

Permit¹

Environmental Protection Act 1994

Environmental authority EPML00557513

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

Permit¹ number: EPML00557513

Environmental Authority takes effect from 8 March 2016.

The anniversary date of this environmental authority is 14 May each year. An annual return and the payment of the annual fee will be due each year on this day.

Environmental authority holder(s)

Name	Registered address
Mt Moss Mining Pty Ltd	22 Ross Street SOUTH TOWNSVILLE QLD 4810

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
8(1)(c) more than 500m ³ chemicals of Class C1 or C2 combustible liquids under AS1940 or Dangerous goods class 3. 31(2)(b) processing, in a year, the following quantities of mineral products, other than coke – more than 100000t 33 crushing, grinding, milling or screening more than 500 t of material in a year 56 receiving and storing regulated waste 63(1)(b)(i) Sewage Treatment Works – operating sewerage treatment works, other than no release works, with a total daily peak design capacity of more than 100 but no more than 1500 EP if treated effluent is	ML10171 ML10359 MLA10363

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation



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discharge from the works to an infiltration trench through an irrigation scheme Schedule 2A 9 a mining activity involving drilling, costeaning, pitting or carrying out geological surveys causing significant disturbance 10 investigating the potential development of a mineral resource by large bulk sampling or constructing an exploratory shaft, adit or open pit 14 mining iron ore	
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Additional information for applicants

Environmentally relevant activities

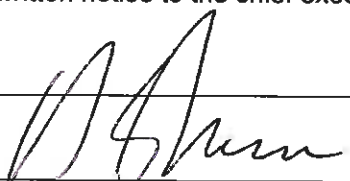
The description of any environmentally relevant activity (ERA) for which an environmental authority is issued is a restatement of the ERA as defined by legislation at the time the approval is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an environmental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

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

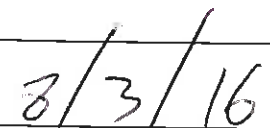
Contaminated land

It is a requirement of the EP Act that if an owner or occupier of land becomes aware a notifiable activity (as defined in Schedule 3 and Schedule 4) is being carried out on the land, or that the land has been, or is being, contaminated by a hazardous contaminant, the owner or occupier must, within 22 business days after becoming so aware, give written notice to the chief executive.



Signature

Dean Sharpe
Delegate of the administering authority
Environmental Protection Act 1994



Date

Enquiries:
PO Box 7230
CAIRNS QLD 4870
Phone: (07) 4222 5334
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Obligations under the *Environmental Protection Act 1994*

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

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

Conditions of environmental authority

Schedule A – General

- (A1-1) This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.
- (A1-2) In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with Schedule J—Map 1 (Project Infrastructure Layout—Mine Area)

Financial Assurance

- (A2-1) Provide a financial assurance in the amount and form required by the administering authority prior to the commencement of activities proposed under this environmental authority.
- NOTE: The calculation of financial assurance for condition (A2-1) must be in accordance with Guideline 17 and may include a performance discount. The amount is defined as the maximum total rehabilitation cost for complete rehabilitation of all disturbed areas, which may vary on an annual basis due to progressive rehabilitation. The amount required for the financial assurance must be the highest Total Rehabilitation Cost calculated for any year of the Plan of Operations and calculated using the formula: (Financial Assurance = Highest Total Annual Rehabilitation Cost x Percentage Required)
- (A2-2) The financial assurance is to remain in force until the administering authority is satisfied that no claim on the assurance is likely.
- NOTE: Where progressive rehabilitation is completed and acceptable to the administering authority, progressive reductions to the amount of financial assurance will be applicable where rehabilitation has been completed in accordance with the acceptance criteria defined within this environmental authority.

Maintenance of Measures, Plant and Equipment

- (A3-1) The environmental authority holder must ensure:
- (a) That all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed; and
 - (b) That such measures, plant and equipment are maintained in a proper condition; and
 - (c) That such measures, plant and equipment are operated in a proper manner.

Monitoring

- (A4-1) Record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.
- (A4-2) Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.

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 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 150 micrograms per cubic metre over a 24 hour averaging time, at a sensitive place downwind of the operational land, when monitored in accordance with:
 - 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
 - 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: You must propose which monitoring method is appropriate in accordance with condition (B1-3) (a) or (b) or both.
- (B1-4) If monitoring indicates exceedence 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.

Odour nuisance

- (B2-1) In the event of a complaint made to the administering authority (which is neither frivolous or vexatious) about odour generated on the licensed place, and the odour is considered by the administering authority to be an unreasonable release, the holder of this environmental authority must take action to mitigate the odour to ensure that it is no longer an unreasonable release.

- (B2-2) Subject to condition (B2-3), the release of noxious or offensive odours or any other noxious or offensive airborne contaminants resulting from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.
- (B2-3) 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 not based on mistaken belief in the opinion of the authorised officer) of the 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.
- (B2-4) If monitoring indicates Condition (B2-2) is not being met then the environmental authority holder must:
- (a) Address the complaint including the use of appropriate dispute resolution if required; or
 - (b) Immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance.

END OF CONDITIONS FOR SCHEDULE B

Schedule C – Water

Release to waters

- (C1-1) Receiving waters affected by the release of process water or storm water contaminated by the mining activities or both must be monitored at the locations and frequencies defined in Schedule C - Table 1 and Schedule J – Map 2, and comply with the contaminant limits defined in Schedule C - Table 3.
- (C1-2) If receiving waters at any site defined schedule C – Table 1, exceed any of the contaminant trigger levels stated in Schedule C - Table 2, the environmental authority holder must:
- (a) complete an investigation in accordance with the ANZECC (2000) methodology, into the potential for environmental harm;
 - (b) provide a written report to the administering authority within 3 months of the date of the original exceedence, outlining:
 - (i) details of the investigations carried out; and
 - (ii) actions taken to prevent environmental harm.

Schedule C - Table 1 (Receiving water monitoring locations and frequency)

Site Code	Easting (GDA 94)	Northing (GDA94)	Monitoring frequency
<u>Reference Sites</u>			<u>Dry Season Monitoring*</u> : Monthly when surface water is present <u>Wet season monitoring*</u> : Daily for the first seven days when off site discharge commences, then weekly while surface water is discharging from site.
SW3	380104	7888640	
SW11	385091	7884915	
SW14	375994	7891912	
<u>Potentially Impacted sites</u>			<u>Dry season monitoring*</u> : Monthly when water is present <u>Wet Season monitoring*</u> : Daily for seven days when flow commences then weekly while surface water is present
SW1	378985	7889450	
SW2	378798	7888864	
SW4	380152	7888442	
SW5	378431	7888498	
SW6	377686	7888734	
SW7	378106	7888280	
SW8	378817	7887860	
SW9	380230	7888010	
SW10	380228	7887906	
SW12	375770	7883184	
SW13	376146	7891574	
SW15	373616	7889852	
SW16	373339	7888720	

NOTE: This does not apply to dams containing hazardous waste.

(1) For the determination of reference site percentiles and monitoring of receiving waters.

* Wet season (November to April) Dry season (May to October)

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Schedule C - Table 2 (Receiving water trigger levels)

PARAMETER	UNITS	LIMIT	LIMIT TYPE
pH		20 th percentile ¹ of reference sites ² or 6 ³ , whichever is lower 80 th percentile ¹ of reference sites ² or 7.5 ³ , whichever is higher	mean ⁴ mean ⁴
EC	µS/cm	80 th percentile ¹ of reference sites ² or 250 ³ , whichever is higher	mean ⁴
Arsenic	µg/L	95 th percentile ¹ of reference sites ² or (AsIII) - 24 ³ , (AsV) - 13 ³ , whichever is higher	80 th percentile ⁴
Copper	µg/L	95 th percentile ¹ of reference sites ² or 1.4 ³ , whichever is higher	80 th percentile ⁴
Cadmium	µg/L	95 th percentile ¹ of reference sites ² or 0.2 ³ , whichever is higher	80 th percentile ⁴
Lead	µg/L	95 th percentile ¹ of reference sites ² or 3.4 ³ , whichever is higher	80 th percentile ⁴
Manganese	µg/L	95 th percentile ¹ of reference sites ² or 1600 ³ , whichever is higher	80 th percentile ⁴
Zinc	µg/L	95 th percentile ¹ of reference sites ² or 8.0 ³ , whichever is higher	80 th percentile ⁴
Sulfate	µg/L	80 th percentile ¹ of reference sites ²	mean ⁴
Fluoride	µg/L	80 th percentile ¹ of reference sites ²	mean ⁴

¹ Trigger levels based on percentiles are derived using ANZECC (2000) methodology and are based on the reference sites defined in Schedule C Table 1.

² Reference sites as defined

³ ANZECC (2000) trigger levels for aquatic ecosystems of slightly disturbed tropical Australian upland rivers.(95% level of protection)

⁴ The mean and the 95th percentile must be determined based on a minimum of three and no more than ten (10) consecutive samples.

Note: This does not apply to dams containing hazardous waste

(C1-3) The receiving waters as defined schedule C – Table 1 must not exceed any of the contaminant limits defined in Schedule C -Table 3.

Schedule C - Table 3 (Receiving water contaminant Limits)

PARAMETER	UNITS	LIMIT	LIMIT TYPE
pH		20 th percentile ¹ of reference sites ² or 6 ³ , whichever is lower 80 th percentile ¹ of reference sites ² or 7.5 ³ , whichever is higher	mean ⁴ mean ⁴
Electrical Conductivity	µS/cm	2 x 80 th percentile ¹ of reference sites ²	Maximum
Arsenic	µg/L	2 x 80 th percentile ¹ of reference sites ²	Maximum

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PARAMETER	UNITS	LIMIT	LIMIT TYPE
Copper	µg/L	2 x 80 th percentile ¹ of reference sites ²	Maximum
Cadmium	µg/L	2 x 80 th percentile ¹ of reference sites ²	Maximum
Lead	µg/L	2 x 80 th percentile ¹ of reference sites ²	Maximum
Manganese	µg/L	2 x 80 th percentile ¹ of reference sites ²	Maximum
Zinc	µg/L	2 x 80 th percentile ¹ of reference sites ²	Maximum
Sulfate	µg/L	2 x 80 th percentile ¹ of reference sites ²	Maximum
Fluoride	µg/L	2 x 80 th percentile ¹ of reference sites ²	Maximum

Note: This does not apply to dams containing hazardous waste

¹ Trigger levels based on percentiles are derived using ANZECC (2000) methodology and are based on the reference sites defined in Schedule C Table 1.

² Reference sites as defined in Schedule C Table 1.

³ ANZECC (2000) trigger levels for aquatic ecosystems of slightly disturbed tropical Australian upland rivers.(95% level of protection)

⁴ The mean and the 95th percentile must be determined based on a minimum of three and no more than ten (10) consecutive samples.

Note: This does not apply to dams containing hazardous waste

- (C1-4) Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities, except as permitted under conditions of this environmental authority.

Dams containing Hazardous Waste

- (C2-1) In the event that the water quality within any dam containing hazardous waste is likely to cause harm to fauna accessing the dam, implement measures to prevent access by all livestock and minimise access by fauna to the dam.

Stream sediment contaminant levels

- (C3-1) All reasonable and practicable erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment.
- (C3-2) The bed of the receiving waters, affected by the release of process water and storm water contaminated by the mining and processing activities must be monitored at the locations and frequencies defined in Schedule C - Table 4 and Schedule J – Map.

Schedule C - Table 4 (Receiving stream sediment monitoring locations and frequency)

Site Code	Easting (GDA 94)	Northing (GDA94)	Monitoring frequency
<u>Reference Sites</u>			Twice yearly: March and September
SW3	380104	7888640	
SW11	385091	7884915	
SW14	375994	7891912	
<u>Potentially Affected sites</u>			
SW1	378985	7889450	
SW2	378798	7888864	

Site Code	Easting (GDA 94)	Northing (GDA94)	Monitoring frequency
SW4	380152	7888442	
SW5	378431	7888498	
SW6	377686	7888734	
SW7	378106	7888280	
SW8	378817	7887860	
SW9	380230	7888010	
SW10	380228	7887906	
SW12	375770	7883184	
SW13	376146	7891574	
SW15	373616	7889852	
SW16	373339	7888720	

- (C3-3) Subject to Condition (C3-2), if the stream sediment contaminant trigger levels (whichever is higher) defined in Schedule C - Table 5 are exceeded then the environmental authority holder must complete an investigation into the potential for environmental harm and notify the administering authority within 3 months of receiving the analysis results.

Schedule C - Table 5 (Receiving stream sediment contaminant trigger levels)

Parameter	Units	Trigger Levels	ANZECC Trigger Values
Antimony	mg/kg	2 x mean of reference sites	2
Arsenic	mg/kg	2 x mean of reference sites	20
Cadmium	mg/kg	2 x mean of reference sites	1.5
Copper	mg/kg	2 x mean of reference sites	65
Lead	mg/kg	2 x mean of reference sites	50
Mercury	mg/kg	2 x mean of reference sites	0.15
Nickel	mg/kg	2 x mean of reference sites	21
Zinc	mg/kg	2 x mean of reference sites	200

* To be advised following sampling of the sites in January-April 2009

- (C3-4) Subject to Condition (C3-2), stream sediment contaminant limits (whichever is higher) must not exceed the contaminant limits defined in Schedule C -Table 6.

Schedule C - Table 6 (Receiving stream sediment contaminant limits)

Parameter	Units	Contaminant Limits	ANZECC Limits
Antimony	mg/kg	2x 80 th %ile of reference sites	25
Arsenic	mg/kg	2x 80 th %ile of reference sites	70
Cadmium	mg/kg	2x 80 th %ile of reference sites	10
Copper	mg/kg	2x 80 th %ile of reference sites	270
Lead	mg/kg	2x 80 th %ile of reference sites	220
Mercury	mg/kg	2x 80 th %ile of reference sites	1
Nickel	mg/kg	2x 80 th %ile of reference sites	52
Zinc	mg/kg	2x 80 th %ile of reference sites	410

- (C3-5) All stream sediment sampling must be undertaken in accordance with AS 5667.12 Guidance on Sampling of Bottom Sediments 1999.

- (C3-6) In the event of a discharge from release points, the quantity of contaminants released to

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the receiving environment must be determined using a V-notch weir or a method with equivalent accuracy.

Sewage effluent

- (C4-1) All effluent released from the sewage treatment plants must be monitored at the frequency and for the parameters specified in Schedule C – Table 7.

Schedule C - Table 7 (Sewage effluent quality targets for dust suppression and irrigation)

Quality characteristics	Release limit	Units	Limit type	Monitoring frequency
5- day Biological oxygen demand (BOD ¹)	20	mg/l	Maximum	Monthly
pH between	6.0 8.5	pH units	Range	Monthly
Faecal coliforms	1000	Colonies per 100 ml	Maximum	Monthly

¹ Based on the average of a minimum of five samples collected.

* Release limits sourced from Queensland Water Recycling Guidelines December 2005 Table 6.2b for Class C.

- (C4-2) Sewage effluent used for dust suppression or irrigation must not exceed sewage effluent release limits defined in Schedule C – Table 7.
- (C4-3) Sewage effluent used for dust suppression or irrigation must not cause spray drift or over spray to any sensitive place.
- (C4-4) Subject to conditions (C4-1) to (C4-3) inclusive, sewage effluent from sewage treatment facilities must be reused or evaporated and must not be directly released from the sewage treatment plant to any waterway or drainage line.

Environmental Impact Monitoring

- (C5-1) The holder of the environmental authority must conduct an Environmental Impact Monitoring Program to assess aquatic ecology annually during the mid-late wet season.
- (C5-2) The Environmental Impact Monitoring Program must include:
1. physical, chemical and biological assessment of water and habitat quality; and
 2. sufficient spatial and temporal replication (including controls) to enable statistically valid conclusions to be made concerning any impacts of the licensed activity on water quality.
- (C5-3) Prepare an annual environmental monitoring report that provides details of the water monitoring program and waste rock and tailings sediment geochemical program by 31 October each year.
- (C5-4) Prepare and submit a water monitoring report by 30 June 2009 to the administering authority addressing back ground water data for the site with proposed contaminate limits.

Groundwater

- (C6-1) Groundwater, affected by the mining activities must be monitored at the locations and frequencies defined in Schedule C - Table 8 and Schedule J – Map 3.

Schedule C - Table 8 (Groundwater monitoring locations and frequency)

Monitoring points	Latitude GDA94	Longitude GDA94	Surface RL (m)	Monitoring frequency
MB1	7888053	377384	395	Quarterly
MB2	7888917	378971	384	Quarterly
MB3	7889454	379034	387	Quarterly
MB5	7888540	377746	398.5	Quarterly
MB7	7888422	378283	399.5	Quarterly
MB8	7888879	377666	407.2	Quarterly

- (C6-2) Subject to Condition (C6-1), if the groundwater contaminant trigger levels defined in Schedule C - Table 9 are exceeded then the environmental authority holder must complete an investigation into the potential for environmental harm and notify the administering authority within 3 months of receiving the analysis results.

Schedule C - Table 9 (Groundwater contaminant trigger levels)

Parameter	Units	Contaminant Limits	Limit Type
pH	pH units	Between 6 ¹ and 7.5 ¹	mean ²
Electrical Conductivity	µS/cm	250 ¹ or 1.2 x maximum of reference sites, whichever is higher	mean ²
Sulphate	mg/L	43 ¹ or 1.2 x maximum of reference sites, whichever is higher	mean ²
Arsenic	µg/L	24 ¹ or 1.2 x maximum of reference sites, whichever is higher	95 percentile ²
Cadmium	µg/L	0.2 ¹ or 1.2 x maximum of reference sites, whichever is higher	95 percentile ²
Copper	µg/L	1.4 ¹ or 1.2 x maximum of reference sites, whichever is higher	95 percentile ²
Lead	µg/L	3.4 ¹ or 1.2 x maximum of reference sites, whichever is higher	95 percentile ²
Zinc	µg/L	8 ¹ or 1.2 x maximum of reference sites, whichever is higher	95 percentile ²

¹ ANZECC (2000) trigger levels for aquatic ecosystems of slightly – moderately disturbed systems level of protection 95% - tropical Australian upland rivers.

² The mean and the 95th percentile must be determined based on a minimum of three and a maximum of ten (10) consecutive samples.

NOTE: Ground water quality contaminant trigger levels are based upon total contaminant concentrations.

- (C6-3) Subject to Condition (C6-1), groundwater contaminant limits must not exceed the contaminant limits (whichever is higher) defined in Schedule C – Table 10.

Schedule C - Table 10 (Groundwater contaminant limits)

Parameter	Units	Contaminant Limits	Limit Type
pH	pH units	6 ²	mean
		7.5 ²	mean
Electrical Conductivity	µS/cm	250 ² Or 2 x 80 th percentile of reference sites, whichever is higher	maximum
Sulphate	mg/L	2 x 80 th percentile of reference sites	maximum
Arsenic	mg/L	0.5 ² or 2 x 80 th percentile of reference sites, whichever is higher	maximum
Cadmium	mg/L	0.01 ² or 2 x 80 th percentile of reference sites, whichever is higher	maximum
Copper	mg/L	1 ² or 2 x 80 th percentile of reference sites, whichever is higher	maximum
Lead	mg/L	0.1 ² or 2 x 80 th percentile of reference sites, whichever is higher	maximum
Zinc	mg/L	20 ² or 2 x 80 th percentile of reference sites, whichever is higher	maximum

¹ Trigger levels based on the 80th or 20th percentile are derived using ANZECC (2000) methodology and are based on data collected from all sites prior to mining.

² ANZECC (2000) trigger levels for livestock drinking water.

- (C6-4) Subject to Condition (C6-1), groundwater levels must be monitored and groundwater level fluctuations in excess of 2m per year, not resulting from the pumping of licensed bores, must be notified within 14 days to the administering authority following completion of monitoring.
- (C6-5) The method of sampling of groundwater must comply with that set out in the latest edition of the Environmental Protection Agency's Water Quality Sampling Manual.

Leakage Collection

- (C7-1) A leakage detection and collection system is to be provided that is capable of collecting all leakage from the designated concentrate ponds, barren and pregnant ponds and vat leach ponds.

END OF CONDITIONS FOR SCHEDULE C



Schedule D - Noise and Vibration

Emission of Noise

(D1-1) Subject to Conditions (D1-2) and (D1-3) noise from the mining and processing activities must not cause an environmental nuisance at any sensitive place

(D1-2) When requested by the administering authority, noise 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 not 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.

(D1-3) If the environmental authority holder can provide evidence through monitoring that the limits defined in Schedule D – Table 1 and 2 inclusive, are not being exceeded then the holder is not in breach of Condition (D1-1). Monitoring must include:

- i. LA, max adj, T; and
- ii. The level and frequency of occurrence of impulsive or tonal noise; and
- iii. Location, date and time of recording.

(D1-4) If monitoring indicates exceedence of the limits in Schedule D – Table 1 and 2, then the environmental authority holder must:

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

(D1-5) The method of measurement and reporting of noise levels must comply with the latest edition of the EPA Noise Measurement Manual.

Schedule D - Table 1 Noise Limits

Noise Level dB(A) measured as	Noise Measured at a "Noise Sensitive Place"					
	Monday to Saturday			Sundays and Public Holidays		
	7am - 6pm	6pm -10pm	10pm - 7am	9am - 6pm	6pm -10pm	10pm - 9am
LA10, ADJ, 10 mins	BG+5	BG+5	BG+3	BG+5	BG+5	BG+0
LA1, ADJ, 10 mins	BG+10	BG+10	BG+5	BG+10	BG+10	BG+5

Schedule D - Table 2 Airblast Overpressure Level

Location	Mon – Frid: 7am – 6pm
	Sat-Sun: 9am – 6pm
Zigzag homestead	Airblast overpressure level of 115 Db (linear peak) for 9 out of 10 consecutive blasts initiated and not greater than 120 Db (linear peak) at any time

Note: The method of measurement and reporting of vibration levels must comply with the latest edition of the Environmental Protection Agency's vibration and air blast overpressure monitoring guideline.

Vibration nuisance

(D2-1) Subject to Conditions (D2-2) and (D2-3) vibration from the mining and processing activities must not cause an environmental nuisance at any sensitive place

(D2-2) When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious not 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.

(D2-3) If the environmental authority holder can provide evidence through monitoring that the limits defined in Schedule D – Table 3 inclusive, are not being exceeded then the holder is not in breach of Condition (D2-1). Monitoring must include:

- (a) Location of the blasts within the mining area (including the bench level); and
- (b) Atmospheric conditions including temperature, RH and wind speed and direction; and
- (c) Location, date and time of recording.

(D2-4) If monitoring indicates exceedence of the limits in Schedule D – Table 3, then the environmental authority holder must:

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

Schedule D - Table 3 Vibration limits

Location	Mon – Frid: 7am – 6pm
	Sat-Sun: 9am – 6pm
Zigzag homestead	25mm/s peak particle velocity for vibrations of more than 35Hz 10mm/s peak particle velocity for vibrations equal to or less than 35Hz

Note: The method of measurement and reporting of vibration levels must comply with the latest edition of the Environmental Protection Agency's vibration and air blast overpressure monitoring guideline.

END OF CONDITIONS FOR SCHEDULE D



Schedule E - Waste

General

- (E1-1) The holder of this environmental authority must not:
1. burn waste or allow waste to be burnt at or on any licensed place covered by this environmental authority unless otherwise approved by this environmental authority; nor
 2. remove waste from any licensed place covered by this environmental authority and burn such waste elsewhere except in accordance with the requirements of the *Environmental Protection Act 1994*.

Off Site Movement of Regulated Wastes

- (E2-1) Where regulated waste is removed from the licensed place (other than by a release as permitted under another schedule of this environmental authority), the holder of this environmental authority must ensure that:
- (a) the removal and transport of such wastes, where it constitutes an environmentally relevant activity under the *Environmental Protection Regulation 1998*, is carried out by a person licensed for carrying out this activity under the *Environmental Protection Act 1994*; and
 - (b) records are kept of the following:
 - (i) the date, quantity and type of waste removed; and
 - (ii) name of the regulated waste transporter that removed the waste; and
 - (iii) the intended treatment/disposal destination of the waste.

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

Notification of Improper Disposal of Regulated Waste

- (E3-1) If the holder of this environmental authority becomes aware that a person has removed regulated waste from the licensed place and disposed of the regulated waste in a manner which is not authorised by this environmental authority or improper or unlawful, then the holder of this environmental authority must, as soon as practicable, notify the administering authority of all relevant facts, matters and circumstances known concerning the disposal.
- (E3-2) Regulated waste generated by maintenance of plant and equipment and absorbent materials used to clean up spills must
- (a) only be disposed off at a facility whose operator is permitted to accept such waste in accordance with the requirements of the *Environmental Protection Act 1994*; and / or
 - (b) be treated / remediated on site.

Other Wastes

- (E4-1) The only wastes that may be disposed of on site are those authorised under this Environmental Authority.



General waste disposal

- (E5-1) General waste (less than 50 tonnes per year) may be disposed of in a trench facility constructed within the soil profile located on ML10171 and must:
- (a) take effective measures to ensure that all wastes accepted for disposal at the licensed place are not disposed of:
 - (i) beyond any active waste disposal trench; and
 - (ii) into waters or leachate collected at the base of any active waste disposal trench
 - (b) ensure that wastes deposited in the active waste disposal trench are consolidated, compacted and covered with a layer of inert earthen material or other non-combustible inert material as often as is necessary to effectively minimise the quantity of wind blown litter, odour and fly nuisance as a result of exposure of putrescible waste.
 - (c) Provide relocatable litter screens or other methods of litter control at the active disposal trench in order to effectively capture paper or other wind blown litter generated by waste disposal activities.
 - (d) Conduct waste disposal operations in a nuisance free manner, particularly regarding fly breeding, mosquito breeding and rat harbourage and breeding.
 - (e) Operate and manage the active waste disposal trench to minimise the generation of leachate including a system of suitable diversion drains or embankments to divert surface waters away from any area where contact with wastes or contaminants may occur.
 - (f) Cap any completed waste disposal trench with low permeability material and compact it to effectively minimise infiltration of stormwater.
 - (g) Maintain a record of location of trenches used for waste disposal

Tailings Management

- (E6-1) Construction of the tailings storage facility must be in accordance with the following:
- (a) the design criteria and Water Management of the tailings dam; and
 - (b) all investigation and exploration drill holes in the area of the tailings storage facility must be backfilled with concrete to total depth of the hole.
- (E6-2) 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, lead, zinc, cadmium; and
 - (b) records must be kept of the tailings disposal to indicate relative locations and characteristics of tailings stored within the tailings storage facility; and
 - (c) 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.
- (E6-3) 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; and

(b) seepage management; and

(c) reactivity of tailings under various conditions.

- (E6-4) Research must be finalised no later than thirty six (36) months prior to the planned mine closure.

Disposal of Tyres

- (E7-1) The environmental authority holder may only dispose of scrap tyres resulting from the mining activities in spoil emplacements in waste rock dumps, provided tyres are placed as deep in the spoil as reasonably practicable.

END OF CONDITIONS FOR SCHEDULE E

Schedule F - Land

Rehabilitation landform criteria

(F1-1) All areas significantly disturbed by mining activities must be rehabilitated to a stable landform with a self-sustaining vegetation cover in accordance with Schedule F – Table 1 and 2.

(F1-2) Progressive rehabilitation must commence when areas become available.

(F1-3) Complete an investigation into rehabilitation of disturbed areas and submit a report to the administering authority proposing acceptance criteria to meet the outcomes in Schedule F – Table 1 and landform design criteria in Schedule F – Table 2 by 31 October 2008

(F1-4) The holder of the environmental authority must conduct a Rehabilitation Monitoring Program on a yearly basis (October each year) to enable statistically valid conclusions to be made concerning the performance of the rehabilitation program.

(F1-5) A post mine land use program must be prepared by October 2007 and included in subsequent Plan of Operations. This program must include the following:

- schematic representation of final land form inclusive of drainage features;
- slope designs;
- cover design;
- drainage design;
- erosion controls proposed on reformed land;
- description of monitoring program for analogue and rehabilitated areas;
- proposed revegetation criteria including:
 - species diversity, abundance and composition,
 - cover percentage, and
 - dry matter production.
- proposed revegetation methods including plant species selection, reprofiling, spreading soil, soil ameliorants, surface preparation and method of spreading; and
- materials balance including available top soil for all sites and low permeability encapsulation media for waste rock dump and tailings dam.

(F1-6) Rehabilitated areas must be revegetated to achieve species diversity, abundance and composition, cover within one (1) standard deviation of the mean of the requisite number of undisturbed analogue sites as per the Post Mine Land Use Program.

(F1-7) Topsoil and subsoils must be stripped ahead of mining to a depth determined from soil surveys to ensure that useable soil resources are preserved for rehabilitation.

(F1-8) When topsoil is stored in stockpiles it should be in a manner that ensures stability. Measures may include:

- vegetating stockpiles; and
- minimising the height of stockpiles; and
- re-using stockpiles as soon as possible.

(F1-9) The holder of this environmental authority must develop a Weed Management Program, which provides for at least the following functions:

- a description of declared weed species and the extent of any infestation on the lease areas;
- methods of containment of the identified weeds on the lease areas;

- steps to eradicate Class 1, 2 and 3 declared plants;
- control measures to ensure that all vehicle movements are controlled to prevent the spread of declared weeds; and
- strategies to prevent introduction of declared weeds to the mine site and surrounding areas.
-

(F1-10) The Weed Management Program must:

- comply with the Local Government Pest Management Plan; and
- be outlined in the Plan of Operations.

Residual void

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

1. Residual voids must not cause any serious environmental harm to land, surface waters or any groundwater aquifer, other than the environmental harm constituted by the void itself, and subject to any other condition within this environmental authority; and
2. Residual voids must comply with Schedule F – Table 3.

(F2-2) Complete an investigation into residual voids and submit a report to the administering authority proposing acceptance criteria to meet the outcomes in (F2-1) and landform design criteria in Schedule F – Table 3 by 31 October 2008.



Schedule F – Table 1 (Final Land Use and Rehabilitation Approval Schedule)

Item	Disturbance type									
	Residual Void	Tailings dam	Reject dump	Waste rock dumps	Infrastructure & Process Area	ROM	Roads & tracks	Exploration areas		
Tenure ID	ML 10171	ML 10171	ML 10171	ML 10171	ML 10171 ML 10363	ML 10171	ML 10171	ML 10171		
Projective surface area (ha)	10	7	5	41	12	6	6	2		
Map reference	Map 5	Map 5	Map 5	Map 5	Map 5	Map 5	Map 5	Map 5		
Post mine land use	Residual void	Limited grazing	Limited grazing	Limited grazing	Limited grazing	Limited grazing	Limited grazing	Limited grazing		
Post-mine land description	Void	Limited grazing land and natural habitat	Limited grazing land and natural habitat	Limited grazing land and natural habitat	Limited grazing land and natural habitat	Limited grazing land and natural habitat	Limited grazing land and natural habitat	Limited grazing land and natural habitat		
Post-mine land capability classification	VIII	VI	V	VI	IV	V	V	IV		
Cover range (%)		50-70	50-70	50-70	50-70	50-70	50-70	50-70		
Species		Native trees and exotic groundcover species	Native trees and exotic groundcover species	Native trees and exotic groundcover species	Native trees and exotic groundcover species	Native trees and exotic groundcover species	Native trees and exotic groundcover species	Native trees and exotic groundcover species		

Schedule F – Table 2 (Landform Design)

Disturbance Type	Slope Range (%)	Projective surface area (ha)
Residual Voids	60-70	10
Tailings dam top	2-5	5.5
Tailings dam wall	25-35	1.5
Rejects	2-5	5
Waste Rock dump top	2-5	25
Waste Rock dump wall	20-25	16
Infrastructure	2	3
ROM	2	6
Roads and tracks	2-15	6

Schedule F – Table 3 (Residual Void Design)

Void ID	Wall Competent Rock Max. Slope (%)	Wall Incompetent Rock Max. Slope (%)	Maximum Surface Area (ha)
Willet Knob	60	40	6
Mt Moss	60	40	4

Infrastructure

- (F3-1) 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 to in writing by the land owner / holder.

Mt Moss Waste Rock

- (F4-1) The management of waste rock disposal at Mt Moss must be in accordance with the following:
- waste rock must be progressively characterised during disposal for acid producing potential and the following metals: arsenic, copper, lead, zinc, cadmium;
 - where the acid producing potential of waste rock material has not been conclusively determined geochemical kinetic testing must be conducted to indicate oxidation rates, potential reaction products and effectiveness of control strategies;
 - records must be kept of the waste rock disposal to indicate relative locations and characteristic of waste rock stored within the waste rock dumps;
 - waste rock with acid producing potential must be selectively handled and placed within the waste rock dumps:
 - no closer than five (5) metres from the base;
 - no further than one (1) metre from the capping layer as defined in condition number (F18 (e));
 - no closer than ten (10) metres from any surface other than the base; and
 - the cell height must not exceed a height of fifteen (15) metres;
 - waste rock with acid producing potential must be capped in accordance with the following:

- a minimum compacted thickness of half a metre (0.5m); and
- a maximum hydraulic conductivity of 1×10^{-8} m/s; and
- the cap must extend at least ten (10) metres laterally beyond the toe of any waste rock with acid producing potential; and
- the surface of each layer of non acid forming encapsulation material waste rock must be compacted and graded away from potentially acid producing waste rock cells; and
- neutralising materials must be used for the drainage system of waste rock dumps, which has cells of rock with acid producing potential; and
- all drainage from cells of rock with acid producing potential must be intercepted and directed to the void; and
- a protective cover with a minimum of one and a half metres (1.5m) of substrate must be established to ensure durability of capping layer and reduce infiltration.

General Waste Rock

(F5-1) The holder of this environmental authority must conduct research during the operational life of the waste rock dumps to determine requirements for final rehabilitation. Research must include:

- site specific climatic conditions;
- seepage management; and
- reactivity of waste rock under various conditions.

(F5-2) Research undertaken in accordance with condition number (F5-1) must be finalised no later than twenty four (24) months prior to the planned mine closure.

(F5-3) Any seepage and contaminated stormwater migrating from perimeter embankments of the waste rock dumps and tailings storage facility must be effectively intercepted and treated at the licensed place.

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.
- (G1-2) The holder of this environmental authority must establish, promote and maintain easily accessible lines of communication between residents and land owners to ensure that social impacts are identified and managed.

END OF CONDITIONS FOR SCHEDULE G

Schedule H - Dams

All Dams – Location and Limits

(H1-1) Any dam constructed or operated within the operational land must be located within the control points defined in Schedule H - Table 1, below.

Schedule H — Table 1 (Location of All dams)

Name of Dam ⁽¹⁾	Latitude ⁽⁴⁾ (GDA 94)	Longitude ⁽⁴⁾ (GDA 94)
Tailings Dam	378285	7888605
	378465	7888659
	378423	7888540
	378343	7888486
Zig Zag Dam	378592	7887891
	378742	7887957
	378807	7887861
	378661	7887838

Note ⁽⁴⁾: A minimum of 3 control points is required to constrain the location of all activities associated with the dam. Additional infrastructure which forms part of any dam may include appurtenant works consisting of tailings discharge pipelines, seepage collection systems, runoff diversion bunds, containment systems, pressure relief wells, decant and recycle water systems.

(H1-2) The construction or operation of any dam within the operational land must comply with Schedule H - Table 2, below.

Schedule H — Table 2 (Basic Details of All Dams)

Name of Dam ⁽¹⁾	Regulated	Maximum surface area of dam (ha)	Maximum volume of dam (m ³)	Maximum depth of dam (m) ⁽²⁾	Purpose of dam ⁽³⁾
Tailings dam	Yes	7	1,300,000	20	Tailings storage
Zig Zag Dam	No	4	533,000	40	Water supply

Note ⁽¹⁾: The name of the dam should refer to the name used in the design plan e.g. process residue facility or decant dam, etc.

Note ⁽²⁾: Where a dam does not incorporate a void, the height of the dam is the difference between the lowest point of the external toe of the dam and the highest point of the dam.

Note ⁽³⁾: Where a dam does incorporate a void, the height of the dam is the difference between the deepest point in the void and the highest point of the dam e.g. where dams are formed partially or fully formed by either excavating below the land surface or backfilling an existing void.

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Standards and Criteria for All Dams

Assessment of consequence category

- (H2-1) 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.
- (H2-2) 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.
- (H2-3) 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 construction⁴ of a regulated structure

- (H2-4) Conditions H2-5 to H2-9 inclusive do not apply to existing structures.
- (H2-5) All **regulated structures** must be designed by, and **constructed**⁵ under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635).
- (H2-6) 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.
- (H2-7) 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.

(H2-8) 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.

(H2-9) 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

(H2-10) 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 H2-7, and
 - ii) a set of 'as constructed' drawings and specifications, and
 - iii) certification of those 'as constructed drawings and specifications' in accordance with condition H2-7, 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.

(H2-11) 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.

(H2-12) 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

(H2-13) Conditions H2-14 to H2-17 inclusive only apply to **Regulated Structures** which have not been certified as low consequence category for 'failure to contain – overtopping'.

(H2-14) 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.

(H2-15) 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.

(H2-16) 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.

(H2-17) The holder must record any changes to the MRL in the Register of Regulated Structures.

Design storage allowance

(H2-18) 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.

(H2-19) 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).

(H2-20) 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.

(H2-21) 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

- (H2-22) Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
- (H2-23) 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.
- (H2-24) 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).
- (H2-25) 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 days⁶ of receipt of the request.

Transfer arrangements

- (H2-26) 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

(H2-27) Dams must not be abandoned but be either:

- a) decommissioned and rehabilitated to achieve compliance with condition (H2-28); 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).

(H2-28) After decommissioning, all significantly disturbed land caused by the carrying out of the environmentally relevant activity(ies) must be rehabilitated to meet the following final acceptance criteria:

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



Register of Regulated Dams

- (H2-29) A Register of Regulated Dams must be established and maintained by the holder for each regulated dam.
- (H2-30) 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.
- (H2-31) The holder must make a final entry of the required information in the Register of Regulated Dams once compliance with condition (H2-10) and (H2-11) has been achieved.
- (H2-32) The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.
- (H2-33) 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.
- (H2-34) The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Dams, in the electronic format required by the administering authority.

Transitional arrangements

- (H2-35) All existing structures that have not been assessed in accordance with either the Manual or the former Manual for Assessing Hazard Categories and Hydraulic Performance of Dams must be assessed and certified in accordance with the Manual within 6 months of amendment of the authority adopting this schedule.
- (H2-36) All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in Table 1 (Transitional requirements for existing structures), depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.
- (H2-37) Table 1 ceases to apply for a structure once any of the following events has occurred:
- a) It has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or
 - b) It has been decommissioned; or
 - c) It has been certified as no longer being assessed as a regulated structure.

(H2-38) Certification of the transitional assessment required by H2-35 and H2-36 (as applicable) must be provided to the administering authority within 6 months of amendment of the authority adopting this schedule.

Schedule H – Table 1 (Transitional hydraulic performance requirements for existing structures)

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

4 Construction of a dam includes modification of an existing dam—refer to the definitions.

5 Certification of design and construction may be undertaken by different persons.

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

Schedule I - Definitions

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

- stability of final land forms in terms of settlement, erosion, weathering, pondage and drainage;
- control of geochemical and contaminant transport processes;
- quality of runoff waters and potential impact on receiving environment;
- vegetation establishment, survival and succession;
- vegetation productivity, sustained growth and structure development;
- fauna colonisation and habitat development;
- ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes;
- microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;
- effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;
- resilience of vegetation to disease, insect attack, drought and fire;
- vegetation water use and effects on ground water levels and catchment yields.

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

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

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

(b) against recognised dam safety deficiency indicators;

(c) for changes in circumstances potentially leading to a change in consequence category;

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

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

(f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);

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

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

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

“assessed or assessment” by a suitably qualified and experienced person in relation to a consequence assessment of a dam, means that a statutory declaration has been made by that

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person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

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

“associated works” in relation to a dam, means:

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

“authority” means an environmental authority or a development approval.

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

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

“commercial place” means a place used as an office or for business or commercial purposes, other than a place within the boundaries of the operational land.

“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.

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

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

“construction” includes building a new dam and modifying or lifting an existing dam.

“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**.

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

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

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

“designer” for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

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

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

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

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

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

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

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

“flowable substance” means matter or a mixture of materials which can 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.

“foreseeable future” is the period used for assessing the total risk of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the end of a 150 year foreseeable future with an acceptable risk of failure before that time.

“hazard” in relation to a dam as defined in this environmental authority, means the potential for environmental harm resulting from the collapse, or failure of the dam to perform its primary purpose of containing, diverting or controlling flowable substances.

“holder” means:

(a) where this document is an environmental authority, any person who is the holder of, or is acting under, that environmental authority; or

(b) where this document is a development approval, any person who is the registered operator for that development approval.

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

“infrastructure” means water storage dams, roads and tracks, buildings and other structures built for the purpose of mining activities but does not include other facilities required for the long term management of mining impacts or the protection of potential resources. Such other facilities include dams, waste rock dumps, voids, or ore stockpiles and buildings as well as 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.

“ $L_{A\ 10, \text{adj}, 10 \text{ mins}}$ ” means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10-minute measurement period, using Fast response.

“ $L_{A\ 1, \text{adj}, 10 \text{ mins}}$ ” means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10-minute measurement period, using Fast response

“ $L_{A, \text{max adj}, T}$ ” means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

“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.

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

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

“levee” means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of **water** or **flowable substances** at any other times.

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

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

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

“modification or modifying” (see definition of ‘construction’)

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

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

“operational land” means the land associated with the project for which this environmental authority has been issued.

“operational plan” includes:

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

(b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

“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).

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

“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.

“register of regulated dams” includes:

(a) Date of entry in the register;

(b) Name of the dam, its purpose and intended/actual contents;

(c) The consequence category of the dam as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*;

(d) Dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;

(e) Name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;

(f) For the regulated dam, other than in relation to any levees –

i. The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;

ii. Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area

iii. Dam crest volume (megalitres);

iv. Spillway crest level (metres AHD).

v. Maximum operating level (metres AHD);

vi. Storage rating table of stored volume versus level (metres AHD);

vii. Design storage allowance (megalitres) and associated level of the dam (metres AHD);

viii. Mandatory reporting level (metres AHD);

(g) The design plan title and reference relevant to the dam;

(h) The date construction was certified as compliant with the design plan;

(i) The name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;

(j) Details of the composition and construction of any liner;

(k) The system for the detection of any leakage through the floor and sides of the dam;

(l) Dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;

(m) Dates when recommendations and actions arising from the annual inspection were provided to the administering authority;

(n) Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

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

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

“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.

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

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

“revegetation criteria” means the auditable criteria established to measure success of rehabilitation to the required final landforms listed in Schedule F-Table 1.

“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; or

- a place used as a workplace, 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.

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

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

“structure” means dam or levee.

‘suitably qualified and experienced person’ in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:
[] for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.

[] for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

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

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

“tolerable limits” means that a range of values could be accepted to achieve an overall environmental management objective (eg. 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). Tolerable limits may be specified:

- by agreement between the proponent and the administering authority as an interim arrangement,
- by insertion of conditions as agreed above into this environmental authority, or
- by direction by the administering authority and insertion in this environmental authority as necessary.

“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.

“void” means any man-made, open excavation in the ground.

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

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

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

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

“water year” means the 12-month period from 1 July to 30 June.

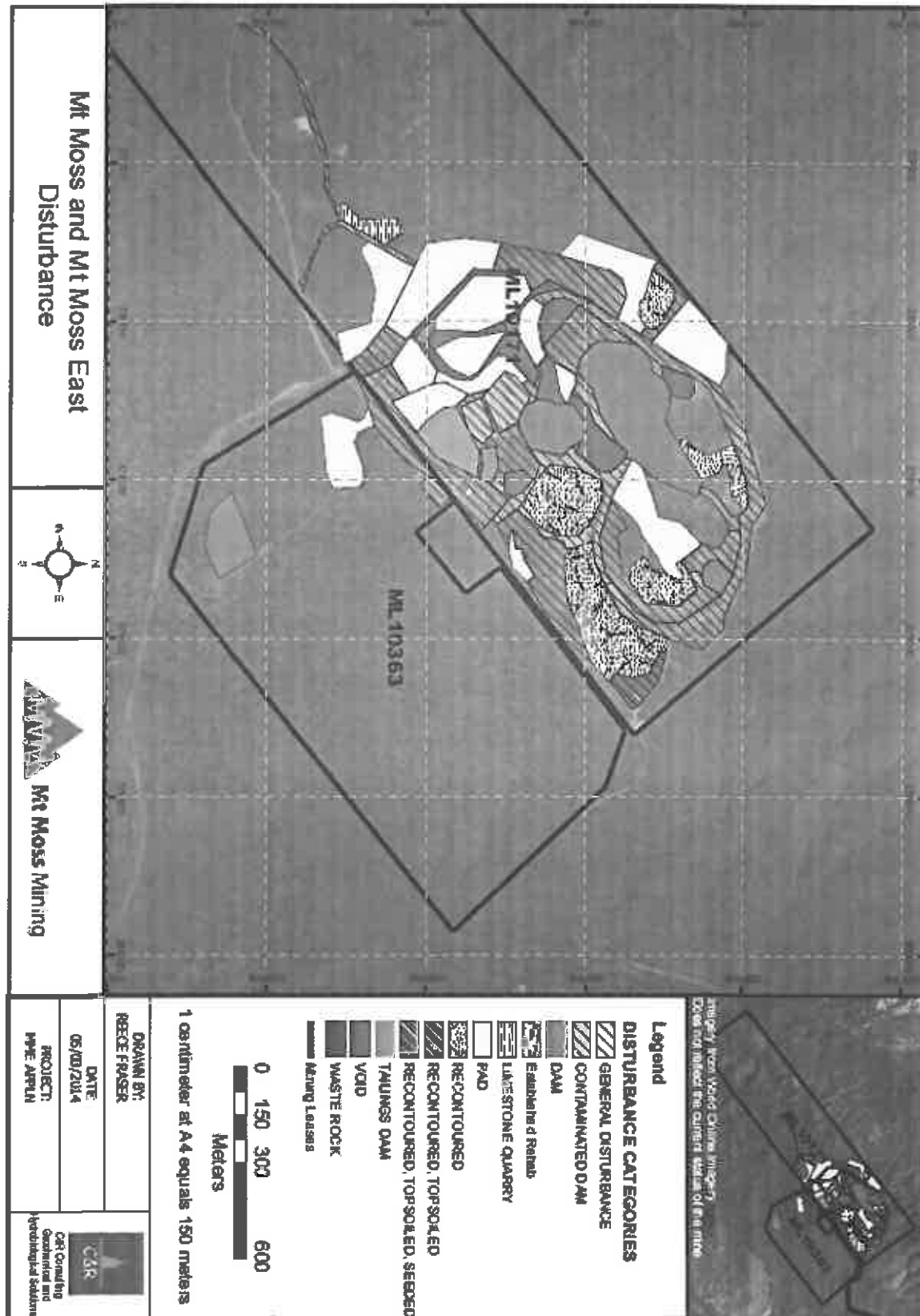
“wet season” means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

END OF CONDITIONS FOR SCHEDULE 1

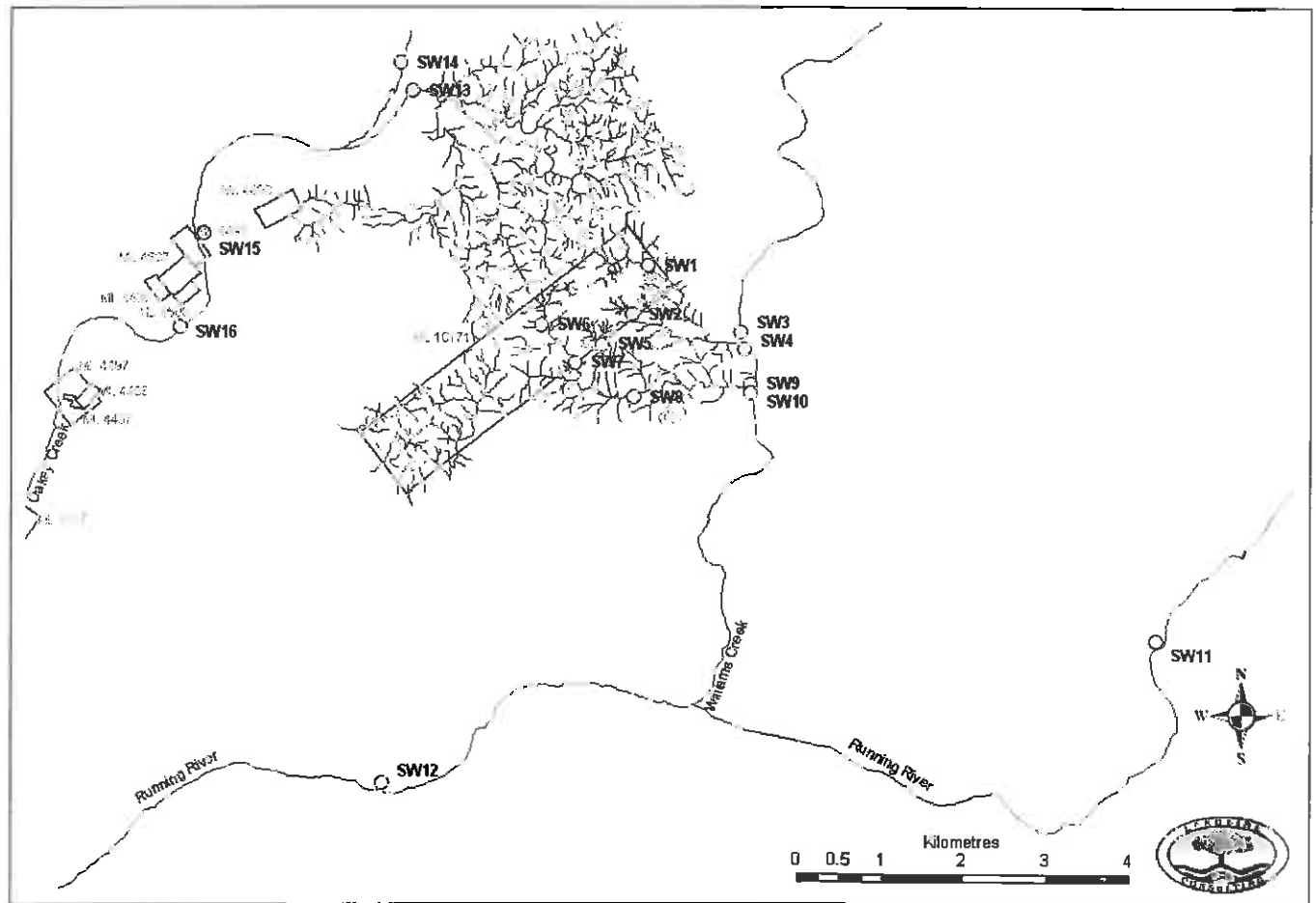


Schedule J - Maps / Plans

Map 1. Project Infrastructure Layout—Mine Area

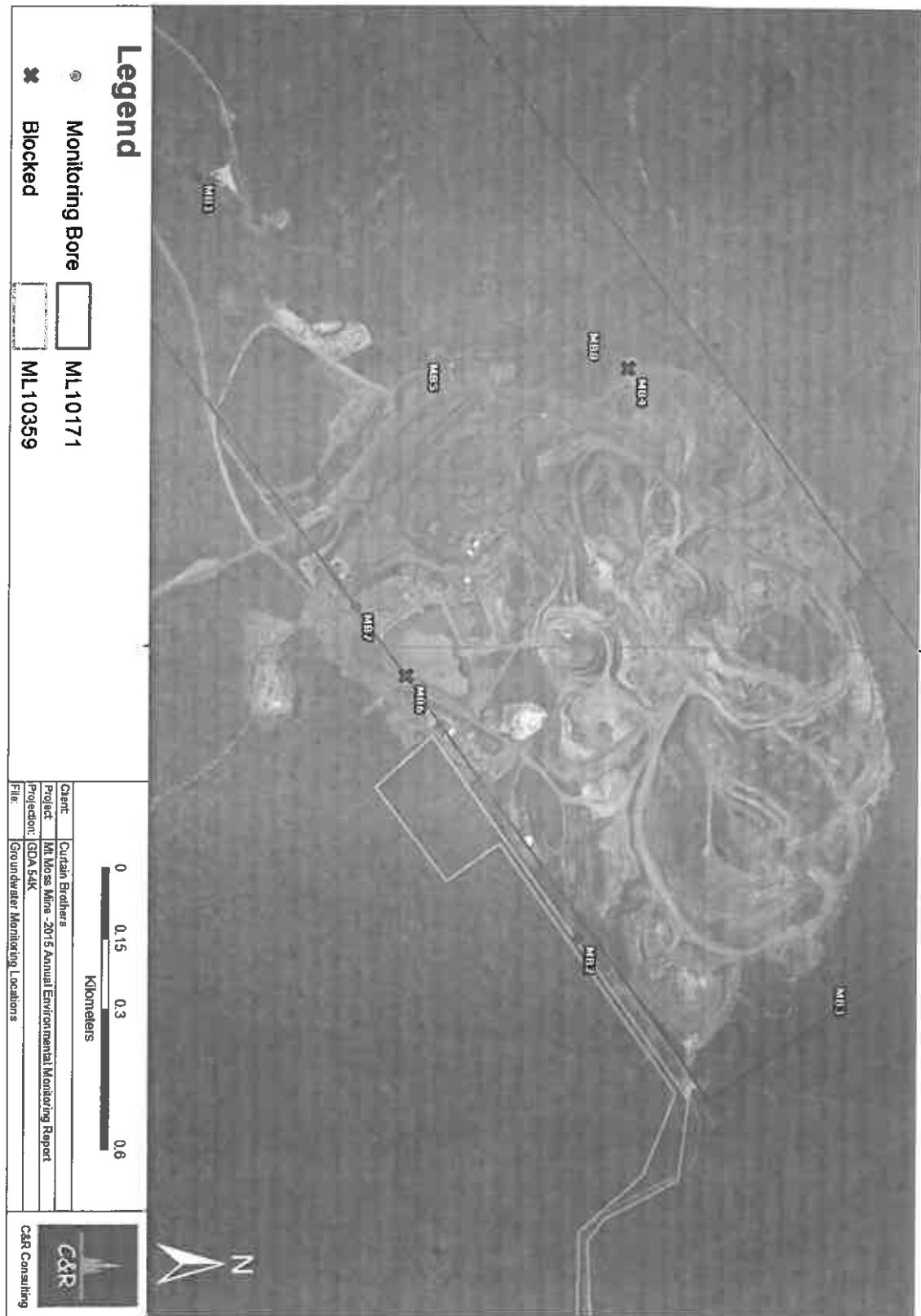


Map 2. Proposed locations of surface water and stream sediment sampling points.



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Map 3. Groundwater monitoring locations.



END OF CONDITIONS FOR SCHEDULE J

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