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Permit

Environmental Protection Act 1994

Environmental Authority

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

Environmental authority number: EPML00899713

Environmental authority takes effect on 24 June 2026.

The anniversary date of this environmental authority is 5 June each year.

Environmental authority holder

Name	Registered address
ERNEST HENRY MINING PTY LTD	Level 24, 175 Liverpool Street SYDNEY NSW 2000

Environmentally relevant activity and location details

Environmentally relevant activities	Locations
Schedule 3 14: Mining iron ore	ML2671 ML90041 ML90072 ML90075 ML90085 ML90100 ML90107 ML90116
Schedule 3 17: Mining copper ore	
Schedule 3 16: Mining gold ore	
Ancillary 07 - Chemical Manufacturing 3: Manufacturing, in a year, a total of 200t or more of any of the following (d) explosives	
Ancillary 07 - Chemical Manufacturing 6: Manufacturing, in a year, the following quantities of inorganic chemicals, other than inorganic chemicals to which items 1 to 4 apply (d) more than 100,000t	
Ancillary 08 - Chemical Storage 2: Storing 50t or more of chemicals of dangerous goods class 6, division 6.1 under subsection (1)(b)	
Ancillary 08 - Chemical Storage 3: Storing more than 500 cubic metres of chemicals of class C1 or C2	

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Environmentally relevant activities	Locations
combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)	
Schedule 3 - 09 - A mining activity involving drilling, costeaning, pitting or carrying out geological surveys causing significant disturbance	
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	
Ancillary 33 - Crushing, milling, grinding or screening Crushing, grinding, milling or screening more than 5000t of material in a year	
Ancillary 60 - Waste disposal 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) (d) more than 200,000t	
Ancillary 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) (b) 2,000t to 5,000t	
Ancillary 62 - Resource recovery and transfer facility operation 1: Operating a facility for receiving and sorting, dismantling, baling or temporarily storing- (c) category 2 regulated waste	
Ancillary 62 - Resource recovery and transfer facility operation 1: Operating a facility for receiving and sorting, dismantling, baling or temporarily storing- (d) category 1 regulated waste	
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-ii) 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 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(1) 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, in accordance with section 200(2) of the EP Act, the day that the EA takes effect may not be before:

(a) if the authority is for a resource activity—the day the relevant tenure is granted to the applicant; or

(b) if a development permit for a material change of use of premises under the *Planning Act 2016* is necessary for carrying out an activity that related to the authority—the day the development permit takes effect; or

(c) if an SDA Approval under the *State Development and Public Works Organisation Act 1971* is necessary for carrying out an activity that relates to the authority—the day the approval takes effect.

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

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

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Sarah de Vries	24 June 2026
Signature	Date

Sarah De Vries

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

Enquiries:

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

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this EA, 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 restore the environment (section 319C)
- 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 EP Act. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department, and other State and Federal Government agencies prior to commencing any activity at the site. For example, this may include permits or approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access State controlled roads), the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development (to clear vegetation), and the Department of Primary Industries (to clear marine plants or to obtain a quarry material allocation).

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

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

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

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

Conditions of environmental authority

This environmental authority incorporates the following schedules:

- Schedule A - General
- Schedule B - Air
- Schedule C - Water
- Schedule D - Noise and Vibration
- Schedule E - Waste
- Schedule F - Land
- Schedule G - Community
- Schedule H - Dams
- Schedule I - Definitions
- Schedule J - Maps/Plans

SCHEDULE A – GENERAL

Maintenance of measures, plant and equipment

(A1-1) The environmental authority holder must:

(a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority and the general environmental duty;
(b) maintain such measures, plant and equipment in a proper condition;
(c) operate such measures, plant and equipment in a proper manner; and
(d) ensure that 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.

(A1-2) 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 caused by the mining activities.

Monitoring

(A2-1) Record, compile, evaluate and keep for a minimum of five years all monitoring results required by this environmental authority, and any complaints received about the mining activities and make available for inspection all or any of these records upon request by the administering authority.

(A2-2) Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.

(A2-3) The holder of this environmental authority must develop, implement and maintain an Environmental Monitoring Manual to monitor compliance with the requirements of this environmental authority. The holder must provide the administering authority a copy of the manual on request.

Emergency Response and Contingency Plan

(A3-1) An emergency response/contingency plan must be implemented and maintained to respond to emergency events and incidents.

(A3-2) The emergency response/contingency plan required under condition (A3-1) 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 by an incident;
(d) Response procedures to be implemented in response to cyanide related incidents to contain, investigate and, if necessary, remediate environmental harm;
(e) The resources to be used in response to an incident;
(f) 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;
(g) The provision and availability of documented procedures to staff attending any incident to enable them to effectively respond;
(h) Training of staff that will be called upon to respond to incidents to enable them to effectively respond;
(i) Timely and accurate reporting of the circumstance and nature of incidents to the administering authority in accordance with conditions of this environmental authority;
(j) Procedures for accessing monitoring points during incidents; and
(k) 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 any release;
ii. the date and time of any release;
iii. the estimated quantity and type of any substances (if available concentrations) involved in any incident;
iv. the potential impacts to environmental values caused by any release.

Storage and handling of flammable and combustible liquids

(A4-1) All flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with the most recent publication of AS 1940 - *Storage and Handling of Flammable and Combustible Liquids.*

Chemical Storage and Handling

(A5-1) All explosives, hazardous chemicals, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the relevant Australian Standard where such is available.

(A5-2) Magnetite concentrate must be stored and loaded in a purpose built storage and loading facility which prevents dust emissions.

(A5-3) The holder of this environmental authority must maintain records of cyanide storage and use on site. These records must be made available to the administering authority within 5 business days of the request.

Notification

(A6-1) The environmental authority holder must notify the administering authority by telephone or email immediately after becoming aware of any emergency or incident resulting in, or having the potential to cause, environmental harm or any breach of condition or exceedance of water quality trigger level of this environmental authority concerning releases of contaminants to the environment.

(A6-2) The notification in condition (A6-1) must include the following information:

(a) the environmental authority number and name of 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 holder of the environmental authority became aware of the incident;
(f) the estimated quantity and type of any 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 harm caused, threatened, or suspected to be caused by the incident;
(i) any sampling conducted or proposed, relevant to the emergency or incident; and
(j) immediate actions taken to prevent any further release and mitigate any environmental harm caused by the release.

(A6-3) Within fourteen (14) days 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 all samples taken and analysed (if available, if not yet available nominate a timeframe acceptable to the administrating authority);
(b) outcomes of actions taken at the time to prevent or minimise environmental harm; and
(c) proposed actions to prevent a recurrence of the emergency or incident including the timeframe to which such action would be completed.

(A6-4) As soon as practicable, but not more than six (6) weeks following the conduct of environmental monitoring performed in relation to the emergency or incident, which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority, written advice must be provided of the results of any such monitoring performed to the administering authority.

Note: a period of greater than 6 weeks may be approved if authorised by the administering authority.

Activity

(A7-1) This environmental authority does not authorise environmental harm unless a condition contained within this authority explicitly authorises that harm. Where there is no condition or the authority is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.

(A7-2) In carrying out the mining activity, all reasonable and practicable measures must be taken to prevent or minimise the likelihood of environmental harm being caused.

(A7-3) Any management or monitoring plans, systems or programs required to be developed and implemented by a condition of this environmental authority must be reviewed for effectiveness in minimising the likelihood of environmental harm on an annual basis and amended promptly if required.

(A7-4) The environmental authority holder is authorised to receive, stockpile and process ore from third party mining operations, provided such activities comply with the requirements set out in this environmental authority and a geochemical assessment of the ore is undertaken and made available to the administering authority prior to processing.

Complaints

(A8-1) 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.

(A8-2) When requested by the administering authority, the environmental authority holder must undertake relevant specified monitoring within a period of 4 weeks to investigate any complaint of environmental harm at any sensitive place or commercial place. 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.

Definitions

(A9-1) Words and phrases used throughout this EA are defined in Schedule H - Definitions. Where a definition for a term used in this EA is sought and the term is not defined within this EA, the definitions in the *Environmental Protection Act 1994*, its Regulations and Environmental Protection Policies must be used.

END OF CONDITIONS FOR SCHEDULE A

Schedule B - Air

Dust nuisance

(B1-1) Subject to Conditions (B1-2) and (B1-3) the release of dust or particulate matter or both resulting from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.

(B1-2) 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.

(B1-3) If the environmental authority holder can provide evidence through monitoring that the following limits are not being exceeded then the holder is not in breach of (B1-1):

(a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with AS 3580.10.1 Methods for sampling and analysis of ambient air - Determination of particulates - Deposited matter - Gravimetric method of 1991; and
(b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, at a sensitive or commercial place downwind of the operational land, when monitored in accordance with:

i. Particulate matter - Determination of suspended particulate PM10 high-volume sampler with size-selective inlet - Gravimetric method, when monitored in accordance with AS 3580.9.6 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 of 1990; or
ii. Any alternative method of sampling PM10, which may be permitted by the 'Air Quality Sampling Manual' as published from time to time by the administering authority.

NOTE: The holder of this environmental authority must propose which monitoring method is appropriate in accordance with condition (B1-3) (a) or (b) or both.

(B1-4) If monitoring indicates exceedance of the relevant limits in Condition (B1-3), then the environmental authority holder must:

(a) address the complaint including the use of appropriate dispute resolution if required; or
(b) immediately implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance.

(B1-5) The environmental authority holder must develop and implement a dust management plan that sets out how dust emitting activities will be managed to minimise off-site impacts. The elements of the dust management plan must include, but are not limited to:

(a) Identification of all major sources of dust emissions that may occur as a result of the operation of the project;
(b) A description of the procedures to manage the dust emissions from the sources identified;
(c) A detailed complaints management procedure for nearby land users and residents affected by dust, including a system for recording, investigating, and responding to complaints, and reporting outcomes to the administering authority;
(d) Identification of responsible person(s) for carrying out the required actions/tasks;
(e) Procedures for monitoring dust emissions from the project, in accordance with the requirements of this environmental authority;
(f) Protocols for regular maintenance of plant and equipment, to minimise the potential for fugitive dust emissions; and
(g) A description of procedures to be undertaken if any non-compliance with the dust management plan or this environmental authority is detected.

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END OF CONDITIONS FOR SCHEDULE B

Schedule C - Water

Surface Water

(C1-1) Contaminants must not be released directly or indirectly to any surface waters other than in accordance with the contaminant release requirements, conditions and limits stated in this environmental authority.

(C1-2) Release of contaminants to surface waters from the licensed place must only occur at the release points specified in Table C1 – Release points (surface water) and identified in Schedule J Map 1 – Process water and storm water release points.

(C1-3) The release of contaminants to surface waters from the release points must be monitored at the locations and frequencies specified in Schedule C - Table C1 and comply with the contaminant limits specified in Schedule C - Table C4 (Receiving water contaminant limits).

(C1-4) An estimate of the daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in Schedule C - Table C1 Release points (surface water).

(C1-5) Receiving waters must be monitored at the locations defined in Table C2 and identified in Schedule J Map 2 for parameters defined in Table C3 and frequency identified in Table C2.

(C1-6) If receiving waters exceed any of the contaminant trigger levels stated in Table C3, the environmental authority holder must:

(a) complete an investigation in accordance with the ANZECC (2000) methodology, into the potential for environmental harm; and

(b) provide a written report to the administering authority within 3 months of the date of the original exceedance, specifying:

i. details of the investigations carried out; and

ii. actions taken to prevent environmental harm.

Note: a period of greater than 3 months may be approved if authorised by the administering authority.

(C1-7) Receiving waters must not exceed any of the contaminant limits defined in Table C4 as a result of the authorised mining activities carried out on site.

(C1-8) Water released from the site must not produce any slick or other visible evidence of oil, grease or litter.

Table C1 - Release points (surface water)

Release Point	Easting GDA 94 (Zone 54)	Northing GDA 94 (Zone 54)	Monitoring Frequency
SW12 – Northern Release Point	0469067	7741170	When discharging ▪ Continuous real time (5 minute) monitoring of pH, EC and flow[2]. ▪ For other parameters, one sample must be taken within 12 hours of the discharge event[1] commencing. A second sample must be taken between 12 and 24 hours after the discharge event commences. Where a discharge event[1] has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter.
SW15 – Southern Release Point	0471142	7736733	

[1] Discharge event is a surface water discharge from water storages or contaminated areas on the licensed place.
[2] Monitoring equipment required to undertake real time monitoring must be installed and operated by 1 December 2011.

Table C2 (Receiving waters monitoring locations)

Monitoring point	Easting GDA 94 (Zone 54)	Northing GDA 94 (Zone 54)	Monitoring Frequency[3]
Receiving waters			
SW4 Gipsy Creek 1	471368	7744261	For the routine monitoring of receiving waters: ▪ Monthly Event based sampling of discharge[1] must occur at the following frequency: ▪ One sample must be taken within 12 hours of a discharge event[1] commencing. A second sample must be taken between 12 and 24 hours after the discharge event[1] commences[2]. ▪ Where a discharge event[1] has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter. **Note:** Sampling must continue at these frequencies for a period of one week following cessation of a discharge event[1].
SW5 Gipsy Creek 2	471337	7745311	
SW6 Gipsy Creek 3	472063	7747516	
SW7 Gipsy Creek East Branch	474092	7744440	
SW8 Eliza Creek Drainage Channel	472138	7736194	
SW10 Eliza Creek Downstream	476241	7735601	
Reference Sites [4]			
SW17 Mt Margaret Creek Reference 1	480232	7742321	For the routine monitoring of receiving waters: ▪ Monthly Event based sampling of discharge[1] must occur at the following frequency: ▪ One sample must be taken within 12 hours of a discharge event[1] commencing. A second sample must be taken between 12 and 24 hours after the discharge event[1] commences[2]. ▪ Where a discharge event[1] has a duration of 24 hours or greater, samples must be taken daily for one week, and once a week thereafter. **Note:** Sampling must continue at these frequencies for a period of one week following cessation of a discharge event[1].
ML4 Eliza Creek Reference 2	471188	7735012	
SW40 Reference 3	To be confirmed pending site inspection for suitability (interim - 503297E 7772808N)		

1 Discharge event is a surface water discharge from water storages or contaminated areas on the licensed place.

2 The use of remote sampling techniques such as rising stage samplers is acceptable where access will be inhibited by rainfall.

3 Monitoring will only be conducted where safe access can be gained.

4 Reference sites must:

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

Table C3 (Receiving water contaminant trigger levels)

Parameter	Unit	Trigger Levels	Limit Type
pH	pH unit	20th percentile[1,5] of reference[4] or 6.0[3], whichever is lower. 80th percentile[1,5] of reference[4] or 7.5[3], whichever is higher	Median[6]
EC	µS/cm	80th percentile[1,5] of reference[4] or 500[9], whichever is higher	Median[6]
Turbidity	NTU	80th percentile[1,5] of reference[4] or 15[3] whichever is higher.	Median[6]
Hardness ($CaCO_3$)	Interpretational purposes only		
Fluoride	µg/L	80th percentile[2,5] of reference[4]	Median[6, 7]
Sulphate	µg/L	80th percentile[1,5] of reference[4]	Median[6]
Aluminium	µg/L	80th percentile[2,5] of reference[4] or 55[3], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Antimony	µg/L	80th percentile[2,5] of reference[4]	Median[6, 7] or 95th percentile[5,6,7]
Arsenic	µg/L	80th percentile[2,5] of reference[4] or 13[3], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Cadmium	µg/L	80th percentile[2,5] of reference[4] or 0.2[3], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Chromium	µg/L	80th percentile[2,5] of reference[4] or 1[3], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Cobalt	µg/L	80th percentile[2,5] of reference[4] or 1.4[10], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Copper	µg/L	80th percentile[2,5] of reference[4] or 1.4[3], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Free Cyanide	µg/L	80th percentile of reference[4] or 7[3] whichever is higher	Median[6,7] or 95th percentile
WAD Cyanide	µg/L	80th percentile of reference[4]	Median[6,7] or 95th percentile
Total Cyanide	µg/L	Interpretational purposes only	
Lead	µg/L	80th percentile[2,5] of reference[4] or 3.4[3], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Mercury	µg/L	80th percentile[2,5] of reference[4] or 0.6[3], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Molybdenum	µg/L	80th percentile[2,5] of reference[4] or 34[10], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Nickel	µg/L	80th percentile[2,5] of reference[4] or 11[3], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Selenium	µg/L	80th percentile[2,5] of reference[4] or 11[3], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Uranium	µg/L	80th percentile[2,5] of reference[4] or 1[11], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Zinc	µg/L	80th percentile[2,5] of reference[4] or 8.0[3], whichever is higher	Median[6, 7] or 95th percentile[5,6,7]
Total Nitrogen[8]	µg/L	80th percentile[2,5] of reference[4] or 150[3] , whichever is the higher	Median[6]
Total Phosphorus[8]	µg/L	80th percentile[2,5] of reference[4] or 10[3], whichever is the higher	Median[6]

1 An interim trigger value can be derived from ≥ 8 but ≤17 consecutive reference site samples[4], derived using EHP Queensland Water Quality Guidelines (2009) methodology (section 4.3).

2 For toxicants, trigger values are based on the 80th percentile of at least 10 and no more than 24 consecutive reference site samples[4], derived using the EHP Queensland Water Quality Guidelines (2009) methodology (Table D1, and section 4.3).

3 Default trigger values – from ANZECC (2000) trigger levels for aquatic ecosystems indicative of slightly disturbed tropical Australian upland river ecosystems.

4 Reference sites are defined in Table C2.

5 20th, 80th and 95th percentiles are calculated using ANZECC (2000) methodology (section 7.4.4.1).

6 The median and 95th percentile must be determined on the most recent three (3) consecutive routine monitoring samples. Comparison against trigger and contaminant limits should be made to maximum test values collected during discharge and flow events.

7 The median limit type is used if the 80th percentile trigger level is used, or if the default trigger level is used when there are <24 reference site values used to calculate the 80th percentile. The 95th percentile limit type is used if the default trigger level is used when there are 24 reference site values used to calculate the 80th percentile.

8 Monitoring of Total Nitrogen and Total Phosphorus is only required for release point SW15 and receiving water monitoring locations for Eliza creek SW8, SW9, SW10.

9 Default trigger value – from QWQG (EHP 2009) Table G.1 (EC Percentiles for Queensland Salinity Zone) 75th percentile for the Gulf Zone

10 Interim (low reliability value from ANZECC (2000) Section 8.3.7.1

11 As per Table F3 in the EHP Guideline for Model Mining Conditions (26 June 2013)

Note: Analysis for total and or dissolved metal concentrations.

Table C4 (Receiving water contaminant limits)

Parameter	Unit	Test Value	Contaminant Limit
pH	pH unit	Range	Lower Limit 6.0 Upper Limit 9.0[1]
EC	mS/cm	Maximum	1[2] or 95th percentile of reference[3], whichever is lowest.
Fluoride	mg/L	Maximum	2[1] or 95th percentile of reference[3], whichever is lowest.
Sulphate	mg/L	Maximum	1000[1] or 95th percentile of reference[3], whichever is lowest.
Turbidity	NTU		Interpretation purposes only
Aluminium	mg/L	Maximum	5[1] or 95th percentile of reference[3], whichever is lowest.
Antimony	mg/L	Maximum	95th percentile of reference[3]
Arsenic	mg/L	Maximum	0.5[1] or 95th percentile of reference[3], whichever is lowest
Cadmium	mg/L	Maximum	0.01[1] or 95th percentile of reference[3], whichever is lowest
Chromium	mg/L	Maximum	1[1] or 95th percentile of reference[3], whichever is lowest
Cobalt	mg/L	Maximum	1[1] or 95th percentile of reference[3], whichever is lowest
Copper	mg/L	Maximum	1[1] or 95th percentile of reference[3], whichever is lowest
Free Cyanide	mg/L	Maximum	0.022[6] or 95th percentile of reference[3], whichever is lowest
WAD Cyanide	mg/L	Maximum	0.5[6]
Total Cyanide	mg/L	N/A	Interpretational purposes only
Lead	mg/L	Maximum	0.1[1] or 95th percentile of reference[3], whichever is lowest
Mercury	mg/L	Maximum	0.002[1] or 95th percentile of reference[3], whichever is lowest
Molybdenum	mg/L	Maximum	0.15[1] or 95th percentile of reference[3], whichever is lowest
Nickel	mg/L	Maximum	1[1] or 95th percentile of reference[3], whichever is lowest
Selenium	mg/L	Maximum	0.02[1] or 5th percentile of reference[3], whichever is lowest
Uranium	mg/L	Maximum	0.2[1] or 95th percentile of reference[3], whichever is lowest
Zinc	mg/L	Maximum	20[1] or 95th percentile of reference[3], whichever is lowest
Total Nitrogen [4]	mg/L	Maximum	30[5] or 95th percentile of reference[3], whichever is lowest
Total Phosphorus [4]	mg/L	Maximum	10[5] or 95th percentile of reference[3], whichever is lowest
E. Coli [1, 4]	Organisms / 100ml	Maximum	1000 applied for release only

1 Contaminant limit based on ANZECC (2000) stock water quality guidelines.
2 Interim limit set by the Administering Authority.
3 Where the 95th percentile of reference 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.
4 Contaminant Limits for Total Nitrogen and Total Phosphorus are only applicable to release point SW15 and receiving waters monitoring locations for Eliza Creek SW8, SW9 and SW10. *E. Coli* are only applicable to release point SW15
5 Based on usual sewage treatment plant performance data.
6 Based *on Implementation Guidance for the International Cyanide Management Code, International Cyanide Management Institute, Standard Practice 4.5.*

Note: Analysis for total metal concentrations.

Stream Sediment Contaminant Levels

(C2-1) Sediment quality of receiving waters and reference waters must be monitored twice a year (once at the end of the wet season and once at the end of the dry season) at the monitoring locations defined in Table C2 and Schedule J – Map 2 and for the parameters defined in Table C5.

(C2-2) If the bed of the receiving waters exceeds any of the stream sediment trigger levels defined in Table C5, the environmental authority holder must:

(a) complete an investigation in accordance with the ANZECC (2000) methodology, into the potential for environmental harm; and
(b) provide a written report to the administering authority within 3 months of the date of the original exceedance, specifying:
    i. details of the investigations carried out; and
    ii. actions taken to prevent environmental harm.

Note: a period of greater than 3 months may be approved if authorised by the administering authority.

(C2-3) The releases of contaminants must not result in an exceedance of sediment contaminant limits stated in Table C5.

(C2-4) All stream sediment sampling must be undertaken in accordance with AS 5667.12 *Guidance on Sampling of Bottom Sediments of 1999*.

Table C5 (Stream sediment trigger and contaminant levels)

Parameter	Unit	Contaminant Limit	Trigger Level
Antimony	mg/kg	25[3] or three times the reference value[1], whichever is higher	Reference[1]or 2[2], whichever is higher.
Arsenic	mg/kg	70[3] or three times the reference value[1], whichever is higher	Reference value[1] or 20[2], whichever is higher.
Barium	mg/kg	3 times the reference value[1]	Reference value[1]
Bismuth	mg/kg	3 times the reference value[1]	Reference value[1]
Boron	mg/kg	3 times the reference value[1]	Reference value[1]
Cadmium	mg/kg	10[3] or three times the reference value[2], whichever is higher	Reference value[1] or 1.5[2], whichever is higher.
Chromium	mg/kg	370[3] or three times the reference value[1], whichever is higher	Reference[1]or 80[2], whichever is higher.
Cobalt	mg/kg	3 times the reference value[1]	Reference value[1]
Copper	mg/kg	270[3] or three times the reference value[1], whichever is higher	Reference[1]or 65[2], whichever is higher.
Cyanide	mg/kg	For interpretational purposes only	
Lead	mg/kg	220[3] or three times the reference value[1], whichever is higher	Reference value[1] or 50[2] whichever is higher.
Nickel	mg/kg	52[3] or three times the reference value[1], whichever is the higher	Reference value[1] or 21[2] whichever is higher.
Manganese		3 times the reference value[1]	Reference value[1]
Mercury		1[3] or three times the reference value[1], whichever is higher	Reference[1]or 0.15[2], whichever is higher.
Molybdenum	mg/kg	3 times the reference value[1]	Reference value[1]
Selenium	mg/kg	3 times the reference value[1]	Reference value[1]
Sulphate	mg/kg	3 times the reference value[1]	Reference value[1]
Thorium		3 times the reference value[1]	Reference value[1]
Uranium	mg/kg	3 times the reference value[1]	Reference value[1]
Vanadium		3 times the reference value[1]	Reference value[1]
Zinc	mg/kg	410[3] or three times the reference value[1], whichever is higher.	Reference value[1] or 200[2] or, whichever is higher.
Particle size distribution for interpretation purposes			

1 Reference value is 2 times the median of values taken at the reference sites defined in Table C2 (Receiving waters monitoring locations).

2 ANZECC (2000) Interim Sediment Quality Guidelines – low values based on total sediments.

3 ANZECC (2000) Interim Sediment Quality Guidelines – high values based on total sediments.

Receiving Environment Monitoring Program (REMP)

(C3-1) The environmental authority holder must develop and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while mine affected water is being discharged from the site. For the purposes of the REMP, the receiving environment is the waters of the Gipsy Creek, Elisa Creek and connected or surrounding waterways within 20 km downstream of the release, or further if an impact is detected beyond 20km. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.

(C3-2) A REMP Design Document that addresses the requirements of the REMP must be prepared and made available to the administrating authority upon request.

(C3-3) A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions C3-1 must be prepared and submitted in writing to the administering authority by 1 December 2012 and thereafter every 12 months. This should include an assessment of background water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environment values.

(C3-4) All determinations of water quality and biological monitoring must be performed by an appropriately qualified person.

Onsite Water Storages

(C4-1) Onsite storages containing contaminated waters must be monitored at the locations defined in Table C6 for parameters listed in Table C7 and at a frequency of:

For the routine monitoring of onsite water locations:

(i) Quarterly

(C4-2) In the event that waters defined in Table C6, exceed the contaminant limits defined in Table C7, the holder of the environmental authority must implement measures to prevent access to waters by all livestock and minimise access by native fauna.

Table C6 (Onsite water storage monitoring locations)

Monitoring Point	Easting GDA 94 (Zone 54)	Northing GDA 94 (Zone 54)
PED - Production Evaporation Dam	471559	7741060
TED - Tailings Evaporation Dam	472809	7741031

Table C7 (Onsite water limits)

Parameter	Unit	Test Value	Contaminant Limit
pH	pH unit	Range	Lower Limit 6.0 Upper Limit 9.0[1]
EC	mS/cm	Maximum	5.970[1]
Fluoride	mg/L	Maximum	2[1]
Sulphate	mg/L	Maximum	1000[1]
Aluminium	mg/L	Maximum	5[1]
Arsenic	mg/L	Maximum	0.5[1]
Cadmium	mg/L	Maximum	0.01[1]
Chromium	mg/L	Maximum	1[1]
Cobalt	mg/L	Maximum	1[1]
Copper	mg/L	Maximum	1[1]
WAD Cyanide	mg/L	Maximum	50[2]
Lead	mg/L	Maximum	0.1[1]
Mercury	mg/L	Maximum	0.002[1]
Molybdenum	mg/L	Maximum	0.15[1]
Nickel	mg/L	Maximum	1[1]
Selenium	mg/L	Maximum	0.02[1]
Uranium	mg/L	Maximum	0.2[1]
Zinc	mg/L	Maximum	20[1]
Total Suspended Solids	mg/L	Maximum	30
Nitrogen	mg/L	Maximum	30
Phosphorus	mg/L	Maximum	15
E. Coli[1]	Organisms / 100ml	Maximum	1000

1 Contaminant limit based on ANZECC (2000) stock water quality guidelines.

2 Based *on Implementation Guidance for the International Cyanide Management Code, International Cyanide Management Institute, Standard Practice 4.4*.

Note: Analysis for total metal concentrations.

Groundwater

(C5-1) The holder of this environmental authority must not release contaminants to groundwater.

(C5-2) Groundwater quality and level must be monitored at the locations and frequencies defined in Schedule C – Table C8 (Groundwater Monitoring Locations and Frequency) for the analytes identified in Schedule C – Table C9 (Groundwater Quality Monitoring Analytes).

(C5-3) If groundwater drawdown bores identified in Table C8 show a change in the groundwater drawdown rate greater than the predicted groundwater drawdown rate in the model results presented in the Groundwater Impact Assessment AGE 2025 (as amended), the environmental authority holder must complete an investigation into the potential source, cause and extent of the water level change, and provide a written report to the administering authority within 3 months of the date of the original variation, outlining:

(a) details of the investigation carried out; and
(b) any actions taken to prevent further impact.

Note: a period of greater than 3 months may be approved if authorised by the administering authority

(C5-4) If groundwater from compliance bores listed in Schedule C - Table C8 (Groundwater Monitoring Locations and Frequency) exceed any of the trigger levels stated in Schedule C - Table C10 (Groundwater Trigger Levels and Contaminant Limits), the holder of this environmental authority must complete an investigation in accordance with the ANZECC & ARMCANZ (2000) approach into the potential for environmental harm and provide a written report to the administering authority within 3 months of the date of the original exceedance, outlining:

(a) details of the investigations carried out; and

(b) actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with condition (C5-4), no further reporting is required for subsequent trigger levels for that quality characteristic within the three-month investigation period.

(C5-5) Groundwater monitoring results from compliance bores identified in Schedule C - Table C8 (Groundwater Monitoring Locations and Frequency), must not exceed any of the contaminant limits defined in Schedule C - Table C10 (Groundwater Trigger Levels and Contaminant Limits).

Table C8 (Groundwater Monitoring Locations and Frequency)

Monitoring Point	Easting GDA 94 (Zone 54)	Northing GDA 94 (Zone 54)	Surface RL (mAHD)	Top of Casing (mAHD)[1]	Total Depth (mBGL)	Monitoring Frequency
Compliance Bores						
TD03	472908	7737192	154.44	155.20	71.6	Quarterly (groundwater quality & groundwater levels)
TD04	470915	7737789	156.01	156.56	66.3	
TD05B	472986	7741228	152.31	153.19	61.9	
TD06A	4710113	7741274	153.89	154.46	56	
RP29	474615	7741064	151.32	152.05	58	
RP33	467001	7739666	157.18	157.88	76	
Drawdown Bores (RL measurements only)						
RP06	480583	7733557	145.39	145.8	70	Biannually between (November to April) and (May to October)
RP26	468509	7753237	140.68	141.28	76	
RP43A	459834	7741496	154.05	155.04	64	
RP43B	459849	7741495	154.26	155.03	51	
RP43C	459860	7741494	154.28	155.01	28.5	
RP45A	468856	7755723	138.32	139.05	63.5	
RP45B	468857	7755722	138.28	139.01	38.4	
RP45C	468864	7755733	138.22	138.9	12	
RP47	489929	7737971	127.25	127.9	286	
RP48	463201	7744583	151.02	151.56	24	
RP49	489295	7730323	125.62	126.45	252	
RP50	474104	7728516	143.44	143.96	65.6	

Table C9 (Groundwater Quality Monitoring Analytes)

Analyte	Unit
Electrical Conductivity	µS/cm
Field pH	pH unit
Sulphate	mg/L
Fluoride	mg/L
Aluminium[1]	mg/L
Antimony[1]	mg/L
Arsenic[1]	mg/L
Boron[1]	mg/L
Cadmium[1]	mg/L
Chromium[1]	mg/L
Cobalt[1]	mg/L
Copper[1]	mg/L
Lead[1]	mg/L
Manganese[1]	mg/L
Mercury[1]	mg/L
Molybdenum[1]	mg/L
Nickel[1]	mg/L
Selenium[1]	mg/L
Uranium[1]	mg/L
Vanadium[1]	mg/L
Zinc[1]	mg/L
Free Cyanide	mg/L
WAD Cyanide	mg/L
Total Cyanide[2]	mg/L

1 Dissolved (filtered) concentration of analyte to be determined.
2 For interpretational purposes only

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Table C10 (Groundwater Trigger Levels and Contaminant Limits)

Type	Event (based on samples from routine monitoring)
Trigger Levels	For all analytes including upper pH limit: • 1 value greater than 99th percentile control limit[1,2] listed in Schedule C – Table C11 • 2 consecutive values greater than 97th percentile control limit[1,2] listed in Schedule C – Table C11 • 5 consecutive values greater than 84th percentile control limit[1,2] listed in Schedule C – Table C11 For lower pH only: • 1 value less than 1st percentile control limit[1,2] listed in Schedule C – Table C11 • 2 consecutive values less than 3rd percentile control limit[1,2] listed in Schedule C – Table C11 • 5 consecutive values less than 16th percentile control limit[1,2] listed in Schedule C – Table C11
Contaminant Limit	For all analytes including upper pH limit: • 3 consecutive values greater than 99th percentile control limit[1,2] listed in Schedule C – Table C11 For lower pH only: • 3 consecutive values less than 1st percentile control limit[1,2] listed in Schedule C – Table C11

1. Calculated from the reference dataset for the bore.
2. Reference data for each bore are to consist of at least 8 values collected over a minimum of at least a year from:
(a) before the licenced operation generated ground disturbance; and
(b) routine monitoring data determined by an appropriately qualified person to not be impacted by the operation. Routine monitoring data for a compliance bore collected after the start of disturbance by the operation may be transferred to its referenced dataset after 8 monitoring events have demonstrated no trigger level exceedance and no trending in the dataset has been identified.

Note: Only applies for dissolved (filtered) concentration of analyte.

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Table C11 (Control limits for compliance bores)

Control Limits	EC µS/cm	SO4 mg/L	F mg/L	Free CN mg/L	WAD CN mg/L	Al mg/L	As mg/L	B mg/L	Cd mg/L	Cr mg/L	Co mg/L	Cu mg/L	Pb mg/L	Mn mg/L	Hg mg/L	Mo mg/L	Ni mg/L	Sb mg/L	Se mg/L	U mg/L	V mg/L	Zn mg/L	pH Upper Limit	Control Limits	pH Lower Limit
RP29																									
84th %ile	1438	181	0.7	<0.004#	<0.004#	0.06	0.057	2.64	<0.0001#	0.001	<0.001#	0.010	0.001	0.109	<0.0001#	0.009	0.002	0.001	<0.01#	0.001	<0.01#	0.026	8.21	16th%ile	7.45
97th %ile	1545	206	1.1	<0.004#	<0.004#	0.24	0.074	2.71	0.0005	0.002	0.005	0.018	0.006	0.211	0.0001	0.010	0.004	0.004	0.01	0.002	<0.01#	0.135	8.36	3rd %ile	7.12
99th %ile	1582	207	1.2	<0.004#	<0.004#	0.41	0.097	2.72	0.0005	0.002	0.005	0.026	0.009	0.297	0.0001	0.010	0.005	0.005	0.01	0.002	<0.01#	0.154	8.40	1st %ile	7.04
RP33																									
84th %ile	505	24	1.2	<0.004#	<0.004#	0.03	0.002	0.18	<0.0001#	<0.001#	<0.001#	0.005	<0.001#	0.033	<0.0001#	0.004	<0.001#	<0.001#	<0.01#	<0.001#	<0.01#	0.022	8.20	16th%ile	7.86
97th %ile	541	31	1.4	<0.004#	<0.004#	0.11	0.003	0.20	0.0001	<0.001#	0.005	0.015	0.004	0.044	<0.0001#	0.007	<0.001#	<0.001#	<0.01#	0.002	<0.01#	0.029	8.42	3rd %ile	7.40
99th %ile	567	33	1.5	<0.004#	<0.004#	0.17	0.004	0.20	0.0002	<0.001#	0.006	0.018	0.006	0.055	<0.0001#	0.008	<0.001#	<0.001#	<0.01#	0.003	<0.01#	0.032	8.51	1st %ile	7.40
TD03																									
84th %ile	754	46	1.6	<0.004#	<0.004#	0.03	0.002	0.18	<0.0001#	<0.001#	<0.001#	0.005	0.001	0.019	<0.0001#	0.003	<0.001#	<0.001#	<0.01#	<0.001#	<0.01#	0.023	8.25	16th%ile	7.90
97th %ile	802	63	1.9	<0.004#	<0.004#	0.10	0.004	0.20	0.0025	<0.001#	<0.001#	0.012	0.006	0.035	<0.0001#	0.004	0.001	<0.001#	<0.01#	<0.001#	0.01	0.044	8.59	3rd %ile	7.51
99th %ile	817	65	2.0	<0.004#	<0.004#	0.10	0.004	0.20	0.0310	<0.001#	0.005	0.013	0.007	0.046	<0.0001#	0.004	0.001	<0.001#	<0.01#	0.001	0.01	0.118	8.60	1st %ile	6.88
TD04																									
84th %ile	2042	138	TBA*	TBA*	TBA*	0.12	0.008	TBA*	<0.0001#	<0.001#	0.005	0.010	0.001	0.261	<0.0001#	0.003	0.003	<0.001#	<0.01#	<0.001#	<0.01#	0.021	8.10	16th%ile	7.13
97th %ile	2305	170	TBA*	TBA*	TBA*	0.27	0.008	TBA*	0.0005	0.001	0.005	0.022	0.005	0.350	<0.0001#	0.003	0.005	0.002	<0.01#	0.001	<0.01#	0.053	8.55	3rd %ile	7.03
99th %ile	2375	177	TBA*	TBA*	TBA*	0.30	0.008	TBA*	0.0005	0.001	0.006	0.028	0.005	0.383	<0.0001#	0.004	0.006	0.002	<0.01#	0.001	<0.01#	0.074	8.78	1st %ile	7.01
TD05B																									
84th %ile	1010	76	2.6	<0.004#	<0.004#	0.02	<0.001#	0.50	<0.0001#	<0.001#	<0.001#	0.001	0.003	0.031	<0.0001#	0.005	0.001	<0.001#	<0.01#	<0.001#	<0.01#	0.022	8.30	16th%ile	8.03
97th %ile	1050	84	2.9	0.003	0.003	0.08	0.001	0.52	0.0001	0.001	0.001	0.008	0.008	0.069	0.0001	0.005	0.003	0.001	0.01	0.001	0.01	0.030	8.55	3rd %ile	7.89
99th %ile	1070	85	3.0	0.004	0.004	0.12	0.001	0.53	0.0002	0.002	0.001	0.014	0.009	0.070	0.0001	0.006	0.004	0.001	0.01	0.001	0.01	0.035	8.60	1st %ile	7.86
TD06A																									
84th %ile	TBA*	TBA*	2.0	<0.004#	<0.004#	<0.01#	<0.001#	0.53	<0.0001#	<0.001#	<0.001#	<0.001#	<0.001#	0.055	<0.0001#	0.003	<0.001#	<0.001#	<0.01#	<0.001#	<0.01#	0.006	8.17	16th%ile	7.92
97th %ile	TBA*	TBA*	2.1	<0.004#	<0.004#	<0.01#	<0.001#	0.54	<0.0001#	<0.001#	<0.001#	0.001	0.002	0.092	<0.0001#	0.004	0.001	0.002	<0.01#	0.001	0.02	0.007	8.34	3rd %ile	7.83
99th %ile	TBA*	TBA*	2.1	<0.004#	<0.004#	<0.01#	<0.001#	0.54	<0.0001#	<0.001#	<0.001#	0.001	0.002	0.103	<0.0001#	0.004	0.001	0.002	<0.01#	0.001	0.02	0.008	8.40	1st %ile	7.80

Free CN – Free Cyanide; WAD CN – Weak Acid Dissociable Cyanide
Where suitable reference data are not available for calculation of the control limit for a compliance bore, the values will be 'To Be Advised' (TBA). All 'TBA' values will be updated by an amendment application before 30 June 2017.
* Minimum size of the referenced dataset required to calculate control limits is 8 samples taken over a minimum of 12 months.
# Value is less than limit of reporting (<LOR) and will be refined if more data becomes available where a new percentile limit exceeds the LOR.
Control limits can be updated by agreed amendment, in accordance with s215 (1) of the *Environmental Protection Act 1994*, in the event additional information is supplied that meets the satisfaction of the administering authority.
The control limits in Table C11 apply until the environmental authority is otherwise amended.

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Seepage Management

(C6-1) The holder of the environmental authority must implement a Seepage Management System to manage seepage generated from the activity in accordance with a Seepage Management Plan.

(C6-2) The Seepage Management Plan must be developed and approved by an appropriately qualified person/s as compliant with the seepage management conditions of this environmental authority. The Seepage Management Plan must:

(a) identify origins of saline and/or metalliferous mine drainage and seepage within the mining lease;

(b) describe the Seepage Management System, its components and detail how each seepage control forms part of the broader Seepage Management System, including a schematic diagram of interceptions, storages, transfers and disposal facilities;

(c) list internally approved, detailed design and as-constructed documentation/drawings reasonably required for an independent technical review and substantiation of the plan;

(d) accurately record and include details of internally approved, detailed design and as-constructed seepage controls for the Seepage Management System in a Register of Seepage Controls kept by the holder of this environmental authority;

(e) include all reasonable and practicable measures to capture and contain all seepage from the mining activities; and

(f) include a Seepage Monitoring Program that includes groundwater monitoring bores and is designed to detect locations both on and off the mining lease, where seepage may circumvent the Seepage Management System.

(g) The groundwater bores required under the seepage monitoring program must be monitored at least once every quarter, for the quality characteristics specified in Schedule C – Table C9 **(Groundwater Quality Monitoring Analytes)**

(C6-3) An appropriately qualified person/s must review the performance of the Seepage Management System and submit a Seepage Management Performance Report to the administering authority by 30 June 2025 and then on an annual basis by 30 June thereafter.

(C6-4) The Seepage Performance Report required by condition (C6-3) must:

(a) detail the review method and findings, provide an assessment of the effectiveness of the Seepage Management Plan, and detail and review the findings of the seepage monitoring program;

(b) 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; and

(c) 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 when, 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 10 (Groundwater Trigger Levels and Contaminant Limits) and any changes over time;
  (iii) the source of the seepage, influences on the quality and quantity of seepage generated, and if not well understood, recommended investigations to establish this information;
  (iv) the disposal location for captured seepage;
  (v) an assessment of the performance of each individual seepage control in meeting the design intent and continuing to remain as fit for purpose; and

(d) make recommendations for update of the Seepage Management Plan.

(C6-5) The Seepage Management Plan must be updated in accordance with all reasonable and practicable recommendations in the Seepage Performance Report required by C6-4.

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Sewage effluent from the contractor demountable toilet block - for irrigation

(C7-1) Treated sewage effluent from the aerated wastewater treatment system (AWTS) may only be released to land within the nominated irrigation area identified in Schedule J – Map 7 (Contractor demountable toilet block- irrigation area) in accordance with the contaminant release limits stated in Table C12 (Contaminant Release Limits to Land) and in accordance with condition C7-8.

(C7-2) All sewage effluent released to land must be monitored at the frequency and for the parameters specified in Table C12 (Contaminant Release Limits to Land).

Table C12 (Contaminant Release Limits to Land)

Contaminant	Unit	Release limit	Limit type	Frequency
5 day Biochemical oxygen demand (BOD)[1]	mg/L	20	Maximum	Monthly
Total Suspended Solids	mg/L	30	Maximum	Monthly
Nitrogen	mg/L	30	Maximum	Monthly
Phosphorus	mg/L	15	Maximum	Monthly
E coli	Organisms / 100ml	1000	Maximum	Monthly
pH	pH units	6.0 - 9.0	Range	Monthly

[1] Based on at least 5 but no more than 10 consecutive samples.

(C7-3) A minimum area of 2500m^2 of land, excluding any necessary buffer zones, must be utilised for the irrigation of treated sewage effluent.

(C7-4) The maximum outflow from the treatment plant to be irrigated must not exceed 1000L/day.

(C7-5) Treated sewage effluent must only be dispersed in accordance with the following outcomes:

(a) Efficient application of effluent utilising best practice methods;
(b) Minimal degradation of soil structure;
(c) Prevention of:
    i. run-off of effluent or seepage from irrigation areas by limitation of application rates and the use of structures such as bunds, catch dams and the Production Evaporation Dam;
    ii. surface ponding;
    iii. damage to native vegetation;
(d) Provide prominent signage, in areas irrigated with effluent and which are accessible to the employees and general public, advising that effluent should not be consumed or used;
(e) Maximise health and safety protection in relation to effluent handling and irrigation; and
(f) Irrigation areas are adequately identified.

(C7-6) Sewage effluent released to land must not cause spray drift or over spray to any odour sensitive place.

(C7-7) The daily volume of effluent release to land must be measured and records kept of the volumes of effluent released.

(C7-8) In periods of wet weather or following wet weather, when no further evaporation and/or infiltration of effluent is reasonably practicable, the release of effluent from the contractor demountable toilet block to waters is permitted to the Production Evaporation Dam (PED).

Permanent Sewage Treatment Plant

(C7-9) Sewage effluent from the permanent sewage treatment facilities identified on Schedule J - Map 3 must be evaporated and must not be directly released from the sewage treatment plant to any waters or drainage line other than in accordance with condition C7-10.

(C7-10) The holder of this environmental authority must ensure the permanent sewage effluent evaporation pond as identified on Schedule J - Map 3 is managed in such a way that:

(a) restrictions on general access are established to minimise risk to health and safety;
(b) prominent signage is installed around the evaporation pond, advising that effluent should not be consumed or used; and
(c) prevents impacts on the groundwater resource through infiltration.

(C7-11) In periods of wet weather or following wet weather, when no further evaporation of effluent is reasonably practicable and when effluent storage ponds are full, the release of effluent from the Permanent Sewage Treatment Plant to waters is permitted to the Production Evaporation Dam.

Loading and Unloading Facilities

(C8-1) Concentrate transport procedures must include:

(a) the use of wash down facilities for vehicles leaving the site to minimise concentrate emissions during transport; and
(b) covering of loads.

Site Water Management Plan

(C9-1) A Water Management Plan must be developed by an appropriately qualified person and implemented.

(C9-2) The Water Management Plan will be kept on site and made available to the administering authority or adjoining and neighbouring landholders on request.

Stormwater, Sediment and Erosion controls

(C10-1) 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 prevent or minimise erosion and the release of sediment to receiving waters and the contamination of storm water.

(C10-2) The Erosion and Sediment Control Plan must provide 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.

(C10-3) 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.

END OF CONDITIONS FOR SCHEDULE C

OFFICIAL

Schedule D - Noise and Vibration

There are no conditions prescribed for this section.

END OF CONDITIONS FOR SCHEDULE D

Schedule E - Waste

Storage of tyres

(E1-1) Tyres stored awaiting disposal or removal off site should be stockpiled in volumes less than 3m in height and 200m^2 in area and at least 10m from any other tyre storage area.

(E1-2) All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a 10m radius of the scrap tyre storage area.

Disposal of tyres

(E2-1) Disposing of scrap tyres resulting from the mining activities in spoil emplacements is acceptable, provided tyres are placed as deep in the spoil as reasonably practicable.

(E2-2) 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.

Waste Management Program

(E3-1) A waste management program in accordance with the *Waste Reduction and Recycling Act 2011* must be developed, implemented and maintained. The waste management program must include:

(a) A description of the mining activities that may generate waste;

(b) The types and amounts of wastes generated by the mining activities;

(c) A program for reusing, recycling or disposing of all wastes;

(d) 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);

(e) 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;

(f) Procedures for dealing with accidents, spills and other incidents;

(g) Details of any accredited management system employed, or planned to be employed, to deal with waste;

(h) How often the performance of the waste management program will be assessed;

(i) The indicators or other criteria on which the performance of the waste management program will be assessed; and

(j) Staff training and induction to the waste management program.

(E3-2) The waste management program required in condition (E3-1) must be reviewed for effectiveness in minimising the likelihood of environmental harm on an annual basis and amended promptly if required.

Waste Rock

(E4-1) The holder of the environmental authority must develop and implement a waste rock management plan, together with the certification of an appropriately qualified person that the plan is compliant with the conditions in this environmental authority and in accordance with best practice environmental management.

(E4-2) The waste rock management plan must include:

(a) characterisation of waste rock to inform disposal strategies;
(b) selective handling techniques to ensure placement of waste rock is according to characterisation results and disposal strategies;
(c) a program of progressive characterisation of waste rock to validate selective handling techniques and disposal strategies;
(d) records of all waste rock characterisation and disposal;
(e) contingency planning for the management of contaminated drainage (including acidic, neutral or saline drainage);
(f) a materials balance and disposal plan demonstrating how waste rock will be selectively placed and/or encapsulated to minimise the generation of contaminated drainage (including acidic, neutral or saline drainage);
(g) a regular review process to ascertain the performance of the plan;
(h) a rehabilitation strategy in accordance with the Administering Authority's Guideline for Rehabilitation Requirements for Mining Projects to ensure waste rock dumps are safe, non-polluting, self-sustaining and geotechnical and geochemical stable; and
(i) monitoring of 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 contaminated drainage, erosion minimisation and establishment of vegetation cover.

(E4-3) For the purpose of the waste rock management plan, characterisation to inform disposal strategies includes testing to determine the following:

(a) potential for Acid Production;
(b) potential for Saline Drainage;
(c) potential for Neutral Mine Drainage; and
(d) characterisation testing for requirements a,), b) and c) above must include an assessment of the metal / metalloids listed in table E1 and their mobility.

(E4-4) The waste rock management plan must be provided to the administering authority upon request.

(E4-5) Only benign waste rock may be used on site for authorised surface construction activities, unless otherwise authorised by the administering authority.

Tailings Management

(E5-1) The management of tailings disposal must be in accordance with the following:

(a) all tailings material must be progressively characterised during disposal for acid producing potential and the following metals: arsenic, copper, molybdenum; and
(b) 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
(c) implement measures to minimise the exposure of potentially acid producing tailings to oxidising conditions.

(E5-2) The holder of this environmental authority must conduct research during the operational life of the tailings storage facility to determine requirements for final rehabilitation. Research must include but not be limited to:

(a) site specific climatic conditions;
(b) seepage management; and
(c) reactivity of tailings under various conditions.

(E5-3) Research undertaken in accordance with condition number (E5-2) must be finalised no later than thirty-six (36) months prior to the planned mine closure.

Ore and Waste Characterisation

(E6-1) The holder of this environmental authority must investigate the occurrence of the metals and metalloids identified in Table E1 within any material mined or processed on site, and submit a report to the administering authority by 1 January 2011. The report must address at a minimum:

(a) the distribution of any identified metals and metalloids per lithological unit; and
(b) for any potentially radioactive or radiogenic metals or metalloids, describe the radioactive or radiogenic nature of those metals and metalloids; and
(c) the fate of any identified metals and metalloids as a result of mining activities in relation to on-site storage of concentrate, tailings and waste rock; and
(d) the impact or risk of any identified metals and metalloids in relation to:
    i. surface water;
    ii. groundwater;
    iii. sediments;
    iv. soils;
    v. air; and
    vi. rehabilitation.

Table E1. Metals and Metalloids for ore and waste characterisation.

Metals / Metalloids for Analysis
Aluminium
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lithium
Lead
Manganese
Molybdenum
Nickel
Rubidium
Selenium
Strontium
Uranium
Vanadium
Zinc

END OF CONDITIONS FOR SCHEDULE E

Schedule F - Land

Rehabilitation landform criteria

(F1-1) Land disturbed by mining must be rehabilitated in accordance with Table F1 (Rehabilitation Requirements).

Table F1. Rehabilitation Requirements.

Disturbance Type	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Residual Void	Safe, non-polluting, stable and self-sustaining	In accordance with condition (F1-4) and the post mine land use plan required under condition (F3-1)	Compliance with condition (F1-5) and the post mine land use plan required under condition (F3-1)	In accordance with condition (F1-6) and the post mine land use plan required under condition (F3-1)
Tailings Dam				
Evaporation Dams surface				
Evaporation Dams wall				
Waste Rock Dump Batters				
Waste Rock Dump Plateaux				
Infrastructure				
ROM Area				
Roads and Tracks				

(F1-2) Rehabilitation must progressively commence as areas become available and in accordance with the Plan of Operations.

(F1-3) Rehabilitated areas must be managed to minimise the proliferation of species not consistent with rehabilitation objectives.

(F1-4) 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.

(F1-5) 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.

(F1-6) 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 F – Table 1 and in the Post Mine Land Use Plan; and
(d) written agreement is obtained from the landowner/holder and administering authority.

Residual void outcome

(F2-1) Residual voids must comply with the following outcomes:

(a) residual voids must not cause any serious environmental harm to land, surface waters or any recognised groundwater aquifer, other than the environmental harm constituted by the existence of the residual void itself and subject to any other condition within this environmental authority.

Post Mine Land Use Plan

(F3-1) A Post Mine Land Use Plan must be developed and included in the Plan of Operations before 1 March 2011 and updated with each subsequent Plan of Operations, describing how the rehabilitation objectives in Table F1 will be achieved. The Post Mine Land Use Plan must include:

(a) schematic representation of final land form inclusive of drainage features;

(b) slope designs;

(c) cover design;

(d) drainage design;

(e) erosion controls proposed on reformed land;

(f) description of experimental design for monitoring of analogue and rehabilitated areas inclusive of statistical design;

(g) proposed revegetation criteria including:

i. species diversity, abundance and composition;

ii. projective cover;

iii. dry matter production; and

iv. stocking rates to ensure self-sustaining vegetation is maintained;

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

(i) materials balance including available top soil and low permeability capping material ;

(j) research program and associated milestones;

(k) geotechnical, geochemical and hydrological studies;

(l) chemical, physical and biological properties of soil and water;

(m) measurable completion criteria for each rehabilitation indicator (for each land unit) that enables determination of rehabilitation success for each disturbance type (or land unit); and

(n) rehabilitation monitoring program.

Rehabilitation Monitoring Program

(F4-1) A rehabilitation monitoring program must be developed and be implemented on commencement of rehabilitation identified in Table F1 (Rehabilitation Requirements) by a person nominated by the holder of this environmental authority possessing appropriate qualifications and experience in the field of mine site rehabilitation.

(F4-2) The holder of this environmental authority must conduct rehabilitation monitoring in accordance with the program developed in Condition (F4-1) 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.

(F4-3) Verification of rehabilitation success is to be carried for each domain. Monitoring must be carried out at a minimum sampling intensity for sufficient replication to occur that enables statistical analysis of results at an acceptable power.

Infrastructure

(F5-1) 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 in writing by the post mining land owner / holder.

NOTE: This is not applicable where the landowner/holder is also the environmental authority holder.

Subsidence

(F6-1) The environmental authority holder must maintain and implement a subsidence monitoring program.

(F6-2) The subsidence monitoring program must include at least the following:

(a) description of the areas at greatest subsidence risk;
(b) monitoring program to detect any failures or subsidence in or adjacent to the pit;
(c) monitoring program to detect any failures or subsidence in or adjacent to the waste rock stockpiles; and
(d) monitoring of surface infrastructure to detect structural damage.

(F6-3) The total extent of the pit and associated subsidence must not exceed 264 hectares as predicted by modelling included in “Ernest Henry Mine – Evolution Ltd Feasibility Study Caveability and Surface Subsidence Mid-Year Mine Plan 2024 prepared for Evolution Mining by Itasca Australia 2025”.

END OF CONDITIONS FOR SCHEDULE F

Schedule G - Community

Complaint response

(G1-1) All complaints received must be recorded including details of complainant, reasons for the complaint, investigations undertaken, conclusions formed and actions taken. This information must be made available for inspection by the administering authority on request.

Notification to Stakeholders

(G2-1) The Environmental Authority holder must make all reasonable efforts to notify any potentially impacted stakeholder (including but not limited to adjoining and neighbouring landholders) by telephone or email as soon as reasonably possible after becoming aware of any emergency or incident that has the potential to cause serious or material environmental harm or breaches any condition of this environmental authority concerning releases of contaminants to the environment.

(G2-2) The notification of condition (G2-1) must include the following:

(a) the location of the release;
(b) the date and time of the release;
(c) an estimated quantity and the type of any substances involved in the incident; and
(d) a description of the nature and potential effects of the incident including environmental harm caused, threatened or suspected to be caused by the incident.

(G2-3) The Environmental Authority holder must establish, promote and maintain easily accessible lines of communication with adjoining and neighbouring landholders to ensure that potential impacts are identified and managed.

END OF CONDITIONS FOR SCHEDULE G

Schedule H - Dams

Assessment of consequence category

(H1) The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* at the following times:

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

(H2) A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.

(H3) Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635).*

Design and construction of a regulated structure

(H4) Conditions (H5) to (H9) inclusive do not apply to existing structures.

(H5) All regulated structures 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 Consequence Categories and Hydraulic Performance of Structures (EM635*).

(H6) Construction of a regulated structure is prohibited unless the holder has submitted a consequence category assessment report and certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.

(H7) Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*, and must be recorded in the Regulated Dams/Levees register.

(H8) Regulated structures must:

(a) be designed and constructed in accordance with and conform to the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635*);
(b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:

i) floodwaters from entering the regulated dam from any watercourse or drainage line; and

ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.

(H9) Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:

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

Operation of a regulated structure

(H10) Operation of a regulated structure, except for an existing structure, is prohibited unless:

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

i) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition (H9), and

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

iii) certification of those 'as constructed drawings and specifications' in accordance with condition (H9), and

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

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

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

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

(H11) For existing structures that are regulated structures:

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

(H12) Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.

Mandatory reporting level

(H13) Conditions (H14) to (H17) inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.

(H14) 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.

(H15) The holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.

(H16) The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.

(H17) The holder must record any changes to the MRL in the Register of Regulated Structures.

Design storage allowance

(H18) The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.

(H19) By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).

(H20) The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.

(H21) The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.

Annual inspection report

(H22) Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

(H23) At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.

(H24) The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635).*

(H25) The holder must:

(a) Within 20 business days of receipt of the annual inspection report, provide to the administering authority:

i) The recommendations section of the annual inspection report; and

ii) If applicable, any actions being taken in response to those recommendations; and

(b) If, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days of receipt of the request.

Transfer arrangements

(H26) The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.

Decommissioning and rehabilitation

(H27) Dams must not be abandoned but be either:

(a) decommissioned and rehabilitated to achieve compliance with condition (H28); or
(b) be left in-situ for a beneficial use(s) provided that:

i) it no longer contains contaminants that will migrate into the environment; and

ii) it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and

iii) the administering authority, the holder of the environmental authority and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally

relevant activity(ies).

(H28) After decommissioning, all significantly disturbed land caused by the carrying out of the environmentally relevant activity(ies) must be rehabilitated to meet the following final acceptance criteria:

(a) the landform is safe for humans and fauna;
(b) the landform is stable with no subsidence or erosion gullies for at least three (3) years;
(c) any contaminated land (e.g. contaminated soils) is remediated and rehabilitated;
(d) not allowing for acid mine drainage; or
(e) there is no ongoing contamination to waters (including groundwater);
(f) rehabilitation is undertaken in a manner such that any actual or potential acid sulphate soils on the area of significant disturbance are treated to prevent or minimise environmental harm in accordance with the Instructions for the treatment and management of acid sulphate soils (2001);
(g) all significantly disturbed land is reinstated to the pre-disturbed soil suitability class;
(h) for land that is not being cultivated by the landholder:

i) groundcover, that is not a declared pest species is established and self-sustaining

ii) vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining, and

iii) the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the activities.

(i) for land that is to be cultivated by the landholder, cover crop is revegetated, unless the landholder will be preparing the site for cropping within 3 months of activities being completed.

Register of Regulated Dams

(H29) A Register of Regulated Dams must be established and maintained by the holder for each regulated dam.

(H30) The holder must provisionally enter the required information in the Register of Regulated Dams when a design plan for a regulated dam is submitted to the administering authority.

(H31) The holder must make a final entry of the required information in the Register of Regulated Dams once compliance with condition (H10) and (H11) has been achieved.

(H32) The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.

(H33) All entries in the Register of Regulated Dams must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.

(H34) The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Dams, in the electronic format required by the administering authority.

Table H1. Location of Regulated Structures.

Name of dam containing hazardous waste	Easting GDA 94 (Zone 54)	Northing GDA 94 (Zone 54)
Tailings dam including Evaporation dam	470841	7737176
	470841	7741176
	474123	7741176
	474123	7739176
	473123	7739176
	473123	7737176

Table H2. Basic Details of Regulated Dams.

Name of Regulated Dam	Max. surface area of dam (ha)	Max. volume of dam (m3)	Max. depth of dam at terminal spillway (m)	Terminal spillway Level (mAHD)	Use of Dam
Tailings dam including Evaporation dam (TED)	781	186,000,000	58.7	212.542	The permanent containment of tailings and potentially contaminated water from the production of copper/gold concentrate at the Ernest Henry Mine

Table H3. Hydraulic Performance of Regulated Dams.

Name of Regulated Dam	Spillway Capacity AEP	Design Storage Allowance AEP	Mandatory Reporting Level AEP
Tailings dam including Evaporation dam (TED)	1:1000	1:100 2 month wet season plus process inputs for the 2 month wet season	1:100 72 hour storm

END OF CONDITIONS FOR SCHEDULE H

Schedule I - 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 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.

“**appropriately qualified person”** means a person who has 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 or literature.

“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.

"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:

- exactly what has been assessed and the precise nature of that determination;
- the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- 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
- 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 authorised under Section 445 of the *Environmental Protection Act 1994*.

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

“benign waste rock” is waste rock that has been shown through appropriate and relevant geochemistry testing, to not produce acidic, saline or metalliferous drainage.

"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.

“EC” means Electrical Conductivity.

“EHM” means Ernest Henry Mining Pty Ltd.

"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.

“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.

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

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

"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.

"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.

“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—

- clay if mined for use for its ceramic properties, kaolin and bentonite;
- foundry sand;
- 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;
- limestone if mined for use for its chemical properties;
- marble;
- mineral oil or gas extracted or produced from shale or coal by in situ processes;
- peat;
- salt including brine;
- shale from which mineral oil may be extracted or produced;
- silica, including silica sand, if mined for use for its chemical properties;
- rock mined in block or slab form for building or monumental purposes;

but does not include—

- living matter;
- petroleum within the meaning of the *Petroleum Act 1923*;
- 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;
- water.

“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 of operations or plan otherwise required in legislation.

“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.

"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.

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

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

  However, the following areas are not included:
    - areas off lease (e.g., roads or tracks which provide access to the mining lease);
    - areas previously significantly disturbed which have achieved the rehabilitation outcomes;

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

"spillway" means 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.

"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:

- knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and
- at least a total of five years of suitable experience and demonstrated expertise in at least four of the following areas:
    i. investigation, design or construction of dams;
    ii. operation and maintenance of dams;
    iii. geomechanics with particular emphasis stability, geology and geochemistry;
    iv. hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology;
    v. hydraulics with particular reference to sediment transport and deposition, erosion control, beach processes;
    vi. hydrogeology with particular reference to seepage, groundwater,
    vii. solute transport processes and monitoring thereof; or
    viii. 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.

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

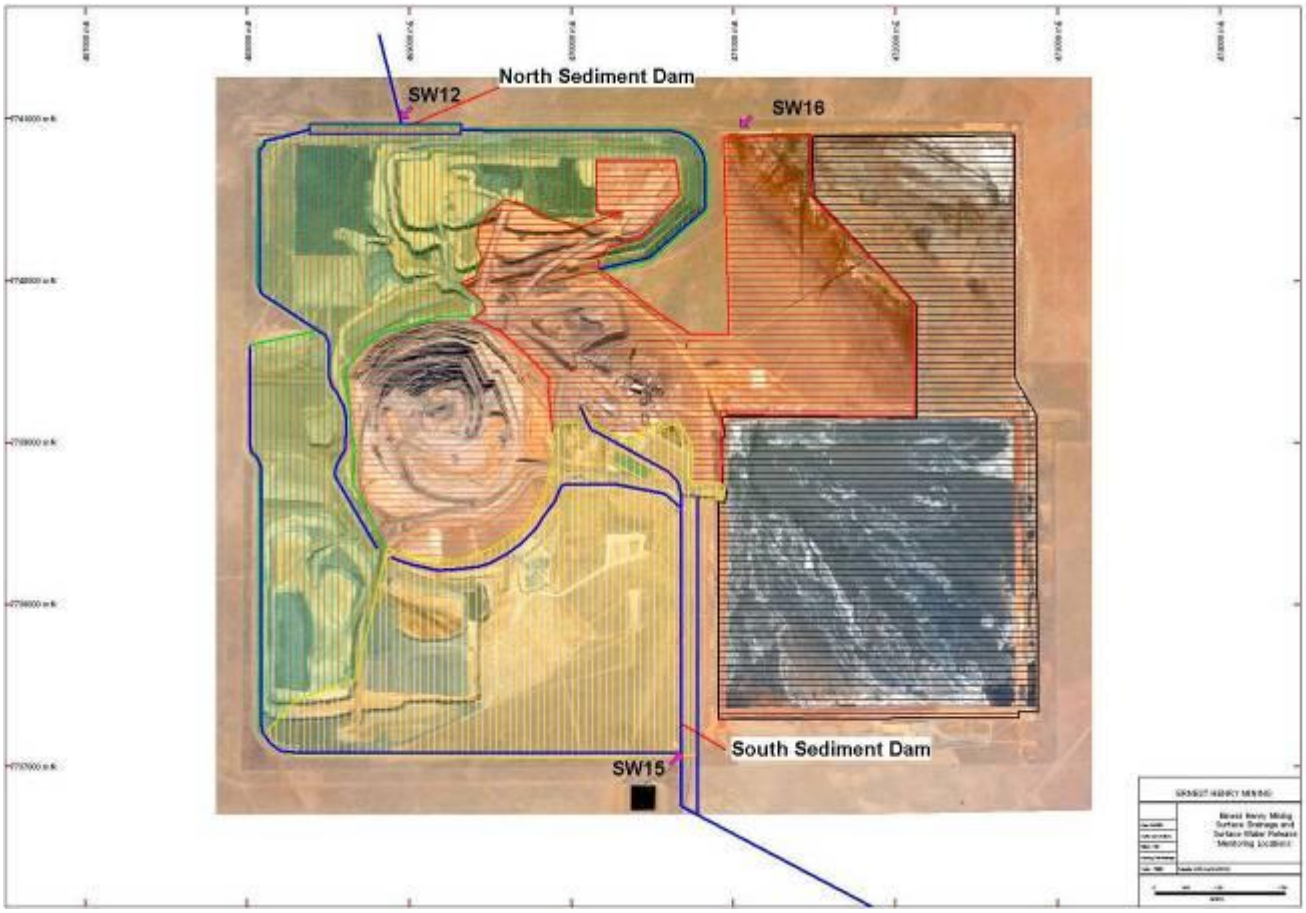
"trivial harm" means environmental harm which is not material or serious environmental harm and will not cause actual or potential loss or damage to property of an amount of, or amounts totalling more than $5,000.

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

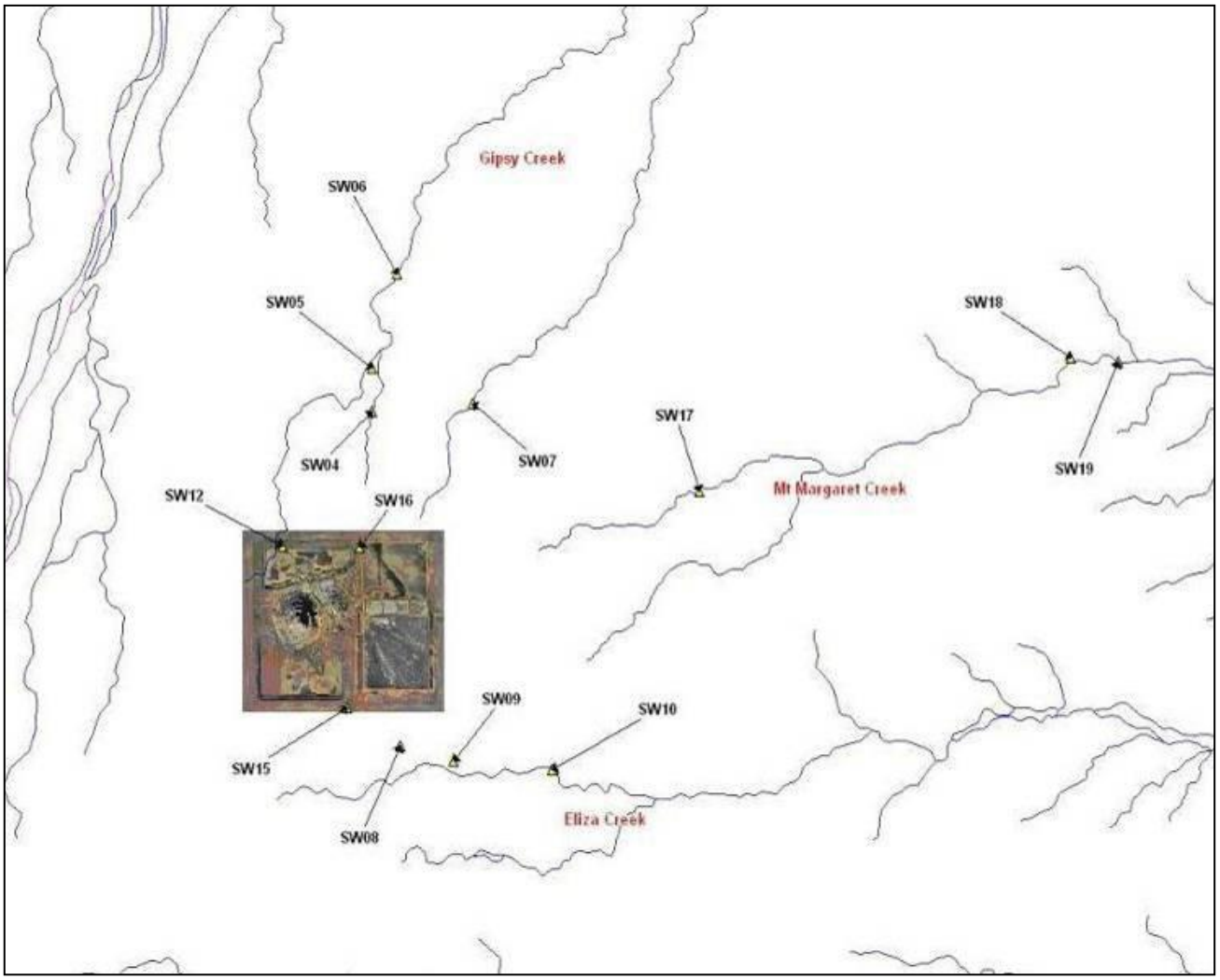
"waters" includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea) or any part-thereof.

END OF SCHEDULE I – DEFINITIONS

Schedule J – Maps

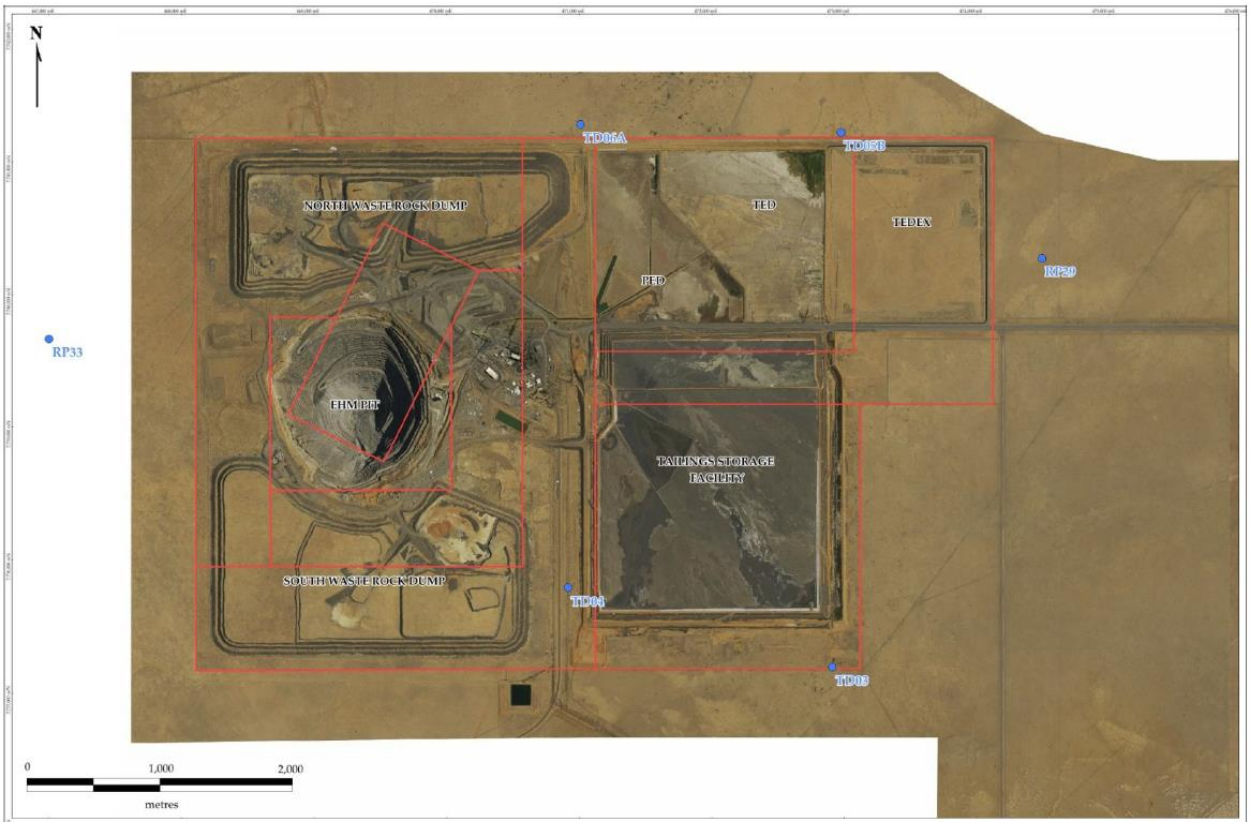


Map 1: Process water and storm water release points.

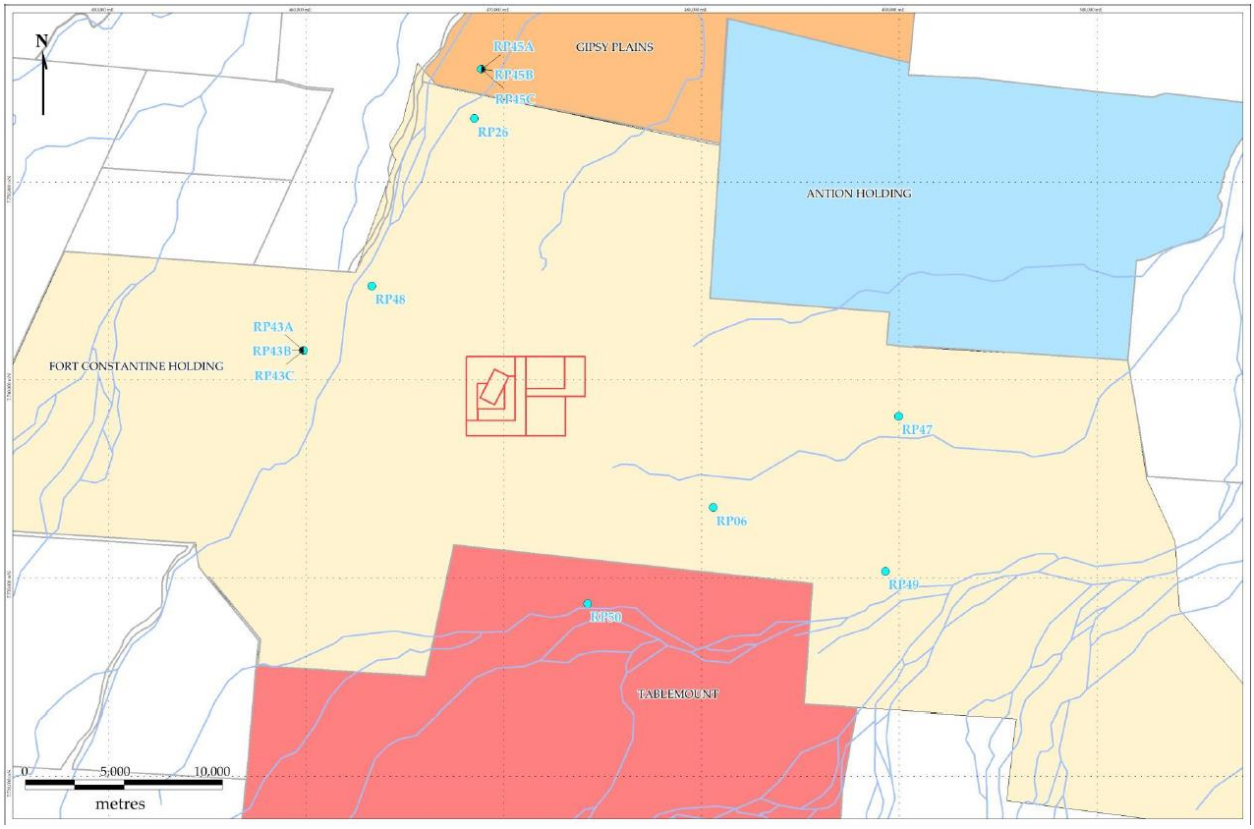


Map 2: Receiving Environment surface water quality locations.

Map 3: Permanent Sewage Treatment Plant Location.



Map 4: Groundwater Monitoring Bore Locations – Compliance Bores.



Map 5: Groundwater Monitoring Bore Locations – Drawdown Bores.

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Map 6: Production Evaporation Dam and Tailings Evaporation Dam Surface Water Sampling Points.

Map 7: Contractor demountable toilet block- irrigation area.

END OF SCHEDULE J – MAPS

END OF ENVIRONMENTAL AUTHORITY