminated land

It is a requirement of the EP Act that an owner or occupier of land give written notice to the administering authority if they become aware of the following:

- the presence of, or happening of an event involving, a hazardous contaminant on the land that is causing, or is reasonably likely to cause, serious or material environmental harm (notice must be given within 24 hours); or
- if the land is contaminated land – a change in the condition of the land that is causing, or is reasonably likely to cause, serious or material environmental harm (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the land (notice must be given within 20 business days).

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term ‘duty to notify’.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority – on the nominated day; or

b) if the authority states a day or an event for it to take effect – on the stated day or when the stated event happens; or

c) otherwise – on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

	7/11/2025
Signature	Date

Giles Bezzina
Department of the Environment, Tourism, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:

Minerals Business Centre
PO Box 7230, Cairns QLD 4870
Phone: 07 4222 5352
Email: ESCairns@detsi.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443).

Other permits required

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department, and other State and Federal Government agencies prior to commencing any activity at the site. For example, this may include permits / approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access State controlled roads), the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development (to clear vegetation), and the Department of Primary Industries (to clear marine plants or to obtain a quarry material allocation).

Obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

Matters of national environmental significance (MNES) are regulated under the Commonwealth EPBC Act rather than under state legislation. You may need to submit a referral if your project potentially impacts any matters protected under the EPBC Act. For more information on self-assessments, and referral and assessment processes please visit the Department of Climate Change, Energy, the Environment and Water webpage, https://www.dcceew.gov.au/environment/epbc/advice.

Obligations under the *Aboriginal Cultural Heritage Act 2003* and *Torres Strait Islander Cultural Heritage Act 2003* (the Cultural Heritage Acts)

The Cultural Heritage Acts require anyone who carries out a land-use activity to exercise a duty of care. This ‘duty of care’ means land users must take all reasonable and practicable measures to ensure their activity does not harm Aboriginal or Torres Strait Islander cultural heritage, and applies to any activity where Aboriginal or Torres Strait Islander cultural heritage is located. For more information on your obligations under this legislation, please visit the Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism webpage at, https://www.dwatsipm.qld.gov.au/.

Conditions of environmental authority

This **Environmental Authority** incorporates the following schedules:

- Schedule A - General
- Schedule B - Air
- Schedule C - Water
- Schedule D - Regulated Dams
- Schedule E - Waste
- Schedule F - Noise and Vibration
- Schedule G - Land and Rehabilitation
- Schedule H - Definitions
- Schedule I - Maps / Plans
- Appendix A - Authorised Mining Activities
- Appendix B - Landform Design and Rehabilitation Requirement

SCHEDULE A – GENERAL

Activity

(A1) This environmental authority authorises environmental harm referred to in the conditions herein. Where a condition in this environmental authority refers to environmental harm the condition is taken to authorise the environmental harm occurring in compliance with the condition. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence shall not be construed as authorising environmental harm.

(A2) In carrying out the mining activity the holder must comply with Schedule A -Table A1 (Authorised Mining Activities). Detailed coordinates (i.e., location) for these mining activities are shown in Table 1 – Appendix A.

Schedule A — Table A1 (Authorised Mining Activities)

Mine Domain	Mine Feature Name	Tenure Type and Number	Location	Maximum Disturbance Area (ha)	Constraints
Waste	Great Australia Waste Rock Dump	ML 90065 (Great Australia)	Coordinates provided in Table 1 – Appendix A	12	Maximum height / slope angles
	Taipan Waste Rock Dump	ML 90065 (Great Australia)		16.1	
	Orphan Shear Waste Rock Dump	ML 90108 (Orphan Shear)		4	
	Flood Protection Landform	ML 90065 (Great Australia)		3.0	
Run of Mine	Agglomeration Site (Located within ROM Pad Area)	ML 90065 (Great Australia)		Within ROM Pad	Area and Maximum annual ROM
	ROM Pad	ML 90065 (Great Australia)		6.61	
Processing Area	Heap Leach Pads	ML 90065 (Great Australia)		32.5	Scale and intensity
	SX Process Plant	ML 90065 (Great Australia)		0.8	
	Concentrator, CIP Plant, Gold Room & Concentrate Storage	ML 90065 (Great Australia)		3.4	
	Crushing Plant	ML 90065 (Great Australia)		1.9	
	Sulphuric Acid and Reagents Storage Area	ML 90065 (Great Australia)		0.2	
	Fuel & Oil Storage	ML 90065 (Great Australia)		0.3	
	Process Plant Area and associated buildings	ML 90065 (Great Australia)		0.8	
Mining Area	Great Australia Pit	ML 90065 (Great Australia)		11	Scale and intensity
	Paddock Lode Pit	ML 90065 (Great Australia)		2	
	Taipan Pit	ML 90065 (Great Australia)		5.16	
	Orphan Shear Pit	ML 90108 (Orphan Shear)		3	
Exploration	Exploration	ML 90065 (Great Australia) ML 90108 (Orphan Shear)		3.65	Scale and intensity
Dam	PLS Ponds	ML 90065 (Great Australia)		0.9	Depth and volume
	Storm Water Ponds 1,2,3 and 4	ML 90065 (Great Australia)		7	
	Storm Pond 5	ML 90065 (Great Australia)		2.8	
	Storm Pond 6	ML 90065 (Great Australia)		2.8	
	Initial Tailings Pond	ML 90065 (Great Australia)		0.2	
	Heap Leach Raw Water Ponds	ML 90065 (Great Australia)		0.35	
	Tailings Storage Facility	ML 90065 (Great Australia)		15.5	
	Decant Ponds 1 and 2	ML 90065 (Great Australia)		2.4	
	Concentrator Process Water Dam	ML 90065 (Great Australia)		0.8	
	Tailings Storage Facility	ML 90108 (Orphan Shear)		14.5	
	Taipan WRD Runoff Dam	ML90065 (Great Australia)		0.25	
Borrow Pits and Stockpiles	Great Australia Topsoil	ML 90065 (Great Australia)		5	Scale and intensity
	Paddock Lode Topsoil	ML 90065 (Great Australia)		0.1	
	Taipan Topsoil	ML 90065 (Great Australia)		0.5	
	Sand & Gravel Borrow Pits	ML 90065 (Great Australia)		3.25	
	Clay Borrow Pits	ML 90065 (Great Australia)		10	
	Orphan Shear Topsoil	ML 90108 (Orphan Shear)		2	

Mine Domain	Mine Feature Name	Tenure Type and Number	Location	Maximum Disturbance Area (ha)	Constraints
	Stockpile				
Ancillary Infrastructure	Raw Water Pipeline	ML 90065 (Great Australia)		1	Scale and intensity
	Existing Site Roads	ML 90065 (Great Australia)		5.3	
	Additional Site Roads and Haulage Roads	ML 90065 (Great Australia)		7.5	
	Noise/Visual Bund	ML 90065 (Great Australia)		0.5	
	Domestic Waste Disposal Area	ML 90065 (Great Australia)		0.01	
	Office	ML 90065 (Great Australia)		0.9	
	Workshops / Admin.	ML 90065 (Great Australia)		0.75	
	Explosives Magazines	ML 90065 (Great Australia)		0.1	
	Sewage Treatment Plant	ML 90065 (Great Australia)		0.1	
	General Construction Areas (Existing disturbance)	ML 90065 (Great Australia)		26	
	Run-off Diversions	ML 90065 (Great Australia)		2	
	Existing Site Roads	ML 90108 (Orphan Shear)		1.5	
	Additional Site Roads and Haulage Roads	ML 90108 (Orphan Shear)		3	
	Run-off Diversions	ML 90108 (Orphan Shear)		0.5	
	Run-off Diversions (Taipan/Flood Protection Landform)	ML 90065 (Great Australia)		1.8	

(A3) Access to the mining project via land authorised for that purpose by the *Mineral Resources Act 1989* is subject to the conditions of this environmental authority.

(A3B) The environmental authority holder is authorised to receive, stockpile and process ore from third party mining operations, provided such activities comply with the requirements set out in this environmental authority and a geochemical assessment of the ore is undertaken and made available to the administering authority prior to storage and handling on site.

Maintenance of measures, plant and equipment

(A4) The holder of this environmental authority must:

(a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;
(b) maintain such measures, plant and equipment in a proper and efficient condition;
(c) operate such measures, plant and equipment in a proper and efficient manner; and
(d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are calibrated, and appropriately operated and maintained.

(A5) No change, replacement or alteration of any plant or equipment is permitted if the change, replacement or alteration increases, or is likely to increase, the risk of environmental harm.

Monitoring

(A6) The holder of this environmental authority must record, compile and keep for a minimum of seven years (7) all monitoring results required by this environmental authority and make available for inspection within ten (10) business days all or any of these records upon request by the administering authority.

(A7) Where monitoring is a requirement of this environmental authority, the holder must ensure that a competent person(s) conducts all monitoring.

(A8) Any management or monitoring plans, systems or programs required to be developed and implemented by a condition of this environmental authority must be reviewed for effectiveness in minimising the likelihood of environmental harm on an annual basis and amended promptly if required.

Financial assurance

(A9) The holder of this environmental authority must provide to the administering authority a financial assurance of an amount and in a form acceptable to the administering authority in accordance with the most recent edition of the administering authority's Guideline – *Calculating financial assurance for mining projects*, before the proposed mining activities commence.

(A10) The financial assurance must include the cost of rehabilitating pre-existing disturbances where the transfer or replacement of a tenement has maintained continuity of tenure since the disturbance was caused or re-disturbed.

(A11) The amount of financial assurance may be reviewed by the administering authority at any time including when a plan of operations is amended or replaced, the authority is amended or new information is obtained from an audit or other sources.

(A12) The financial assurance is to remain in force until the administering authority is satisfied that no claim on the assurance will be required.

Risk management

(A13) The holder of this environmental authority must develop and implement an environmental risk management system for mining activities which conforms to a recognised Standard for Environmental Risk Management by 30 November 2012.

Emergency response / contingency

(A14) The holder of this environmental authority must develop and implement an emergency response/contingency plan to respond to emergency events and incidents by the 7 June, 2012.

(A15) The emergency response/contingency plan required under condition (A14) must include, but not be limited to, the following

(a) Response procedures to be implemented to prevent or minimise the risk of environmental harm arising from incidents;
(b) Response procedures to minimise the extent and duration of environmental harm caused by an incident;
(c) The practices and procedures to be employed to restore the environment or mitigate any environmental harm caused;
(d) The resources to be used in response to an incident;
(e) Procedures to investigate the cause of any incidents, including releases, and where necessary, implement remedial actions to reduce the likelihood of recurrence of similar events;
(f) The provision and availability of documented procedures to staff attending any incident to enable them to effectively respond;
(g) Training of staff that will be called upon to respond to incidents to enable them to effectively respond;
(h) Timely and accurate reporting of the circumstance and nature of incidents to the administering authority in accordance with conditions of this environmental authority;
(i) Procedures for accessing monitoring points during incidents; and
(j) Procedures to notify any occupiers or registered owners of affected land and other potentially impacted stakeholder who may be affected by the event.

Notification of emergencies, incidents and exceptions

(A16) The holder of this environmental authority must notify the administering authority by written notification as soon as practicable but within twenty-four (24) hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.

(A17) The notification in conditions (A16) must include, but not be limited to, the following:

(a) The environmental authority number and name of the holder;
(b) The name and telephone number of the designated contact person;
(c) The location of the emergency or incident;
(d) The date and time of the emergency or incident;
(e) The time the holder of the environmental authority became aware of the emergency or incident;
(f) Where known:

(i) the estimated quantity and type of substances involved in the emergency or incident;
(ii) the actual or potential cause of the emergency or incident;
(iii) a description of the nature and effects of the emergency or incident including environmental risks, and any risks to public health or livestock;

(g) Any sampling conducted or proposed, relevant to the emergency or incident;
(h) Immediate actions taken to prevent or mitigate any further environmental harm caused by the emergency or incident; and
(i) What notification of stakeholders who may be affected by the emergency or incident has occurred or is being undertaken.

(A18) The holder of this environmental authority must notify the occupiers or registered owners of affected land and any other potentially impacted stakeholder as soon as reasonably practicable after becoming aware of the event of any emergency or incident that has the potential to impact on environmental values or breaches any condition of this environmental authority concerning releases of contaminants to the environment.

(A19) The notification in condition (A18) must include the following:
(a) The location of the emergency or incident;
(b) The date and time of the emergency or incident;
(c) The estimated quantity and type of any substances involved in the emergency or incident;
(d) The potential impacts to environmental values caused by the emergency or incident; and
(e) Where there is potential impact on livestock or human health, precautionary measures that should be taken.

(A20) Within ten (10) business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, which includes details of:
(a) all available results and interpretation of any samples taken and analysed;
(b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm;
(c) proposed actions to prevent a recurrence of the emergency or incident; and
(d) proposed actions to respond to the information about circumstances which result or may result in environmental harm.

(A21) As soon as practicable, but not more than six (6) weeks following the conduct of any environmental monitoring performed in relation to the emergency or incident, which results in the release of contaminants not in accordance with, or reasonably expected to be not in accordance with the conditions of this environmental authority, written advice must be provided to the administering authority detailing the results of any such monitoring performed.

(A22) The holder of this environmental authority must notify the administering authority by telephone, email or facsimile as soon as practicable but within forty-eight (48) hours, after becoming aware of any monitoring result that demonstrates an exceedance of any approval limit and is not known to be associated with any emergency or incident event (as described in condition A16).

Complaints

(A23) The holder of this environmental authority must record all environmental complaints received about the mining activities including the following details:
(a) Name, address and contact number for of the complainant;
(b) Time and date of complaint;
(c) Reasons for the complaint;
(d) Investigations undertaken;
(e) Conclusions formed;
(f) Actions taken to resolve the complaint;
(g) Any abatement measures implemented; and
(h) Person responsible for resolving the complaint.

(A24) The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a timeframe nominated by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures implemented must be provided to the administering authority within ten (10) business days of completion of the investigation, or no later than ten (10) business days after

the end of the timeframe nominated by the administering authority to undertake the investigation.

Community

(A25) The holder of this environmental authority must establish, promote and maintain easily accessible lines of communication between residents, stakeholders and land owners reasonably expected to be affected by the activities to ensure that social and cultural heritage impacts are identified and managed. This must include but not be limited to the following:

(a) Regular meetings open to all relevant stakeholders at intervals of not less than six (6) months; or
(b) The establishment of a consultative committee with representation open to all relevant stakeholders that meets at regular intervals as determined by the committee.

Third party auditing

(A26) The holder of this environmental authority must nominate an appropriate third party auditor to audit compliance with the conditions of this environmental authority within one (1) year of the commencement of this authority, and then at regular intervals not exceeding two (2) years.

(A27) The third party auditor must certify the independent findings of the audit in the report.

(A28) The financial costs of the third party audit are the responsibility of the holder.

(A29) The holder must promptly act upon any recommendations arising from the audit by:

(a) Investigating any non-compliance issues identified; and
(b) Promptly implementing measures or taking necessary action to ensure compliance with the requirements of this environmental authority.

(A30) Within one (1) month of receiving the final audit report and audit document, the holder must provide a written report, which includes a copy of final audit report, to the administering authority addressing the:

(a) Actions taken by the holder to ensure compliance with this environmental authority; and
(b) Actions taken to prevent a recurrence of any non-compliance issues identified.

(A31) Where a condition of this environmental authority requires compliance with a standard published externally to this authority and the standard is amended or changed subsequent to the issues of this authority the holder must:

(a) Comply with the amended or changed standard within 12 months of the amendment of change being made, unless a different period is specified in the amended standard or relevant legislation; and
(b) Until compliance with the amended or changed standard is achieved, continue to remain in compliance with the standard that was current immediately prior to the relevant amendment or change.

Exploration

(A32) All exploration activities carried out on the mining leases must comply with each of the Standard Environmental Conditions contained in the most recent version of the *Eligibility criteria and standard conditions for exploration and mineral development projects*. To the extent that any Standard Environmental Condition is inconsistent with a provision of this authority, the provision of this authority will prevail.

(A33) Notwithstanding standard condition A13 of the *Eligibility criteria and standard conditions for exploration and mineral development projects,* the holder of this environmental authority is authorised to carry out exploration activities up to 5 metres from the boundary of the category B environmentally sensitive areas (ESA), identified as endangered regional ecosystem and 100 metres from the boundary of the category B ESA, identified as the Mount Elliot Metallurgical Plant and Mill (Heritage Place ID 602256), provided that no environmental harm occurs.

END OF CONDITIONS FOR SCHEDULE A

SCHEDULE B – AIR

Point Source releases to air

(B1) The point source release of contaminants to air from carrying out the mining activity must:

(a) Only occur from a location specified in Table B1 – Release points (air); and

(b) Be undertaken in accordance with the release requirements specified in Table B1 – Release points (air); and

(c) Not cause or contribute to an exceedance of a contaminant limit specified in Table B2 – Contaminant limits (air) at any sensitive place.

(B2) Prior to operation of the Gold Room, develop an air quality monitoring program (AQMP) capable of determining compliance with condition B1 of this environmental authority must be developed and documented. The AQMP must comply with the most recent edition of *AS4323.1 Stationary source emissions method 1: Selection of sampling positions*, and the most recent edition of the administering authority's air quality sampling manual.

(B3) From commencement of operating the Gold Room, implement the AQMP required under condition B2 of this environmental authority.

Table B1 – Release points (air)

Release point	Release point description	Location		Source description	Release requirements	
		Easting	Northing		Minimum release height (metres above ground)	Minimum exit gas temperature (°C)
RP3	Barring furnace extraction fan	449844	7707668	Barring furnace	7	50

Table B2 – Contaminant limits (air)

Contaminant	Period	Contaminant limit (µg/m^3)
Ammonia (NH_3)	1 hour	330[4]
Arsenic[1]	1 year	0.006[3]
Cadmium[1]	1 year	0.005[3]
Carbon Monoxide (CO)	8 hours	11,000[3]
Chromium (VI)	1 hour	0.09[4]
Copper	1 hour	3.7[4]
Hydrogen cyanide (HCN)	1 hour	200[4]
Lead[2]	1 year	0.5[3]
Manganese[1]	1 year	0.16[3]
NO_2	1 hour	250[3]
$PM_{2.5}$	1 day	25[3]
SO_2	1 day	230[3]

Note: [1] measured as the total metal content in PM_{10}

[2] measured as the total metal content in total suspended particles.

[3] Schedule 1 Air quality objectives of the *Environmental Protection (Air) Policy 2008*

[4] NSW *Protection of the Environment Operations (Clean Air) Regulation 2010*

(B4) Contaminants must not be released to the atmosphere from any diesel powered generator other than in accordance with the manufacturers' specifications.

General

(B5) The release of noxious or offensive odour or any other airborne contaminant resulting from the mining activities must not cause environmental harm.

(B6) The holder of this environmental authority must ensure that vehicles (including trains) used for transporting bulk materials from the mining tenement, leave the site with appropriate load preparation to prevent the spillage and / or loss of particulate matter and / or windblown dust during transport.

(B7) The holder of this environmental authority must implement and maintain dust control procedures that incorporate a program for continuous improvement for the management of dust resulting from the mining activities.

Dust and Particulate Monitoring

(B8) The environmental authority holder shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that the dust and particulate matter emissions generated by the mining activities do not cause exceedances of the following levels when measured at any sensitive or commercial place:

- *(a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air – Determination of particulate matter – Deposited matter – Gravimetric method.*
- *(b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM_{10}) suspended in the atmosphere of 50 micrograms per cubic metre over a 24 hour averaging time, for no more than five exceedances recorded each year, when monitored in accordance with the most recent version of either:*
  - *i. Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM_{10} high volume sampler with size-selective inlet – Gravimetric method, or*
  - *ii. Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM_{10} low volume sampler—Gravimetric method.*
- *(c) A concentration of particulate matter with an aerodynamic diameter of less than 2.5 micrometres ($PM_{2.5}$) suspended in the atmosphere of 25 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.10 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM (sub)$_{2.5}$(/sub) low volume sampler—Gravimetric method.*
- *(d) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over respectively a one year, when monitored in accordance with AS/NZS3580.9.3:2003 Determination of suspended particulate matter – Total suspended particulate matter (TSP) – High volume sampler gravimetric method.*

(B9) When requested by the administering authority or as a result of a complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer), dust and particulate monitoring must be undertaken, and the results thereof notified to the administering authority within fourteen (14) days following completion of monitoring. Monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place.

(B10) If monitoring indicates the limits in condition (B8) have been exceeded, the holder of this environmental authority must promptly implement dust abatement measures so that emissions of dust generated by the mining activities cease to exceed the limits in condition (B8).

Background Dust and Particulate Matter Monitoring

(B11) The holder of this environmental authority must develop and implement a background dust deposition monitoring program within 12 months of the commencement of this environmental authority. The program must be able to detect a significant change to dust deposition to sensitive receptors due to activities that are part of the mining activity.

(B12) The program must include, but not limited to, the details as specified in Schedule B- Table B3 (Background Dust and Particulate Matter Monitoring).

(B13) The holder of this environmental authority must report the results and analysis of dust and particulate matter monitoring to the administering authority on request.

Schedule B - Table B3 (Background Dust and Particulate Matter Monitoring)

Air Quality Determination	Monitoring Point Location (Easting, Northing - GDA94)	Monitoring Point Description
Dust Deposition (total solids g/(m^2 month))	450296.00, 7706659.00	DG1
	449671.00, 7709201.00	DG2
	449162.00, 7709206.00	DG3
	448589.00, 7709147.00	DG4
	448356.00, 7709098.00	DG5
	448760.00, 7707917.00	DG6

END OF CONDITIONS FOR SCHEDULE B

SCHEDULE C - WATER

Release to Waters

(C1) Contaminants that will, or have the potential to cause environmental harm, must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.

Contaminant Release to Waters

(C2) The release of contaminants to waters must only occur from the release points specified in Schedule C - Table C1 (Contaminant Release Points) and depicted in Schedule I - Figure 2 - Location of Surface Monitoring Points (Water Quality and Flow) and Release Points.

Schedule C - Table C1 (Contaminant Release Points)

Release Point	Easting (GDA94)	Northing (GDA94)	Contaminant Source and Location, and Description of Release Point	Receiving Waters Description
RP1	449629.00	7707104.00	Discharge from Storm Pond 5 spillway	Coppermine Creek
RP2	448321.00	770814.00	Paddock Lode / Taipan Pit Spillway	Coppermine Creek

(C3) The release of contaminants to waters from the release points must be monitored at the locations specified in Schedule C - Table C1(Contaminant Release Points) for each quality characteristic and at the frequency specified in Schedule C - Table C2 (Contaminant Release Limits).

Schedule C - Table C2 (Contaminant Release Limits)

Contaminant (mg/L unless specified otherwise)[1]	Release Limits	Monitoring Frequency
Electrical conductivity (µS/cm)	1500 or 20 x 80th percentile of applicable reference site value, whichever is higher[5].	Daily during release (the first sample must be taken within 2 hours of commencement of release)
pH (pH unit)	6.0 or 20th percentile of applicable reference site value, whichever is higher. 7.5 or 80th percentile of applicable reference site value, whichever is higher.	
Sulphate as SO_4^{2-}	545 [2] or 80th percentile of applicable reference site concentration[5].	
Aluminium	1.1[3] or 20 x 80th percentile of applicable reference site concentration, whichever is higher[5].	
Arsenic (AsV)	0.26[3] or 20 x 80th percentile of applicable reference site concentration[5], whichever is higher.	
Cadmium	0.004[3] or 20 x 80th percentile of applicable reference site concentration[5], whichever is higher.	
Chromium (CrVI)	0.02[3] or 20 x 80th percentile of applicable reference site concentration[5], whichever is higher.	
Cobalt	0.001[6] or 20 x 80th percentile of applicable reference site concentration[5], whichever is higher.	
Copper	0.028[3] or 20 x 80th percentile of applicable reference site concentration[5], whichever is higher.	
Lead	0.068[3] or 20 x 80th percentile of applicable reference site concentration[5], whichever is higher.	
Nickel	0.22[3] or 20 x 80th percentile of applicable reference site concentration[5], whichever is higher.	
Mercury	0.012[3] or 20 x 80th percentile of applicable reference site concentration[5], whichever is higher.	
Zinc	0.16[3] or 20 x 80th percentile of applicable reference site concentration[5], whichever is higher.	
Cyanide (free) (as un-ionised HCN; measured as (CN))	0.014[3]	
Cyanide (total)	1.67[4]	

Notes for Table C2:

1. *All metals and metalloids must be measured and reported as both total (unfiltered) and dissolved (field filtered) levels;*
2. *For the protection of 95% of species (slightly to moderately disturbed aquatic ecosystem). Source: Australasian Bulletin of Ecotoxicology and Environmental Chemistry (2016), Table 3 <https://australasia.setac.org/wp-content/uploads/ABEEC-v3-p1.pdf>*
3. *Twenty (20) times contaminant level based on ANZECC (2000), Table 3.4.1, 95% aquatic species protection level for slightly to moderately disturbed ecosystem.*
4. *Twenty (20) times Australian Drinking Water Guidelines, version 3.3 (2011), Table 10.6*
5. *Reference site concentration determined from reference site specified in* **Table C8** *at time of release.*
6. *Twenty (20) times contaminant level based on ANZECC (2000), section 8.3.7.1 low reliability metals and metalloids.*

(C4) The release of contaminants to waters must not exceed the release limits stated in Schedule C - Table C2 (Contaminant Release Limits) for each quality characteristic.

Stream Flow Monitoring

(C5) Before the 1 November 2012, the holder of this environmental authority must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations upstream of each release point as specified in Schedule C - Table C3 (Contaminant Release During Flow Events) for any receiving water into which a release occurs.

(C6) Notwithstanding any other condition of this environmental authority, the release of contaminants to waters must only take place during periods of natural flow events specified as minimum flow in Schedule C - Table C3 (Contaminant Release During Flow Events) for the contaminant release point(s) specified in Schedule C - Table C1 (Contaminant Release Points).

Schedule C - Table C3 (Contaminant Release during Flow Events)

Receiving water description	Release point	Gauging station description	Easting (GDA94)	Northing (GDA94)	Minimum Flow in Receiving Water Required for a Release Event	Flow recording Frequency
Coppermine Creek	Discharge from Spillway of Stormwater Pond 5	Gauging station 1	449583.00	7706956.00	The release comprising less than 5% of the natural flow.[1]	Continuous (minimum daily)
Coppermine Creek	Discharge from Spillway of Paddock Lode Pit					

Notes for Table C3:

1. *The volume of flow can be determined by height of water or flow. The actual flow must be a quantifiable measure.*

(C7) At the time of release the water flow volume in the respective receiving water must be at least twenty (20) times the volume at which respective treated waste waters are released.

(C8) The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in Schedule C - Table C1 (Contaminant Release Points).

(C9) Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build-up of sediment in such waters.

Notification of Release Event

(C10) The holder of this environmental authority must notify the administering authority as soon as practicable of a release event (no later than twenty four (24)) hours of having commenced releasing mine affected water to the receiving environment). Notification must include the submission of written verification to the administering authority of the following information:

(a) release commencement date/time;
(b) expected release cessation date/time;
(c) release point/s;
(d) release volume (estimated);
(e) receiving water/s including the natural flow rate; and
(f) any details (including available data) regarding likely impacts on the receiving water(s).

(C11) The holder of this environmental authority must notify the administering authority as soon as practicable, (nominally within twenty-four (24) hours after cessation of a release) of the cessation of a release notified under condition (C10) and within 28 days provide the following information in writing:

(a) release cessation date/time;
(b) natural flow volume in receiving water;

(c) volume of water released;
(d) details regarding the compliance of the release with the conditions of Agency Interest: Water of this environmental authority (i.e. contamination limits, natural flow, discharge volume);
(e) all in-situ water quality monitoring results; and
(f) any other matters pertinent to the water release event.

Onsite Water Storages

(C12) Water storages stated in Schedule C - Table C5 (Water Storage Monitoring) must be monitored for the water quality characteristics specified in Schedule C - Table C6 (Onsite Water Storage Contaminant Limits) at the monitoring locations and at the monitoring frequency specified in Schedule C - Table C5 (Water Storage Monitoring).

Schedule C - Table C5 (Water Storage Monitoring)

Water Storage Description	Easting (GDA94)	Northing (GDA94)	Monitoring Frequency
Great Australia Pit	448986.57	7708719.68	Quarterly
Paddock Lode Pit	448246.21	7708046.06	Quarterly
Taipan Pit	448112.56	7708235.44	Quarterly
Orphan Shear Pit	449391.33	7709040.12	Quarterly

(C13) Water stored in the Great Australia Mine Pit must not exceed a level of 167.3 mAHD.

(C14) In the event that waters storages defined in Schedule C - Table C5 (Water Storage Monitoring) exceed the contaminant limits defined in Schedule C - Table C6 (Onsite Water Storage Contaminant Limits), the holder of the environmental authority must implement measures, where practicable, to prevent access to waters by livestock.

Schedule C - Table C6 (Onsite Water Storage Contaminant Limits)

Quality Characteristic	Test Value	Contaminant Limit[2]
pH (pH units)	Range	6 – 9[1]
EC (µS/cm)	Maximum	1000[1]
Sulphate (mg/L)	Maximum	1000[1]
Aluminium (mg/L)	Maximum	5[1]
Arsenic (mg/L)	Maximum	0.5[1]
Cadmium (mg/L)	Maximum	0.01[1]
Chromium (mg/L)	Maximum	1[1]
Cobalt (mg/L)	Maximum	1[1]
Copper (mg/L)	Maximum	1[1]
Lead (mg/L)	Maximum	0.1[1]
Nickel (mg/L	Maximum	1[1]
Zinc (mg/L)	Maximum	20[1]
Magnesium (mg/L)	Maximum	2000[1]
Mercury	Maximum	0.002[1]
Cyanide (total)	Maximum	0.08[3]

Notes for Table C6:
[1]Contaminant limit based on ANZECC & ARMCANZ (2000) stock water quality guidelines.
[2]For metals or metalloids Total measurements (unfiltered) must be taken and analysed.
[3] Australian Drinking Water Guidelines, version 3.3 (2011), Table 10.6, measured as 'total' metal.

Receiving Environment Monitoring and Contaminant Levels

(C15) The quality of the receiving waters must be monitored at the locations specified in Schedule C - Table C8 (Receiving Water Reference Sites and Down Stream Monitoring Points) for each quality characteristic and at the frequency stated in Schedule C - Table C7 (Receiving waters quality objectives).

Schedule C - Table C7 (Receiving waters quality objectives)

Contaminant (mg/L unless specified otherwise)[1]	Water quality objectives[5] (total)	Water quality objectives[5] (dissolved)	Monitoring Frequency
Electrical conductivity (µS/cm)	500[2]		Each flow event within 24 hours of a release Weekly during natural flow event
pH (pH units)	6 - 7.5[6]		
Sulphate as SO_4^{2-}	545[7]		
Aluminium	0.1[3]	0.055[4]	
Arsenic (AsV)	0.01[3]	0.013[4]	
Cadmium	0.002[3]	0.0002[4]	
Chromium (CrVI)	0.05[3]	0.001[4]	
Cobalt	monitoring purposes only	0.00005 [8]	
Copper	2[3]	0.0014[4]	
Lead	0.01[3]	0.0034[4]	
Mercury	0.001[3]	0.0006[4]	
Nickel	0.02[3]	0.011[4]	
Zinc[1]	monitoring purposes only	0.008[4]	
Cyanide (Free) (as un-ionised HCN, measured as [CN])	0.007[4]		
Cyanide (Total)	0.08[3]		
Nitrate (Total N)	0.7[4]		

Notes for Table C7:

1. *All metals and metalloids must be measured as both 'total' (from analysis of an unfiltered sample) and 'dissolved' (from analysis of a field filtered sample)*
2. *Based off Queensland Water Quality Guideline (2013), electrical conductivity 75th percentile in the Gulf –Appendix G, Table G.1*
3. *Australian Drinking Water Guidelines, version 3.3 (2011), Table 10.6, measured as 'total' metals*
4. *Based off ANZECC (2000) value for 95% species protection, Table 3.4.1, measured as 'dissolved' metals*
5. *Where a water quality objective is exceeded at a compliance site and the applicable reference site also exceeds this concentration during the release/flow event, the value of the reference site applies as the water quality objective for the duration of the release/flow event.*
6. *Based off ANZECC (2000) Table 3.3.5*
7. *For the protection of 95% of species (slightly to moderately disturbed aquatic ecosystem).*

   Source: Australasian Bulletin of Ecotoxicology and Environmental Chemistry (2016), Table 3 <https://australasia.setac.org/wp-content/uploads/ABEEC-v3-p1.pdf>
8. *Based off ANZECC (2000) low reliability metals and metalloids, Section 8.3.7.1*

Schedule C - Table C8 (Receiving Water Reference Sites and Down Stream Monitoring Points)

Monitoring Points	Receiving Waters Location Description	Easting (GDA94 Zone 54)	Northing (GDA94 Zone 54)
Upstream Monitoring Points			
GAM Site 1	Upstream of the boundary of and directly down slope from the southern limit of the heap leach pad.	449689.00	7706395.00
Great Australia Mine – additional upstream site (GAM 4)	Upstream of Coppermine Creek	450130.00	7708749.00
Downstream Monitoring Points			
Great Australia Mine Site 2	At the point where Coppermine Creek enters ML90065, downstream from the process area	448540.00	7708033.00
Great Australia Mine Site 3	The northern boundary of the mining lease where Coppermine Creek exits ML90065	448721.00	7709273.00
Orphan Shear	Downstream	449775.00	7708777.00

Notes for Table C8:

Reference sites must:

(a) be from the same bio-geographic and climatic region;
(b) have similar geology, soil types and topography;
(c) contain a range of habitats similar to those at the test sites;
(d) have a similar flow regime; and
(e) not be so close to the test sites that any disturbance at the test site also results in a change at the reference site.

(C16) If quality characteristics of the receiving water at the downstream monitoring points exceed any of the water quality objectives specified in Schedule C - Table C7 (Receiving Waters Quality Objectives) the holder of this environmental authority must compare the downstream results to the reference site results in the receiving waters and:

(a) where the downstream result in the same or a lower value than the reference site value for the quality characteristic during the same sampling event then no action is to be taken; or
(b) where the downstream results exceed the reference site complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining:
    (i) details of the investigations carried out; and
    (ii) actions taken to prevent environmental harm.

Note: Where an exceedance of a water quality objective has occurred and is being investigated, in accordance with (C16) (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

(C17) Release of contaminants must not result in an exceedance of contaminant limits stated in Schedule C - Table C7 (Receiving waters quality objectives).

Stream Sediment

(C18) Sediment quality of receiving waters must be monitored twice a year (once at the end of the wet season and once at the end of the dry season) at the monitoring locations defined in Schedule C - Table C8 (Receiving Water Reference Sites and Down Stream Monitoring Points) and identified on Schedule I – Figure 2 and for the parameters defined in Schedule C - Table C9 (Stream Sediment Trigger and Contaminant Levels).

(C19) If quality characteristics of sediments exceed any of the stream sediment trigger levels specified in Schedule C - Table C9 (Stream Sediment Trigger and Contaminant Levels), the holder of this environmental authority must compare the results of the downstream monitoring point to the results from the upstream monitoring points and:

(a) if the level of contaminants at the downstream monitoring point does not exceed the upstream monitoring point data, then no action is to be taken; or
(b) if the level of contaminants at the downstream monitoring point is greater than the upstream monitoring point data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority within three (3) months, outlining:
    (i) details of the investigations carried out; and
    (ii) actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with C19(b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic within the three month investigation period.

(C20) Releases of contaminants must not result in an exceedance of sediment contaminant limits stated in Schedule C - Table C9 (Stream Sediment Trigger and Contaminant Levels).

(C21) All stream sediment sampling must be undertaken in accordance with the most recent version of Australian Standard AS 5667.12 Guidance on Sampling of Bottom Sediments of 1998.

Schedule C - Table C9 (Stream Sediment Trigger and Contaminant Levels)

Parameter	Unit	Contaminant Limit	Trigger Level
Arsenic	mg/kg	70[3] or 3 times the reference value[1], whichever is higher	Reference value[1] or 20[2], whichever is higher.
Cadmium	mg/kg	10[3] or 3 times the reference value[1], whichever is higher	Reference value[1] or 1.5[3], whichever is higher.
Chromium	mg/kg	370[3] or 3 times the reference value[1], whichever is higher	Reference value[1] or 80[2], whichever is higher.
Copper	mg/kg	270[3] or 3 times the reference value[1], whichever is higher	Reference[1]or 65[2], whichever is higher.
Lead	mg/kg	220[3] or 3 times the reference value[1], whichever is higher	Reference value[1] or 50[2] whichever is higher.
Mercury	mg/kg	1[3] or 3 times the reference value[1], whichever is higher	Reference value[1] or 0.15[2] whichever is higher.
Zinc	mg/kg	410[3] or 3 times the reference value[1], whichever is higher	Reference value[1] or 200[2] or, whichever is higher.
Particle size distribution		For interpretation purposes only	

Notes for Table C9

1 *Reference sites are defined in Table C8.*
2 *ANZECC (2000) Interim Sediment Quality Guidelines – low values based on total sediments.*
3 *ANZECC (2000) Interim Sediment Quality Guidelines – high values based on total sediments.*

Receiving Environment Monitoring Program (REMP)

(C22) A REMP must be developed and implemented by 7 June 2012 to monitor and record the effects of the release of contaminants on the receiving environment periodically and whilst contaminants are being discharged from the site, with the aims of identifying and describing the extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving water. A copy of the REMP must be provided to the administering authority prior to its implementation and due consideration given to any comments made on the REMP by the administering authority.
For the purposes of the REMP, the receiving environment is the waters of the Coppermine Creek and connected waterways within 10 km downstream of the release or further if an impact is detected beyond 10 km.

(C23) The REMP must address (but not necessarily be limited to) the following:

(a) Description of potentially affected receiving waters including key communities and background water quality characteristics based on accurate and reliable monitoring data that takes into consideration any temporal variation (e.g., seasonality);
(b) Description of applicable environmental values and water quality objectives to be achieved (i.e., as scheduled pursuant to the Environmental Protection (Water) Policy 2009);
(c) Any relevant reports prepared by other governmental or professional research organisations that relate to the receiving environment within which the REMP is proposed;
(d) Water quality targets within the receiving environment to be achieved, and clarification of contaminant concentrations or level indicating adverse environmental impacts during the REMP;
(e) Monitoring for any potential adverse environmental impacts caused by the release;
(f) Monitoring of stream flow and hydrology;
(g) Monitoring of toxicants should consider the indicators specified in Schedule C - Table C2 (Contaminant Release Limits) to assess the extent of the compliance of concentrations with water quality objectives and/or the ANZECC & ARMCANZ 2000 guidelines for slightly to moderately disturbed ecosystems;
(h) Monitoring as a minimum the parameters specified in Schedule C - Table C2 (Contaminant Release Limits) (in addition to dissolved oxygen saturation and temperature);
(i) Monitoring biological indicators (for macroinvertebrates in accordance with the AusRivas methodology / the latest edition of the Administering Authority's monitoring and sampling manual) and metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 *Guidance on Sampling of Bottom Sediments*) for permanent, semi-permanent water holes and water storages;
(j) The location of monitoring points (including the locations specified in Schedule C - Table C8 (Receiving Water Reference Sites and Down Stream Monitoring Points) which are reference and downstream impacted sites for each release point;
(k) The frequency or scheduling or sampling and analysis sufficient to determine water quality objectives

and to derive site specific reference values within 2 years (depending on wet season flows) in accordance with the latest edition of the Administering Authority's *Queensland Water Quality Guidelines*. For ephemeral streams, this should include periods of flow irrespective of mine or other discharges;

(l) Specify sampling and analysis methods and quality assurance and control;
(m) Any historical datasets to be relied upon;
(n) Description of the statistical basis on which conclusions are drawn; and
(o) Any spatial and temporal controls to exclude potential confounding factors.

(C24) A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with condition (C23) must be prepared and submitted in writing to the administering authority by 31 January 2013 and thereafter every 12 months. This should include an assessment of background water quality, any assimilative capacity for those contaminants monitored and the suitability of current discharge limits to protect downstream environment values.

Water General

(C25) All determinations of water quality must be:
(a) Performed by a person or body possessing appropriate experience and qualifications to perform the required measurements;
(b) Made in accordance with methods prescribed in the latest edition of the latest edition of the Administering Authority's monitoring and sampling manual;
(c) Collected from the monitoring locations identified within this environmental authority, within 24 hours of each other where possible;
(d) Carried out on representative samples; and
(e) For laboratory determinations, carried out in a laboratory accredited (e.g., NATA) for the method of analysis being used.

(C26) The release of contaminants directly or indirectly to waters must not:
(a) Produce any visible discolouration of receiving waters; or
(b) Produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.

Annual Water Monitoring Reporting

(C27) The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format with each annual return:
(a) The date on which the sample was taken;
(b) The time at which the sample was taken;
(c) The monitoring point at which the sample was taken;
(d) The measured or estimated daily quantity of the contaminants released from all release points;
(e) The release flow rate at the time of sampling for each release point;
(f) The results of all monitoring and details of any exceedances with the conditions of this environmental authority; and
(g) Water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.

Water Management Plan

(C28) A Water Management Plan must be developed and implemented by 7 June 2012 that provides for the proper and effective management of the actual and potential environmental impacts resulting from the mining activity and to ensure compliance with the conditions of this environmental authority.

(C29) The Water Management Plan must be developed in accordance with the most recent edition of the administering authority's *Guideline for Preparing a Water Management Plan 2009* and must include at least the following components:
(a) Contaminant Source Study;
(b) Site Water Balance and Model;
(c) Water Management System;
(d) Saline Drainage Prevention and Management Measures;

(e) Acid Rock Drainage Prevention and Management Measures (if applicable);
(f) Emergency and Contingency Planning; and
(g) Monitoring and Review.

(C30) Each year the holder of the environmental authority must undertake a review of the Water Management Plan prior to the wet season (i.e. by 1 November) and a further review following the wet season (i.e. by 1 May the following year) to ensure that proper and effective measures, practices or procedures are in place so that the mine is operated in accordance with the conditions of this environmental authority and that environmental harm is prevented or minimised.

(C31) A copy of the Water Management Plan and/or a review of the Water Management Plan must be provided to the administering authority on request.

Saline, acid and metalliferous drainage

(C32) The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline, acid and/or metalliferous mine drainage.

Stormwater and Water Sediment Controls

(C33) An Erosion and Sediment Control Plan must be developed before 7 June 2012 by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of storm water.

(C34) The Erosion and Sediment Control Plan must be included in the Plan of Operations, and provides for at least the following stormwater management functions:
(a) Prevent or minimise the contamination of stormwater;
(b) Diverting uncontaminated stormwater run-off around areas disturbed by mining activities or where contaminants or wastes are stored or handled;
(c) Contaminated stormwater runoff, incident rainfall and leachate is collected; and treated, reused, or released in accordance with the conditions of this environmental authority;
(d) Roofing or minimising the size of areas where contaminants or wastes are stored or handled;
(e) Using alternate materials and or processes (such as dry absorbents) to clean up spills that will minimise the generation of contaminated waters;
(f) Erosion and sediment control structures are placed to minimise erosion of disturbed areas and prevent the contamination of any waters;
(g) Procedures to ensure that erosion and sediment control structures are maintained and adequate storage is available in sediment dams in accordance with design criteria; and
(h) Training of staff that will be responsible for maintenance and operations of sediment and erosion control structures.

(C35) Erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment and contamination of storm water.

(C36) The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any receiving waters.

(C37) Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters.

Groundwater

(C38) Groundwater quality and level must be monitored at the locations and frequencies defined in Schedule C - Table C10 (Groundwater Monitoring Locations and Frequency) & Schedule I – Figure 3 for quality characteristics identified in Schedule C - Table C11 (Groundwater Contaminant and Trigger Limits).

(C39) If quality characteristics of groundwater from compliance bores identified in Schedule C - Table C10 (Groundwater Monitoring Locations and Frequency) exceed any of the trigger levels stated in Schedule C - Table C11 (Groundwater Contaminant and Trigger Limits), the holder of this environmental authority must compare the compliance monitoring bore results to the reference bore results and:
(a) if the level of contaminants at the compliance monitoring bore does not exceed the reference bore

results, then no action is to be taken; and

(b) if the level of contaminants at the compliance monitoring bore is greater than the reference bore results, complete an investigation in accordance with the ANZECC & ARMCANZ 2000, into the potential for environmental harm and provide a written report to the administering authority within 3 months, outlining:
   i. details of the investigations carried out; and
   ii. actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with C39 (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic within the three month investigation period.

(C40) Monitoring of groundwater from compliance bores identified in Schedule C - Table C10 (Groundwater Monitoring Locations and Frequency), must not exceed any of the contaminant limits defined in Schedule C - Table C11 (Groundwater Contaminant and Trigger Limits).

(C41) Groundwater monitoring bores must be constructed and operated in accordance with methods prescribed in the latest edition of the Agriculture and Resource Management Council of Australia and New Zealand manual titled *Minimum Construction Requirements for Water Bores in Australia.*

(C42) Annual groundwater monitoring reports analysing groundwater chemistry and hydro-geological status of all groundwater bores and groundwater conditions must be prepared and submitted to the administering authority with each annual return.

Schedule C - Table C10 (Groundwater Monitoring Locations and Frequency)

Monitoring Point	Easting (GDA94)	Northing (GDA94)	Surface RL[1] (m)	Monitoring Frequency
Compliance Bores				
Great Australia Mine – OB1	449480.00	7707250.00	211.5	Quarterly
Great Australia Mine – OB2	449533.00	7707165.00	195.1	
Great Australia Mine – OB3	449568.00	7707094.00	199.0	
Great Australia Mine – OB4	449636.00	7707022.00	195.9	
Great Australia Mine – OB5	449725.00	7706991.00	195.5	
Great Australia Mine – OB6	449827.00	7706989.00	193.8	
Great Australia Mine – OB7	449464.00	7707362.00	192.5	
Great Australia Mine – OB8	449448.00	7707462.00	191.9	
Great Australia Mine – OB9	449406.00	7707553.00	192.4	
Great Australia Mine – OB10	449976.00	7707090.00	194.7	
Great Australia Mine – OB11	449726.00	7707415.00	195.8	
Great Australia Mine – OB12	449846.00	7707144.00	194.9	
Great Australia Mine – OB13	450442.00	7706996.00	199.2	
Great Australia Mine – OB14	449404.00	7707169.00	192.7	
Great Australia Mine – OB15	449778.00	7706722.00	193.1	
Great Australia Mine – OB16	450117.00	7706998.00	195.0	
Great Australia Mine – OB17	450300.00	7706660.00	209.0	
Great Australia Mine – OB18	450706.00	7707078.00	214.0	
PL – OB1	448470.00	7708054.00	203.0	
PL – OB2	448369.00	7708075.00	206.0	
OS – OB1	449772.00	7708776.00	213.0	
OS – OB2	449557.00	7708730.00	211.0	
OS – OB3	449470.00	7708867.00	208.0	
TSF – OB1 (north of TSF)	449360.00	7708421.00	209.5	
TSF – OB2 (north of TSF)	449610.00	7708386.00	204.0	
TSF – OB3 (east of TSF)	449738.00	7708166.00	202.8	
TSF – OB3a (east of TSF)	449736.00	7708135.00	204.0	
TSF – OB4 (south of TSF)	449734.00	7708089.00	202.3	
TSF – OB6 (south of TSF)	449300.00	7707764.00	192.3	
TSF – OB10 (west of TSF)	448990.00	7708072.00	197.8	

Monitoring Point	Easting (GDA94)	Northing (GDA94)	Surface RL[1] (m)	Monitoring Frequency
TSF – OB11 (west of TSF)	449121.00	7708226.00	205.6	
TSF – OB12 (south of TSF)	448993.00	7707905.00	TBA[3]	
TSF – OB13 (west of TSF)	449182.00	7707813.00	TBA[3]	
TSF – OB14 (west of TSF)	449415.00	7707775.00	TBA[3]	
Reference Bores[2]				
OS – OB 1a	449788.00	7708776.00	213.0	Quarterly
PL - OB3	448767.00	7707935.00	202.0	Quarterly

Notes for Table C10

[1] *RL measurement to be taken from top of bore casing.*

[2] *Reference sites must:*

(a) be from the same bio-geographic and climatic region; and

(b) have similar geology, soil types and topography; and

(c) not be so close to the test sites that any disturbance at the test site also results in a change at the reference site.

[3] *To be provided to the Administering Authority within 4 weeks from the date of commencement of this Environmental Authority.*

Schedule C - Table C11 (Groundwater Contaminant and Trigger Limits)

Quality Characteristic	Trigger Levels[3,4]	Contaminant Limit[3,5]
Electrical conductivity	435 µS/cm or 80th percentile of reference	1000 µS/cm or 95th percentile of reference[2], whichever is lowest
pH	6.0 (minimum) or 20th percentile of reference 7.5 (maximum) or 80th percentile of reference	5.5 (minimum) or 5th percentile of reference[2], whichever is highest. 9.0 (maximum) or 95th percentile of reference[2], whichever is lowest
Sulphate as SO_4^{2-}	80th percentile of reference	1000 mg/L or 95th percentile of reference[2], whichever is lowest
Aluminium	0.055 mg/L or 80th percentile of reference	0.055 mg/L or 95th percentile of reference, whichever is higher
Arsenic[1]	13 µg/L or 80th percentile of reference	0.5 mg/L or 95th percentile of reference[2], whichever is lowest
Barium	-	-
Beryllium	-	-
Boron	-	-
Cadmium[1]	0.2 µg/L or 80th percentile of reference	0.01 mg/L or 95th percentile of reference[2], whichever is lowest
Chromium[1]	1.0 µg/L or 80th percentile of reference	1 mg/L or 95th percentile of reference[2], whichever is lowest
Cobalt[1]	80th percentile of reference	1 mg/L or 95th percentile of reference[2], whichever is lowest
Copper[1]	1.4 µg/L or 80th percentile of reference	1 mg/L or 95th percentile of reference[2], whichever is lowest
Manganese	-	-
Nickel	-	-
Lead[1]	3.4 µg/L or 80th percentile of reference	0.1 mg/L or 95th percentile of reference[2], whichever is lowest
Selenium	-	-
Vanadium	-	-
Magnesium	80th percentile of reference	2000 mg/L or 95th percentile of reference[2], whichever is lowest
Mercury[1]	0.6 µg/L or 80th percentile of reference	0.002 mg/L or 95th percentile of reference[2], whichever is lowest
Zinc[1]	8.0 µg/L or 80th percentile of reference	20 mg/L or 95th percentile of reference[2], whichever is lowest
Cyanide (Free)	0.007[6]	0.007[6]
Calcium	For interpretation purposes	
Sodium		
Potassium		
Chloride		
Carbonate		
Bicarbonate		

Notes for table C11:

1. *All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger. Contaminant limits apply for metal/metalloids if total results exceed limits.*
2. *Where 5th or 95th percentile of the long-term reference data is exceeded and the reference site also exceeds the value during the same event, the value of the reference site during the same event applies as the contaminant release limit.*
3. *Levels presented are maximums unless otherwise stated.*
4. *Trigger levels for metals and metalloids are based on filtered water quality samples.*
5. *Release limits for metals and metalloids are based on unfiltered water quality samples.*
6. *Contaminant limit based on ANZECC (2000), Table 3.4.1, 95% aquatic species protection level for slightly to moderately disturbed ecosystem.*

Heap Leach Pad Leak Detection

(C43) The holder must install and maintain a leak detection system to detect any leakage from the heap leach pads.

(C44) The monitoring locations and frequencies of the leak detection systems for the heap leach pads are defined in Schedule C - Table C12 (Leak Detection Devices).

Schedule C - Table C12 (Leak Detection Devices)

Monitoring point	Easting (GDA 94 Zone 54)	Northing (GDA 94 Zone 54)	Monitoring frequency
Leak Detection Bore 1	449862.00	7707306.00	Monthly
Leak Detection Bore 2	449964.00	7707238.00	
Leak Detection Bore 3	450021.00	7707209.00	
Leak Detection Bore 4	450074.00	7707183.00	
Leak Detection Bore 5	450129.00	7707154.00	
Leak Detection Bore 6	450184.00	7707125.00	
Leak Detection Bore 7	450239.00	7707096.00	
HLP Cell Bore 1	449880.00	7707314.00	
HLP Cell Bore 2	449927.00	7707291.00	
HLP Cell Bore 3	449965.00	7707272.00	
HLP Cell Bore 4	450007.00	7707250.00	
HLP Cell Bore 5	450047.00	7707232.00	
HLP Cell Bore 6	450087.00	7707210.00	
Interception Bore 1	449847.00	7707317.00	
Interception Bore 2	449870.00	7707305.00	
Interception Bore 3	449916.00	7707272.00	
Interception Bore 4	449956.00	7707254.00	
Interception Bore 5	449998.00	7707232.00	
Interception Bore 6	450038.00	7707212.00	
PLS Pond East LD	449785.00	7707244.00	
PLS Pond West LD	449756.00	7707257.00	
Raffinate Pond LD	450189.00	7707684.00	
Storm Pond 5 – LD 1	449736.00	7707051.00	
Storm Pond 5 – LD 2	449609.00	7707130.00	
Storm Pond 5 – LD 3	449684.00	7707083.00	
Storm Pond 5 – LD 4	449744.00	7707223.00	
Storm Pond 6 – LD 6	449554.00	7707335.00	

(C45) Seepage must not exceed the groundwater contaminant limits defined under Schedule C – Table C11.

(C46) Contaminants must not be released outside the lined area of the heap leach pads.

END OF CONDITIONS FOR SCHEDULE C

SCHEDULE D – REGULATED DAMS

Assessment of consequence category

(D1) The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635) at the following times:

(a) prior to the design and construction of the structure, if it is not an existing structure; or
(b) if it is an existing structure, prior to the adoption of this schedule; or
(c) prior to any change in its purpose or the nature of its stored contents.

(D2) A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.

(D3) Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

Design and construction[4] of a regulated structure

(D4) Conditions (D5) to (D9) inclusive do not apply to existing structures.

(D5) All regulated structures must be designed by, and constructed[5] under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

(D6) Construction of a regulated structure is prohibited unless the holder has submitted a consequence category assessment report and certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.

(D7) Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*, and must be recorded in the Regulated Dams/Levees register.

(D8) Regulated structures must:

(a) be designed and constructed in accordance with and conform to the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635);*
(b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:
    (i) floodwaters from entering the regulated dam from any watercourse or drainage line; and
    (ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.
    (iii) floodwaters causing erosion of the TSF embankment.
(c) have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.

(D9) Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:

(a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure;
(b) construction of the regulated structure is in accordance with the design plan.

(D10) The following regulated dams must meet the hydraulic performance criteria specified in Schedule D - Table D1 (Hydraulic Performance of Regulated Dams).

[4] Construction of a dam includes modification of an existing dam—refer to the definitions.
[5] Certification of design and construction may be undertaken by different persons.

Schedule D - Table D1 (Hydraulic Performance of Regulated Dams)

Name of Regulated dam	Spillway Capacity or Diversion Capacity (Levees) AEP	Design Storage Allowance (DSA) (Dams other than levees) AEP	Mandatory Reporting Level (Dams other than levees) AEP
Raffinate Pond	1:10,000 AEP	1:100 AEP, 2 month wet season plus process input	1:100 AEP 72 hour volume or 1 in 100 AEP wave allowance
Initial Tailing Dam	1:10,000 AEP	1:100 AEP, 2 month wet season plus process input	
Storm Water Pond 4	1:10,000 AEP	1:20 AEP, 2 month wet season plus process input	
PLS Pond 1 (East)	1:10,000 AEP	1:100 AEP, 2 month wet season plus process input	
PLS Pond 2 (West)	1:10,000 AEP		
Storm Water Pond 1	1:10,000 AEP		
Storm Water Pond 2	1:10,000 AEP		
Storm Water Pond 3	1:10,000 AEP		
Storm Water Pond 5	1:1,000 AEP		
Storm Water Pond 6	1:1,000 AEP		
Tailings Storage Facility (TSF1 and TSF2)	1:10,000 AEP	1:100 AEP, 2 month wet season plus process input	
Concentrator Process Water Dam	1:1,000 AEP	1:100 AEP, 2 month wet season plus process input	

Operation of a regulated structure

(D11) Operation of a regulated structure**,** except for an existing structure, is prohibited unless:

(a) the holder has submitted to the administering authority:

(i) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition (D8), and

(ii) a set of 'as constructed' drawings and specifications, and

(iii) certification of those 'as constructed drawings and specifications' in accordance with condition (D9), and

(iv) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan.

(v) the requirements of this authority relating to the construction of the regulated structure have been met;

(vi) the holder has entered the details required under this authority, into a Register of Regulated Dams; and

(vii) there is a current operational plan for the regulated structures.

(D12) For existing structures that are regulated structures:

(a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within 12 months of the commencement of this condition a copy of the certified system design plan including that structure; and

(b) There must be a current operational plan for the existing structures.

(D13) Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.

(D14) The following regulated dams must be wholly located within the control points defined in Schedule D - Table D2 (Location of Regulated Dams) below.

Schedule D - Table D2 (Location of Regulated Dams)

Name of dam containing hazardous waste	Latitude (GDA94)[1]	Longitude (GDA94)[1]
Pregnant Leachate Solution Pond 1	449809.00	7707287.00
	449844.00	7707268.00
	449771.00	7707238.00
Pregnant Leachate Solution Pond 2	449846.00	7707272.00
	449771.00	7707238.00
	449719.00	7707268.00
Raffinate Pond	449809.00	7707287.00
	450053.00	7707724.00
	450238.00	7707706.00
Initial Tailings Dam	450180.00	7707655.00
	450170.00	7707627.00
	450215.00	7707631.00
Storm Water Pond 1	450172.00	7707675.00
	449653.00	7707286.00
	449607.00	7707142.00
Storm Water Pond 2	449508.00	7707203.00
	449571.00	7707326.00
	449713.00	7707370.00
Storm Water Pond 3	449751.00	7707422.00
	449809.00	7707287.00
	449779.00	7707428.00
Storm Water Pond 4	449739.00	7707330.00
	449883.00	7707459.00
	449849.00	7707459.00
Storm Water Pond 5	449676.00	7707256.00
	449832.00	7707185.00
	449769.00	7707038.00
	451342.00	7707122.00
Storm Water Pond 6	449623.00	7707477.00
	449748.00	7707425.00
	449676.00	7707280.00
	449560.00	7707335.00
Tailings Storage Facility (TSF) 1 and TSF 2	448921.00	7707997.00
	449270.00	7708346.00
	449587.00	7708346.00
	449718.00	7708244.00
	449541.00	7707806.00
	449276.00	7707809.00
	449018.00	7707915.00
Concentrator Process Water Dam	449888.00	7707481.00
	449915.00	7707534.00
	449887.00	7707546.00
	449857.00	7707502.00

Note [1]: A minimum of 3 control points is required to constrain the location of all activities associated with the dam containing hazardous waste. Additional infrastructure which forms part of any dam containing hazardous waste may include appurtenant works consisting of tailings discharge pipelines, seepage collection systems, runoff diversion bunds, containment systems, pressure relief wells, decant and recycle water systems.

Schedule D - Table D3 (Basic Details of Regulated Dams)

Name of Regulated dam	Hazard Category	Maximum surface area of dam (ha)	Maximum volume of dam (m^3)	Maximum depth of dam (m)	Use of dam
PLS Pond 1	High	0.25	6,000	5	Storage of Pregnant Leach Solution
PLS Pond 2	High	0.25	6,000	5	Storage of Pregnant Leach Solution
Raffinate Pond	High	0.16	3,000	3	Storage of Raffinate Solution
Initial Tailing Dam	High	0.07	2,000	3	Storage of tailings from process trials
Storm Water Pond 1	High	2.1	54,700	5	Storage of stormwater from runoff from processing area

Storm Water Pond 2	High	0.86	17,800	3	Storage of stormwater from runoff from processing area
Storm Water Pond 3	High	0.73	15,815	6	Storage of stormwater from runoff from processing area
Storm Water Pond 4	Significant	0.30	3,950	3	Storage of stormwater from runoff from processing area
Storm Water Pond 5	High	2.41	115,000	5	Storage of stormwater from runoff from processing area
Storm Water Pond 6	High	1.8	46,500	6	Storage of stormwater from runoff from processing area
TSF 1	High	18.38	2.7 million	22	Permanent containment of tailings
TSF 2	High	11.62	726,400	18.5	Permanent containment of tailings
Concentrator Process Water Dam	Significant	0.8	25700	3.3	Storage of process water for the concentrator

Mandatory reporting level

(D15) Conditions (D16) to (D19) inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.

(D16) The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.

(D17) The holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.

(D18) The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.

(D19) The holder must record any changes to the MRL in the Register of Regulated Structures.

Design storage allowance

(D20) The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.

(D21) By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).

(D22) The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.

(D23) The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.

Annual inspection report

(D24) Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

(D25) At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.

(D26) The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

(D27) The holder must:
- (a) Within 20 business days of receipt of the annual inspection report, provide to the administering authority:
  - (i) The recommendations section of the annual inspection report; and
  - (ii) If applicable, any actions being taken in response to those recommendations; and
- (b) If, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days[62] of receipt of the request.

Transfer arrangements

(D28) The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.

Decommissioning and rehabilitation

(D29) Dams must not be abandoned but be either:
- (a) decommissioned and rehabilitated to achieve compliance with condition (D30); or
- (b) be left in-situ for a beneficial use(s) provided that:
  - (i) it no longer contains contaminants that will migrate into the environment; and
  - (ii) it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and
  - (iii) the administering authority, the holder of the environmental authority and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies).

(D30) After decommissioning, all significantly disturbed land caused by the carrying out of the environmentally relevant activity(ies) must be rehabilitated to meet the following final acceptance criteria:
- (a) the landform is safe for humans and fauna;
- (b) the landform is stable with no subsidence or erosion gullies for at least three (3) years;
- (c) any contaminated land (e.g., contaminated soils) is remediated and rehabilitated;
- (d) not allowing for acid mine drainage; or
- (e) there is no ongoing contamination to waters (including groundwater);
- (f) rehabilitation is undertaken in a manner such that any actual or potential acid sulfate soils on the area of significant disturbance are treated to prevent or minimise environmental harm in accordance with the Instructions for the treatment and management of acid sulfate soils (2001);
- (g) all significantly disturbed land is reinstated to the pre-disturbed soil suitability class;
- (h) for land that is not being cultivated by the landholder:
  - a. groundcover, that is not a declared pest species is established and self-sustaining
  - b. vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining, and
  - c. the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the petroleum activity(ies).
  - d. for land that is to be cultivated by the landholder, cover crop is revegetated, unless the landholder will be preparing the site for cropping within 3 months of petroleum activities being completed.

Register of Regulated Dams

(D31) A Register of Regulated Dams must be established and maintained by the holder for each regulated dam.

(D32) The holder must provisionally enter the required information in the Register of Regulated Dams when a design plan for a regulated dam is submitted to the administering authority.

(D33) The holder must make a final entry of the required information in the Register of Regulated Dams once compliance with condition (D11) and (D12) has been achieved.

(D34) The holder must ensure that the information contained in the Register of Regulated Dams is current and

[6] Please note that for some model conditions, such as model conditions for dams associated with a resource activity – non mining activity, the notification requirements may be located in a separate part of the conditions of an environmental authority (e.g., under notification requirement conditions).

complete on any given day.

(D35) All entries in the Register of Regulated Dams must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.

(D36) The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Dams, in the electronic format required by the administering authority.

Transitional arrangements

(D37) All existing structures that have not been assessed in accordance with either the Manual or the former Manual for Assessing Hazard Categories and Hydraulic Performance of Dams must be assessed and certified in accordance with the Manual within 6 months of amendment of the authority adopting this schedule.

(D38) All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in Table D4 (Transitional hydraulic performance requirements for existing structures), depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.

(D39) Table D4 ceases to apply for a structure once any of the following events has occurred:

(a) It has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or
(b) It has been decommissioned; or
(c) It has been certified as no longer being assessed as a regulated structure.

(D40) Certification of the transitional assessment required by (D37) and (D38) (as applicable) must be provided to the administering authority within 6 months of amendment of the authority adopting this schedule.

Schedule D – Table D4 (Transitional hydraulic performance requirements for existing structures)

Transition period required for existing structures to achieve the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Dams*			
Compliance with criteria	**High**	**Significant**	**Low**
>90% and a history of good compliance performance in last 5 years	No transition required	No transition required	No transitional conditions apply. Review consequence assessment every 7 years.
>70%-≤90%	Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 10 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	No transitional conditions apply. Review consequence assessment every 7 years.
>50-≤70%	Within 5 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 7 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Review consequence assessment every 7 years.
≤50%	Within 5 years or as per compliance requirements (e.g., TEP timing).	Within 5 years or as per compliance requirements (e.g., TEP timing).	Review consequence assessment every 5 years.

END OF CONDITIONS FOR SCHEDULE D

SCHEDULE E – WASTE

Waste Management Program

(E1) The holder must develop, implement and maintain a waste management program in accordance with Part 5 of the *Environmental Management (Waste Management) Policy 2000* for the site. The waste management program must include:

- (a) a description of the mining activities that may generate waste;
- (b) waste management control strategies including:
  - i. the types and amounts of wastes generated by the mining activities;
  - ii. segregation of the wastes;
  - iii. storage of the wastes;
  - iv. transport of the wastes;
  - v. monitoring and reporting matters concerning the waste;
- (c) the hazardous characteristics of the wastes generated including disposal procedures for hazardous wastes;
- (d) a program for reusing, recycling or disposing of all wastes;
- (e) how the waste will be dealt with in accordance with the waste management hierarchy, including a description of the types and amounts of waste that will be dealt with under each of the waste management practices in the waste management hierarchy (i.e., avoidance, reuse, recycling, energy recovery, disposal);
- (f) procedures for identifying and implementing opportunities to minimise the amount of waste generated, promote efficiency in the use of resources and improve the waste management practices employed;
- (g) procedures for dealing with accidents, spills and other incidents;
- (h) details of any accredited management system employed, or planned to be employed, to deal with waste;
- (i) how often the performance of the waste management program will be assessed;
- (j) the indicators or other criteria on which the performance of the waste management program will be assessed; and
- (k) staff training and induction to the waste management program.

Waste Disposal

(E2) All general and regulated waste (other than authorised under condition (E3) must be removed from the site to a facility that is lawfully able to accept the waste under the *Environmental Protection Act 1994*.

(E3) The only waste that can be disposed of on site is waste that is generated on site. Waste generated on site is limited to:

- (a) Waste rock;
- (b) Scats;
- (c) Rejects;
- (d) Tailings;
- (e) Tyres;
- (f) Spent heap leach material; and
- (g) General waste including construction and demolition waste, green waste and putrescible and domestic wastes.

Regulated waste

(E4) Regulated waste, other than that authorised to be disposed of onsite under this authority, must only be removed and transported from the site by a person who holds a current authority to transport such wastes to a facility that is lawfully able to accept the waste under the Environmental Protection Act 1994.

(E5) Regulated waste generated in the mining activity can be temporarily stored on site awaiting removal provided it is stored to ensure there is minimal risk of causing fire or contamination to land or waters.

(E6) Each container of regulated waste stored awaiting movement off-site must be clearly marked to identify the contents.

(E7) Except as otherwise provided by the conditions of this authority, all waste removed from the site must be taken to a facility that is lawfully allowed to accept such waste under the provisions of the Environmental Protection

Act 1994.

(E8) Where regulated waste is removed from the site (other than by a release as permitted under another schedule of this environmental authority), records must be kept of the following:
- (a) the date, quantity and type of waste removed, and
- (b) name of the waste transporter that removed the waste; and
- (c) the intended treatment/disposal destination of the waste.

Note: Records of documents maintained in compliance with a waste tracking system established under the Environmental Protection Act 1994 or any other law for regulated waste will be deemed to satisfy this condition.

Tyre storage and disposal

(E9) Tyres stored awaiting disposal or transport for take-back and recycling or waste-to-energy options – must be stockpiled in volumes less than 3m in height and 200m^2 and at least 10m from any other tyre storage area.

(E10) Fire Prevention measures must be implemented including the removal of all combustible materials, including grass and vegetation, within a 10m radius of any tyre storage area.

(E11) Waste tyres generated from mining activities may be disposed of in waste rock emplacements provided tyres are placed as deep in the waste rock as reasonably practical.

(E12) Scrap tyres resulting from the mining activities disposed within the operational land must not impede saturated aquifers or compromise the stability of the consolidated landform.

Tailings disposal

(E13) Tailings must be managed in accordance with procedures contained within the current Environmental Management Plan. These procedures must include provisions for:
- (a) Containment of tailings in accordance with approved design plan
- (b) The management of seepage and leachates both during operation and post closure;
- (c) The control of fugitive emissions to air;
- (d) A program of progressive sampling and characterisation to identify acid producing potential and metal concentrations of tailings:
  - (i) all tailings material must be progressively characterised during disposal for net acid producing potential (NAPP) and the following contaminants: arsenic, cadmium, chromium, cobalt, copper, iron, lead, manganese, nickel, tin, zinc and fluoride.
  - (ii) Tailings characterisation must be undertaken at a minimum rate of eight (8) regularly spaced samples per 100,000 tonnes of tailings material discharged.
  - (iii) where the acid producing potential of tailings material has not been conclusively determined geochemical kinetic testing must be conducted to indicate oxidation rates, potential reaction products and effectiveness of control strategies.
  - (iv) maximum duration of surface exposure of potentially acid producing tailings to oxidizing conditions is one (1) month.
- (e) Rehabilitation strategy which meets the rehabilitation objectives specified in Schedule G (G3); and
- (f) Monitoring of rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of tailings, including the prevention and management of acid drainage, erosion minimisation and establishment of vegetation cover.

(E14) Upon disposal of tailings into the tailings storage facility, the holder of this environmental authority must inspect the tailings storage facility weekly to identify and register any fauna mortalities. This information will be made available to the administering authority upon request and within forty eight (48) hours of the discovery of any fauna mortalities. Details of mortalities will include but not be limited to:
- (a) animal species of the discovery of any fauna mortality;
- (b) number of animals;
- (c) location; and
- (d) likely cause of death.

(E15) If in the opinion of the administering authority, the mortality rate referred to in condition E14 is unacceptable, the holder of this environmental authority will be required to develop and implement an action plan to reduce the mortality rate and provide the action plan to the administering authority within one (1) month of the plan

being required.

Waste rock disposal

(E16) The holder must develop, implement and submit to the administering authority a waste rock and spoil management plan before 30 November, 2012 and update and resubmit the plan with each subsequent Plan of Operations.

(E17) From the 1 October, 2012, waste rock and spoil disposal must not occur on the site unless the holder has submitted to the administering authority a waste rock and spoil management plan, together with the certification by an appropriately qualified person that the plan has addressed the requirements of condition (E18) in accordance with best practice environmental management.

(E18) The waste rock and spoil management plan must include where relevant, at least:

(a) Characterisation of the waste rock and spoil to predict the quality of runoff and seepage generated, including salinity, acidity, alkalinity, dissolved metals, metalloids and non-metallic inorganic substances;
(b) A program of progressive sampling program to validate pre-mine waste rock and spoil characterisation. The waste rock sampling program must include validation of salinity, acid and alkali producing potential and metal concentrations including arsenic, cadmium, chromium, cobalt, copper, lead, magnesium, mercury and zinc;
(c) Where the acid rock drainage potential / neutral mine drainage potential of waste rock material has not been conclusively determined, geochemical kinetic testing must be conducted to indicate oxidation rates, potential reaction products and effectiveness of control strategies;
(d) Records must be maintained of all waste rock characterisation and disposal including contingency planning for the management of acid rock / neutral mine drainage;
(e) A materials balance and disposal plan demonstrating how potentially acid forming and acid forming waste rock will be selectively placed and/or encapsulated to minimise the generation of acid mine drainage;
(f) A materials balance and disposal plan demonstrating how waste rock that has a potential to generate neutral and/or saline mine drainage will be selectively placed and managed to minimise the generation of neutral and/or saline mine drainage;
(g) A sampling program to verify encapsulation and/or placement of potentially acid forming / acid forming waste rock / waste rock that has a potential to generate neutral mine drainage;
(h) How often the performance of the plan will be assessed;
(i) A Rehabilitation strategy which meets the rehabilitation objectives specified in Schedule G;
(j) Monitoring or rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of the placed materials, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover; and
(k) Waste rock dump must be constructed and maintained in accordance with the Environmental Management Plan Amendment (April 2008).

(E19) The waste rock dump must be constructed to prevent any water other than incidental rainfall from entering the waste rock dump.

(E20) Seepage from the waste rock dump can only be released into the receiving environment if the seepage complies with the contaminant limits set out under Schedule C - Table C2 (Contaminant Release Limits)

(E21) All waste rock characterised as having acid forming potential must be returned to the open pit at end of mine life or be encapsulated in a suitably designed waste rock dump approved by the administering authority.

Waste Burning

(E22) The only waste authorised to be burnt on site is packaging boxes from explosive and sodium cyanide, so long as the burning does not cause environmental harm.

END OF CONDITIONS FOR SCHEDULE E

SCHEDULE F – NOISE AND VIBRATION

General

(F1) Unless authorised by this environmental authority, noise from any mining activity must not cause serious or material environmental harm at any sensitive place or commercial place.

(F2) In the event of a complaint made to the administering authority (which is neither frivolous or vexatious) about noise generated in carrying out the licensed activity and the noise is considered by the administering authority to be an unreasonable noise, the holder must take action to ensure that it will not in the future cause unreasonable noise.

Noise Monitoring

(F3) The holder of this environmental authority must ensure that noise generated by the mining activities does not cause the criteria in Schedule F - Table F1 (Noise Limits) to be exceeded at a sensitive place or commercial place.

(F4) When requested by the administering authority, the holder of this environmental authority must undertake noise monitoring and recording within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint of environmental nuisance at any sensitive place or commercial place, and the administering authority must be notified of the results within ten (10) business days following completion of monitoring.

Schedule F - Table F1 (Noise Limits)

Sensitive place or commercial place						
Noise level dB(A) measured as:	**Monday to Saturday**			**Sundays and public holidays**		
	7am to 6pm	**6pm to 10pm**	**10pm to 7am**	**9am to 6pm**	**6pm to 10pm**	**10pm to 9am**
$L_{A10,\ adj,\ 10\ mins}$	BG+5	BG+5	BG+3	BG+5	BG+5	BG+3
$L_{A1,\ adj,\ 10\ mins}$	BG+10	BG+10	BG+5	BG+10	BG+10	BG+5

Note: In the event that the measured background noise level (BG) is less than 25 dB(A), then 25 dB(A) can be substituted for the measured background level.

(F5) Noise monitoring and recording must include the following descriptor characteristics and matters:
- (a) $L_{AN,T}$ (where N equals the statistical levels of 1, 10 and 90 and T = 15 mins);
- (b) background noise $L_{A90,}$;
- (c) the level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to statistical levels;
- (d) atmospheric conditions including temperature, relative humidity and wind speed and directions;
- (e) effects due to any extraneous factors such as traffic noise;
- (f) location, date and time of monitoring;
- (g) if the complaint concerns low frequency noise, Max $Lp_{LIN,T}$; and
- (h) if the complaint concerns low frequency noise, one third octave band measurements in dB(LIN) for centre frequencies in the 10 – 200 Hz range.

(F6) The method of measurement and reporting of noise levels must comply with the most recent edition of the administering authority's Noise Measurement Manual or the most recent version of Australian Standard AS 1055.1 *Acoustics – Description and measurement of environmental noise.*

Air Blast and Ground Vibration

(F7) The holder of this environmental authority must ensure that blasting does not cause the limits for peak particle velocity and air blast overpressure in Schedule F - Table F2 (Blasting Noise Limits) to be exceeded at a sensitive place or commercial place.

Schedule F - Table F2 (Blasting Noise Limits)

Blasting noise limits	Sensitive or commercial place limits	
	7am to 6pm	6pm to 7am
Air-blast overpressure	115 dB (Linear) Peak for nine (9) out of ten (10) consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time.	No blasting
Ground vibration peak particle velocity	For vibrations of more than 35 Hz -not more than 25 mm/s ground vibration, peak particle velocity; or For vibration of not more than 35 Hz – not more than 10 mm/s ground vibration, peak particle velocity.	No blasting

(F8) The holder must develop and implement a blast monitoring program to monitor compliance with Schedule F - Table F2 (Blasting Noise Limits) for:

(a) at least 10 % of all blasts undertaken on this site in each year; and
(b) all blasts conducted during any time period specified by the administering authority at the nearest sensitive place or commercial place.

(F9) Where blast monitoring detects non-compliance with Schedule F - Table F2 (Blasting Noise Limits) the holder must:

(a) take steps to ensure compliance is achieved by subsequent blasts; and
(b) continue to monitor all consecutive blasts until at least three (3) successive blasts comply with Schedule F - Table F2 (Blasting Noise Limits).

(F10) The holder of this environmental authority must undertake vibration monitoring when requested to do so by the administering authority

(a) to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive place or commercial place.
(b) the administering authority must be notified within ten (10) business days to the administering authority following completion of monitoring.
(c) the results of the investigation must be provided in the time requested by the administering authority.

(F11) The method of measurement and reporting of vibration levels must comply with the most recent edition of the administering authority's guideline *Noise and vibration from blasting.*

END OF CONDITIONS FOR SCHEDULE F

SCHEDULE G – LAND & REHABILITATION

General

(G1) Other than as authorised under this environmental authority, contaminants must not be released to land in a manner which constitutes environmental nuisance, or material or serious environmental harm.

(G2) Any spillage of wastes, contaminants or other materials must be cleaned up promptly. Such spillages must be cleaned up using dry methods that minimise the release of wastes, contaminants or materials to any stormwater drainage system, roadside gutter or waters.

Rehabilitation Objectives

(G3) Land disturbed by mining must be rehabilitated in accordance with Appendix B - Table 1 (Rehabilitation Requirements) and Table 2 (Landform Design).

Progressive Rehabilitation

(G4) Progressive rehabilitation must commence within 12 months of when areas become available within the operational land, and must be in accordance with the current plan of operations.

Topsoil

(G5) Topsoil and subsoils must be stripped and stockpiled ahead of mining to a depth determined from soil surveys to ensure that useable soil resources are preserved for rehabilitation.

(G6) Topsoil and subsoil stockpiles must be managed to ensure stability and minimise the release contaminants. Measures must include:

(a) Vegetating stockpiles;
(b) Minimising the height of stockpiles; and
(c) Re-using stockpiles as soon as possible.

(G7) A topsoil inventory which identifies the topsoil requirements for the mining project and availability of suitable topsoil on site must be detailed in the Plan of Operations submitted after the 7 June 2012.

Post Mine Land Use Plan

(G8) The holder must develop and submit to the administering authority a Post Mine Land Use Plan (PMLUP) within 18 months of commencement of this environmental authority and update and resubmit the plan with each subsequent Plan of Operations. The PMLUP must describe how the rehabilitation objectives in Appendix B - Table 1 will be achieved. The Post Mine Land Use Plan must include:

(a) Schematic representation of final land form inclusive of drainage features;
(b) Slope design;
(c) Cover design;
(d) Drainage design;
(e) Erosion controls proposed on reformed land;
(f) Description of experimental design for monitoring of analogue and rehabilitated areas inclusive of statistical design;
(g) Proposed revegetation methods inclusive of plant species selection, re-profiling, respreading soil, soil ameliorants/amendments, surface preparation and method of propagation;
(h) Materials balance including available top soil and low permeability capping material;
(i) Geotechnical, geochemical and hydrological studies;
(j) Chemical, physical and biological properties of soil and water;
(k) Nominate performance criteria for the cover system; and
(l) A rehabilitation monitoring program.

Rehabilitation Monitoring Program

(G9) A rehabilitation monitoring program must be developed and implemented on commencement of rehabilitation by a person nominated by the holder of this environmental authority possessing appropriate qualifications and experience in the field of mine site rehabilitation.

(G10) The holder must conduct rehabilitation monitoring in accordance with the program developed in condition (G9) on at least a yearly basis which must include sufficient spatial and temporal replication to enable scientifically justifiable conclusions as established under the rehabilitation program or other methodology to the satisfaction of the administering authority.

(G11) Verification of rehabilitation success is to be carried for each domain. Monitoring must be carried out for each domain at a minimum sampling intensity of 1:15,000 and must include sufficient replication to enable statistical analysis of results at an acceptable power.

Post closure management plan

(G12) A Post Closure Management Plan for the site must be prepared at least 18 months prior to final production onsite and implemented for a period of:

- (a) At least thirty (30) years following final production on site; or
- (b) A shorter period if:
  - (i) the site is proven to be geo-technically and geo-chemically stable; and
  - (ii) it can be demonstrated to the satisfaction of the administering authority that no release of contaminants from the site will result in environmental harm; and
  - (iii) The plan is prepared at least 6 months prior to final production onsite.

(G13) The Post Closure Management Plan must include the following elements:

- (a) Operation and maintenance of:
  - (i) Wastewater collection and reticulation systems;
  - (ii) Wastewater treatment systems;
  - (iii) The groundwater monitoring network;
  - (iv) Final cover systems; and
  - (v) Vegetative cover.
- (b) Monitoring of:
  - (i) Surface water quality;
  - (ii) Groundwater quality;
  - (iii) Seepage rates;
  - (iv) Erosion rates;
  - (v) The integrity and effectiveness of final cover systems;
  - (vi) The health and resilience of vegetative cover.

Heap Leach Operational Plan

(G14) The holder must develop and implement a Heap Leach Operational Plan.

(G15) The Heap Leach Operational Plan must be submitted with the Plan of Operations and certified by a suitably qualified environmental professional.

(G16) The Heap Leach Operational Plan (as required under G14) must address as a minimum the following:

- (a) Regular inspections of the heap leach liner and an assessment of its ability to contain contaminants;
- (b) Sizing of launders, perimeter drains and containment bunds to prevent the release of contaminants or potentially contaminated waters;
- (c) Diversion of uncontaminated stormwater away from the heap leach pads and minimising catchment size;
- (d) Procedures to prevent tears in the liner including but not limited to use of equipment on the pads, the placement of ore and the management of fly rock;
- (e) Contingency plans in the event of the release of contaminants;
- (f) Records of as constructed and design plans, and all pipes and infrastructure associated with the heap leach operation;
- (g) Procedures to minimise erosion of the heap leach pads and exclude ore from entering the launders and/or perimeter drains.

(G17) The holder must undertake a review of the Heap Leach Operational Plan at a minimum frequency of every three (3) years.

Infrastructure

(G18) All buildings, structures, mining equipment and plant erected and/or used for the mining activities must be removed from the site prior to surrender, except where agreed in writing by:

- (a) the Minister responsible for the *Mineral Resources Act 1989*;
- (b) the administering authority, and
- (c) the landowner.

Chemicals and flammable or combustible liquids

(G19) All explosives, hazardous chemicals, corrosive substances, toxic substances, gases, *flammable or combustible* liquids and dangerous goods must be stored and handled in accordance with the current, relevant Australian Standard where such is applicable.

(G20) Notwithstanding the requirements of any applicable Australian Standard, any liquids stored on site that have the potential to cause environmental harm must be stored in or serviced by an effective containment system that is impervious to the materials stored and managed to prevent the release of liquids to waters or land.

(G21) Where no relevant Australian Standard is available, the following must be applied:

(a) storage tanks must be bunded such that the capacity and construction of the bund is sufficient to contain at least 110% of a single storage tank or 100% of the largest storage tank plus 10% of the second largest storage tank in multiple storage areas; and

(b) drum storages must be bunded such that the capacity and construction of the bund is sufficient to contain at least 25% of the maximum design storage volume within the bund.

(G22) All containment systems must be designed to minimise rainfall collection within the system.

Contaminated Land

(G23) Prior to making an application for Surrender or approval for Progressive Rehabilitation the holder must undertake a contaminated land assessment / investigation of the relevant areas of the licensed place in accordance with the administering authority's Guideline for the Assessment & Management of Contaminated Land in Queensland.

(G24) A register and map of all potentially contaminated sites and any remediation details, must be kept on site, updated regularly, and included in each Plan of Operations.

(G25) A Spillage Management Plan and an Emergency Plan must be developed before 7 June 2012 for all hazardous materials stored on-site, together with a description of suitable equipment and training must be updated and included with each Plan of Operations.

Baseline Studies

(G26) All areas greater than 10 ha to be disturbed must undergo the following pre-mining surveys where these surveys have not been previously carried out:

(a) survey topsoil to determine its suitability for use in rehabilitation;

(b) survey of land suitability;

(c) survey flora, fauna and nature conservation values; and

(d) survey cultural heritage values.

END OF CONDITIONS FOR SCHEDULE G

SCHEDULE H – DEFINITIONS

Words and phrases used throughout the environmental authority are defined in the Definitions section at the end of the Environmental Authority. Where a definition for a term used in the environmental authority is sought and the term is not defined within the environmental authority, the definitions in the *Environmental Protection Act 1994*, its Regulations and Environmental Protection Policies must be used.

Acceptance criteria means the measures by which the actions implemented to rehabilitate the land are deemed to be complete. The acceptance criteria indicate the success of the rehabilitation outcome or remediation of areas which have been significantly disturbed by the mining activities. Acceptance criteria may include information regarding:

- vegetation establishment, survival and succession;
- vegetation productivity, sustained growth and structure development;
- fauna colonisation and habitat development;
- ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes;
- microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;
- effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;
- resilience of vegetation to disease, insect attack, drought and fire;
- vegetation water use and effects on ground water levels and catchment yields.

Affected person is someone whose drinking water can potentially be impacted as a result of discharges from a dam or their life can be put at risk due to dwellings or workplaces being in the path of a dam break flood.

Acid rock drainage means any low pH waters, contaminated as a result of the mining activities.

Ambient (or total) noise at a place, means the level of noise at the place from all sources (near and far), measured as the Leq for an appropriate time interval.

Annual inspection report means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan);

(a) against recommendations contained in previous annual inspections reports;
(b) against recognised dam safety deficiency indicators;
(c) for changes in circumstances potentially leading to a change in consequence category;
(d) for conformance with the conditions of this authority;
(e) for conformance with the 'as constructed' drawings;
(f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);
(g) for evidence of conformance with the current operational plan.

Annual exceedance probability or AEP the probability that at least one event in excess of a particular magnitude will occur in any given year.

Assessed or **assessment** by a suitably qualified and experienced person in relation to a consequence assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

(a) exactly what has been assessed and the precise nature of that determination;
(b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
(c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
(d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

Associated works in relation to a dam, means:

(a) operations of any kind and all things constructed, erected or installed for that dam; and
(b) any land used for those operations.

Authority means an environmental authority or a development approval.

Background means the average of samples taken prior to the commencement of mining from the same waterway that the current sample has been taken.

Certification means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by this Manual, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

Certifying, **certify or certified** have a corresponding meaning as 'certification'.

Commercial place means a work place used as an office or for business or commercial purposes, which is not part of the mining activity and does not include employees' accommodation or public roads.

Competent person means a person with the demonstrated skill and knowledge required to carry out the task to a standard necessary for the reliance upon collected data or protection of the environment.

Construction or constructed in relation to a dam includes building a new dam and modifying or lifting an existing dam, but does not include investigations and testing necessary for the purpose of preparing a design plan.

Coal seam gas water means groundwater that is necessarily or unavoidably brought to the surface in the process of coal seam gas exploration or production.

Coal seam gas water concentrate means the concentrated saline water waste stream from a water treatment process that does not exceed a total dissolved solid concentration of 40 000 mg/L.

Coal seam gas evaporation dam is defined as a impoundment, enclosure or structure that is designed to be used to hold coal seam gas water for evaporation.

Consequence in relation to a structure as defined, means the potential for environmental harm resulting from the collapse or failure of the structure to perform its primary purpose of containing, diverting or controlling flowable substances.

Consequence category means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

Dam means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works.

Dam crest volume means the volume of material (liquids and/or solids) that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (for example, via spillway).

Design plan is a document setting out how all identified consequence scenarios are addressed in the planned design and operation of a regulated structure.

Design storage allowance or DSA means an available volume, estimated in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual.

Designer for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

Development approval means a development approval under the *Integrated Planning Act 1997* or the *Sustainable Planning Act 2009* in relation to a matter that involves an environmentally relevant activity under the *Environmental Protection Act 1994*.

EC means Electrical Conductivity.

Emergency action plan means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to downstream communities and the implementation of protection measures. The plan must require dam owners to annually update contact.

Environmental authority holder means the holder of this environmental authority.

Existing structure means a structure that was in existence prior to the adoption of this schedule of conditions under the authority.

Extreme Storm Storage – means a storm storage allowance determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

Flare pit means containment area where any hydrocarbon that is discovered in an over-pressured reservoir during a drilling operation is diverted to, and combusted, The flare pit is only used during the drilling and work over process on a petroleum well.

Flowable substance means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

Geochemical assessment means establishing all elements present in the ore material and their likelihood to produce acid, saline or neutral mine drainage.

Hazardous waste means any substance, whether liquid, solid or gaseous, derived by or resulting from, the processing of minerals that tends to destroy life or impair or endanger health.

Holder means:

(a) where this document is an environmental authority, any person who is the holder of, or is acting under, that environmental authority; or
(b) where this document is a development approval, any person who is the registered operator for that development approval.

Hydraulic performance means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

Infrastructure means water storage dams, roads and tracks, buildings and other structures built for the purpose of mining activities but does not include facilities required for the long term management of mining impacts or the protection of potential resources. Such facilities include dams containing hazardous waste, waste rock dumps, voids, or ore stockpiles and buildings or other structures whose ownership can be transferred and which have a residual beneficial use for the next owner of the operational land or the background land owner.

Land is the “land schedule” of this document means land excluding waters and the atmosphere.

Land capability as defined in the DME 1995 *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland.*

Land suitability as defined in the DME 1995 *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland.*

Land use term to describe the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

Levee means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works,

during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of water or flowable substances at any other times.

Low consequence dam means any dam that is not a high or significant consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

Mandatory reporting level or MRL means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

Manual means the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

Measures include any measures to prevent or minimise environmental impacts of the activity such as bunds, silt fences, diversion drains, capping, and containment systems.

Metalliferous mine drainage means any waters, contaminated with metals / metalloids or other contaminants as a result of the mining activities.

Mineral means a substance which normally occurs naturally as part of the earth's crust or is dissolved or suspended in water within or upon the earth's crust and includes a substance which may be extracted from such a substance, and includes—

(a) clay if mined for use for its ceramic properties, kaolin and bentonite;
(b) foundry sand;
(c) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil there from;
(d) limestone if mined for use for its chemical properties;
(e) marble;
(f) mineral oil or gas extracted or produced from shale or coal by in situ processes;
(g) peat;
(h) salt including brine;
(i) shale from which mineral oil may be extracted or produced;
(j) silica, including silica sand, if mined for use for its chemical properties;
(k) rock mined in block or slab form for building or monumental purposes;

but does not include—

(l) living matter;
(m) petroleum within the meaning of the *Petroleum Act 1923*;
(n) soil, sand, gravel or rock (other than rock mined in block or slab form for building or monumental purposes) to be used or to be supplied for use as such, whether intact or in broken form;
(o) water.

Modification or modifying (see definition of 'construction')

Natural flow means the flow of water through waters caused by nature.

Offensive means causing reasonable offence or displeasure; disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.

Operational plan includes:

(a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance);
(b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

Oxide ore means fully oxidised rock which has no acid forming potential.

Ore or waste rock characterised as having acid forming potential means any rock with either a Net Acid

Producing Potential of greater than 5 kg of H_2SO_4/tonne or a Net Acid Generation oxidation pH of less than 4.5 (pH unit).

Peak particle velocity (ppv) means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mms^{-1}).

Protected area means - a protected area under the *Nature Conservation Act 1992*; or
(a) a marine park under the *Marine Parks Act 1992*; or
(b) a World Heritage Area.

Progressive rehabilitation means rehabilitation (defined below) undertaken progressively or a staged approach to rehabilitation as mining operations are ongoing.

Reference site (or analogue site) may reflect the original location, adjacent area or another area where rehabilitation success has been completed for a similar biodiversity. Details of the reference site may be as photographs, computer generated images and vegetation models, etc.

Rehabilitation the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.

Receiving environment means all groundwater, surface water, land, and sediments that are not disturbed areas authorised by this environmental authority.

Receiving waters means all groundwater and surface water that are not disturbed areas authorised by this environmental authority.

Register of Regulated Dams includes:
(a) Date of entry in the register;
(b) Name of the dam, its purpose and intended/actual contents;
(c) The consequence category of the dam as assessed using the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635);
(d) Dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;
(e) Name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;
(f) For the regulated dam, other than in relation to any levees –
    i. The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;
    ii. Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area
    iii. Dam crest volume (megalitres);
    iv. Spillway crest level (metres AHD).
    v. Maximum operating level (metres AHD)
    vi. Storage rating table of stored volume versus level (metres AHD);
    vii. Design storage allowance (megalitres) and associated level of the dam (metres AHD);
    viii. Mandatory reporting level (metres AHD);
(g) The design plan title and reference relevant to the dam;
(h) The date construction was certified as compliant with the design plan;
(i) The name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;
(j) Details of the composition and construction of any liner;
(k) The system for the detection of any leakage through the floor and sides of the dam;
(l) Dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;
(m) Dates when recommendations and actions arising from the annual inspection were provided to the administering authority;
(n) Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

Regulated dam means any dam in the significant or high consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

Regulated structure includes land-based containment structures, levees, bunds and voids, but not a tank or container designed and constructed to an Australian Standard that deals with strength and structural integrity.

Representative means a sample set which covers the variance in monitoring or other data either due to natural changes or operational phases of the mining activities.

Residual drilling material means waste drilling materials including muds and cuttings or cement returns from well holes and which have been left behind after the drilling fluids are pumped out.

Residual void means an open pit resulting from the removal of ore and/or waste rock which will remain following the cessation of all mining activities and completion of rehabilitation processes.

Self-sustaining means an area of land which has been rehabilitated and has maintained the required acceptance criteria without human intervention for a period nominated by the administering authority.

Sensitive place means;

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; or
- an educational institution; or
- a medical centre or hospital; or
- a protected area under the Nature Conservation Act 1992, the Marine Parks Act 1992 or a World Heritage Area; or
- a public park or gardens.

Significant disturbance - includes land;

(a) if it is contaminated land; or
(b) it has been disturbed and human intervention is needed to rehabilitate it;
    i. to a state required under the relevant environmental authority; or
    ii. if the environmental authority does not require the land to be rehabilitated to a particular state - to its state immediately before the disturbance.

Some examples of disturbed land include:

- areas where soil has been compacted, removed, covered, exposed or stockpiled;
- areas where vegetation has been removed or destroyed to an extent where the land has been made susceptible to erosion; (vegetation & topsoil)
- areas where land use suitability or capability has been diminished;
- areas within a watercourse, waterway, wetland or lake where mining activities occur;
- areas submerged by tailings or hazardous contaminant storage and dam walls in all cases;
- areas under temporary infrastructure. Temporary infrastructure includes any infrastructure (roads,
- tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc.) which is to be removed after mining activities have ceased; or
- areas where land has been contaminated and a suitability statement has not been issued.

However, the following areas are not included:

- areas off lease (e.g., roads or tracks which provide access to the mining lease);
- areas previously significantly disturbed which have achieved the rehabilitation outcomes;
- by agreement with the EPA, areas previously significantly disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);
- areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc.) which is to be left by agreement with the landowner. The agreement to leave permanent infrastructure must be recorded in the Landowner Agreement and lodged with the EPA;
- disturbances that pre-existed the grant of the tenure unless those areas are disturbed during the term of the tenure.

Spillway means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges form the dam, normally under flood conditions or in anticipation of flood conditions.

Stable means land form dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (traffic ability), erosion resistance and geochemical stability with respect to seepage and contaminant generation.

Stakeholder means a person who is readily identifiable and is affected by, or is directly concerned with the holder of this environmental authority's mining activities.

Suitably qualified and experienced person in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:

- for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.
- for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

Tolerable limits means that a range of values could be accepted to achieve an overall environmental management objective (e.g., a range of settlement of a tailing capping could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation).

Trivial harm means environmental harm which is not material or serious environmental harm and will not cause actual or potential loss or damage to property of an amount of, or amounts totalling more than $5,000.

Saline mine drainage The movement of waters, contaminated with salt(s), as a result of the mining activity.

System design plan means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.

Void means any constructed, open excavation in the ground.

Watercourse has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means a river, creek or stream in which water flows permanently or intermittently—

(a) in a natural channel, whether artificially improved or not; or
(b) in an artificial channel that has changed the course of the watercourse.

Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

Waters includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and banks of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater.

Water release event means release of any waters that are or maybe contaminated by the mining activity.

Water year means the 12 month period from 1 July to 30 June.

Wet season means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

END OF CONDITIONS FOR SCHEDULE H

SCHEDULE I – MAPS / PLANS

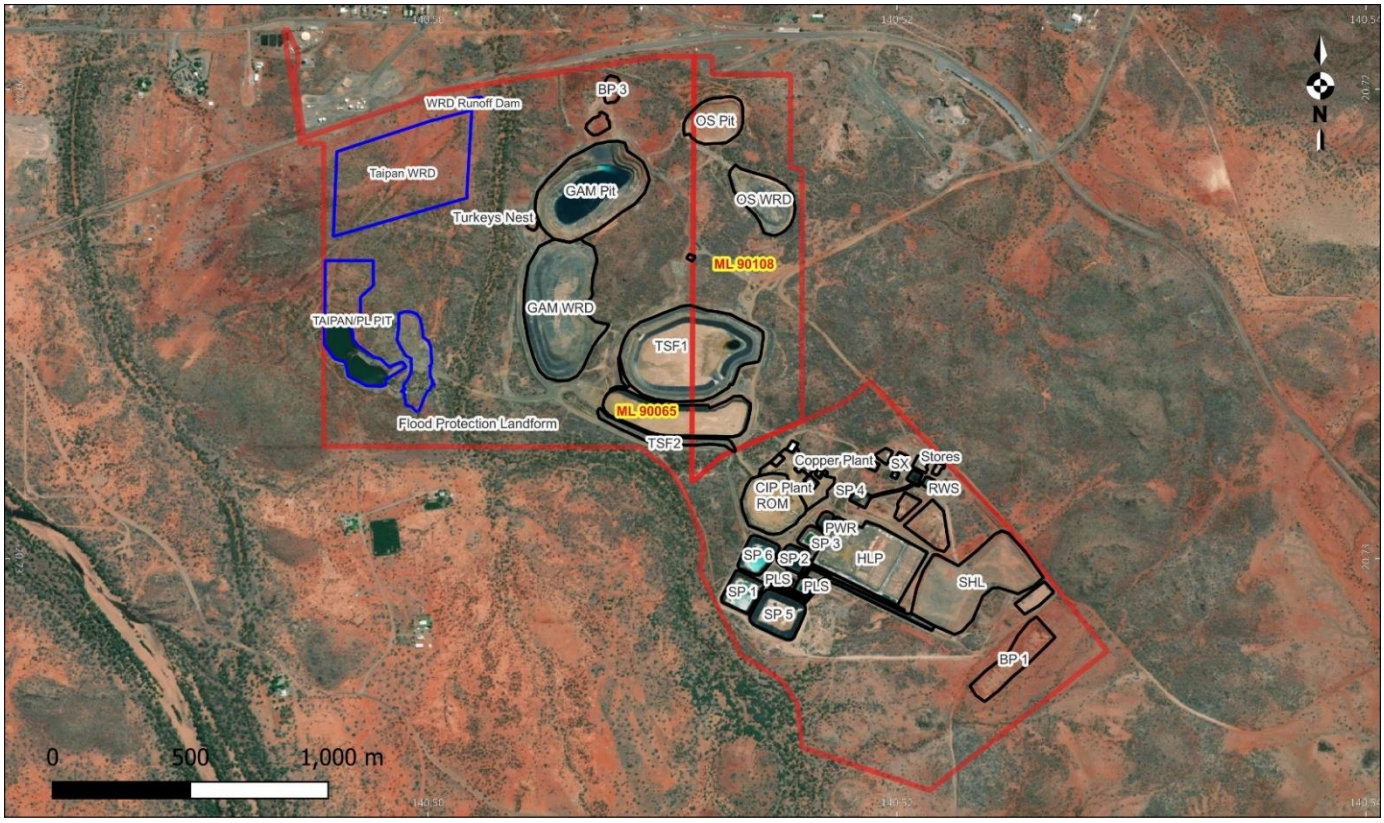

Figure 1 – Site Map.

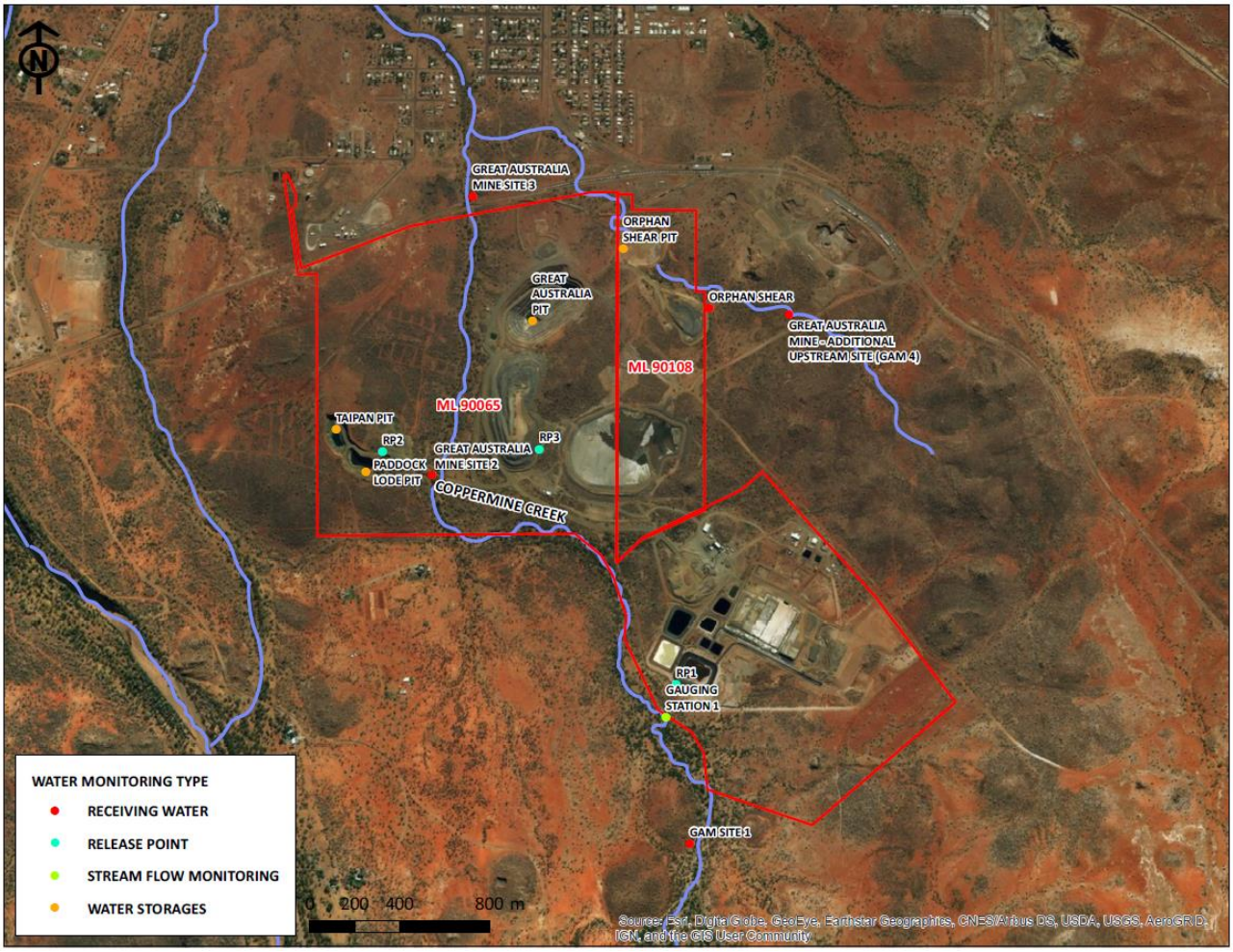

Figure 2 – Location of Surface Monitoring Points (Water Quality and Flow) and Release Points.

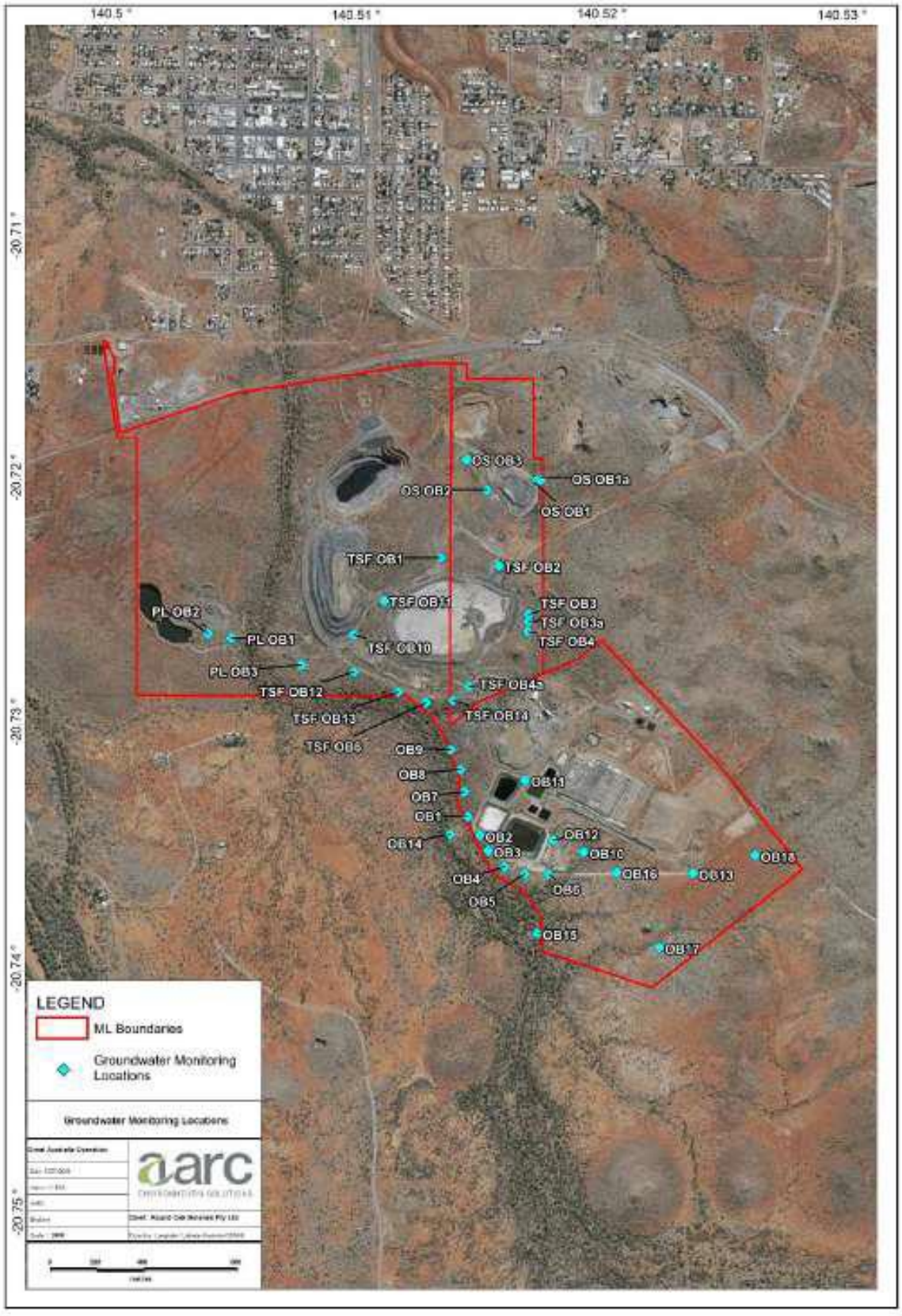

Figure 3 – Groundwater Monitoring Locations.

Figure 4 – Location of ancillary infrastructure (green line is raw water pipeline).

Note: 'Exco Offices' now named 'Offices'.

END OF CONDITIONS FOR SCHEDULE I

Appendix A
Detailed Coordinates - Authorised Mining Activities

Mine Domain	Mine Feature Name	Easting (GDA 94)	Northing (GDA 94)	Easting (GDA 94)	Northing (GDA 94)	Easting (GDA 94)	Northing (GDA 94)	Easting (GDA 94)	Northing (GDA 94)
Waste	Great Australia Waste Rock Dump	448831.252	7708584.985	449048.497	7708545.391	448852.308	7708084.125	448993.504	7708075.881
	Taipan Waste Rock Dump	448598.003	7709090.899	448109.065	7708929.992	448582.968	7708753.385	448096.993	7708601.921
	Orphan Shear Waste Rock Dump	449538.970	7708794.446	449608.820	7708855.442	449776.512	7708722.495	449669.556	7708614.057
	Flood Protection Landform	448336.146	7708295.711	448399.697	7708278.262	448407.000	7707925.000	448361.000	7707953.000
Run of Mine	Agglomeration Site (Located within ROM Pad Area)	No longer in use							
	ROM Pad	449535.000	7707754.000	449683.000	7707477.000	449812.350	7707540.310	449665.000	7707809.000
Processing Area	Heap Leach Pads	449927.833	7707528.214	449836.928	7707348.914	450162.685	7707168.811	450244.610	7707394.023
	SX Process Plant	450103.522	7707763.125	450110.475	7707775.602	450122.575	7707771.837	450114.490	7707757.022
	Concentrator Plant and Concentrate Storage	See Figure 4							
	Crushing Plant	449742.578	7707614.854	449749.152	7707619.696	449776.500	7707592.158	449733.710	7707547.211
	Sulphuric Acid and Reagents Storage Area	450134.158	7707693.181	450143.947	7707692.162	450135.115	7707684.197	450142.260	7707684.204
	Fuel & Oil Storage	450199.491	7707826.364	450204.963	7707835.629	450215.967	7707821.852	450214.006	7707818.272
	Process Plant Area and associated buildings	See Figure 4							
Mining Area	Great Australia Pit	449010.377	7708937.870	449229.851	7708819.677	448986.342	7708613.559	448835.998	7708734.185
	Paddock Lode Pit	448140.124	7708115.288	448199.874	7708161.540	448300.867	7708086.934	448293.762	7708029.173
	Taipan Pit	448140.124	7708115.288	448069.148	7708510.304	448242.966	7708511.352	448200.248	7708164.751
	Orphan Shear Pit	449572.167	7709057.184	449477.500	7709123.340	449372.134	7709017.295	449477.500	7708966.660
Dam	PLS Ponds	449719.496	7707276.733	449741.053	7707319.867	449841.335	7707269.489	449819.777	7707226.355
Dam Borrow Pits and Stockpiles	Storm Pond 1	449506.253	7707206.614	449567.046	7707319.921	449669.913	7707266.671	449607.849	7707147.835
	Storm Pond 2	449708.628	7707357.942	449763.489	7707418.776	449825.132	7707392.938	449796.169	7707304.571
	Storm Pond 3	449784.188	7707439.561	449831.189	7707492.286	449882.059	7707452.359	449855.145	7707402.638
	Storm Pond 4	449969.447	7707590.519	449995.515	7707637.717	450050.545	7707608.368	450030.93	7707558.814
	Storm Pond 5	449613.956	7707140.296	449675.027	7707244.826	449812.469	7707184.882	449766.782	7707053.866
	Storm Pond 6	449567.090	7707140.296	449675.027	7707451.130	449722.117	7707408.878	449646.589	7707298.646
	Initial Tailings Pond	450180	7707655	450170	7707627	450215	7707631	450206	7707616
	Heap Leach Raw Water Ponds	450234.648	7707646.853	450252.204	7707681.772	450286.545	7707666.901	450268.079	7707630.963
	Tailings Storage Facility (TSF) 1 and TSF 2	As per Schedule D Table D2							
	Decant Ponds 1 and 2								
	Concentrator Process Water Dam	449888	7707481	449915	7707534	449887	7707546	449857	7707502
	Taipan WRD Runoff Dam	448572.422	7709129.381	448579.913	7709090.295	448638.867	7709102.835	448633.818	7709141.92
Borrow Pits and	Great Australia Topsoil	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]
	Paddock Lode Topsoil	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]

Stockpiles Ancillary Infrastructure	Taipan Topsoil	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]
	Sand & Gravel Borrow Pits	450250	7707584	450323	7707544	450338	7707404	450150	7707486
	Orphan Shear Topsoil Stockpile	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]
	Great Australia Clay Borrow Pits	450736	7707221	450834	7707102	450505	7706710	450352	7706876
	Existing Site Roads	See Figure 4							
Ancillary Infrastructure	Additional Site Roads and Haulage Roads	See Figure 4							
	Existing Site Roads	See Figure 4							
	Additional Site Roads and Haulage Roads	See Figure 4							
	General Infrastructure	See Figure 4							
	Raw Water Pipeline	See Figure 4							
	Existing Site Roads	See Figure 4							
	Additional Site Roads and Haulage Roads	See Figure 4							
	Noise/Visual Bund	448953	7709032	448923	7709244	449223	7709213		
	Mining Contractor Area	449036.842	7707959.697	449039.290	7707965.302	449103.638	7707977.682	449114.840	7707971.369
	Domestic Waste Disposal Area	Domestic waste is to be disposed of in dedicated bins							
	Office	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	Workshops / Admin.	449742.134	7707787.646	449760.207	7707818.993	449784.627	7707804.689	449766.525	7707773.557
	Explosives Magazines	449381.016	7708523.282	449389.876	7708540.626	449411.881	7708529.480	449403.080	7708512.185
	Sewage Treatment Plant	See Figure 4							
	General Construction Areas (Existing disturbance)	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]
	Run-off Diversions	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]	TBD[1]
	Existing Site Roads	See Figure 4							
	Additional Site Roads and Haulage Roads	See Figure 4							

Notes:
[1] Coordinates to be provided within 3 months of construction.

Appendix B
Landform Design and Rehabilitation Requirement

Appendix B - Table 1

Disturbance Category	Max. Area	Land Use		Land Capability		Analogue Site 1 (GDA 94 MGA z54)		Analogue Site 2 (GDA 94 MGA z54)		Analogue Site 3 (GDA 94 MGA z54)	
ML 90065 (Great Australia)	(ha)	PRE DISTURBANCE	POST DISTURBANCE	PRE DISTURBANCE	POST DISTURBANCE	Northing	Easting	Northing	Easting	Northing	Easting
Great Australia Pit	11	LIG	Residual Void - No Use	VIII	Residual Void - No Use	NA					
Paddock Lode Pit	2	LIG	Residual Void - No Use	VII	Residual Void - No Use	NA					
Taipan Pit	5.16	LIG	Residual Void - No Use	VII	Residual Void - No Use	NA					
Great Australia Waste Rock Dump	12	LIG	LIG	VII	VII/VIII	7708486.528	449038.728	7708056.049	449011.107	7708179.018	449010.735
Great Australia Topsoil	5	LIG	LIG	VII/VIII	VII/VIII	7708486.528	449038.728	7708056.049	449011.107	7708179.018	449010.735
Flood Protection Landform	3.0	LIG	LIG	VII	VII/VIII	7708207.202	448171.891	7708330.881	448402.894	7708330.793	448373.972
Paddock Lode Topsoil	0.1	LIG	LIG	VII/VIII	VII/VIII	7708207.202	448171.891	7708330.881	448402.894	7708330.793	448373.972
Taipan Waste Rock Dump	16.1	LIG	LIG	VII/VIII	VII/VIII	7708207.202	448171.891	7708330.881	448402.894	7708330.793	448373.972
Taipan Topsoil	0.5	LIG	LIG	VII/VIII	VII/VIII	7708207.202	448171.891	7708330.881	448402.894	7708330.793	448373.972
Heap Leach Pads	32.5	LIG	Managed	VII	VIII	7707476.003	450372.170	7707075.499	450084.142	7707135.866	449707.992
PLS Ponds	0.9	LIG	LIG	VII	VII	7707135.866	449707.992	7707075.156	449968.460	7707381.458	449591.574
Storm Water Ponds 1,2,3 and 4	7.0	LIG	LIG or Water Storages	VII	VII or Water Storages	7707135.866	449707.992	7707075.156	449968.460	7707381.458	449591.574
Storm Pond 5	2.8	LIG	LIG or Water Storages	VII	VII or Water Storages	7707135.866	449707.992	7707075.156	449968.460	7707381.458	449591.574
Storm Pond 6	2.8	LIG	Water Storage	VII	Water Storage	NA					
Initial Tailings Pond	0.2	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
SX Process Plant	0.8	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Heap Leach Raw Water Ponds	0.35	LIG	Water Storage	VII	Water Storage	NA					

Disturbance Category	Max. Area	Land Use		Land Capability		Analogue Site 1 (GDA 94 MGA z54)		Analogue Site 2 (GDA 94 MGA z54)		Analogue Site 3 (GDA 94 MGA z54)	
ML 90065 (Great Australia)	(ha)	PRE DISTURBANCE	POST DISTURBANCE	PRE DISTURBANCE	POST DISTURBANCE	Northing	Easting	Northing	Easting	Northing	Easting
Tailings Storage Facility	15.5	LIG	LIG	VII/VIII	VII/VIII	7708486.528	449038.728	7708056.049	449011.107	7708179.018	449010.735
Decant Ponds 1 and 2	2.4	LIG	Water Storage	VIII	Water Storage	NA					
Concentrator Plant and Concentrate Storage	3.4	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Concentrator Process Water Dam	0.8	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Raw Water Pipeline	1.0	LIG	LIG	VII	VII	7707381.458	449591.574	7707781.712	449792.830	7707781.367	449677.144
Agglomeration Site (Located within ROM Pad Area)	Within ROM Pad	LIG	LIG	VII	VII	7707381.458	449591.574	7707781.712	449792.830	7707781.367	449677.144
Crushing Plant	1.9	LIG	LIG	VII	VII	7707381.458	449591.574	7707781.712	449792.830	7707781.367	449677.144
ROM Pad	6.61	LIG	LIG	VII	VII/VIII	7707669.910	449506.180	7707476.003	450372.170	7707781.712	449792.830
Existing Site Roads	5.3	Roads	Roads	Roads	Roads	NA					
Additional Site Roads and Haulage Roads	7.5	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Sulphuric Acid and Reagents Storage Area	0.2	LIG	LIG	VII	VII	7708486.528	449038.728	7709162.771	449007.760	7709132.465	449152.473
Noise/Visual Bund	0.5	LIG	LIG	VII	VII	7707781.712	449792.830	7707781.367	449677.144	7707905.197	449965.996
Domestic Waste Disposal Area	0.01	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Fuel & Oil Storage	0.3	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Process Plant Area and associated buildings	0.8	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Office	0.9	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Workshops/Admin	0.75	LIG	LIG	VII	VII	7708149.409	449386.819	7708210.893	449386.634	7708302.859	449299.590

Disturbance Category	Max. Area	Land Use		Land Capability		Analogue Site 1 (GDA 94 MGA z54)		Analogue Site 2 (GDA 94 MGA z54)		Analogue Site 3 (GDA 94 MGA z54)	
ML 90065 (Great Australia)	**(ha)**	**PRE DISTURBANCE**	**POST DISTURBANCE**	**PRE DISTURBANCE**	**POST DISTURBANCE**	**Northing**	**Easting**	**Northing**	**Easting**	**Northing**	**Easting**
Explosives Magazines	0.1	LIG	LIG	VII	VII	7709163.120	449123.457	7709162.771	449007.760	7709132.465	449152.473
Sand & Gravel Borrow Pits	3.25	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Clay Burrow Pits	10	LIG	LIG	VII	VII	TBD*	TBD*	TBD*	TBD*	TBD*	TBD*
Sewage Treatment Plant	0.1	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
General Construction Areas (Existing disturbance)	26	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Exploration	2.88	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Taipan WRD Runoff Dam	0.25	LIG	LIG	VII	VIII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Run-off Diversions	3.8	LIG	Diversion	VII	Diversion	NA					
TOTAL	**196.46**										

Disturbance Category	Max. Area	Land Use		Land Capability		Analogue Site 1 (GDA 94 MGA z54)		Analogue Site 2 (GDA 94 MGA z54)		Analogue Site 3 (GDA 94 MGA z54)	
ML90108 (Orphan Shear)	**(ha)**	**PRE DISTURBANCE**	**POST DISTURBANCE**	**PRE DISTURBANCE**	**POST DISTURBANCE**	**Northing**	**Easting**	**Northing**	**Easting**	**Northing**	**Easting**
Orphan Shear Pit	3	LIG	Residual Void - No Use	VII	Residual Void - No Use	NA					
Orphan Shear Waste Rock Dump	4	LIG	LIG	VII	VII/VIII	TBD*	TBD*	TBD*	TBD*	TBD*	TBD*
Orphan Shear Topsoil Stockpile	2	LIG	LIG	VII/VIII	VII/VIII	TBD*	TBD*	TBD*	TBD*	TBD*	TBD*
Existing Site Roads	1.5	Roads	Roads	Roads	Roads	NA					
Additional Site Roads and Haulage Roads	3	LIG	LIG	VII	VII	7707476.003	450372.170	7707781.712	449792.830	7707905.197	449965.996
Run-off Diversions	0.5	LIG	Diversion	VII	Diversion	NA					
Tailings Storage Facility	14.5	LIG	LIG	VII	VII/VIII	7708486.528	449038.728	7708056.049	449011.107	7708179.018	449010.735
Exploration	0.77	LIG	LIG	VII	VII	TBD*	TBD*	TBD*	TBD*	TBD*	TBD*
TOTAL	**29.27**										

**Analogue sites and disturbance description are to be identified.*
LIG - Low Intensity Grazing.
VII – Land not suitable for cultivation and only careful pastoral use possible.
VIII – Land not suitable for agricultural or grazing uses.

Appendix B - Table 2 (Landform Design)

Disturbance type	Slope range (%)	Projective surface area (ha)
Waste Rock Dumps	20 degrees to the angle of repose	30
Heap Leach Pads	<20 degrees	32.5
ROM Pads	20 degrees to the angle of repose	7

END OF ENVIRONMENTAL AUTHORITY