Permit

Environmental Protection Act 1994

Environmental authority EPML00818113

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

Environmental authority number: EPML00818113

Environmental authority takes effect on 17 April 2025

The anniversary date of this environmental authority is 1 March each year.

Environmental authority holder(s)

Name(s)	Registered address
AIC COPPER PTY LTD	Suite 3, 130 Hay Street SUBIACO WA 6008

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 - 16 - Mining gold ore Schedule 3 - 17 - Mining copper ore Ancillary 08 - Chemical Storage - 5 - storing 200 cubic metres or more of chemicals that are liquids, 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	ML90064 ML90080 ML90086 ML90155

Queensland Government

Environmentally relevant activity/activities	Location(s)
category 1 regulated waste Ancillary 63 - Sewage Treatment - 1(b-ii) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of more than 100 but not more than 1500EP – otherwise	

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.

The anniversary day of this environmental authority is the same day each year as the effective date. The payment of the annual fee will be due each year on this day. An annual return will be due each year on 01 April.

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.

T.Gibbs	17 April 2025
Signature	Date

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

Enquiries:
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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 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 Resources (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

Conditions of environmental authority

Location: Eloise Copper Mine, approximately 60 kilometres east south east of Cloncurry QLD 4824

ML90064, ML90080, ML90086 and ML90155

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

Schedule A – General

Activity

(A1) This environmental authority does not authorise environmental harm unless a condition contained within this authority explicitly authorises the harm. Where there is no condition or the 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 of the environmental authority must comply with Schedule A – Table A1 (Authorised Mining Activities). Mine domain locations are shown in Schedule I – Map 1 (General Layout Plan).

Schedule A – Table A1 (Authorised Mining Activities)

Mine Domain	Mine Feature Name	Tenure Type and Number	Easting GDA94 z54	Northing GDA94 z54	Maximum Disturbance Area (ha)	Constraints
Waste	Temporary Excavated Material Stockpile	ML90064	498526	7683776	2.2	Area
	Scats Pile	ML90064	497844	7682740	2	
	Waste Pad	ML90064	497461	7682509	5.9	
Run of Mine	Ore Processing Area	ML90064	497918	7682832	4.61	Area and Maximum annual ROM
	ROM Pad	ML90064	497690	7682840	6	
Processing Area	Process Plant	ML90064	497914	7682857	0.22	Scale and intensity
	Fuel and Oil Storage	ML90064	497978	7682750	0.16	
	Power Station	ML90064	498008	7682754	0.35	
	Process Water Tanks	ML90064	497887	7683079	0.26	Area
Mining Area	Decline Area	ML90064	497616	7682630	1.2	Scale and intensity
	Batch Plant and UG Stores	ML90064	497486	7682753	2.5	
	Shafts and Vents	ML90064	497608 497534 497708 497848 497808 497743 497758	7682104 7682055 7682586 7682418 7682407 7682656 7682419	1.07	
	Chiller Plant	ML90064	497685	7682589	1.1	
Underground Access	Underground Link Drive	ML90064 ML90155	Map 4, SCHEDULE I – Maps / Plans		1	Area
Exploration	Exploration Sites	ML90155	Various	Various	1	Scale and intensity
	Exploration Coreyard	ML90064	498614	7682855	3.2	
Dams	Lake Andrew (Underground Dewatering Dam)	ML90064	498007	7682451	5.5	Depth, Area and volume
	Stores Pond	ML90064	498249	7682927	0.35	

Mine Domain	Mine Feature Name	Tenure Type and Number	Easting GDA94 z54	Northing GDA94 z54	Maximum Disturbance Area (ha)	Constraints
	Process Water Dam(2)	ML90064	497871	7682961	0.76	
	Tailings Dam Cell 1/2	ML90064	497635	7683343	67	
	Tailings Dam Cell 3	ML90064	497948	7683413		
	Tailings Dam Cell 4	ML90064, ML90086 and ML90155	497932	7683880		
	Tailings Dam Cell 5	ML90064, ML90155	497368	7683578	25.18	
	Sedimentation Dams	ML90064	497398	7682754	0.1	
	Batt Dam	ML90064 and ML90086	498559	7683717	6.9	
	Hamilton Dam	ML90064	498263	7683320	6	
	Old Evaporation Dams	ML90064	498753	7683642	2.5	
Borrow Pits and Stockpiles	Topsoil Stockpiles	ML90064	498246 498843 497629 497535 497985 497980	7683550 7683590 7682993 7682875 7682671 7682650	3.1	Scale and intensity
	Clay Borrow Pits	ML90155	498229	7683997	4.7	
	TD5 Temporary Materials Stockpile	ML90064, ML90155	497329	7683033	12	
Ancillary Infrastructure	Laydown Areas	ML90064	497735	7683050	3.95	Scale and intensity
	Water Treatment Plant	ML90064	498733	7683421	0.13	
	Rehab Area	ML90064	498167	7682441	0.92	
	Sewage Treatment Areas[1]	ML90064	498758	7683507	0.22	
	Workshops/Administration	ML90064	497971	7682980	2.06	
	Stores	ML90064	498103	7682909	1.2	
	Accommodation Village (Relocatable)	ML90064	498750	7683296	8.88	
	Camp (oval area)	ML90064	498694	7683264	0.53	
	Village Sewage Treatment Plant	ML90064	498614	7683391	0.07	
	Explosives Magazine	ML90064	497824	7682334	0.1	

Mine Domain	Mine Feature Name	Tenure Type and Number	Easting GDA94 z54	Northing GDA94 z54	Maximum Disturbance Area (ha)	Constraints
	Bores	ML90064	Various	Various	0.1	
	Refuse Disposal Area	ML90064	497436	7682038	2.9	
	Waste Transfer Area	ML90064	497475	7682259	2.5	
	Diversions	ML90064	498421	7683344	0.17	
	Elrose Borefield	ML90080	Various	Various	5	
	Site Roads	ML90064, ML90080 and ML90086	Various	Various	13.1	
	Pump Back Bores	ML90064, ML90086 and ML90155	Various	Various	0.009	
	Container Laydown	ML90064	498931	7682681	1.5	
Construction	Mobile crush and screen area	ML90064	497535	7682376	1.21	Area
	Construction Laydown	ML90064	497709	7682985	8.58	
		ML90064	497571	7683013		
		ML90064	497730	7682481		
		ML90064	498062	7682782		
		ML90064	497829	7682614		
		ML90064	497671	7682402		
		ML90064	498013	7682617		

Footnote:

[1] *Sewage treatment Areas in Schedule G - Table G1 (Final Land Use and Rehabilitation Approval Schedule) are defined separately as Sewage Treatment Area 1 and Sewage Treatment Area 2.*

[2] *The process water dam will no longer exist once the requirements of condition A32 have been met.*

Maintenance of Measures, Plant and Equipment

(A3) The environmental authority holder 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 condition;

c) Operate such measures, plant and equipment in a proper manner; and

d) All instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority must be calibrated and appropriately operated and maintained.

(A4) No change, replacement or alteration of any measures, plant or equipment is permitted if the

change, replacement or alteration increases, or is likely to increase, the risk of environmental harm.

Monitoring

(A5) The environmental authority holder must record, compile and keep for a minimum of seven (7) years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.

(A6) Where monitoring is a requirement of this environmental authority, ensure that an appropriate qualified person conducts all monitoring.

(A7) All analyses, monitoring and tests required to be conducted under this environmental authority must be carried out by a laboratory that has a National Association of Testing Authorities (*NATA)* certification for such analyses, monitoring and tests, except as otherwise authorised by the administering authority.

(A8) The holder of this environmental authority must upon request from the administering authority, supply monitoring records, plans and reports in the form and by the means requested by the administering authority within fourteen days.

Emergency Response / Contingency

(A9) An emergency response/contingency plan must be developed by 1 November 2012. The plan must be implemented to respond to emergency events and incidents.

(A10) The emergency response/contingency plan required under condition (A9) must address the following matters as a minimum:

(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;

(j) Procedures to notify any potentially impacted stakeholder who may be affected by the event within 24 hours, with information to be provided at a minimum:

i. The location of the release;

ii. The date and time of the release;

iii. The estimated quantity and type of any substances (if available concentrations) involved in the incident;

iv. The potential impacts to environmental values caused by the release.

Notification of Emergencies, Incidents and Exceptions

(A11) The environmental authority holder must notify the administering authority by telephone, email or facsimile 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 approval.

(A12) The notification in condition (A11) 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 incident;

(e) The time the environmental authority holder became aware of the incident;

(f) The estimated quantity and type of substances involved in the incident;

(g) The actual or potential cause of the incident;

(h) A description of the nature and effects of the incident including environmental risks, any risks to public health or livestock;

(i) Any sampling conducted or proposed, relevant to the emergency or incident;

(j) Immediate actions taken to prevent or mitigate any further environmental harm caused by the release; and

(k) What notification of persons who may be affected by the event has occurred/is being undertaken.

(A13) Within fourteen (14) days or another nominated time agreed to by the administering authority, following the initial notification of an emergency or incident, further written advice must be provided to the administering authority, including the following:

(a) Results and interpretation of any samples taken and analysed;

(b) Outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and

(c) Proposed actions to prevent a recurrence of the emergency or incident.

(A14) The environmental authority holder must notify any potentially impacted stakeholder by telephone, email or facsimile within 12 hours after becoming aware 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.

(A15) The notification in condition (A14) must include the following:

(a) The location of the release;

(b) The date and time of the release;

(c) The estimated quantity and type of any substances involved in the incident;

(d) The potential impacts to environmental values caused by the release; and

(e) Where there is potential impact on livestock or human health, precautionary measures that should be taken.

(A16) The environmental authority holder 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.

Complaints & Community

(A17) Records must be kept of all environmental complaints received about the mining activities including the following details:

(a) Name, address and contact number for complainant (if not available, record – not identified);

(b) Time and date of complaint;

(c) Specifics of the complaint;

(d) Investigations undertaken;

(e) Conclusions formed;

(f) Actions taken to resolve complaint;

(g) Any abatement measures implemented; and

(h) Person responsible for resolving the complaint.

This information must be made available for inspection by the administering authority on request.

(A18) When requested by the administering authority, undertake relevant specific 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 fourteen (14) days of completion of the investigation unless otherwise agreed to by the administering authority, and no later than fourteen (14) days after the end of the timeframe nominated by the administering authority to undertake the investigation.

(A19) The environmental authority holder 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) Organise regular meetings with all relevant stakeholders at intervals of not less than six (6) months;

(b) Alternate frequencies requested by relevant stakeholders; or

(c) The establishment of a consultative committee with representation for all relevant stakeholders that meets at regular intervals as determined by the committee.

Third Party Auditing

(A20) 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 three (3) years.

(A21) The third-party auditor must certify the independent findings of the audit in the report.

(A22) The financial costs of the third-party audit are the responsibility of the holder.

(A23) 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.

(A24) Within one (1) month of completing the audit, the holder must provide a written 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.

Risk Management

(A25) The environmental authority holder must develop and implement by 1 May 2013 an environmental risk management system for mining activities which conforms to the Standard for Risk Management (ISO31000:2009) or the latest edition of a recognised Standard for Environmental Risk Management.

Exploration

(A26) 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 *Code of Environmental Compliance for Exploration and Mineral Development Projects* (the Code). Where there is a discrepancy between the Code and this environmental authority, the conditions of the environmental authority apply.

Light Emission

(A27) In the event of a complaint which, after investigation, is considered to be non-vexatious and non-frivolous in the opinion of an authorised officer under the Environmental Protection Act 1994, and concerns light from any mining activity that is causing a nuisance at a sensitive place, the administering authority may request the holder to take appropriate action to mitigate the nuisance. The environmental authority holder must take appropriate action (e.g., by screening or directing the light away from residences or public roads) within any reasonable time set by the administering authority.

Transition to New Standards

(A28) Where a condition requires compliance with a standard published externally to this environmental authority and the standard is amended or changed subsequent to the issues of this environmental authority, then the environmental authority holder must:

(a) Until compliance with the amended or changed standard can be achieved, continue to remain in compliance with the standard that was current immediately prior to the relevant amendment or change; and

(b) Comply with the amended or changed standard within 2 years, unless a different period is specified in the amended standard or relevant legislation.

Definitions

(A29) Words and phrases used throughout the environmental authority are defined in Schedule H-Definitions. 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.

Ore Acceptance

(A30) Only ore permitted to be accepted is from the Jericho Mine project on mining lease (ML) 100348.

Processing Plant

(A31) The processing of ore must not exceed 10% of 2024 ore throughput.

Transitional Arrangement

(A32) Within 3 months of commissioning of Process Water Tanks, the Process Water Dam is to be decommissioned and rehabilitated in accordance with the requirements set out in condition D32 of this environmental authority.

END OF CONDITIONS FOR SCHEDULE A

Schedule B – Air

General

(B1) The release of noxious or offensive odour or any other airborne contaminant resulting from the mining activities must not cause environmental harm at any sensitive place or commercial place.

(B2) The environmental authority holder must ensure that vehicles used for transporting bulk materials to and from the mining tenement, enter and leave the site with appropriate load preparation to prevent the spillage and/or loss of particulate matter and/or windblown dust to the receiving environment during transport.

Dust Nuisance

(B3) When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority 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 or commercial place, and the results must be notified within 14 days to the administering authority following completion of monitoring. Monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place.

(B4) Dust and particulate matter must not exceed 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 most recent version of 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 (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version of Australian Standard AS3580.9.6 *Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM (sub) 10 high volume sampler with size-selective inlet – Gravimetric method*.

(c) A concentration of particulate matter with an aerodynamic diameter of less than 2.5 micrometres (PM2.5) 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 a one (1) year averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.3:2003 *Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – Total suspended particulate matter (TSP) – High volume sampler gravimetric method*.

(B5) If monitoring indicates the limits in condition (B4) have been exceeded, the environmental authority holder must promptly implement dust abatement measures so that emissions of dust generated by the mining activities cease to exceed the limits in condition (B4).

Odour Nuisance

(B6) The release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the mining activity must not cause an environmental nuisance at any sensitive or commercial place.

(B7) When requested by the administering authority, odour monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority 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 or commercial place, and the results must be notified within 14 days to the administering authority following completion of monitoring.

(B8) If monitoring indicates condition (B6) is not being met then the environmental authority holder must:

(a) address the complaint including the use of appropriate dispute resolution if required; or

(b) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance.

Meteorological Monitoring

(B9) By 1 December 2012, the environmental authority holder must establish and maintain a permanent meteorological station to continuously measure and record wind speed, wind direction, temperature, daily rainfall volume and rainfall intensity.

(B10) The permanent meteorological station must be installed in accordance with the latest edition of the Bureau of Meteorology guideline observation specifications No. 2013.1 Guidelines for the positioning and exposure of meteorological instruments and observing facilities.

(B11) The holder of this environmental authority must record, compile, evaluate and keep all monitoring records obtained from the permanent meteorological station.

Point source release of contaminants to the atmosphere

(B12) Contaminants must not be released to the atmosphere from any diesel-powered generator other than in accordance with the manufacturer's specifications.

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 – Map 2 (Monitoring Sites for Surface Water and Sediments).

Schedule C – Table C1 (Contaminant Release Points)

Release Point	Easting (GDA94) Zone 54	Northing (GDA94) Zone 54	Contaminant Source and Location, and Description of Release Point	Receiving Waters Description
1	498397	7683336	Discharge from Hamilton Dam spillway	Scrubby Creek
2	498001	7682346	Discharge from Lake Andrew spillway	Scrubby 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 Trigger Levels and Limits).

Schedule C – Table C2 (Contaminant Release Trigger Levels and Limits)

Quality Characteristic	Trigger Levels[2, 3]	Release Limit[2,4]	Monitoring Frequency
Electrical conductivity	435µS/cm or 80th percentile of reference	1000 µS/cm or 95th percentile of reference[2], which ever is lowest	Daily during release (the first sample must be taken within 2 hours of commencement of release if safe to do so)
pH	6.0 (minimum) 7.5 (maximum)	5.5 (minimum) 9.0 (maximum)	
Turbidity	TBA[5]	TBA[5]	
Sulphate as SO_4	80th percentile of reference	1000 mg/L or 95th percentile of reference[2], which ever is lowest	
Aluminium	TBA[5]	TBA[5]	
Arsenic[1]	13 µg/L or 80th percentile of reference, whichever is higher	0.5 mg/L or 95th percentile of reference[2], which ever is lowest	
Cadmium[1]	0.2 µg/L or 80th percentile of reference, whichever is higher	0.01 mg/L or 95th percentile of reference[2], which ever is lowest	
Chromium	TBA[5]	TBA[5]	
Cobalt	TBA[5]	TBA[5]	
Copper[1]	1.4 µg/L or 80th percentile of reference, whichever is higher	1 mg/L or 95th percentile of reference[2], which ever is lowest	
Lead[1]	3.4 µg/L or 80th percentile of reference, whichever is higher	0.1 mg/L or 95th percentile of reference[2], which ever is lowest	
Manganese	TBA[5]	TBA[5]	
Mercury	TBA[5]	TBA[5]	

(inorganic)			
Molybdenum	TBA[5]	TBA[5]	
Barium	TBA[5]	TBA[5]	
Beryllium	TBA[5]	TBA[5]	
Boron	TBA[5]	TBA[5]	
Strontium	TBA[5]	TBA[5]	
Tin	TBA[5]	TBA[5]	
Uranium	TBA[5]	TBA[5]	
Nickel	TBA[5]	TBA[5]	
Selenium	TBA[5]	TBA[5]	
Zinc[1]	8.0 µg/L or 80th percentile of reference, whichever is higher	20 mg/L or 95th percentile of reference[2], which ever is lowest	
Fluoride	TBA[5]	TBA[5]	
Hardness	For interpretation purposes only		

Notes for Table C2:

1. *Where 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.*
2. *Levels presented are maximums unless otherwise stated.*
3. *Trigger levels for metals and metalloids are based on filtered water quality samples.*
4. *Release limits for metals and metalloids are based on unfiltered water quality samples.*
5. *Trigger Levels and Release limits for any TBA must be nominated in accordance with condition C3-1.*

(C3-1) All "TBA" listed in Schedule C – Table C2 (Contaminant Release Trigger Levels and Limits) and Schedule C – Table C5 (Receiving Water and Stream Sediment Trigger and Contaminant Limits) must be nominated via an amendment application pursuant to the *Environmental Protection Act 1994* to this environmental authority by 30 March 2026.

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

(C5) If quality characteristics of the release exceed any of the trigger levels specified in Schedule C – Table C2 (Contaminant Trigger Levels and Release Limits) during a release event, the holder of this environmental authority must compare the downstream results in the receiving waters during that release event to the trigger values specified in Schedule C – Table C2 (Contaminant Trigger Levels and Release Limits) and:

(a) If the level of contaminants at the downstream site is the same or a lower value than the reference value for the quality characteristic during the release event then no action is to be taken; or

(b) If the level of contaminants at the downstream site is greater than the reference monitoring site 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 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 (C5) (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

(C6) 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.

Stream Flow Monitoring

(C7) Before the 1 November 2012, the environmental authority holder 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.

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

Receiving water description	Release point	Gauging station description	Easting (GDA94) Zone 54	Northing (GDA94) Zone 54	Minimum Flow in Receiving Water Required for a Release Event	Flow recording Frequency
Scrubby Creek	Discharge from Spillway of Lake Andrew	Gauging station 1	498001	7682346	The release comprising less than 5% of the natural flow.[1]	Continuous (minimum daily)

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.*

(C8) 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 3 (Contaminant Release during Flow Events) for the contaminant release point(s).

(C9) 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).

(C10) 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

(C11) The environmental authority holder 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).

(C12) The environmental authority holder 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 (C11) and within twenty-eight (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 Schedule C-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.

Receiving Environment Monitoring and Contaminant Trigger Levels and Limits

(C13) The quality of the receiving waters and stream sediments must be monitored at the locations and frequencies defined in Schedule C – Table C4 (Receiving Water and Stream Sediment Monitoring Locations and Frequency) and Schedule I – Map 2 (Monitoring Sites for Surface Water and Sediments) for the quality characteristics defined in Schedule C – Table C5 (Receiving Water and Stream Sediment Trigger and Contaminant Limits).

Schedule C – Table C4 (Receiving Water and Stream Sediment Monitoring Locations and Frequency)

Monitoring point	Easting (GDA 94) Zone 54	Northing (GDA 94) Zone 54	Monitoring frequency
Reference Sites[1]			**Surface Waters:** Daily during a release; or Weekly during each stream flow event **Stream Sediment:** Bi-annually (once at the end of the wet season, once at the end of the dry season
SC1 – Scrubby Creek (east) upstream reference site[1] at the north-eastern boundary of ML90155	498092	7681997	
SC1A – Scrubby Creek (west) upstream reference site[1], approximately 6.7km upstream of Eloise Copper Mine	491459	7679507	
Impact Sites			
SC2 – Drainage channel flowing north into Scrubby Creek (east) approximately 200m downstream of SC3	498504	7683932	
SC2A – Scrubby Creek flowing north, approximately 3.4km downstream of mining operations. Downstream of the confluence of Scrubby Creek (east) and (west)	499457	7687270	

SC2B – Scrubby Creek (west) flowing north, at northern boundary of ML 90155 and downstream of mining operations	497341	7684129	
SC3 – Scrubby Creek East Downstream Impact site – east TD3 and TD4 Drainage channel flowing north into Scrubby Creek (east), approximately 300m downstream of mining operations	498375	7683667	

Notes for Table C4:

1. *Reference sites must:*
   a) *be from the same biogeographic and climatic region; and*
   b) *have similar geology, soil types and topography; and*
   c) *contain a range of habitats similar to those at the test sites; and*
   d) *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*

Schedule C – Table C5 (Receiving Water and Stream Sediment Trigger and Contaminant Limits)

Quality Characteristic	Receiving Water Quality (mg/L unless stated otherwise)		Stream Sediment Quality (mg/kg unless stated otherwise)	
	Trigger Levels[3, 4]	Contaminant Limits[3, 5]	Trigger Level	Contaminant Limit
Electrical conductivity	435µS/cm or 80th percentile of reference	1000 µS/cm or 95th percentile of reference[2], which ever is lowest	N/A	N/A
pH	6.0 (minimum) 7.5 (maximum)	5.5 (minimum) 9.0 (maximum)	N/A	N/A
Turbidity	TBA[7]	TBA[7]	N/A	N/A
Sulphate as SO_4	80th percentile of reference	1000 mg/L or 95th percentile of reference[2], which ever is lowest	N/A	N/A
Aluminium	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Arsenic[1]	13 µg/L or 80th percentile of reference	0.5 mg/L or 95th percentile of reference[2], which ever is lowest	Reference value or 20 mg/kg[5], whichever is higher.	70 mg/kg[6] or 3 times the reference value, whichever is higher
Cadmium[1]	0.2 µg/L or 80th percentile of reference	0.01 mg/L or 95th percentile of reference[2], which ever is lowest	Reference value or 1.5 mg/kg[5], whichever is higher	10 mg/kg[6] or 3 times the reference value, whichever is higher
Chromium	TBA[7]	TBA	TBA[7]	TBA[7]
Cobalt	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Copper[1]	1.4 µg/L or 80th percentile of reference	1 mg/L or 95th percentile of reference[2], which ever is lowest	Reference value or 65 mg/kg[5], whichever is higher.	270 mg/kg[6] or 3 times the reference value, whichever is higher
Lead[1]	3.4 µg/L or 80th percentile of reference	0.1 mg/L or 95th percentile of reference[2], which ever	Reference value or 50 mg/kg[5] whichever is higher.	220 mg/kg[6] or 3 times the reference value, whichever is higher

		is lowest		
Manganese	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Mercury (inorganic)	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Molybdenum	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Barium	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Beryllium	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Boron	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Strontium	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Tin	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Uranium	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Nickel	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Selenium	TBA[7]	TBA[7]	TBA[7]	TBA[7]
Zinc[1]	8.0 µg/L or 80th percentile of reference	20 mg/L or 95th percentile of reference[2], which ever is lowest	Reference value or 200 mg/kg[5] or, whichever is higher.	410 mg/kg[6] or 3 times the reference value, whichever is higher
Fluoride	TBA[7]	TBA[7]	N/A	N/A
Hardness	For interpretation purposes only		For interpretation purposes only	
Particle Size Distribution	N/A		For Interpretational Purposes Only	

Notes for Table C5:

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 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. *ANZECC (2000) Interim Sediment Quality Guidelines – low values based on total sediments*
6. *ANZECC (2000) Interim Sediment Quality Guidelines – high values based on total sediments*
7. *Trigger Levels and Contaminant Limits for any TBA must be nominated in accordance with condition C3-1.*

(C14) The release of contaminants to the receiving environment must not result in an exceedance of surface water or stream sediment contaminant limits stated in Schedule C – Table 5 (Receiving Water and Stream Sediment Trigger and Contaminant Limits) for each quality characteristic.

(C15) If quality characteristics of the receiving water at the downstream monitoring points exceed any of the surface water or stream sediment trigger levels specified in Schedule C – Table 5 (Receiving Water and Stream Sediment Trigger and Contaminant Limits), the environmental authority holder must compare the downstream results to the reference site results in the receiving waters and:

(a) where the downstream result is 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 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 C15 (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

(C16) 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.

Onsite Water Storages

(C17) The holder of this environmental authority must monitor the water quality in all regulated dams defined in Schedule D – Table D1 (Location of Regulated Dams) of this environmental authority for the water quality contaminant limits detailed in Schedule C – Table C6 (Onsite Water Storage Contaminant Limits) every three (3) months.

(C18) In the event that water storages defined in Schedule D – Table D1 (Location of Regulated Dams) of this environmental authority exceed the contaminant limits defined in Schedule C – Table 6 (Onsite Water Storage Contaminant Limits), the holder of the environmental authority must implement measures, where practicable, to prevent access to waters by livestock, and limit access to native fauna.

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

Quality Characteristic	Test Value	Contaminant Limit[2]
pH	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]
Copper (mg/L)	Maximum	1[1]
Lead (mg/L)	Maximum	0.1[1]
Mercury (mg/L)	Maximum	0.002[1]
Nickel (mg/L)	Maximum	1[1]
Selenium (mg/L)	Maximum	0.02[1]
Zinc (mg/L)	Maximum	20[1]

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.*

Receiving Environment Monitoring Program (REMP)

(C19) An updated REMP must be developed and implemented by 1 July 2023 to monitor and record the effects of the release of contaminants on the receiving environment or potential release of contaminants, 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.

For the purposes of the REMP, the receiving environment is the waters of Scrubby Creek and connected waterways within 10 km downstream of the release or further if an impact is detected beyond 10 km.

(C20) The REMP must be reviewed and re-submitted to the administering authority by an appropriately qualified person every three (3) years from 1 July 2023 to ensure that any potential environmental impacts due to changes in the carrying out of the mining activity are monitored.

(C21) The REMP must address (but not necessarily be limited to) the following:

(a) Description of potentially affected receiving waters including key communities and reference water quality and sediment 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;

(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 and sediment quality targets within the receiving environment to be achieved and clarification of contaminant concentrations or levels indicating adverse environmental impacts during the REMP;

(e) Monitoring identify and describe any adverse environmental impacts to surface water environmental values, quality, and flows;

(f) Monitoring of stream flow and hydrology;

(g) Assess the receiving environment monitoring against Schedule C – Table C4 (Receiving Water and Stream Sediment Trigger and Contaminant Limits) to assess the extent of the compliance of concentrations with water quality objectives;

(h) Apply procedures and/or guidelines from ANZG 2018 and other relevant standards and guideline documents.

(i) Monitoring of physical and chemical parameters that include dissolved oxygen saturation and temperature;

(j) Monitoring biological indicators (for macroinvertebrates in accordance with the administering authorities' monitoring and sampling manual (AusRivas methodology) 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;

(k) The locations of monitoring points (including the locations specified in Schedule C – Table C4 (Receiving Water and Stream Sediment Monitoring Locations and Frequency) which are reference/upstream and downstream impacted sites for each release point);

(l) The frequency or scheduling of sampling and analysis sufficient to determine water quality objectives and to derive site specific reference values within two (2) years (depending on wet season flows) in accordance with the Queensland Water Quality Guidelines. For ephemeral streams, this should include periods of flow irrespective of mine or other discharges;

(m) Specify sampling and analysis methods and quality assurance and control;

(n) Any historical data sets to be relied upon;

(o) Description of the statistical basis on which conclusions are drawn;

(p) Assess the long-term condition or state of surface waters, sediment, and aquatic ecosystem health;

(q) Include an assessment of the potential impacts of the activity and propose appropriate mitigation measures;

(r) Assess the status of and any change to aquatic ecosystem health including aquatic flora and fauna within and immediately surrounding the project area;

(s) Incorporate stream flow and hydrological information in the interpretations of water quality and biological data; and

(t) Any spatial and temporal controls to exclude potential confounding factors.

(C22) A report outlining the findings of the REMP, including all monitoring results and interpretations or assumptions relied upon, in accordance with condition C20 must be prepared for the period of 1 July – 30 June the following year and the report submitted to the administering authority each year by 30 September. This should include an assessment of reference water quality, any assimilative capacity for those contaminants monitored and the suitability of current discharge limits to protect downstream environment values.

(C23) The report required by condition C22 must:

(a) Be prepared by an appropriately qualified person.

(b) Include an audit of compliance with the latest version of the administering authority's guideline *Receiving environment monitoring program (ESR/2016/2399*) and condition C20; and

(c) Outline the findings of the REMP, including but not limited to:

(i) An assessment of long-term background water quality,

(ii) An assessment of the long-term condition and state of surface waters, sediment and aquatic ecosystem health.

(iii) Suitability of current release limits to protect downstream environmental values.

(iv) Recommendations for further investigation.

(v) Recommendations for changes or improvements to the monitoring program; and

(vi) Potential changes to management and conditioning of the authorised activity to minimise impacts.

Water General

(C24) 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 administering authority's monitoring and sampling manual;

(c) Collected from the monitoring locations identified within this environmental authority, within 2 hours of each other (reference/downstream) where possible;

(d) Carried out on representative samples; and,

(e) Laboratory testing must be undertaken using a laboratory accredited (e.g. NATA) for the method of analysis being used.

Annual Water Monitoring Reporting

(C25) 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 when requested:

(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

(C26) A Water Management Plan must be developed and implemented 1 March 2013 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.

(C27) The Water Management Plan must be developed in accordance with administering authority Guideline for Preparing a Water Management Plan 2009 or any updates that become available from time to time 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.

(C28) Each year the environmental authority holder must undertake a review of the Water Management Plan prior to the wet season (and no later than 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.

(C29) 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

(C30) 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, Sediment and Erosion Controls

(C31) An Erosion and Sediment Control Plan must be developed 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. A copy of the erosion and sediment control plan must be provided to the administering authority on request.

(C32) The Erosion and Sediment Control Plan must be managed in accordance with documented procedures, 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.

(C33) 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.

Runoff Control from Machinery Maintenance

(C34) 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.

(C35) 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

(C36) The holder of this environmental authority must not release contaminants to groundwater.

(C37) By 30 March 2024, a revised numerical groundwater model must be developed by an appropriately qualified person.

(C38) The numerical groundwater model required by Condition C37 must:

(a) include a hydrogeological conceptual model and hydrostatigraphy of the groundwater units;

(b) provide groundwater contours;

(c) predict groundwater levels;

(d) predict operational groundwater seepage and post-mining seepage rates;

(e) predict fluxes through the floor of the tailings dams cells, embankments and into the underlying

groundwater systems;

(f) predict lateral and vertical geographical extents of contaminants and direction of movements of contaminants;

(g) be calibrated and include sensitivity analysis to evaluate the relative effect of model input parameters and boundary conditions on model calibration and predictive outputs.

(C39) The numerical groundwater model in Condition C38 must simulate the interaction of the tailings dams with the site groundwater system and the different hydro-stratigraphic units.

(C40) By 30 April 2024, a model review report providing details of the numerical groundwater model required by Condition C38 must:

(a) be submitted to the administering authority; and

(b) have due consideration given to any comments made by the administering authority on the numerical groundwater model.

(C41) The numerical groundwater model in Condition C38 must be maintained and calibrated to ensure the site groundwater system is modelled for operational and post-mining activities.

(C42) Groundwater quality and level must be monitored at the locations and frequencies defined in Schedule C - Table C7 (Groundwater Monitoring Locations and Frequency) for quality characteristics identified in Schedule C - Table C8 (Groundwater Trigger and Contaminant Limits).

Schedule C – Table C7 (Groundwater Monitoring Locations and Frequency)

Monitoring point*	Aquifer Formation Geologic unit	MGA Easting (GDA 94) Zone 54	MGA Northing (GDA 94) Zone 54	Surface RL (m)	Depth below surface (m)	Monitoring frequency
Tertiary Sediments /Weathered Wallumbilla Formation; Wallumbilla Formation						
Reference Bores[1,3 –] (Shallow) - Tertiary Sediments /Weathered Wallumbilla Formation						
REF1_S	Tertiary sediments / Weathered Wallumbilla Formation	498805	7682201	185.3	12	Quarterly
Compliance Bores (Shallow) – Tertiary Sediments, Tertiary Sediments /Weathered Wallumbilla Formation, Wallumbilla Formation						
WB10	Tertiary sediments / Weathered Wallumbilla Formation	497622	7684283	189	12	Quarterly
WB11A		498106	7684323	192	12	Quarterly
WB12		498425	7684237	189	12	Quarterly
WB13		498305	7683844	175	12	Quarterly
WB14A		498355	7683220	191	12	Quarterly
TD5_1		497542	7684051	175.1	12	Quarterly

Monitoring point*	Aquifer Formation Geologic unit	MGA Easting (GDA 94) Zone 54	MGA Northing (GDA 94) Zone 54	Surface RL (m)	Depth below surface (m)	Monitoring frequency
TD5_2		497025	7683599	177.7	10	Quarterly
TD5_3		497028	7683359	179.9	12	Quarterly
TD5_4		497128	7682942	183.9	12	Quarterly
TD5_5		497623	7683107	184.8	11.8	Quarterly
TD5_6		497155	7683299	180.6	12	Quarterly
TD5_7		497603	7684011	177.5	12	Quarterly
TD5_8		497152	7683656	177.6	10	Quarterly
TD5_9		497333	7683930	175.6	12	Quarterly
LDB05		497132	7683784	175	12	Quarterly
LDB07	Tertiary sediments	497183	7683921	175	12	Quarterly
Wallumbilla Formation						
Observation Bores[2, 4]						
WB1	Wallumbilla Formation	498171	7683158	184	29	Quarterly
WB2		498200	7683431	182	23	Quarterly
WB3		498196	7683653	183	23	Quarterly
Reference Bores[1–] (Deep) - Wallumbilla Formation						
REF1_D	Wallumbilla Formation	498813	7682200	185.5	40	Quarterly
Compliance Bores – (Deep) - Wallumbilla Formation						
TD5_10	Wallumbilla Formation	497152	7683649	177.7	40	Quarterly
TD5_11		497328	7683929	175.6	40	Quarterly
Gilbert River Formation						
Reference Bores[1] – Deep - Gilbert River Formation						
DWB 7	Gilbert River Formation	498655	7683541	185	66	Quarterly
Compliance Bores (Deep) - Gilbert River Formation						
WB9B	Gilbert River Formation	497505	7683973	175	80	Quarterly
WB14B		498353	7683213	190	60	Quarterly
WB19		497620	7684148	177	80	Quarterly
WB20		498299	7684136	177	80	Quarterly

Notes for Table C7:

1. *The reference bores must establish the quality of ground water that has not been affected by any seepage of contaminants to ground water from the licensed place.*

2. *To determine any shallow groundwater seepage outside of the perimeter of the interception system on Tailings dams, TD3 and TD4.*
3. *The shallow reference bore must establish the presence or absence of a shallow aquifer in the tertiary sediments of the Wallumbilla formation, in a location hydraulically upgradient of the potential contaminant source.*
4. *Located within the interception system adjacent to the tailings dams,TD3 and TD4.*

**Map of monitoring bore locations depicted in Schedule I - Map 3 – ECM Groundwater Monitoring Locations*

Schedule C - Table C8 (Groundwater Trigger and Contaminant Limits)

Quality Characteristic	Trigger Levels[3,4]	Contaminant Limit[3,5]
Electrical conductivity	435 µS/cm or 80th percentile of reference, whichever is higher	1000 µS/cm or 95th percentile of reference[2, 6], whichever is lowest
pH	6.0 (minimum) 7.5 (maximum)	5.5 (minimum) 9.0 (maximum)
Sulphate as SO_4	80th percentile of reference	1000 mg/L or 95th percentile of reference[2, 6], whichever is lowest
Fluoride	TBA[8]	TBA[8]
Sodium	TBA[8]	TBA[8]
Aluminium	TBA[8]	TBA[8]
Arsenic[1]	13 µg/L or 80th percentile of reference, whichever is higher	0.5 mg/L or 95th percentile of reference[2, 6], whichever is lowest
Cadmium[1]	0.2 µg/L or 80th percentile of reference, whichever is higher	0.01 mg/L or 95th percentile of reference[2, 6], whichever is lowest
Chromium	TBA[8]	TBA[8]
Cobalt	TBA[8]	TBA[8]
Copper[1]	1.4 µg/L or 80th percentile of reference, whichever is higher	1 mg/L or 95th percentile of reference[2, 6], whichever is lowest
Lead[1]	3.4 µg/L or 80th percentile of reference, whichever is higher	0.1 mg/L or 95th percentile of reference[2, 6], whichever is lowest
Iron	TBA[8]	TBA[8]
Manganese	TBA[8]	TBA[8]
Molybdenum	TBA[8]	TBA[8]
Mercury	TBA[8]	TBA[8]
Nickel	TBA[8]	TBA[8]
Selenium	TBA[8]	TBA[8]
Silver	TBA[8]	TBA[8]
Vanadium	TBA[8]	TBA[8]
Barium	TBA[8]	TBA[8]
Beryllium	TBA[8]	TBA[8]
Boron	TBA[8]	TBA[8]
Strontium	TBA[8]	TBA[8]
Tin	TBA[8]	TBA[8]
Uranium	TBA[8]	TBA[8]
Zinc[1]	8.0 µg/L or 80th percentile of reference, whichever is higher	20 mg/L or 95th percentile of reference[2, 6], whichever is lowest
Major ions	For interpretation purposes only	
Total Hardness	For interpretation purposes only	
Total Nitrogen, TN (mg/L as N)[7]	N/A	
Total Phosphorus, TP (mg/L as P) [7]		
E. coli (cfu/100mL) [7]		

Notes for table C8

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. *Contaminant limits for metals and metalloids are based on unfiltered water quality samples.*
6. *Applicable reference bores for contaminant limits are specified in Schedule C – Table C7.*
7. *This analysis is only required for monitoring bore, DWB 7 installed downgradient of the sewage treatment works.*
8. *Trigger Levels and Contaminant Limits for any TBA must be nominated in accordance with condition C42-1.*

(C42-1) All "TBA" listed in Schedule C - Table C8 (Groundwater Trigger and Contaminant Limits) must be nominated via an amendment application pursuant to the *Environmental Protection Act 1994* to this environmental authority by 30 March 2026.

(C43) If quality characteristics of groundwater from compliance bores identified in Schedule C - Table C7 (Groundwater Monitoring Locations and Frequency) exceed any of the trigger levels stated in Schedule C - Table C8 (Groundwater Trigger and Contaminant Limits), the holder of this environmental authority must compare the compliance monitoring bore results to the applicable reference bore results and:

(a) if the level of contaminants at the compliance monitoring bore does not exceed the applicable 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 applicable 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 C38 (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic within the three-month investigation period.

(C44) Monitoring of groundwater from compliance bores identified in Schedule C - Table C7 (Groundwater Monitoring Locations and Frequency), must not exceed any of the contaminant limits defined in Schedule C - Table C8 (Groundwater Trigger and Contaminant Limits).

(C45) By 30 September 2017, the EA holder must install and operate the Seepage Management System.

(C46) From 30 January 2022, a Groundwater Management Program must be developed and documented by appropriately qualified person/s and implemented and maintained by the environmental authority holder.

(C47) The Groundwater Management Program required by Condition C46 must:

(a) identify potential sources, mechanisms, and pathways of contamination to groundwater from the activity; and
(b) ensure that all potential groundwater impacts due to the activity are identified, monitored and mitigated; and
(c) document sampling and monitoring methodology; and
(d) ensure that adequate groundwater monitoring and data analysis is undertaken to achieve the following objectives:

i. detect any impacts to groundwater levels due to the activity;
ii. detect any impacts to groundwater quality due to the activity;
iii. determine compliance with Conditions C53; and
iv. determine trends in groundwater quality showing decreasing and increasing trends; and

(e) include an appropriate quality assurance and quality control program; and
(f) include a conceptual groundwater model which includes an assessment of current seepage rates and predicted post-mining seepage rates; and
(g) specify the purpose of each groundwater bore, the monitoring location, quality characteristics and frequency; and
(h) include a review process to identify improvements to the program that includes addressing any comments provided by the administering authority.

(C48) The Groundwater Management Program must be reviewed and submitted on an annual basis by 30 June by an appropriately qualified person to determine if it continues to meet the requirements stated in Condition C47. The review must include at a minimum:

(a) an assessment that the Groundwater Monitoring and Management Program continues to meet the requirements stated in condition C47; and
(b) an assessment of the suitability of the monitoring network for groundwater specified in Table C7 - Groundwater monitoring locations and frequency to detect impacts from the mining activities; and
(c) where relevant information gaps or uncertainty are identified as pertinent to the accuracy of the investigations finding/conclusions, include recommendations and associated timeframes to address those information gaps and resolve uncertainty.

(C49) From 1 January 2024, an Annual Groundwater Monitoring Report must be prepared for the period of 1 January to 31 December the preceding year by an appropriately qualified person(s) and the report submitted to the administering authority each year by 1 April. The report must include but not be limited to:

(a) an assessment, analysis and interpretation of groundwater quality results from each monitoring event, including time series graph of all data and an assessment of trends in the groundwater quality and level, a graphical comparison with at least the past five (5) years previous monitoring data;

(b) recommendation/s of the review that is conducted by the appropriately qualified person(s) under condition C48;

(c) investigation of any potential groundwater quality deterioration when measured at any bore listed in Schedule C - Table C7 (Groundwater Monitoring Locations and Frequency).

(d) an assessment, analysis and interpretation of results from Seepage Management Plan required under condition C59;

(e) a review process to identify improvements to the Seepage Management Plan that includes addressing any comments provided by the appropriately qualified person(s) required under condition C61.

(C50) The construction, maintenance and decommissioning of groundwater monitoring bores must be undertaken by a licensed appropriately qualified person in a manner that:

(a) prevents contaminants entering the groundwater; and

(b) ensures the integrity of the bores to obtain representative groundwater samples from the target aquifer; and

(c) maintains the hydrogeological environment within the aquifer.

(C51) A bore drill log must be kept for each reference, compliance and observation groundwater monitoring bore which includes:

(a) bore identification reference and geographic coordinate location;

(b) specific construction information including but not limited to depth of bore, depth and length of casing, depth and length of screening and bore sealing details;

(c) standing groundwater level and water quality characteristics including physical characteristics and results of laboratory analysis for the possible trigger characteristics;

(d) lithological data and stratigraphic interpretation by an appropriately qualified person to identify important features associated with groundwater monitoring; and

(e) target hydrogeological feature of the bore.

(C52) Monitoring and sampling must be carried out in accordance with written procedures and must address the requirements of the latest version of the following documents unless otherwise approved by the administering authority:

(a) for waters and aquatic environments, Monitoring and Sampling Manual: Environmental Protection (Water) Policy, (Department of Environment and Science 2018).

(b) for groundwater, Groundwater Sampling and Analysis – A Field Guide (2009:27 GeoCat#6890.1) and Australian Standard AS/NZS 5667.11:1998 Water quality—Sampling -Part 11: Guidance on sampling of groundwaters;

(c) for subterranean aquatic fauna, the Guideline for the Environmental Assessment of Subterranean Aquatic Fauna (Queensland Herbarium, DSITI December 2015).

(C53) The environmental authority holder must ensure that groundwater quality measured in observation bores specified in Table C7 – Groundwater monitoring locations and frequency does not have increasing trends.

(C54) The environmental authority holder must install, operate and maintain Seepage Management Systems to contain seepage and prevent seepage from all site infrastructure moving beyond the observation bores specified in Table C7 – Groundwater monitoring locations and frequency.

(C55) The Seepage Management Systems required by condition C54 must, at a minimum:

(a) include effective control measures to minimise seepage from all site infrastructure; and
(b) include effective control measures to capture and pump-back seepage sufficient to prevent migration into surface waters; and
(c) include effective control measures to ensure seepage does not report to groundwater in the receiving environment; and
(d) include effective control measures to ensure compliance with condition C53; and
(e) include adequate detection measures to analyse and confirm the effectiveness of all control measures required by this condition.

C56) All recovered seepage must be returned to a structure or facility lawfully authorised to receive the seepage.

(C57) Seepage generated from the activity must be managed in accordance with a Seepage Management Plan.

(C58) The Seepage Management Plan must be developed and certified by an appropriately qualified person(s) as compliant with the seepage management conditions of this environmental authority.

(C59) By 30 January 2022, the environmental authority holder must develop, document and implement a Seepage Management Plan (SMP). The SMP must, at a minimum:

(a) describe the Seepage Management Systems required by condition C54; and
(b) include adequate control measures to ensure groundwater quality in compliance bores listed in Table 'C7 (Groundwater Monitoring Locations and Frequency)' comply with all limits specified in 'Table C8 – Groundwater Trigger and Contaminant Limits'; and
(c) include all measures necessary to ensure that the management intent for groundwater is achieved in accordance with condition C53; and
(d) include all measures necessary to ensure compliance with conditions C1, C6 and C36; and
(e) include adequate measures to intercept seepage sufficient to prevent migration beyond the Observation bores as specified in 'Table C7 (Groundwater Monitoring Locations and Frequency)'; and
(f) include adequate measures and review processes to determine if any additional control measures e.g. interception bores or interception trenches are required; and
(g) include an action plan to implement and/or install any additional control measures that are required; and
(h) include a map or figure that depicts the location and type of seepage control measures installed; and
(i) be reviewed annually for the effectiveness of the components and include details of improvements undertaken in the previous year; and
(j) address any comments made by the administering authority; and
(k) include a seepage monitoring program that is designed to detect locations both on and off the mining lease, where seepage may express at the surface, and locations where seepage may not be captured within the Seepage Management System.
(l) include documentation reasonably required for an independent technical review and substantiation of the plan.

(C60) The Seepage Management Plan must include design plans for the seepage controls that form part of the Seepage Management System. The design plans must:

(a) contain the design details for each seepage control;

(b) contain 'as constructed' drawings certified by the appropriately qualified person(s) for each design;

(c) provide specifications for the measures, plant and equipment that form part of the design for each of the seepage controls;

(d) include a map or figure to scale that depicts the location and type of seepage control installed/ to be installed;

(e) include the operating rules, maintenance and monitoring/checking requirements, predicted performance, outline how performance will be assessed, and include performance validation monitoring for each of the seepage controls; and

(f) describe the overall Seepage Management System, and detail how the seepage control forms part of the broader Seepage Management System.

(C61) Annually an appropriately qualified person(s) must review the Seepage Management Plan, including the seepage monitoring program, and submit a review report to the administering authority by 15 May of each calendar year. The review report must:

(a) include a certification by the appropriately qualified person(s) that the Seepage Management Plan is compliant with the seepage management conditions of the environmental authority or detail amendments necessary to the Seepage Management Plan such that compliance can be achieved.

(b) detail the review method and findings, an assessment of the effectiveness of the Seepage Management Plan, and detail and review the findings of the monitoring program designed to detect seepage that may not be captured.

(c) include an assessment of the performance of the Seepage Management System as a whole in meeting its intent and continuing to remain as fit for purpose.

(d) include documentation reasonably required for an independent technical review and substantiation of the performance. This, as a minimum, must include for each seepage control;

i. the volume of seepage captured, and any changes in seepage volume over time;

ii. the quality of the seepage with respect to the quality characteristics listed in Schedule C - Table C8 (Groundwater Trigger and Contaminant Limits) and any changes over time;

iii. the disposal location for captured seepage; and

iv. an assessment of the performance of seepage control in meeting the design intent and continuing to remain as fit for purpose.

(C62) The Seepage Management Plan must:

(a) be amended within 30 days of each annual review as required to ensure compliance with the conditions of the EA; and

(b) be made available to the administering authority each year by 30 June.

Tailings Dam (TD5)

(C63) Tailings Dam (TD5) must:

(a) be designed by a suitably qualified and experienced person; and

(b) be constructed in a manner that prevents the release of seepage by either:

i. fully confining and containing any seepage to within the TD5 embankments, or

ii. fully lining TD5 with High Density Poly Ethylene (HDPE) in accordance with Scenario 5 in ATC Williams (ATCW, 2022), Eloise Mine – TD5 Design Verification, TD5 Foundation Permeability Assessment, Seepage Analysis and Liner Design Review, November 2022 (ref: 112341.49M04); and

(c) be constructed under the supervision of a suitably qualified and experienced person; and

(d) be certified by a suitably qualified and experienced person.

(C64) Prior to the construction of TD5, the environmental authority holder must submit to the administering authority certification that the design is in accordance with the requirements in condition C63 (b).

(C65) Certification by the suitably qualified and experienced person must be submitted to the administering authority on the completion of construction of TD5 and prior to the disposal of tailings into TD5, and must state that:

(a) the 'as constructed' drawings and specifications meet the original intent of the design plan for TD5; and

(b) construction of TD5 is in accordance with the design plan; and

(c) construction of TD5 is in compliance with condition C63 of this environmental authority; and

(d) construction of TD5 is in compliance with Schedule D – Regulated Dams of this environmental authority.

Sewage Treatment

(C66) Sewage or treated sewage effluent must not be released from the site to any waters or bed and banks of any waters including groundwater.

(C67) All ponds used for storage of treated sewage effluent must be maintained:

(a) so as to minimise the likelihood of any release of effluent through the bed or banks of the pond to any waters (including groundwater);

(b) so that a freeboard of not less than 1 metre is maintained at all times; and

(c) so as to ensure the stability of the ponds' construction.

(C68) Suitable banks and / or diversion drains must be installed and maintained to exclude stormwater runoff from entering any ponds or other structures used for the storage or treatment of sewage.

(C69) Effluent may be reused for the purposes of dust suppression or irrigation where the conditions of the environmental authority are complied with.

(C70) All effluent released from the sewage treatment facilities must be monitored at the monitoring locations and at the minimum monitoring frequency for the parameters specified in *Table C9 – Sewage effluent quality limits.*

Table C9 – Sewage effluent quality limits

Monitoring Location Name	Easting GDA94 z54	Northing GDA94 z54	Quality characteristics	Units	Release Limit	Limit Type	Minimum monitoring frequency
Sewage Treatment Plant Discharge Pipe	498562	7683331	pH	pH	6.5 to 8.5	Range	Monthly
			Biological oxygen demand (BOD)	mg/L	<20	Maximum	Monthly
			Suspended solids	mg/L	<30	Maximum	Monthly
			Total Nitrogen (TN)	mg/L	<10 (or 7 mg/L from influent valve)	Maximum	Monthly
			Total Phosphorus	mg/L	1 to 6 (variable according	Maximum	Monthly

			(TP)		to coagulant dose rate)		
			E. Coli	CFU/100 mL	<10	Maximum	Monthly
			Free chlorine	mg/L	0.2 to 2.0	Range	Monthly

(C71) Treated effluent release to land must be undertaken in a manner and in accordance with documentation that ensures:

(a) drainage to groundwater and subsurface flows of contaminants to surface waters are prevented

(b) surface pondage and run-off of effluent is prevented

(c) degradation of soil structure is minimised

(d) soil sodicity and the build-up of nutrients and heavy metals in the soil and subsoil are minimised

(e) spray drift or overspray does not carry beyond effluent disposal areas

(f) permanent irrigation effluent disposal areas are maintained with an appropriate crop in a viable state for transpiration and nutrient uptake

(g) sufficient buffer zones are maintained between irrigation sites and sensitive environmental receptors.

(C72) When weather conditions or soil conditions preclude the release of treated sewage effluent to land, effluent must not be irrigated to land.

(C73) Solids that accumulate in the sewage treatment facilities (including the evaporation pond) are to be removed by an appropriately licenced regulated waste transporter.

(C74) Notices must be prominently displayed on any treated effluent irrigation area warning staff and the public that the area is irrigated with treated effluent and not to use or drink the treated effluent.

(C75) The daily volume of effluent released must be measured and documented.

END OF CONDITIONS FOR SCHEDULE C

Schedule D – Regulated Dams

Assessment of Hazard Category

(D1) The hazard category of any dam must be assessed by a suitably qualified and experienced person:

(a) in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*; and

(b) in any of the following situations:

i. prior to the design and construction of the dam; or

ii. prior to any change in its purpose or the nature of its stored contents.

(D2) A hazard assessment report and certification must be prepared for any dam assessed and the report may include a hazard assessment for more than one dam.

(D3) The holder of this environmental authority must, on receipt of a hazard assessment report and certification, provide to the administering authority one paper copy and one electronic copy of the hazard assessment report and certification.

(D4) 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 Hazard Categories and Hydraulic Performance of Dams*.

(D5) The holder of this environmental authority must take reasonable and practical measures so that each dam associated with the mining activity is designed, constructed, operated and maintained in accordance with accepted engineering standards and is fit for the purpose for which it is intended.

Design and Construction of a Regulated Dam

(D6) All regulated dams must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *"Manual for Assessing Hazard Categories and Hydraulic Performance of Dams"*.

(D7) Construction of a regulated dam is prohibited unless the holder has:

(a) submitted a hazard category assessment report and certification to the administering authority;

(b) commissioned a suitably qualified and experienced person to prepare a design plan for the dam; and

(c) received the certification from 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 environmental authority.

(D8) 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 Hazard Categories and Hydraulic Performance of Dams*.

(D9) Regulated dams must:

(a) be designed and constructed in accordance with and conform to the requirements of the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams;*

(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.

(D10) The design plan for a regulated dam must include, but is not limited to:

(a) certification that the design plan

i. is in accordance with the *"Manual for Assessing Hazard Categories and Hydraulic Performance of Dams",* including subsidiary certifications if necessary; and

ii. addresses the requirements in condition (D10) (b) to (h).

(b) A design report which provides:

i. a description of all the documents which constitute the design plan;

ii. a statement of:

a. the applicable standards including engineering criteria, industry guidelines, relevant legislation and regulatory documents, relied upon in preparing the design plan;

b. all relevant facts and data used in preparing the design plan, including any efforts made to obtain necessary facts and data, and any limitations or assumptions to facts and data used in preparing the design plan;

c. the hazard category of the regulated dam; and

d. setting out the reasoning of the suitably qualified and experienced person who has certified the design plan, as to how the design plan provides the necessary required performance;

iii. documentation of hydrological analyses and estimates required to determine all elements of the design including volumes and flow capacities;

iv. detailed criteria for the design, operation, maintenance and decommissioning of the regulated dam, including any assumptions; and

v. design, specification and operational rules for any related dams and systems used to prevent failure scenarios;

(c) Drawings showing the lines and dimensions, and locations of built dams and land forms associated with the regulated dam;

(d) Consideration of the interaction of the pit design with the levee or regulated dam design;

(e) An operational plan that includes;

i. normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance); and

ii. 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 dam;

(f) A plan for the decommissioning and rehabilitation of the regulated dam at the end of its

operational life;

(g) Details of reports on investigations and studies done in support of the design plan; and

(h) Any other matter required by the suitably qualified and experienced person.

(D11) 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 dam, and state that:

(a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated dam; and

(b) construction of the regulated dam is in accordance with the design plan.

(D12) Where a regulated dam is to be managed as part of an integrated containment system and the DSA volume is to be shared across the integrated containment system, the design and operating rules for the system as a whole must be documented in a system design plan that is certified by a suitably qualified and experienced person.

(D13) The system design plan must contain:

(a) the design plans;

(b) the ‘as constructed’ plans;

(c) the operational rules for each individual regulated dam that forms part of the integrated system;

(d) the standards of serviceability and accessibility of water transfer equipment or dams; and

(e) the operational rules for the system as a whole.

Operation of a regulated dam

(D14) Operation of a regulated dam 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 (D10);

ii. a set of ‘as constructed’ drawings and specifications;

iii. certification of those ‘as constructed drawings and specifications’ in accordance with condition (D11); and

iv. where the regulated dam 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;

(b) the requirements of this authority relating to the construction of the regulated dam have been met.

(D15) Each regulated dam must be maintained and operated in a manner that is consistent with the current design plan, the current operational plan, and the associated certified ‘as constructed’ drawings for the duration of its operational life until decommissioned and rehabilitated.

(D16) The holder of this environmental authority must take reasonable and practicable control measures to prevent the causing of harm to persons, livestock or wildlife through the construction and operation of a regulated dam. Reasonable and practicable control measures may include, but are not limited

to:

(a) the secure use of fencing, bunding or screening; and

(b) escape arrangements for trapped livestock and fauna.

Mandatory Reporting Level

(D17) 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.

(D18) The holder of this environmental authority 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.

(D19) The holder of this environmental authority must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.

Annual Inspection Report

(D20) Each regulated dam must be inspected each calendar year by a suitably qualified and experienced person.

(D21) At each annual inspection, the condition and adequacy of all components of the regulated dam must be assessed:

(a) against the most recent hazard assessment report and design plan (or system design plan);

(b) against recommendations contained in previous annual inspections reports;

(c) against recognised dam safety deficiency indicators;

(d) for changes in circumstances potentially leading to a change in hazard category;

(e) for conformance with the conditions of this authority;

(f) for conformance with the ‘as constructed’ drawings;

(g) 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)

(h) for evidence of conformance with the current operational plan.

(D22) A suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and including recommended actions to ensure the integrity of the regulated dam.

(D23) The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *"Manual for Assessing Hazard Categories and Hydraulic Performance of Dams"*.

(D24) The holder must:

(a) upon receipt of the annual inspection report, consider the report and its recommendations and take action to ensure that the regulated dam will safely perform its intended function; and

(b) within twenty (20) business days of receipt of the annual inspection report, notify the administering authority in writing, of the recommendations of the inspection report and the

actions being taken to ensure the integrity of each regulated dam.

(D25) A copy of the annual inspection report must be provided to the administering authority upon request and within ten (10) business days.

Design Storage Allowance

(D26) On 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).

(D27) The holder of this environmental authority 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.

(D28) The holder of this environmental authority 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.

Performance review

(D29) The holder of this environmental authority 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.

(D30) The holder of this environmental authority must take action to modify its water management or linked containment system so as to ensure that the regulated dam or linked containment system will perform in accordance with the requirements of this authority, for the subsequent November to May period.

Note: Action may include seeking the necessary approvals for physical modification of a regulated dam.

Transfer arrangements

(D31) The holder of this environmental authority must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Dams, hazard assessment, design plan and other supporting documentation, to a new holder and the administering authority on transfer of this authority.

Decommissioning and Rehabilitation

(D32) Prior to the cessation of mining activities, each regulated dam must be decommissioned such that:

(a) ongoing environmental harm is minimised by the regulated dam:

i. becoming a safe site for humans and animals at the completion of rehabilitation; or

ii. becoming a stable landform, that no longer contains flowable substances and minimises erosion impacts; or not allowing for acid mine drainage; or

iii. being approved or authorised under relevant legislation for a beneficial use; or

iv. being a void authorised by the administering authority to remain after decommissioning; and

(b) the regulated dam is compliant with all other relevant rehabilitation requirements of this authority.

Regulated Dams Location and Performance

(D33) Each regulated dam shown in Table D1 must be wholly located within the control points noted in Table D1, below, for that dam.

Schedule D - Table D1 (Location of Regulated Dams)

Name of dam containing hazardous waste	Easting (1) GDA 94 (Zone 54)	Northing (1) GDA 94 (Zone 54)
Tailings Dam 1& 2	497,434 497,756 497,930 497,445 497,700 497,948	7,683,669 7,683,660 7,683,073 7,683,107 7,683,360 7,683,360
Tailings Dam 3	497,682 498,251 498,199 497,639	7,683,639 7,683,628 7,683,099 7,683,103
Process Water Pond[1]	497,839 497,976 497,957 497,832	7,683,021 7,683,003 7,682,868 7,682,885
Tailings Dam 4	497,668 498,253 498,251 497,682	7,684,154 7,684,157 7,683,628 7,683,639
Tailings Dam 5	497,504 497,133 497,509 497,755 497,152 497,753	7,683,157 7,683,170 7,683,594 7,683,596 7,683,918 7,683,927

[1] *Condition D33 will no longer apply to the process water pond once the requirements of condition A32 have been met.*

(D34) Each regulated dam shown in Table D2 must be consistent with the details noted in Table D2, below, for that dam.

Schedule D – Table D2 (Basic Details of Regulated Dams)

Name of Regulated Dam	Hazardous Category	Surface area of dam at spillway (ha)	Max. volume of dam at spillway (m^3)	Max. depth of dam at spillway (m)	Spillway Level (mAHD)	Use of Dam
Tailings Dam 1 & 2	High	11.80	5,290,000	25.2	200.5	Tailings storage
Tailings Dam 3	High	12.5	2,800,000	25	200.0	Tailings storage
Process Water Pond(1)	High	0.4	5,700	3.6	186.0	Process water storage
Tailings Dam 4	High	17.4	4,300,000	22	200.0	Tailings storage
Tailings Dam 5	High	21.2	2,170,000	12	186.5	Tailings storage

[1] *Condition D34 will no longer apply to the process water pond once the requirements of condition A32 have been met.*

(D35) Each regulated dam shown in Table D1, must meet the hydraulic performance criteria noted in Table D3, below, for that dam.

Schedule D - Table D3 (Hydraulic Performance of Regulated Dams)

Name of Regulated Dam	Spillway Capacity AEP	Design Storage Allowance AEP	Mandatory Reporting Level AEP
Tailings Dam 1& 2	1:10000 AEP	1:100 AEP 2 month wet season plus process inputs	1:100 AEP 72 hours storm or the 1 in 100 AEP wave allowance whichever is lower
Tailings Dam 3	1:10000 AEP	1:100 AEP 2 month wet season plus process inputs	
Process Water Pond(1)	1:10000 AEP	1:100 AEP 2 month wet season plus process inputs	
Tailings Dam 4	1:10000 AEP	1:100 AEP 2 month wet season plus process inputs	
Tailings Dam 5	1:10000 AEP	1:100 AEP 2 month wet season plus process inputs	

[1] *Condition D35 will no longer apply to the process water pond once the requirements of condition A32 have been met.*

Transitional Arrangements

(D36) From 1 September 2015, the environmental authority holder must operate and maintain all tailings dams in a manner that limits the generation of seepage.

(D37) From 1 December 2015, the holder of this environmental authority must develop, document and implement a tailings dam seepage monitoring program sufficient to determine compliance with condition (C1).

END OF CONDITIONS FOR SCHEDULE D

Schedule E – Waste

Waste Management Program

(E1) By 1 February 2013, 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; and

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) and (E3-1) 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 and waste rock from ML100348. Waste generated on site is limited to:

(a) Waste rock;

(b) Scats;

(c) Rejects;

(d) Tailings;

(e) Tyres; and

(f) General waste including construction and demolition waste, green waste and putrescible and domestic wastes.

(E3-1) Waste rock from ML100348 is authorised to be received and disposed of within the underground workings on site in accordance with condition E19, where demonstrated to be not substantially different to the characteristics of material authorised for disposal under this environmental authority.

(E3-2) Groundwater from ML100348 is authorised to be received and stored in Lake Andrew in accordance with the conditions of this environmental authority.

(E4) Records of waste trade agreements and waste or materials leaving the mining lease must be maintained and made available to the administering authority on request.

(E5) Designated areas must be set aside for the segregation of economically viable recyclable solid or liquid waste.

(E6) Unless otherwise permitted by the conditions of this authority, waste must not be burnt or taken offsite and burnt by the environmental authority holder.

Regulated Waste

(E7) Regulated waste, other than that authorised to be disposed of on site 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*.

(E8) 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.

(E9) Each container of regulated waste stored awaiting movement off-site must be clearly marked to identify the contents.

(E10) 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.*

(E11) 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;

(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

(E12) 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.

(E13) 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.

(E14) 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.

(E15) 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

(E16) 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 sufficient statistical frequency to determine any changes to tailings geochemistry, and at a minimum must be at least one samples per 50,000 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; and

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 condition (G3) of this environmental authority; 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.

Waste Rock Disposal

(E17) The holder must develop and implement a waste rock and spoil management plan by 1 July 2013. The plan must be reviewed and updated annually. After 1 July 2013, a copy of the waste rock and spoil management plan must be provided to the administering authority within 2 weeks upon request.

(E18) After 1 July 2013, waste rock and spoil disposal must not occur on the site unless the waste rock and spoil management plan is certified by an appropriately qualified person that the plan has addressed the requirements of condition (E19) in accordance with best practice environmental management.

(E19) 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) Characterisation of the waste rock received from ML100348 to confirm characteristics of the material are not substantially different to the characteristics of material authorised for disposal under this environmental authority.

(c) A program of progressive sampling 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, zinc and other metals or metalloids identified as necessary in condition (E19) (a);

(d) 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;

(e) Records must be maintained of all waste rock characterisation and disposal including contingency planning for the management of acid rock / neutral mine drainage;

(f) A materials balance and disposal plan demonstrating how waste rock will be selectively placed and/or encapsulated to minimise the generation of contaminants (including salts, acidic solutions, alkaline solutions and metalliferous solutions);

(g) A sampling program to verify encapsulation and/or placement of potentially acid forming 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; and

(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.

(E20) The holder of this environmental authority must construct and manage any waste rock dump on site:

(a) Under the supervision of appropriately qualified person(s) in regards to:

(i)Engineering and Geotechnical Stability; and

(ii) Geology and Geochemistry.

(b) In accordance with this environmental authority and the waste rock and spoil management plan;

(c) To prevent any water other than incidental rainfall from entering the waste rock dump; and

(d) In a manner that minimises the risk of contaminants being generated and/or release from the waste rock dump to the receiving environment.

(E21) Any contaminated or potentially contaminated seepage or runoff from a waste rock dump on the site must be captured and directed to an appropriately designed and constructed dam.

(E22) Only waste rock that is characterised as un–reactive and/or benign material (i.e. material that does not cause acid, neutral or saline mine drainage) may be used for the construction of temporary or permanent structures within the operation areas.

Bioremediation

(E23) The EA holder must develop, document and implement procedures and guidelines for the acceptance, handling, storage and processing of regulated waste at the designated bioremediation area.

(E24) The bioremediation activity must be undertaken in accordance with written procedures that:

(a) Ensure that only waste suitable for bioremediation is accepted for storage and processing within the designated bioremediation area;

(b) Identify potential risks to the environment from the activity during routine operations, closure and an emergency;

(c) Establish and maintain control measures that minimise the potential for environmental harm;

(d) Ensure that staff are trained in and aware of their obligations under the Environmental Protection Act 1994; and

(e) Ensure that reviews of environmental performance are undertaken at least annually.

(E25) An area which provides suitable containment to subsoil and groundwater must be used for:

(a) Receiving, storing, mixing and processing materials associated with the bioremediation activity; and

(b) Collecting and storing leachate.

(E26) Stormwater runoff from disturbed areas associated with the bioremediation area, generated by (up to and including) a 72-hour storm event with an average recurrence interval of one-in-100 years must be retained on site and can only be released after the event where:

(a) Beneficial reuse on site is not viable;

(b) A release is required to maintain the required stormwater retention capacity; and

(c) There are no contaminants present or at concentrations which may cause environmental harm.

(E27) All reasonable and practicable measures must be taken to exclude vectors and pest species from the bioremediation area to the extent necessary to prevent:

(a) Environmental nuisance to occupiers of neighbouring premises; and

(b) Any danger or risk to the health of any persons.

(E28) The holder of this environmental authority must ensure detailed records are maintained of all waste accepted for storage, treatment and processing at the bioremediation area, including the date accepted, and the origin, quantity and chemical composition of the waste.

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 nor vexatious nor based on mistaken belief in the opinion of the authorised officer) 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 for Table F1: 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) Subject to condition (F8) vibration from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.

(F8) When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorized officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within 14 days to the administering authority following completion of monitoring.

END OF CONDITIONS FOR SCHEDULE F

Schedule G – Land and Rehabilitation

General

(G1) Contaminants that will or may cause environmental harm must not be directly or indirectly released to land except as permitted under this environmental authority.

(G2) Any spillage to land of wastes, contaminants or other materials must be cleaned up as quickly as practicable. 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 Schedule G - Table G1 (Final Land Use and Rehabilitation Approval Schedule), Table G2 (Landform Design) and Table G3 (Reference Sites – Names and Locations).

Schedule G - Table G1 (Final Land Use and Rehabilitation Approval Schedule)

Disturbance Type	Disturbance area (ha)	Pre-mine land Description	Post-mine land description	Post mine land classification	Analogue site identification
Decline Area	1.2	LIG	LIG	IV	1, 2 & 3
Batch Plant and UG Stores	2.5	LIG	LIG	IV	1,2 & 3
Waste Pad	5.9	LIG	LIG	IV	1,2 & 3
Shafts & Vents	1.07	LIG	LIG	IV	1, 2 & 3
Chiller Plant	1.1	LIG	LIG	IV	1, 2 & 3
Underground Link Drive	1	LIG	LIG	IV	1, 2 & 3
Laydown Areas	3.95	LIG	LIG	IV	1, 2 & 3
Water Treatment Plant	0.13	LIG	LIG	IV	1, 2 & 3
Rehab Area	0.92	LIG	LIG	IV	1, 2 & 3
Stores	1.2	LIG	LIG	IV	1, 2 & 3
Container Laydown	1.5	LIG	LIG	IV	1, 2 & 3
Temporary Excavated Materials Stockpile	2.2	LIG	LIG	IV & VI	1, 2 & 3
Ore Processing Area	4.61	LIG	LIG	IV	1, 2 & 3
ROM pad	6.0	LIG	LIG	IV	1, 2 & 3
Topsoil Stockpiles	3.1	LIG	LIG	IV	1, 2 & 3
Sewage Treatment Area 1	0.12	LIG	LIG	IV	1, 2 & 3

Disturbance Type	Disturbance area (ha)	Pre-mine land Description	Post-mine land description	Post mine land classification	Analogue site identification
Dewatering (U/G) Dam (Lake Andrew)	5.5	LIG	Water Storage*	Water Storage*	N/A
Tailings Dam Cell 1, 2 3, 4 & 5	92.18	LIG	LIG	IV	1, 2 & 3
Sedimentation Dams	0.1	LIG	Water Storage*	Water Storage*	N/A
Batt Dam (Fresh Water)	6.9	LIG	Water Storage*	Water Storage*	N/A
Stores Pond	0.35	LIG	LIG	IV	1, 2 & 3
Process Water Dam[1]	0.762	LIG	LIG	IV	1, 2 & 3
Process Water Tank	0.26	LIG	LIG	LIG	LIG
Site Roads	13.1	LIG	LIG	IV	1, 2 & 3
Fuel & Oil Storage	0.16	LIG	LIG	IV	1, 2 & 3
Sewage Treatment Area 2	0.1	LIG	LIG	IV	1, 2 & 3
Workshops/ Administration	2.06	LIG	LIG	IV	1, 2 & 3
Accommodation Village (relocatable)	8.88	LIG	LIG	IV	1, 2 & 3
Camp (oval area)	0.53	LIG	LIG	IV	1, 2 & 3
Village Sewage Treatment Plant	0.07	LIG	LIG	IV	1, 2 & 3
Explosives Magazine	0.1	LIG	LIG	IV	1, 2 & 3
Clay Borrow Pits	4.7	LIG	LIG	IV	1, 2 & 3
TD5 Temporary Materials Stockpile	12	LIG	LIG	IV	1, 2 & 3
Bores	0.1	LIG	Bores *	Bores *	N/A
Pump Back Bores	0.009	LIG	LIG	IV	1, 2 & 3
Power Station	0.35	LIG	LIG	IV	1, 2 & 3
Refuse Disposal Area	2.9	LIG	LIG	IV	1, 2 & 3
Waste Transfer Area	2.5	LIG	LIG	IV	1, 2 & 3
Diversions	0.17	LIG	Diversions	Diversions	N/A
Exploration Sites	1	LIG	LIG	IV	1, 2 & 3

Disturbance Type	Disturbance area (ha)	Pre-mine land Description	Post-mine land description	Post mine land classification	Analogue site identification
Exploration Coreyard	3.2	LIG	LIG	IV	1, 2 & 3
Process Plant	0.22	LIG	LIG	IV	1, 2 & 3
Elrose Borefield	5.0	LIG	LIG	IV	1, 2 & 3
Scats Pile	2.0	LIG	LIG	VII	1, 2 & 3
Old Evaporation Dams	2.5	LIG	LIG	VII	1, 2 & 3
Hamilton Dam	6.0	LIG	LIG	VII	1,2 & 3
Mobile crush and screen area	1.21	LIG	LIG	IV	1,2 & 3
Construction Laydown	8.58	LIG	LIG	IV	1,2 & 3
Total	**219.99**				

*Note: * Infrastructure, to remain where agreed in writing by the post-mining landowner / holder*
Where 1, 2 & 3 are listed in Analogue Site identification Column, refer to Schedule G – Table G3 for geographical locations.

Reference for land description and classifications: Rosser et al, (1974) A Land Capability Classification for Agricultural Purposes. Div Land Util. tech. rep. 14.

[1] *The process water dam will no longer exist once the requirements of condition A32 have been met.*

Schedule G - Table G2 (Landform Design)

Disturbance type	Slope Range	Projective Surface Area
ROM pad slopes	33% - 40%	1.5 ha
Temporary excavated materials stockpile slopes	33% - 40%	1.0 ha
Tailings Dam Wall slopes	20% - 33%	24.4 ha
Tailing Dam top	3% - 20%	69.4 ha

Schedule G – Table G3 (Reference Sites – Names and Locations)

Site Name	AMG Easting (AGD 94)	AMG Northing (AGD 94)
Reference Site 1	0498555	7682698
Reference Site 2	0498653	7682588
Reference Site 3	0497329	7683078

Progressive Rehabilitation

(G4) Progressive rehabilitation must commence when operational areas become available in accordance with the conditions of the EA.

(G5) Rehabilitated areas must be managed to minimise the proliferation of species not consistent with rehabilitation objectives.

(G6) All land subject to mining activities must be rehabilitated to:

(a) a stable landform and with a self-sustaining vegetation cover and species that are similar to adjoining undisturbed areas;

(b) a safe landform, which is non-polluting, geo-chemically and geo-technically stable;

(c) ensure that the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance by mining activities; and,

(d) ensure that the water quality of any residual void or water bodies constructed by mining activities meets criteria for subsequent uses and does not have potential to cause environmental harm.

(G7) Maintenance of rehabilitated areas must take place to ensure and demonstrate:

(a) Stability of landforms;

(b) Erosion control measures remain effective;

(c) Stormwater runoff and seepage from rehabilitated areas does not negatively affect the environmental values of any waters;

(d) Plants show healthy growth and recruitment is occurring; and

(e) Rehabilitated areas are free of any declared pest plants.

(G8) Rehabilitation can be considered successful when:

(a) The site can be managed for its designated land-use (e.g. similar to that of surrounding undisturbed areas);

(b) No greater management input than for other land in the area being used for a similar purpose is required and there is evidence that the rehabilitation has been successful for at least three (3) years;

(c) The rehabilitation is carried out in accordance with the goals, objectives indicators and completion criteria as specified in Schedule G – Table 1 (Final Land Use and Rehabilitation Approval Schedule) and in the Post Mine Land Use Plan (refer to PMLUP conditions of EA – G12 and G13); and

(d) Written agreement is obtained from the landowner/holder and administering authority.

Topsoil

(G9) 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.

(G10) 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.

(G11) A topsoil inventory which identifies the topsoil requirements for the mining project and availability of suitable topsoil on site must be detailed in the Post Mine Land Use Plan (PMLUP) required under condition G12.

Post Mine Land Use Plan

(G12) The holder of this environmental authority must develop and submit to the administering authority a Post Mine Land Use Plan (PMLUP)-and update and be made available to the administering authority upon request.

(G13) The Post Mine Land Use Plan must include:

(a) Schematic representation of final land form of the residual voids, waste rock dumps, gypsum stacks, and creek diversions inclusive of:

i. Drainage features;

ii. Slope designs;

iii. Cover design;

iv. Drainage design; and

v. Erosion controls proposed on reformed land;

(b) Description of experimental design for monitoring of analogue and rehabilitated areas inclusive of statistical design;

(c) Proposed revegetation criteria including (if appropriate):

i. Species diversity, abundance and composition;

ii. Projective cover;

iii. Dry matter production; and

iv. Stocking rates to ensure self-sustaining vegetation is maintained.

(d) Proposed revegetation methods inclusive of plant species selection, re-profiling, respreading soil, soil ameliorants/amendments, surface preparation and method of propagation;

(e) Materials balance including available top soil and low permeability capping material;

(f) Research program and associated milestones;

(g) Geotechnical, geochemical and hydrological studies;

(h) Chemical, physical and biological properties of soil and water;

(i) Clear objectives and success criteria for each land unit including establishment in accordance with outcomes stipulated in the administering authority's guideline for Rehabilitation Requirements for Mining Projects;

(j) Measurable completion criteria of rehabilitation success for each disturbance type (or land unit); and

(k) Rehabilitation monitoring program which includes sufficient replication to enable statistical analysis of results at an acceptable power.

Post Closure Management Plan

(G14) A Post Closure Management Plan for the site must be developed by 1 October 2015 and

implemented for a nominal period of:

(a) At least thirty (30) years following final ore processing on site; or

(b) A shorter period if the site is proven to be geo-technically and geo-chemically stable and it can be demonstrated to the satisfaction of the administering authority that no release of contaminants from the site will result in environmental harm.

(G15) 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; and

vi. The health and resilience of vegetative cover.

Rehabilitation Monitoring Program

(G16) 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.

(G17) The holder must conduct rehabilitation monitoring in accordance with the program developed in condition (G16) 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.

(G18) 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.

Pest management

(G19) In carrying out the mining activities the holder of this environmental authority must develop and implement an effective pest management program that includes but is not limited to the following:

(a) Identification of pest species and infestation areas;

(b) Prevention and/or minimisation of the introduction and/or spread of pests;

(c) Control and management of pest outbreaks as a result of mining activities including measures to ensure that all vehicle movements are controlled to prevent the spread of declared weeds;

and

(d) Strategies to prevent introduction of declared weeds to the mine site and surrounding areas.

(G20) A copy of the pest management program must be made available to the administering authority on request.

Infrastructure

(G21) All infrastructure, constructed by or for the environmental authority holder during the mining activities including water storage structures, must be removed from the site prior to mining lease surrender, except where agreed to in writing by the post mining land owner/holder.

Chemicals and Flammable or Combustible Liquids

(G22) 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.

(G23) Notwithstanding the requirements of any 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.

(G24) Where no relevant Australian Standard is available, the following must be applied:

(a) Storage tanks must be bunded so 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 so that the capacity and construction of the bund is sufficient to contain at least 25% of the maximum design storage volume within the bund.

(G25) All containment systems must be designed to minimise rainfall collection within the system.

Contaminated Land

(G26) Prior to making an application for Surrender or approval for Progressive Rehabilitation the holder of this environmental authority must undertake a contaminated land assessment / investigation of the relevant areas of the licensed place in accordance with the Administering Authority Guidelines for the Assessment & Management of Contaminated Land in Queensland.

(G27) A register and map of all potentially contaminated sites and any remediation details, must be kept on site, updated regularly, and be made available to the administering authority upon request.

(G28) A Spillage Management Plan and an Emergency Plan for all hazardous materials stored on-site, together with a description of suitable equipment and training must be must be developed before 1 November 2012 and updated on a regular basis. A copy must be provided to the administering authority on request.

END OF CONDITIONS FOR SCHEDULE G

Schedule H – Definitions

"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 been 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.

"acid rock drainage" or "acid mine drainage" means any low pH waters, contaminated as a result of the mining activities.

"the activity" includes the environmentally relevant activities authorised by this authority, including ancillary environmentally relevant activities.

"airblast overpressure" means energy transmitted from the blast site within the atmosphere in the form of pressure waves. The maximum excess pressure in the wave, above ambient pressure is the peak airblast overpressure measured in decibels linear (dB).

"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.

"ANZECC" means Australia and New Zealand Environment and Conservation Council.

"ARMCANZ" means Agriculture and Resource Management Council of Australia and New Zealand.

"appropriately qualified person" means a person who has the professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods and literature.

"assessed" and **"assessment"** by a suitably qualified and experienced person in relation to a hazard 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.

“authority” means environmental authority (mining activities) under the *Environmental Protection Act 1994*.

“authorised officer” means a person appointed under section 445 of the *Environmental Protection Act 1994.*

“background” means prevailing level in a specified environment measured in the absence of impacts being studied.

“blasting” means the use of explosive materials to fracture (a) rock, coal and other minerals for later recovery, or (b) structural components or other items to facilitate removal from a site or for reuse.

"certification", in connection with dam management, 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.

“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. A dam does *not* mean a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container.

“design plan” in the context of a dam design is the documentation required under the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, the procedures and criteria to be used for operating the dam and the decommissioning and rehabilitation objectives in terms procedures, works and outcomes at the end of dam life. The documents can include design and investigation reports, drawings, specifications and certifications.

"Design Storage Allowance" or **"DSA"** means an available volume, estimated in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* published by the Department of Environment and Heritage Protection, that 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.

“effluent” means the liquid fraction of treated sewage.

"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 details that are part of the plan, and to comprehensively review the plan at least every five years.

“emergency event” in the context of this environmental authority, is an unexpected situation which will disrupt production and where environmental harm has the potential to occur if alternate actions are not taken.

“EC” means Electrical Conductivity.

“environmental authority holder” means the holder of this environmental authority.

“flowable substance” means matter or mixture of materials which can be forced to or otherwise flow under any conditions possible in a situation. It includes water, other liquids or a mixture that includes water or any other liquid or suspended solids.

“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.

"hazard 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 Hazard Categories and Hydraulic Performance of Dams*.

"hydraulic performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*.

"holder" means any person who is the holder of, or is acting under, that environmental authority.
“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” in 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.

“leachate” means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of at the operational land which contains soluble, suspended or miscible contaminants likely to have been derived from the said material.

"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.

"Mandatory Reporting Level" or **"MRL"** means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* published by the administering authority.

“Licensed Place” means all areas subject to the Mining Leases 90157, 90199, 7122, 90198, 90200, 90228 and 90229.

"mandatory reporting level" means the volume below the spillway crest, equivalent to the lower of the AEP, 72-hour storm or the AEP wave allowance (AEP is the annual exceedance probability).

"measures" includes 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.

"noxious" means harmful or injurious to health or physical well being, other than trivial harm.

"NATA" means National Association of Testing Authorities (Australia).

"natural flow" means the flow of water through waters caused by nature.

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

"operational plan" for a dam means a document that amongst other things sets out procedures and criteria to be used for operating a dam during a particular time period. The operational plan as defined herein may form part of a plan otherwise required in legislation.

"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 marine park under the *Marine Parks Act 1992*; or
- 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.

"regulated structures" or **"regulated dams"** means any dams in the significant or high hazard category as assessed using the "Manual for Assessing Hazard Categories and Hydraulic Performance of Dams" published by the administering authority.

"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.

"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 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.

"qualified person" (see "appropriately qualified person")

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

"seepage" in relation to conditions (D36) and (D37) of this environmental authority, means any liquid released from the tailings dam other than via the spillway.

"seepage collection system" means the system in accordance with section 3.6 of the "Eloise Copper Mine EA Amendment Application Supporting Information" dated March 2017, which combines the current seepage interception trench with the proposed interception bore network designed to prevent seepage from the tailings dam being released into the receiving environment.

"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 administering authority, 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 administering authority;
- disturbances that pre-existed the grant of the tenure unless those areas are disturbed during the term of

the tenure.

"spillway" means passage or outlet from the dam through which surplus water flows.

"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.

"structure" under the context of dam means dam or levee.

"suitably qualified and experienced person" means a person who is a Registered Professional Engineer of Queensland under the provisions of the Professional Engineers Act 1988 or a Corporate Member of the Institution of Engineers Australia or holds equivalent professional qualifications and has the following:

(a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and

(b) at least a total of five years of suitable experience and demonstrated expertise in at least four of the following areas:

- investigation, design or construction of dams;
- operation and maintenance of dams;
- geomechanics with particular emphasis stability, geology and geochemistry;
- hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology;
- hydraulics with particular reference to sediment transport and deposition, erosion control, beach processes;
- hydrogeology with particular reference to seepage, groundwater,
- solute transport processes and monitoring thereof; or
- dam safety.

"system design plan" means a plan that manages an integrated containment system that shares the required DSA volume across the integrated containment system.

"tailings dam" means a dam referred to in *Schedule D - Table D1 (Location of Regulated Dams)* of this environmental authority as either *"Tailings Dam 1 & 2", "Tailings Dam 3"* or *"Tailings Dam 4".*

"TBD" means to be determined

"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).

"Total Nitrogen (TN)" means the sum of Organic Nitrogen, Ammonia Nitrogen, Nitrite plus Nitrate Nitrogen expressed as mg/L as Nitrogen. This includes both the inorganic and organic fraction of nitrogen.

"Total Phosphorus (TP)" means the sum of reactive phosphorus, acid-hydrolysable phosphorus and organic phosphorus, as mg/L of Phosphorus. This includes both the inorganic and organic fraction of phosphorus.

“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.

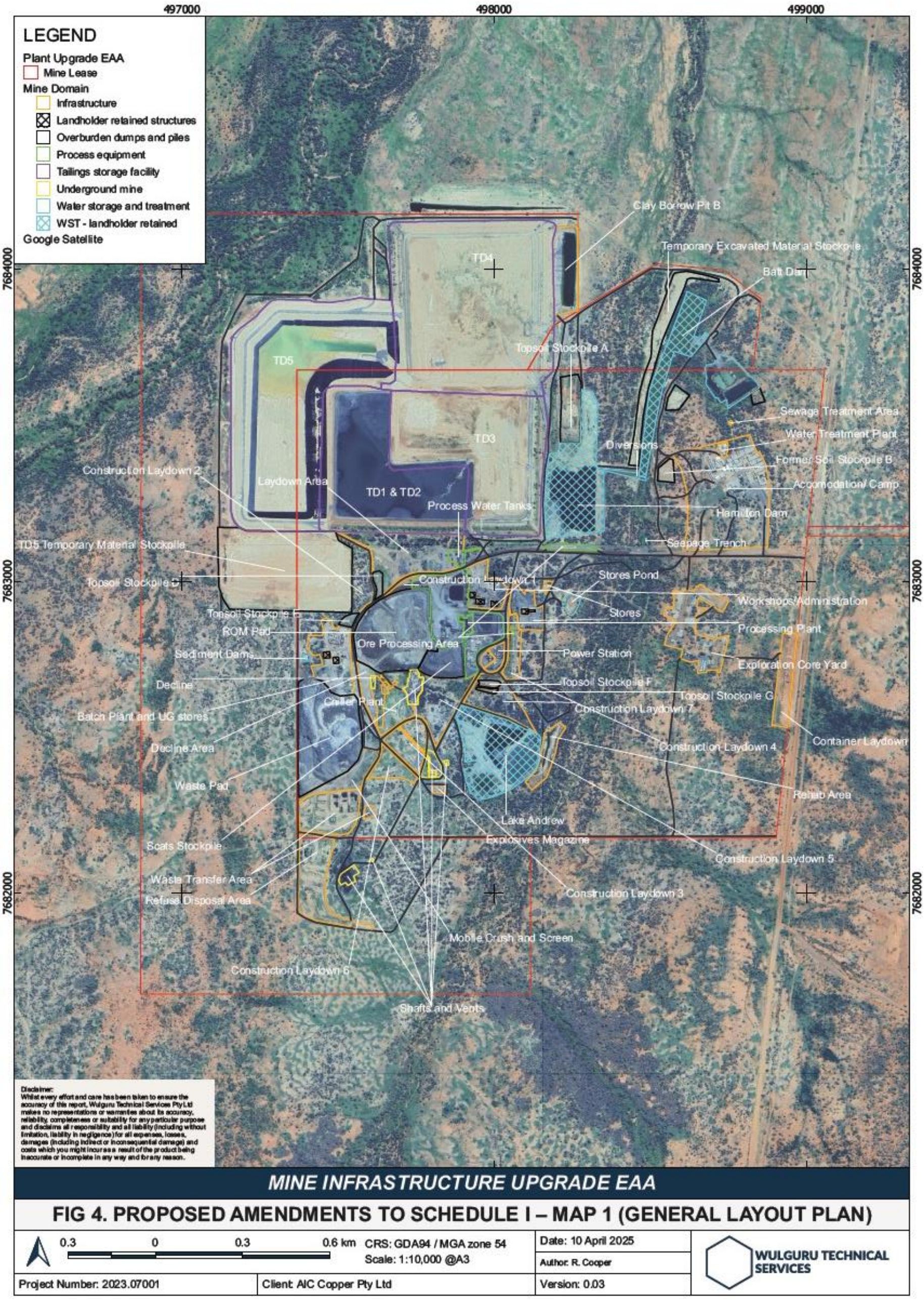
"watercourse" has the same meaning given in the *Water Act 2000*.

"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 bank of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater runoff, and groundwater.

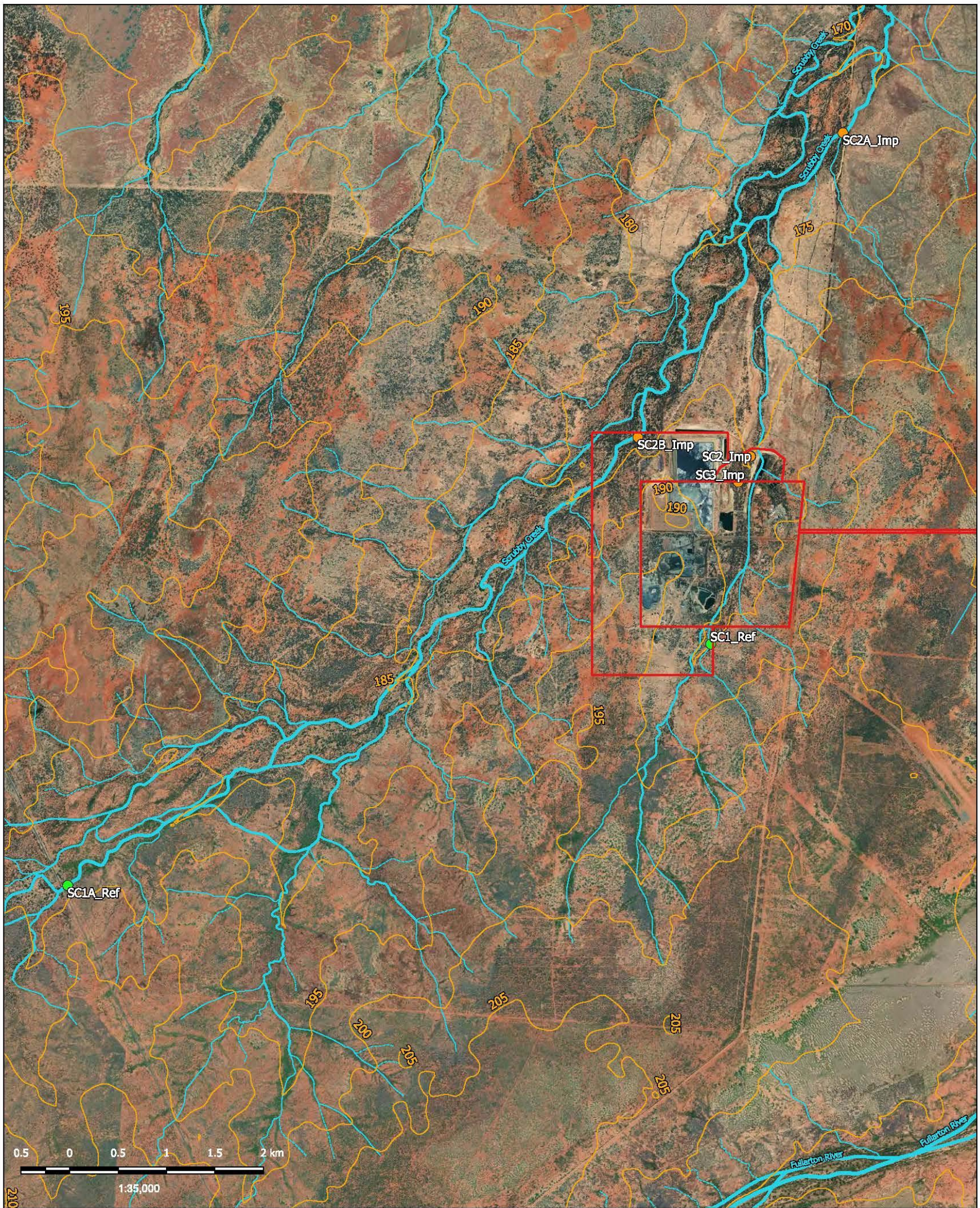
“**water release event**” means release of any waters that are or maybe contaminated by the mining activity.

END OF CONDITIONS FOR SCHEDULE

SCHEDULE I – Maps / Plans



Map 1 (General Layout Plan)



Map 2 – Surface Water and Sediment Monitoring Locations

Client: AIC COPPER PTY LTD
Project number: 2023.07001
CRS: GDA2020 / MGA zone 54 EPSG:7854
Date: 9 October 2023

Print as A3

Figure 1. Groundwater Monitoring Locations

Legend

- Bore Location Google Satellite
- Mining Lease

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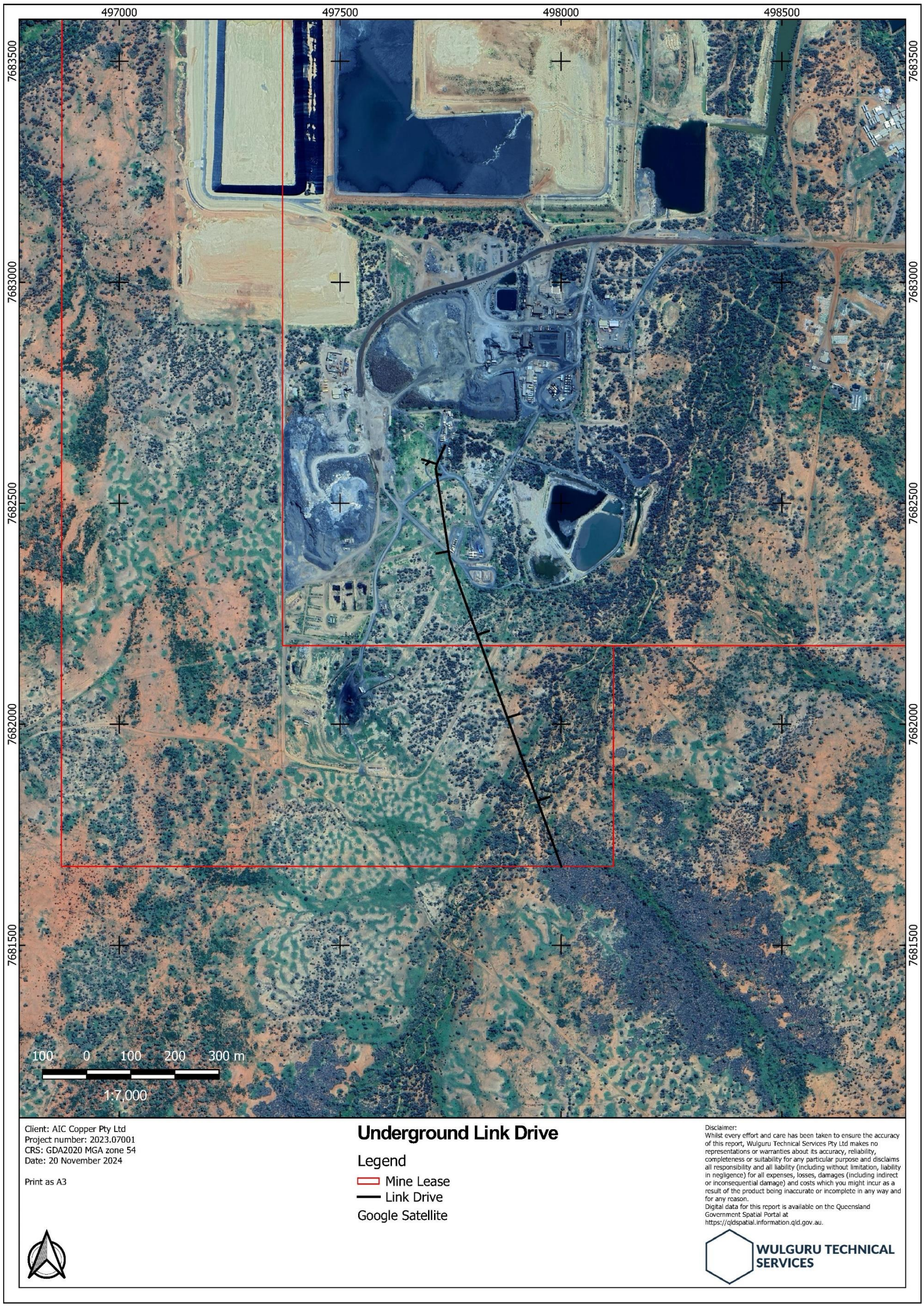
Digital data for this report is available on the Queensland Government Spatial Portal at https://qldspatial.information.qld.gov.au.

WULGURU TECHNICAL SERVICES

Map 3 – ECM Groundwater Monitoring Locations



Map 4 (Underground Link Drive as depicted by black line)

END OF CONDITIONS FOR SCHEDULE I

END OF ENVIRONMENTAL AUTHORITY