

Permit

Environmental Protection Act 1994

Environmental authority EPML00367613

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

Environmental authority number: EPML00367613

Environmental authority takes effect on 30 April 2017

Environmental authority holder(s)

Name(s)	Registered address
NEW COLTON COAL PTY LTD	Suite 1 Level 7 100 Edward St BRISBANE CITY QLD 4000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 13: Mining black coal	ML50274
Schedule 3 13: Mining black coal	ML50280
Schedule 3 13: Mining black coal	ML50273

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).

Environmental authority

Contaminated land

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

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (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 contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.

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

Take effect

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

- a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
- b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
- c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the Sustainable Planning Act 2009 or an SDA Approval under the State Development and Public Works Organisation Act 1971), this EA will not take effect until the additional authorisation has taken effect.

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

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

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

Enquiries:
Coal & Gemstone Mining
Department of Environment and Science
Phone: 07 4987 9320
Email: crmining@des.qld.gov.au

Date issued: 19 January 2021

Environmental authority

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)

Environmental authority EPML00367613 – Colton Coal Mine

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); and
- offence to place contaminant where environmental harm or nuisance may be caused (section 443).

Conditions of environmental authority

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Agency interest: General	
Condition number	Condition
A1	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.
A2	In carrying out the mining activity authorised by this environmental authority, disturbance of land: a) may occur in the areas marked 'A'; b) must not occur in the areas marked 'B'; c) may occur in the areas marked 'C' on the map that is Figure 1 attached to this environmental authority, but only in accordance with Condition A3.

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

A3	Any disturbance within the areas marked 'C' on the map that is Figure 1 attached to this environmental authority: a) is only authorised to the extent reasonably necessary for a road, fence, underground service, low-impact telecommunications facility, electrical sub-station, transmission grid works and supply network works, storage depots, similar minor infrastructure and ancillary facilities for any of the above minor infrastructure; b) any disturbance within areas marked 'A' or 'C' is not to impact adversely on areas marked 'B'.
A4	The holder of this environmental authority must: a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; b) maintain such measures, plant and equipment in a proper and efficient condition; c) operate such measures, plant and equipment in a proper and efficient manner; d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.
A5	Monitoring Except where specified otherwise in another condition of this environmental authority, all monitoring records or reports required by this environmental authority must be kept for a period of not less than 5 years.
A6	Financial assurance The activity must not be carried out until the environmental authority holder has given financial assurance to the administering authority as security for compliance with this environmental authority and any costs or expenses, or likely costs or expenses, mentioned in section 298 of the <i>Environmental Protection Act 1994</i>.
A7	The amount of financial assurance must be reviewed by the holder of this environmental authority when a plan of operations is amended or replaced or the authority is amended.
A8	Risk management The holder of this environmental authority must develop and implement a risk management system for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000:2009), or the latest edition of an Australian standard for risk management, to the extent relevant to environmental management, within three (3) months of this environmental authority taking effect.
A9	Notification of emergencies, incidents and exceptions The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority.

A10	Within 10 business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following: a) results and interpretation of any samples taken and analysed; b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; c) proposed actions to prevent a recurrence of the emergency or incident.
A11	Complaints The holder of this environmental authority must record all environmental complaints received about the mining activities including: a) name, address and contact number for of the complainant; b) time and date of complaint; c) reasons for the complaint; d) investigations undertaken; e) conclusions formed; f) actions taken to resolve the complaint; g) any abatement measures implemented; h) person responsible for resolving the complaint.
A12	The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within 10 business days of completion of the investigation, or no later than 10 business days after the end of the timeframe nominated by the administering authority to undertake the investigation.
A13	Third-party reporting The holder of this environmental authority must: a) within one (1) year of the commencement of this environmental authority, obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority; b) obtain further such reports at regular intervals, not exceeding 3 yearly intervals, from the completion of the report referred to above; and c) provide each report to the administering authority within 90 days of its completion.

A14	Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority, the holder of this environmental authority must: a) comply with the amended or changed standard, policy or guideline within 2 years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation. b) until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.
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Agency interest: Air	
Condition number	Condition
B1	The environmental authority holder must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that the dust and particulate matter emissions generated by the mining activities do not cause exceedances of the following levels when measured at any sensitive or commercial place: a) Dust deposition of 120 milligrams per square metre per day, averaged over 1 month, when monitored in accordance with the most recent version of Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air – Determination of particulate matter – Deposited matter – Gravimetric method. b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM₁₀) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, for no more than 5 exceedances recorded each year, when monitored in accordance with the most recent version of either: 1. Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air — Determination of suspended particulate matter — PM₁₀ high volume sampler with size-selective inlet – Gravimetric method; or 2. Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air — Determination of suspended particulate matter — PM₁₀ low volume sampler — Gravimetric method. c) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1 year averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.3 Methods for sampling and analysis of ambient air — Determination of suspended particulate matter—Total suspended particulate matter (TSP) – High volume sampler gravimetric method

B2	Dust, particulate and meteorological monitoring Monitoring of levels of dust deposition must be undertaken at a minimum of four (4) locations around the mining lease areas relevant to the environmental authority in accordance with AS 3580.10.1 Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method. Sample collection and subsequent determination of the dust deposition rate must be undertaken every 30 days at the location(s) shown in Table 2 and in Figure 2.
B3	Monitoring of particulate matter with an aerodynamic diameter of less than 10 micrometre (μm) (PM_{10}) suspended in the atmosphere must be undertaken in accordance with <i>either</i>: 1. Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air — Determination of suspended particulate matter — PM_{10} high volume sampler with size-selective inlet – Gravimetric method; or 2. Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air — Determination of suspended particulate matter — PM_{10} low volume sampler — Gravimetric method. Sampling of the particulate matter with an aerodynamic diameter of less than 10 micrometre (μm) (PM_{10}) suspended in the atmosphere must be performed once every six days, with a sampling period of 24 hours, at the location(s) shown in Table 2 and in Figure 2.
B4	A permanent automatic weather station for continuous, real time monitoring and recording of wind speed, wind direction, temperature, relative humidity and rainfall must be installed at the location(s) shown in Table 2 and in Figure 2. The station must be installed, managed, and monitoring conducted in accordance with relevant Australian Standards, including, Australian Standard AS 3580.14 - Methods for sampling and analysis of ambient air, Part 14: Meteorological monitoring for ambient air quality monitoring applications.
B5	The holder must record, compile and keep all monitoring records obtained from the automatic meteorological station.
B6	Dust and particulate monitoring required under Conditions B2 and B3 must be conducted in accordance with the standards and at the locations, specified in Table 2 and shown in Figure 2.

Table 2 (Dust and Particulate Monitoring Locations)

Air Quality Determination	Monitoring Standard	Monitoring Point Description	Approximate Monitoring Point Location	
			Latitude (GDA94)	Longitude (GDA94)
Dust deposition	AS 3580.10.1	D1 – Deposition gauge	-25.4069°	152.6449°
		D2 – Deposition gauge	-25.4430°	152.6706°
		D3 – Deposition gauge	-25.4420°	152.7102°
		D4 – Deposition gauge	-25.4238°	152.7113°
PM ₁₀	AS 3580.9.6	HV1 – High volume PM ₁₀ sampler location	Must be located within the vicinity of the township of Aldershot, inside the area indicated for high volume sampler location shown in Figure 2 .	
Meteorological data including wind speed, wind direction, temperature, humidity, and precipitation.	AS 3580.14	WS1 – Weather Station	Must be located within the mining lease areas, at a site that complies with siting requirements specified under AS 3580.14.	

Agency interest: Waste	
Condition number	Condition
C1	General waste generated by mining activities must be removed to a facility that is lawfully able to accept the waste under the <i>Environmental Protection Act 1994</i> .
C2	Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.
C3	The holder of this environmental authority may burn vegetation cleared in the course of carrying out mining activities provided the activity does not cause environmental harm at any sensitive or commercial place.

C4	Tailings disposal Tailings must be managed in accordance with procedures contained within the current plan of operations. These procedures must include provisions for: a) containment of tailings; b) the management of seepage and leachates both during operation and the foreseeable future; c) the control of fugitive emissions to air; d) a program of progressive sampling and characterisation to identify acid producing potential and metal concentrations of tailings; e) maintaining records of the relative locations of any other waste stored within the tailings; f) rehabilitation strategy; g) monitoring of rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of tailings, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover.
C5	Acid sulphate soils Treat and manage acid sulphate soils in accordance with the latest edition of the Queensland Acid Sulfate Soil Technical Manual.

Agency interest: Noise	
Condition number	Condition
D1	Noise limits The holder of this environmental authority must ensure that noise generated by the mining activities does not exceed the levels identified in Table D1 – Noise limits at the locations specified between the boundary of the site and the surrounding sensitive or commercial places as shown on Figure 3 – Location of noise limit locations.

Table D1 – Noise limits

Noise level dB(A) measured as:	Monday to Saturday			Sunday and Public Holidays		
	7am - 6pm	6pm - 10pm	10pm - 7am	9am - 6pm	6pm - 10pm	10pm - 9am
Noise measured at location M1 (latitude -25 ° 25 ' 4.55 ", longitude 140 ° 38 ' 8.27 ")						
L_{Aeq} adj, 15 mins	58	51	46	58	51	46
L_{A1} adj, 15 mins	63	56	51	63	56	51
Noise measured at location M2 (latitude -25 ° 27 ' 6.72 ", longitude 140 ° 39 ' 59.66 ")						
L_{Aeq} adj, 15 mins	47	45	40	47	45	40
L_{A1} adj, 15 mins	52	50	45	52	50	45
Noise measured at location M3 (latitude -25 ° 26 ' 23.02 ", longitude 140 ° 42 ' 44.30")						
L_{Aeq} adj, 15 mins	41	39	39	41	39	39
L_{A1} adj, 15 mins	46	44	44	46	44	44

D1A	In the event of a complaint being made by the owner of the property described as Lot 73 on Plan LX435 at Colton Road, Colton QLD 4650, the holder of this environmental authority must ensure that noise generated by the mining activities does not exceed the levels identified in Table D1A – Noise limits at Lot 73 on Plan LX435 at the sensitive place located on Lot 73 on Plan LX435 at Colton Road, Colton QLD 4650.
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Table D1A – Noise limits at Lot 73 on Plan LX435

Noise level dB(A) measured as:	Monday to Saturday			Sunday and Public Holidays		
	7am - 6pm	6pm - 10pm	10pm - 7am	9am - 6pm	6pm - 10pm	10pm - 9am
L_{Aeq} adj, 15 mins	40	39	35	40	39	35
L_{A1} adj, 15 mins	45	44	38	45	44	38

D2	Airblast overpressure nuisance The holder of this environmental authority must ensure that blasting does not cause the limits for peak particle velocity and air blast overpressure in Table D2 – Blasting noise limits to be exceeded at a sensitive or commercial place.
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Table D2 – Blasting noise limits

Blasting noise limits	Sensitive or commercial place blasting noise limits	
	7am to 6pm	6pm to 7am
Airblast overpressure	115 dB (Linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time	No Blasting
Ground vibration peak particle velocity	5mm/second peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time	No Blasting

D3	Low frequency noise nuisance Emission of any low frequency noise must not exceed the following limits in the event of a complaint about low frequency noise being made to the Administering Authority and it is subsequently determined by the Administering Authority to be a valid complaint: a) 60dB(C)($L_{eq, 15min}$) measured outside the sensitive or commercial place; and b) The difference between the internal A weighted and C weighted noise levels is no greater than 20dB or; c) 50dB(Z)($L_{eq, 15min}$) measured inside the sensitive or commercial place; and d) The difference between the internal A weighted and Z weighted noise levels is no greater than 15dB.
D4	Monitoring and reporting Noise monitoring and recording must include the following descriptor characteristics and matters: a) $L_{AN,T}$ (where N equals the statistical levels of 1, 10 and 90 and $T = 15$ mins); b) background noise L_{A90}; c) the level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to statistical levels; d) atmospheric conditions including temperature, relative humidity and wind speed and directions; e) effects due to any extraneous factors such as traffic noise; f) location, date and time of monitoring; g) if the complaint concerns low frequency noise, Max $L_{pLIN,T}$ and one third octave band measurements in dB(LIN) for centre frequencies in the 10 – 200 Hz range.

D5	The holder of this environmental authority must develop and implement a blast monitoring program to monitor compliance with Table D2 – Blasting noise limits for: a) at least 100% of all blasts undertaken on this site in each year at the nearest sensitive place or commercial place. b) all blasts conducted during any time period specified by the administering authority at the nearest sensitive place or commercial place.
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Agency interest: Groundwater	
Condition number	Condition
E1	Contaminant release The holder of this environmental authority must not release contaminants to groundwater.
E2	Monitoring and reporting All determinations of groundwater quality and biological monitoring must be performed by an appropriately qualified person.
E3	Groundwater quality and levels must be monitored at the locations and frequencies defined in Table – E3 Groundwater monitoring locations and frequency and Figure 4 – Groundwater Bore Monitoring Locations) for quality characteristics identified in Table E4 – Groundwater quality triggers and limits.

Table E3 – Groundwater monitoring locations and frequency

Monitoring Point	Location		Surface RL ² (mAHD)	Bore Depth (m)	Monitoring Frequency	Lithology Monitored	Comment
	Latitude (GDA94, decimal degrees)	Longitude (GDA94, decimal degrees)					
Reference Bores ³							
RB-1	25.41872814	152.6918421	To be provided when bores are installed. Monitoring bores to be installed must allow sampling of groundwater that reflects the background groundwater quality for aquifers impacted by mining activities.	Quarterly	To be provided when bores are installed. Monitoring bores to be installed must allow sampling of groundwater that reflects the background groundwater quality for aquifers impacted by mining activities.		
RB-2	25.39888363	152.6610721		Quarterly			
Compliance Bores ¹							
NMB-041	25.4389873	152.6936504	19.20	51.38	Quarterly	Coal Seams	Nested bore installation
NMB-042	25.43897827	152.6936504	19.22	21.00	Quarterly	Claystone/ minor sandstone	
NMB-043	25.43707982	152.6758632	28.27	49.48	Quarterly	Clays, sandstone, mudstone	Nested bore installation
NMB-044	25.43708885	152.6758632	28.12	24.92	Quarterly	Sandstone	
NMB-045	25.41711496	152.6724761	31.05	56.22	Quarterly	Claystone with minor coal seams	Nested bore installation
NMB-046	25.41711498	152.6724861	31.05	12.35	Quarterly	Clay and coal	
NMB-047	25.42822377	152.6897296	20.09	60.70	Quarterly	Claystone with minor coal seams	Nested bore installation
NMB-048	25.42821474	152.6897297	20.09	30.60	Quarterly	Claystone, sandstone, mudstone with coal	

¹ Monitoring is not required where a bore has been removed as a direct result of the mining activity.

² RL must be measured to the nearest 5cm from the top of the bore casing.

³ Reference sites must:

- (a) have a similar flow regime;
- (b) be from the same bio-geographic and climatic region;
- (c) have similar geology, soil types and topography; and
- (d) 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 E4 – Groundwater quality triggers and limits

Parameter	Units	Contaminant Triggers Level	Contaminant Limit	Trigger Level and Limit Type
pH	pH Units	6.5 – 8.0	6.0 – 9.0	Minimum and maximum range
Electrical Conductivity	mS/cm	20	25	Maximum
Total Dissolved Solids	mg/L	14000	17000	Maximum
Acidity	Equivalent CaCO ₃ in mg/L	NA	NA	NA
Alkalinity (bicarbonate, carbonate, hydroxide and total)	Equivalent CaCO ₃ in mg/L	600	700	Maximum
Chloride	mg/L	7000	10000	Maximum
Fluoride	mg/L	1.6	2	Maximum
Sulphate	mg/L	800	1000	Maximum
Calcium	mg/L	NA	NA	NA
Magnesium	mg/L	NA	NA	NA
Potassium	mg/L	NA	NA	NA
Sodium	mg/L	NA	NA	NA
Total Nitrogen	mg/L	10	12	Maximum
Nitrate	Equivalent N in mg/L	8	10	Maximum
Aluminium	mg/L	4	5	Maximum
Arsenic (Total)	mg/L	0.4	0.5	Maximum
Barium	mg/L	0.7	1	Maximum
Boron	mg/L	4	5	Maximum
Cadmium	mg/L	0.004	0.01	Maximum
Chromium (III)	mg/L	0.8	1	Maximum

Chromium (IV)	mg/L	0.8	1	Maximum
Cobalt	mg/L	0.8	1	Maximum
Copper	mg/L	0.8	1	Maximum
Iron	mg/L	NA	NA	NA
Lead	mg/L	0.044	0.1	Maximum
Manganese	mg/L	1.9	2.5	Maximum
Nickel	mg/L	0.8	1	Maximum
Selenium	mg/L	0.016	0.02	Maximum
Zinc	mg/L	0.12	1	Maximum

Note: The contaminant limit listed in the Table will not apply to a groundwater monitoring bore where an investigation in accordance with **Condition E5** has been conducted and the contaminant level in the bore is shown to be below the background levels as determined by the reference bore results.

E4	Groundwater levels when measured at the monitoring locations specified in Table E3 - Groundwater monitoring locations and frequency must not exceed the groundwater level change trigger thresholds specified in Table E5 - Groundwater level monitoring below .
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Table E5 – Groundwater level monitoring

Monitoring Point	Location		Groundwater level change trigger thresholds (m)
	Latitude (GDA94, decimal degrees)	Longitude (GDA94, decimal degrees)	
RB-1	25.41872814	152.6918421	na
RB-2	25.39888363	152.6610721	na
NMB-041	25.4389873	152.6936504	5
NMB-042	25.43897827	152.6936504	5
NMB-043	25.43707982	152.6758632	5
NMB-044	25.43708885	152.6758632	5
MB_1	25.41404112	152.6551632	2
MB_2	25.4279623	152.6612891	2

E5	Exceedance Investigation If quality characteristics of groundwater from compliance bores identified in Table E3 - Groundwater monitoring locations and frequency exceed any of the groundwater level change trigger thresholds stated in Table E4 - Groundwater quality triggers and limits or exceed any of the groundwater level trigger threshold stated in Table E5 - Groundwater level monitoring, the holder of this environmental authority must compare the compliance monitoring bore results to the reference bore results and complete an investigation in accordance with the ANZECC and ARMCANZ 2000.
E6	Results of monitoring of groundwater from compliance bores identified in Table E3 - Groundwater monitoring locations and frequency, must not exceed any of the limits defined in Table E4 - Groundwater quality triggers and limits.
E7	Bore construction and maintenance and decommissioning The construction, maintenance and management of groundwater bores (including groundwater monitoring bores) must be undertaken in a manner that prevents or minimises impacts to the environment and ensures the integrity of the bores to obtain accurate monitoring.

Agency interest: Water	
Condition number	Condition
F1	Contaminant release 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 the conditions of this environmental authority.
F2	Unless otherwise permitted under the conditions of this environmental authority, the release of mine affected water to waters must only occur from the release points specified in Table F1 - Mine affected water release points, sources and receiving waters and depicted in Figure 5 attached to this environmental authority.
F3	The release of mine affected water to internal water management infrastructure installed and operated in accordance with a water management plan that complies with condition F25 is permitted.

Table F1 – Mine affected water release points, sources and receiving waters

Release Point (RP)	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)	Mine Affected Water Source and Location	Monitoring Point	Receiving waters description
MRP1	25° 28.033'S	152° 43.796'E	Mine Water Dam at Mary River pipeline off take.	Sampling point drawing water out of Mary River discharge pipeline	Mary River at end of discharge pipeline at Churchill Mines Rd, approximate AMTD 26.5km

F4	The release of mine affected water to waters in accordance with condition F2 must not exceed the release limits stated in Table F2 – Mine affected water release limits when measured at the monitoring points specified in Table F1 – Mine affected water release points, sources and receiving waters for each quality characteristic.
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Table F2 – Mine affected water release limits

Quality Characteristic	Release Limits	Monitoring Frequency
Electrical Conductivity (µS/cm)	4000	Daily during release (the first sample must be taken within 2 hours of commencement of release)
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)
Turbidity (NTU)	50	Daily during release (the first sample must be taken within 2 hours of commencement of release)
Dissolved Oxygen (mg/L)	4 (minimum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)

F5	The release of mine affected water to waters from the release points must be monitored at the locations specified in Table F1 - Mine affected water release points, sources and receiving waters for each quality characteristic and at the frequency specified in Table F2 - Mine affected water release limits and Table F3 - Release contaminant trigger investigation levels, potential contaminants. <i>Note: the administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event Condition F5 is contravened due to a temporary lack of safe or practical access. The administering authority expects the environmental authority holder to take all reasonable and practicable measures to maintain safe and practical access to designated monitoring locations.</i>
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Table F3 - Release contaminant trigger investigation levels, potential contaminants

Quality Characteristic	Trigger Levels	Comment on Trigger Level	Monitoring Frequency
Aluminium (µg/L)	55	ANZECC aquatic ecosystem protection, freshwater, slightly to moderately disturbed	Prior to commencement of release and thereafter weekly during release
Arsenic (µg/L)	13	ANZECC aquatic ecosystem protection, freshwater, slightly to moderately disturbed	
Boron (µg/L)	370	ANZECC aquatic ecosystem protection, freshwater, slightly to moderately disturbed	
Cadmium (µg/L)	0.2	ANZECC aquatic ecosystem protection, freshwater, slightly to moderately disturbed	
Chromium (µg/L)	1.0	ANZECC aquatic ecosystem protection, freshwater, slightly to moderately disturbed	
Cobalt (µg/L)	1.0	ANZECC aquatic ecosystem protection, marine, slightly to moderately disturbed	
Copper (µg/L)	2	ANZECC aquatic ecosystem protection, freshwater, slightly to moderately disturbed, however ICMS LOR limits to 2 µg/L	
Iron (µg/L)	300	ANZECC section 8.3.7.1 for metals and metalloids	
Lead (µg/L)	3.4	ANZECC aquatic ecosystem protection, freshwater, slightly to moderately disturbed	
Manganese (µg/L)	200	For aquatic ecosystem protection, based on WHO 2005	
Mercury (µg/L)	0.2	ANZECC aquatic ecosystem protection, freshwater, slightly to moderately disturbed however LOR for Cold Vapour FIMS is 0.2 µg/L	
Nickel (µg/L)	11	ANZECC aquatic ecosystem protection, freshwater 95% species protection for SMD	
Selenium (µg/L)	10	ANZECC aquatic ecosystem protection, freshwater, slightly to moderately disturbed, however LOR for ICP-MS is 10 µg/L	
Silver (µg/L)	1	ANZECC aquatic ecosystem protection, freshwater, slightly to moderately disturbed, however ICMS LOR limits to 1 µg/L	
Vanadium (µg/L)	100	ANZECC aquatic ecosystem protection, marine, slightly to moderately disturbed	
Zinc (µg/L)	8.0	ANZECC aquatic ecosystem protection, freshwater, slightly to moderately disturbed	
Sulphate (SO ₄ ²⁻) (mg/L)	770	Based on expected acceptable mine water quality	
Total Nitrogen (µg/L)	300	Mary River WQO for Mary River mid estuary	

Ammonia (µg/L)	10	Mary River WQO for Mary River mid estuary	
Nitrate (µg/L)	10	Mary River WQO for Mary River mid estuary	
Total Phosphorus (µg/L)	25	Mary River WQO for Mary River mid estuary	
Total Petroleum hydrocarbons (C6-C9) (µg/L)	20	ANZECC Section 8.3.7.21 and EHP model Fitzroy water conditions	
Total Petroleum hydrocarbons (C10-C36) (µg/L)	100	ANZECC Section 8.3.7.21 and EHP model Fitzroy water conditions	

Notes:

1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.
2. The quality characteristics required to be monitored as per **Table F3 - Release contaminant trigger investigation levels, potential contaminants** can be reviewed once the results of 2 years monitoring data is available, or if sufficient data is available to adequately demonstrate negligible environmental risk, and it may be determined that a reduced monitoring frequency is appropriate or that certain quality characteristics can be removed from **Table F3 - Release contaminant trigger investigation levels, potential contaminants** by amendment.
3. SMD – slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).
4. LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.

F6	If quality characteristics of the release exceed any of the trigger levels specified in Table F3 - Release contaminant trigger investigation levels, potential contaminants during a release event, the environmental authority holder must, for the parameters which are exceeded, complete an investigation into the potential for environmental harm and provide a written report to the administering authority within 90 days of receiving the result, outlining (i) details of the investigations carried out, including a comparison of the results to monitoring in the receiving environment (ii) actions taken to prevent environmental harm. <i>Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with F6 of this condition, no further reporting is required for subsequent trigger events for that quality characteristic that occur during the period of investigation.</i>
F7	If an exceedance in accordance with Condition F6 is identified, the holder of the environmental authority must notify the administering authority in writing within 24 hours of receiving the result.
F8	Mine Affected Water Release Events The holder must ensure a stream flow gauging station/s is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in Table F4 - Mine affected water release during flow events.
F9	Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with Condition F2 must only take place during periods of natural flow in accordance with the receiving water flow criteria for discharge specified in Table F4 - Mine affected water release during flow events for the release point(s) specified in Table F1 - Mine affected water release points, sources and receiving waters .
F10	The release of mine affected water to waters in accordance with Condition F2 must not exceed the Maximum Release Rate for each receiving water flow criterion for discharge specified in Table F4 - Mine affected water release during flow events when measured at the monitoring points specified in Table F1 - Mine affected water release points, sources and receiving waters .

Table F4 - Mine affected water release during flow events

Receiving waters/ stream	Release Point (RP)	Gauging station(s)	Gauging Station Latitude (Decimal degrees, GDA94)	Gauging Station Longitude (Decimal degrees, GDA94)	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for discharge	Maximum release rate (for all combined release point flows) m ³ /s
Mary River	MRP1 – Discharge pipeline release point	GS1 Sunwater Mary Barrage	25.58806	152.62360	Daily	Total Flow <150 ML/day	No Release allowed
		GS2 Sunwater Tinana Barrage	25.56917	152.71917		Total Flow >150 ML/day	0.1
						Total Flow >300 ML/day	0.2

F11	The daily quantity of mine affected water released from each release point must be measured and recorded.
F12	Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build-up of sediment in such waters.
F13	Notification of Release Event The environmental authority holder must notify the administering authority as soon as practicable and no later than 24 hours after commencing to release mine affected water to the receiving environment. Notification must include the submission of written advice to the administering authority of the following information: a) release commencement date/time; b) details regarding the compliance of the release with the conditions of Department Interest: Water in this environmental authority (that is, contaminant limits, natural flow, discharge volume); c) release point; d) release rate; e) release salinity; f) receiving water including the natural flow rate.

F14	The environmental authority holder must notify the administering authority as soon as practicable and nominally no later than 24 hours after cessation of a release event of the cessation of a release notified under Condition F13 and within 28 days provide the following information in writing: a) release cessation date/time; b) natural flow rate in receiving water; c) volume of water released; d) details regarding the compliance of the release with the conditions of Schedule F – Water of this environmental authority (i.e. contaminant limits, natural flow, discharge volume); e) all in-situ water quality monitoring results; f) any other matters pertinent to the water release event. Note: Successive or intermittent releases occurring within 24 hours of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purpose of compliance with Conditions F13 and F14, provided the relevant details of the release are included within the notification provided in accordance with Conditions F13 and F14.
F15	Notification of Release Event Exceedance If the release limits defined in Table F2 - Mine affected water release limits are exceeded, the holder of the environmental authority must notify the administering authority within 24 hours of receiving the results.
F16	The environmental authority holder must, within 28 days of a release that is not compliant with the conditions of this environmental authority, provide a report to the administering authority detailing: a) the reason for the release; b) the location of the release; c) the total volume of the release and which (if any) part of this volume was non-compliant; d) the total duration of the release and which (if any) part of this period was non-compliant; e) all water quality monitoring results (including all laboratory analyses); f) identification of any environmental harm as a result of the non-compliance; g) all calculations; h) any other matters pertinent to the water release event.
F17	Receiving Environment Monitoring Program (REMP) The quality of the receiving waters as part of the REMP must be monitored at the locations specified in Table F6 - Receiving water monitoring points and depicted in Figure 5 attached to this environmental authority.

Table F6 - Receiving water monitoring points

Monitoring Point	Receiving Waters Location Description	Latitude (Decimal degree, GDA 94)	Longitude (Decimal degree, GDA 94)
Upstream Background Monitoring Points (noting that Mary River at point of discharge is tidal)			
W1	Mary River Queens Park Boat Ramp	25.539115°	152.706977°
W2	Mary River Upstream of Dundathu	25.487129°	152.738037°
Downstream Monitoring Points (noting that Mary River at point of discharge is tidal)			
W3	Mary River Downstream of Dundathu	25.486601°	152.747454°
W4	Mary River HEV Zone boundary	25.507081°	152.782611°
W5	Mary River Beaver Rock Boat Ramp	25.500707°	152.835815°
W6*	Mary River Power Island	25.450681°	152.882649°

* Note: the location of monitoring point W6 is not shown correctly in **Figure 5** attached to this environmental authority.

F18	All determinations of water quality and biological monitoring must be performed by an appropriately qualified person.
F19	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 in accordance with the latest version of the Department's Receiving Environment Monitoring Program (REMP) Guideline. 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 Mary River and connected or surrounding waterways within 5 km of the release. 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. As a minimum, monitoring points should include those specified in Table F6 - Receiving water monitoring points and all parameters specified in Table F2 - Mine affected water release limits and Table F3 - Release contaminant trigger investigation levels, potential contaminants .
F20	A REMP Design Document that addresses the requirements of the REMP must be prepared and made available to the administering authority upon request.

F21	A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared annually and made available on request to the administering authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.
F22	Water Reuse Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party (with the consent of the third party).
F23	Annual Water Monitoring Report The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format: a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; d) the measured or estimated daily quantity of mine affected water released from all release points; e) the release flow rate at the time of sampling for each release point; f) the results of all monitoring and details of any exceedances of the conditions of this environmental authority; g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.
F24	Temporary Interference with Waterways Destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring necessary for and associated with mining operations must be undertaken in accordance with Department of Natural Resources and Mines (or its successor) <i>Guideline – Activities in a Watercourse, Lake or Spring associated with Mining Activities</i>.
F25	Water Management Plan A Water Management Plan must be developed by an appropriately qualified person and implemented.
F26	Stormwater and Water Sediment Controls An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.

F27	Stormwater, other than mine affected water, is permitted to be released to waters from: a) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by Condition F26 b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with Condition F25, for the purpose of ensuring water does not become mine affected water.
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Agency interest: Sewage Treatment	
Condition number	Condition
G1	The only contaminant permitted to be released to land is treated sewage effluent in compliance with the release limits stated in Table G1 - Contaminant release limits to land .

Table G1 - Contaminant release limits to land

Contaminant	Unit	Release limit	Limit type	Frequency
5 day Biochemical oxygen demand (BOD)	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

G2	Treated sewage effluent may only be released to land in accordance with the conditions of this approval at the following locations: a) within the designated effluent irrigation area(s); b) other land for the purpose of dust suppression and/or firefighting.
G3	The application of treated effluent to land must be carried out in a manner such that: a) vegetation is not damaged; b) there is no surface ponding of effluent; c) there is no run-off of effluent.
G4	If areas irrigated with effluent are accessible to employees or the general public, prominent signage must be provided advising that effluent is present and care should be taken to avoid consuming or otherwise coming into unprotected contact with the effluent.

G5	All sewage effluent released to land must be monitored at the frequency and for the parameters specified in Table G1 - Contaminant release limits to land .
G6	The daily volume of effluent release to land must be measured and records kept of the volumes of effluent released.
G7	When circumstances prevent the irrigation or beneficial reuse of treated sewage effluent such as during or following rain events, waters must be directed to a wet weather storage or alternative measures must be taken to store/lawfully dispose of effluent.
G8	A minimum area of 3650m² of land, excluding any necessary buffer zones, must be utilised for the irrigation and/or beneficial reuse of treated sewage effluent.
G9	Treated sewage effluent must only be supplied to another person or organisation that has a written plan detailing how the user of the treated sewage effluent will comply with their general environmental duty under section 319 of the Act whilst using the treated sewage effluent.

Agency interest: Land and rehabilitation	
Condition number	Condition
H1	Land disturbed by mining must be rehabilitated in accordance with Table H1 - Rehabilitation Requirements .

Table H1 - Rehabilitation Requirements

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Final Voids	Void	Safe	The final voids will be safe for humans and animals on decommissioning and into the foreseeable future.	Presence of permanent safety barriers and signage around the final void.	Evidence in rehabilitation report that signage and safety barriers have been installed to limit access to the final void. Safety barriers are consistent with the <i>Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland – Open Pit Rehabilitation</i> (DME 1995) or equivalent guidelines relevant at the time of rehabilitation). Safety signage is consistent with the requirements of the <i>Coal Mining, Safety and Health Act 1999</i> or equivalent legislation at the time of mine rehabilitation.
				Safety assessment of the final void to ensure there is no risk to humans or animals in the event of a failure.	Certification that the final void is safe and stable now and for the foreseeable future.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Non-Polluting	The final voids will not be a source of environmental harm to the receiving environment on decommissioning and into the foreseeable future.	Void water body water quality monitoring.	Water quality within the final void water body maintains environmental values required for the defined sustainable land use.
				Downstream surface waters and groundwater receiving waters monitoring.	Environmental values of receiving surface waters are not impacted by water from the mine void. Water quality of receiving surface waters remains consistent with upstream/reference site data Post-mining, water quality of the surrounding groundwater aquifers shall remain consistent with baseline and reference data.
				Monitoring water level in the final void & hydraulic modelling to predict long term water levels.	Evidence in the rehabilitation report that the final void has a low risk of overtopping (as detailed in the Post Mine Land Use Plan) on decommissioning and for the foreseeable future.
		Stable	Very low probability of wall failure, slippage or rock falls that will cause significant environmental harm	Geotechnical studies of the final void.	Geotechnical evidence/report supporting a very low probability of failure or slippage causing environmental harm.
				Past record of slope failure during mining.	Evidence in rehabilitation report that appropriate control measures are in place to prevent recurrence.
			Landform design meets criteria.	Slope angle and length.	Slopes in 'competent rock' to a maximum of 65 degrees and in 'incompetent rock' to a maximum of 45 degrees.
			Low probability of significant erosion.	Visual evidence of erosion.	Evidence in rehabilitation report that erosion is being managed with the required contour banks, interceptor channels and drains in place and functioning to divert water away from the highwall face.
		Sustainable land use	Establish a water body that is safe for native fauna and is consistent with the end land use of native habitat.	Water quality monitoring.	Water quality in the final void shall remain within ANZECC livestock drinking water limits.

Environmental authority EPML00367613 – Colton Coal Mine

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Dams	Regulated Dams	Safe	Site is safe for all humans and animals on decommissioning and for the foreseeable future.	Dams are decommissioned and rehabilitated in full accordance with the decommissioning requirements specified in the operational plan for the structure.	Certification from a suitably qualified person that the structure has been decommissioned and rehabilitated in full accordance with the decommissioning requirements specified in the operational plan for the structure.
				Contaminated land site investigation.	The land has either been removed from the environmental management register or the land has a site management plan approved.
		Non-polluting	Hazardous material adequately managed, presenting a low risk of environmental harm.	Contaminated land site investigations.	The land has either been removed from the environmental management register or the land has a site management plan approved.
				Water quality monitoring.	Post-mining, water quality of the receiving surface water courses should meet water quality limits described in the EA, or should remain consistent with upstream / reference site data where the limits of the EA are otherwise exceeded due to other contributing sources (natural or otherwise). Post-mining, water quality of the surrounding groundwater aquifers shall remain consistent with baseline and/or reference data.
		Stable	Vegetative cover to minimise erosion.	Percentage ground cover.	Evidence that the percentage ground cover of the rehabilitated areas is statistically equivalent to analogue sites.
		Sustainable land use	Vegetation and habitat established consistent with agreed post mine land use.	Monitoring of vegetation type, density and rejuvenation.	Evidence that the vegetation species richness/composition and vegetation cover/density of the rehabilitated areas is statistically equivalent to analogue sites and is self-sustaining over time.
			Soil properties support desired land use.	Soil nutrient testing.	Evidence that soil nutrient levels are statistically equivalent to analogue sites.
	Other site dams and sediment and surface-water control infrastructure	Safe	Site is safe for all humans and animals on decommissioning and for the foreseeable future.	Soil testing in potentially contaminated areas.	The land has either been removed from the environmental management register or the land has a site management plan approved.

Environmental authority EPML00367613 – Colton Coal Mine

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Non-polluting	Hazardous material adequately managed, presenting a low risk of environmental harm.	Water quality monitoring.	Post-mining water quality of the receiving surface water courses should meet water quality limits described in the EA, or should remain consistent with upstream / reference site data where the limits of the EA are otherwise exceeded due to other contributing sources (natural or otherwise). Post-mining water quality of the surrounding groundwater aquifers shall remain consistent with baseline and/or reference data.
		Stable	Vegetative cover to minimise erosion.	Percentage ground cover.	Evidence that the percentage ground cover of the rehabilitated areas is statistically equivalent to analogue sites.
		Sustainable land use	Vegetation and habitat established consistent with agreed post mine land use.	Monitoring of vegetation type and density.	Evidence that the vegetation species richness/composition and vegetation cover/density of the rehabilitated areas is statistically equivalent to analogue sites.
			Soil properties support desired land use.	Soil nutrient testing.	Evidence that soil nutrient levels are statistically equivalent to analogue sites.
			Establish self-sustaining natural vegetation.	Monitoring of species composition, species richness, and weed abundance.	Evidence that vegetation species composition, richness and weed abundance of rehabilitated areas is statistically equivalent to analogue sites.
Infrastructure	Buildings; Roads, Exploration Areas; CHPP; Rail Loop, Load-out Facility; Hardstand Areas; ROM Pad; Stockpile Areas; Chemical and Fuels Storages.	Safe	Site is safe for humans and animals on decommissioning and for the foreseeable future.	Infrastructure removed or retained by agreement.	Evidence in the rehabilitation report that adequate safety measures are in place for all infrastructure retained by agreement.
		Non-polluting	Hazardous material adequately managed, presenting a low risk of environmental harm.	Contaminated land site investigation.	The land has either been removed from the environmental management register or the land has a site management plan approved

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				Water quality monitoring.	For a period of 3 consecutive years post-mining, water quality of the receiving surface water courses should meet water quality limits described in the EA, or should remain consistent with upstream / reference site data where the limits of the EA are otherwise exceeded due to other contributing sources (natural or otherwise). For a period of 3 consecutive years post-mining, water quality of the surrounding groundwater aquifers shall remain consistent with baseline and/or reference data.
		Stable	Vegetative cover to minimise erosion.	Percentage ground cover.	Evidence that the percentage ground cover of the rehabilitated areas is statistically equivalent to analogue sites.
		Sustainable land use	Vegetation and habitat established consistent with agreed post mine land use.	Monitoring of vegetation type and density	Evidence that the vegetation species richness/composition and vegetation cover/density of the rehabilitated areas is statistically equivalent to analogue sites.
			Soil properties support desired land use.	Soil nutrient testing.	Evidence that soil nutrient levels are statistically equivalent to analogue sites.
			Establish self-sustaining natural vegetation	Monitoring of species composition, species richness, and weed abundance.	Evidence that vegetation species composition, richness and weed abundance of rehabilitated areas is statistically equivalent to analogue sites.
Waste Disposal	Spoil Dumps (both In-pit and Out-of-pit)	Safe	The spoil dumps will be safe for humans and animals on decommissioning and into the foreseeable future.	Safety assessment of slopes that are >30 degrees and > 5 metres in height.	Certification in rehabilitation report that slopes have been assessed as safe and are expected to remain so for the foreseeable future. Safety signage is consistent with the requirements of the <i>Coal Mining, Safety and Health Act 1999</i> or equivalent legislation at the time of mine rehabilitation.
		Non-polluting	Hazardous material adequately managed.	Engineering supervision and design.	Certification in the rehabilitation report that the specified minimum cover thickness is in place.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
			The spoil dumps will not be a source of serious environmental harm to the receiving environment on decommissioning and into the foreseeable future.	Downstream surface water and groundwater monitoring.	For a period of 3 consecutive years post-mining, water quality of the receiving surface water courses should meet water quality limits described in the EA, or should remain consistent with upstream / reference site data where the limits of the EA are otherwise exceeded due to other contributing sources (natural or otherwise). For a period of 3 consecutive years post-mining, water quality of the surrounding groundwater aquifers shall remain consistent with baseline and reference data.
		Stable	Minimal probability of slope slippage that will cause significant environmental harm.	Geotechnical studies of the spoil dumps.	Geotechnical evidence/report supporting a very low probability of failure or slippage causing environmental harm.
				Past record of slope failure during mining.	Evidence in rehabilitation report that appropriate control measures are in place to prevent recurrence.
			Landform design meets criteria.	Slope angle and length.	A maximum angle of 9.5 degrees (1V:6H) is achieved for all dump slopes above natural surface.
			Vegetative cover to minimise erosion.	Percentage ground cover.	Evidence that the percentage ground cover of the rehabilitated areas is statistically equivalent to analogue sites.
			Low probability of significant erosion.	Visual observations of erosion.	Evidence in rehabilitation report that required contour banks, interceptor channels and drains are in place and functioning to divert catchment and manage surface runoff.
		Sustainable land use	Vegetation and habitat established consistent with agreed post mine land use.	Monitoring of vegetation type and density.	Evidence that the vegetation species richness/composition and vegetation cover/density of the rehabilitated areas is statistically equivalent to analogue sites.
			Soil properties support desired land use.	Soil nutrient testing.	Evidence that soil nutrient levels are statistically equivalent to analogue sites.
			Establish self-sustaining natural vegetation.	Monitoring of species composition, species richness, and weed abundance.	Evidence that vegetation species composition, richness and weed abundance of rehabilitated areas is statistically equivalent to analogue sites.

H2	Rehabilitation must commence progressively in accordance with the plan of operations.
H3	Contaminated Land Before applying for surrender of a mining lease, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the mining lease which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.
H4	Before applying for progressive rehabilitation certification for an area, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the area the subject of the application which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use under Condition H1 .
H5	Minimise the potential for contamination of land by hazardous contaminants.

Agency interest: Biodiversity Offsets	
Condition number	Condition
J1	The holder of this environmental authority must take all reasonable and practicable measures to firstly avoid and then minimise impacts on any <i>State Significant Biodiversity Value</i> .
J2	The holder of this environmental authority must provide an <i>environmental offset</i> for at least, but not limited to, the <i>significant residual impacts</i> on the <i>State Significant Biodiversity Values</i> shown in Table J1 - Details of relevant State Significant Biodiversity Values below.

Table J1 - Details of relevant State Significant Biodiversity Values

State Significant Biodiversity Value	Likely extent impacted by mining activities (ha)	Form of offset delivery required
Remnant – Of Concern Regional Ecosystem 12.3.11; Essential Habitat – Koala; Watercourse (Stream Order1).	11.03	Land Based Offset, Offset Payment, or combination of Land Based Offset and Offset Payment
Essential Habitat – Pineapple Zamia in Regional Ecosystem 12.3.11	2.65	
Remnant – Of Concern Regional Ecosystem 12.5.9	8.7	
Wetland Vegetation Management Act 1999; Essential Habitat – Pineapple Zamia in Regional Ecosystem 12.5.9	3.03	
Remnant – Of Concern Regional Ecosystem 12.5.9a	2.58	
Essential Habitat – Wallum Froglet; Essential Habitat – Koala; Watercourse (Stream Order 1) in Regional Ecosystem 12.3.5	39.52	
Essential Habitat – Pineapple Zamia in Regional Ecosystem 12.3.5	15.02	
Essential Habitat – Wallum Froglet; Essential Habitat – Koala in Regional Ecosystem 12.5.4a	483.1	
Essential Habitat – Pineapple Zamia in Regional Ecosystem 12.5.4a	25.46	
Essential Habitat – Pineapple Zamia in Regional Ecosystem 12.5.4	103.85	
Connectivity in all Remanet Regional Ecosystem areas	1013	
Vulnerable Species Habitat under <i>Nature Conservation Act 1992</i> - Wallum Froglet in Regional Ecosystem 12.3.5 / 22a	39.52	Legally Secured Land Based Offset
Vulnerable Species Habitat under <i>Nature Conservation Act 1992</i> - Wallum Froglet in Regional Ecosystem 12.3.12 / 21a	483.1	

Note: Offsets for different *State Significant Biodiversity Values* may be co-located on the same land where the associated *State Significant Biodiversity Values* are provided for.

J3	The holder of this environmental authority must deliver the offset in the form specified in Table J1 - Details of relevant State Significant Biodiversity Values for at least, but not limited to the <i>State Significant Biodiversity Values</i> shown.
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J4	Staging of offset The holder of this environmental authority is permitted to deliver the offset required in stages in accordance with a biodiversity offset plan that meets the requirements of Conditions J5 and J7.
J5	Biodiversity Offset Plan The holder of this environmental authority must submit a biodiversity offset plan to the administering authority for review no less than three months before the commencement of any stage requiring delivery of an offset. The holder of this environmental authority must consider any comment provided by the administering authority in relation to the biodiversity offset plan, and must incorporate the comments within the plan as soon as practicable.
J6	The holder of this environmental authority must not commence any mining activities that require an offset to be delivered (other than minor early works or any works otherwise authorised under an environmental authority held for exploration activities) for any stage until the biodiversity offset plan for the stage meets the requirements of Conditions J5 and J7.
J7	The biodiversity offset plan must: a) identify each proposed stage of the project that may impact State Significant Biodiversity Values; b) ensure that an assessment for each stage is undertaken by an appropriately qualified person to identify the presence, type, and extent of any likely impacts to State Significant Biodiversity Values; c) include an assessment using the ecological equivalence methodology undertaken in accordance with the Ecological Equivalence Methodology Guideline – V1 October 2011 or an alternative approach approved by the administering authority. <i>NOTE: The holder of this environmental authority may apply to change the Biodiversity Offset Plan at any time, by submitting a new Biodiversity Offset Plan or an amendment to the plan to the administering authority for approval.</i>
J8	Biodiversity offset strategy Where the biodiversity offset plan identifies that the proposed mining activities for a stage of the project will potentially impact on State Significant Biodiversity Values, the holder of the environmental authority must develop a biodiversity offset strategy for the proposed stage of mining. <i>NOTE: The holder of this environmental authority may apply to change the biodiversity offset strategy for a mining stage, by submitting a new Biodiversity Offset Strategy or amendment to the strategy to the administering authority for approval.</i>

J9	The holder of this environmental authority must submit the biodiversity offset strategy required under Condition J8 to the administering authority for review no less than one (1) month before the commencement of any stage requiring delivery of an offset, (other than minor early works or any works otherwise authorised under an environmental authority held for exploration activities). The holder of this environmental authority must consider any comment provided by the administering authority in relation to the biodiversity offset strategy , and must incorporate the comments within the biodiversity offset strategy as soon as practicable.
J10	The biodiversity offset strategy for the proposed stage of mining required under Condition J8 must: a) quantify the offset requirement for that stage of mining and include a detailed description of the surveyed locations of State Significant Biodiversity Values, as assessed in the biodiversity offset plan required under Condition J7; and b) identify the required form of delivery for the offset requirement for that stage (as a legally secured land based offset, an offset payment, or combination of both); and c) for land based offset components, identify the land within the South East Queensland bioregion (including the land on which the relevant mining activity is carried out) or on other land in the State which may have the relevant State Significant Biodiversity Values and identify the proposed process by which that land will be: i. investigated, including provision for an ecological equivalence assessment of the impacted area and offset area(s) to be undertaken in accordance with the methodology outlined in the <i>Ecological Equivalence Methodology Guideline – V1 October 2011</i> or an alternative approach approved by the administering authority; and ii. legally secured; and d) for legally secured offset components to be delivered via an offset transfer, indicate the level of the offset delivery for which the offset transfer is proposed and the proposed process for entering into an agreement with an offset broker; and e) for any offset payment component, detail the type and extent of the State Significant Biodiversity Values (in hectares) for which the offset payment is proposed.
J11	Delivery of offsets The holder of this environmental authority must legally secure the component of the offset for the stage for the State Significant Biodiversity Values for the stage specified in Table J1 - Details of relevant State Significant Biodiversity Values, and any other State Significant Biodiversity Values that are subsequently identified as being delivered as a Legally Secured Land Based Offset, using a legally binding mechanism within 12 months of submitting the biodiversity offset strategy for the stage.
J12	The holder of this environmental authority must provide the administering authority with a legally executed contractual arrangement with an offset broker for the delivery of any offset transfer proposed for a stage, no less than one (1) month before the commencement of any stage of the mining activities for which an offset transfer is proposed.

J13	The holder of this environmental authority must enter into an agreement with the administering authority for the delivery of offset transfers prior to commencement of any stage of the mining activities proposing an offset transfer.
J14	The holder of this environmental authority must ensure that any offset transfer proposed is secured within 12 months of commencement of the signing of the agreement required in Condition J13 , and must provide financial assurance to cover any failure to secure the required offset. The financial assurance must be in the form of an unconditional bank guarantee for the value identified to be delivered as an offset transfer for the stage in Condition J10 .
J15	The holder of this environmental authority must pay any component of the offset that will be delivered as an offset payment: a) for the amount in full as calculated in accordance with Condition J16; and b) in accordance with any commitment given in the biodiversity offset strategy for the stage; and c) to the offset account administered by the administering authority within 4 months of submitting the biodiversity offset strategy for the stage
J16	The holder of this environmental authority must calculate any component of the offset that will be delivered as an offset payment in accordance with the following calculation: Offset payment = Land value + Administration costs + Management costs Where Land value = area impacted (ha) x 5 x \$32,000 Administration costs = \$60,000 x percentage multiplier for impacted area (ha) taken from Table J1 - Administrative costs area based percentage multiplier Management costs = (area impacted (ha) x 5 x \$7000) + \$21,000

Table J1 – Administrative costs area based percentage multiplier

Area impacted (ha)	Percentage multiplier
Five hectares or less	25%
Over five hectares but less than 20 hectares	50%
20 hectares but less than 50 hectares	75%
Over 50 hectares	100%

J17	Offset area management plan The holder of this environmental authority must develop an offset area management plan for the management of legally secured land based offset areas.
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J18	The offset area management plan must contain the following information: a) management and environmental objectives and outcomes, performance criteria and monitoring requirements; b) an analysis of the risks to achieve the objectives and outcomes; actions to minimise the risks and remedial action that will be undertaken if any of the risks occur; c) any restrictions imposed on the use of the offset area, including the management/control of weeds, stock and site access; d) the activities that will be undertaken to achieve the objectives and outcomes, including the management/control of weeds, site access, erosion and sediment and fire management; e) a map that shows spatially the areas subject to the offset area management plan; and f) a monitoring and reporting programme.
J19	The environmental authority holder must submit the offset area management plan to the administering authority for review no later than three (3) months after the land has been legally secured under Condition J11. The holder of this environmental authority must consider any comment provided by the administering authority in relation to the offset area management plan, and must incorporate the comments within the plan as soon as practicable.
J20	The environmental authority holder must manage all land legally secured under Condition J11 in accordance with the offset area management plan.

Agency interest: Structures	
Condition number	Condition
X1	Assessment of hazard category 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.
X2	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.
X3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)</i>.

X4	Design and construction¹ of a regulated structure All regulated structures must be designed by, and constructed² under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)</i>.
X5	Construction of a regulated structure is prohibited unless the environmental authority 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.
X6	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 <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)</i>, and must be recorded in the Regulated Dams/Levees register.
X7	Regulated structures must: a) be designed and constructed in accordance with and conform to the requirements of the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)</i>; 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.
X8	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;

¹ Construction of a dam includes modification of an existing dam — refer to the definitions.

² Certification of design and construction may be undertaken by different persons.

X9	Operation of a regulated structure Operation of a regulated structure is prohibited unless: a) the environmental authority 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 X8, and (ii) a set of 'as constructed' drawings and specifications, and (iii) certification of those 'as constructed drawings and specifications' in accordance with Condition X8, and (iv) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the Design Storage Allowance (DSA) volume across the system, a copy of the certified system design plan; (v) the requirements of this environmental authority relating to the construction of the regulated structure have been met; (vi) the environmental authority holder has entered the details required under this authority, into a Register of Regulated Structures; and (vii) there is a current operational plan for the regulated structures.
X10	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.
X11	Mandatory reporting level Conditions X12 to X15 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
X12	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.
X13	The environmental authority 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 .
X14	The environmental authority 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 .
X15	The environmental authority holder must record any changes to the MRL in the Register of Regulated Structures.
X16	Design storage allowance The environmental authority 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.

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X17	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 DSA volume for the dam (or network of linked containment systems).
X18	The environmental authority 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.
X19	The environmental authority 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.
X20	Annual inspection report Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person .
X21	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 .
X22	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)</i> .
X23	The environmental authority 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 environmental authority holder, provide this to the administering authority within 10 business days of receipt of the request.
X24	Transfer arrangements The environmental authority 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 environmental authority holder on transfer of this authority .

X25	Decommissioning and rehabilitation Dams must not be abandoned but be either: a) decommissioned and rehabilitated to achieve compliance with Condition X26; 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).
X26	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 <i>Instructions for the treatment and management of acid sulfate soils (2001)</i> 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 environmentally relevant 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 environmentally relevant activity(ies) being completed.
X27	Register of Regulated Dams A Register of Regulated Dams must be established and maintained by the environmental authority holder for each regulated dam.

X28	The environmental authority 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.
X29	The environmental authority holder must make a final entry of the required information in the Register of Regulated Dams once compliance with Condition X8 has been achieved.
X30	The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.
X31	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.
X32	The environmental authority 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.

END OF CONDITIONS

Definitions

Words and phrases used throughout this environmental authority are defined below. Where a definition for a term used in this environmental authority is not provided within this environmental authority, but is provided in the Environmental Protection Act 1994 or subordinate legislation, the definition in the EP Act or subordinate legislation must be used.

‘acid mine drainage’ means any contaminated discharge emanating from a mining activity formed through a series of chemical and biological reactions, when geological strata is disturbed and exposed to oxygen and moisture.

‘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.

‘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 (dBL).

‘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.

‘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 relating to the subject matter using the relevant protocols, standards, methods or literature.

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

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

‘associated works’ in relation to a dam, means:

- a) operations of any kind and all things constructed, erected or installed for that dam; and

b) any land used for those operations.

‘authority’ means an environmental authority or a development approval.

‘background’, with reference to the water schedule means the average of samples taken prior to the commencement of mining from the same waterway that the current sample has been taken.

‘blasting’ means the use of explosive materials to fracture:

- a) rock, coal and other minerals for later recovery; or
- b) structural components or other items to facilitate removal from a site or for reuse.

‘certification’ means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*, 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’.

‘chemical’ means:

- a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994 (Commonwealth)*; or
- b) a dangerous good under the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council; or
- c) a lead hazardous substance within the meaning of the Workplace Health and Safety Regulation 1997;
- d) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers’ Advisory Council and published by the Commonwealth; or
- e) any substance used as, or intended for use as:
 - (i) a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product; or
 - (ii) a surface active agent, including, for example, soap or related detergent; or
 - (iii) a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide; or
 - (iv) a fertiliser for agricultural, horticultural or garden use; or
 - (v) a substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or
 - (vi) manufacture of plastic or synthetic rubber.

‘commercial place’ means a workplace 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.

‘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’ 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 (eg 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*.

‘disturbance’ of land includes:

- a) compacting, removing, covering, exposing or stockpiling of earth;
- b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion;
- c) carrying out mining within a watercourse, waterway, wetland or lake;
- d) the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls;
- e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after the mining activity has ceased; or
- f) releasing of contaminants into the soil, or underlying geological strata.

However, the following areas are not included when calculating areas of ‘disturbance’:

- a) areas off lease (e.g. roads or tracks which provide access to the mining lease);
- b) areas previously disturbed which have achieved the rehabilitation outcomes;
- c) by agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);
- d) areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner.
- e) disturbance that pre-existed the grant of the tenure.

‘EC’ means electrical conductivity.

‘effluent’ treated waste water released from sewage treatment plants.

‘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.

‘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

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

‘hazard’ in relation to a dam as defined, 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.

‘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 *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams(EM635)*.

‘holder’ means any person who is the holder of, or is acting under, that environmental authority.

‘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, levees, roads and tracks, buildings and other structures built for the purpose of the mining activity.

‘land’ in the ‘land schedule’ of this document means land excluding waters and the atmosphere, that is, the term has a different meaning from the term as defined in the *Environmental Protection Act 1994*. For the purposes of the *Acts Interpretation Act 1954*, it is expressly noted that the term ‘land’ in this environmental authority relates to physical land and not to interests in land.

‘land use’ means the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

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

‘Legally binding mechanism’ may include one of the following:

- declaration of an area of high conservation value under the *Vegetation Management Act 1999*
- a covenant under the *Land Act 1994*; *Land Title Act 1994*
- gazetted as a protected area under the *Nature conservation Act 1992*, such as a nature refuge
- another mechanism administered and approved by the State.

‘legally secure(d)’ means an offset area that is:

- provided protection from clearing through the use of a legally binding mechanism
- supported by an offset area management plan that identifies the actions required to ensure an offset area is managed to meet the objectives of the offset area
- registered on title, certified or gazetted as required by the legally binding mechanism

‘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.

‘licensed place’ means the mining activities carried out at the mining tenements listed on page 1 of this environmental authority.

‘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)*.

‘m’ means metres.

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

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

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

‘mine affected water’:

- a) means the following types of water:
 - (i) pit water, tailings dam water, processing plant water;
 - (ii) water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the Environmental Protection Regulation 2008 if it had not formed part of the mining activity;
 - (iii) rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage such runoff, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water;
 - (iv) groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;
 - (v) groundwater from the mine’s dewatering activities;
 - (vi) a mix of mine affected water (under any of paragraphs i)-v) and other water.
- b) does not include surface water runoff which, to the extent that it has been in contact with areas disturbed by mining activities that have not yet been completely rehabilitated, has only been in contact with:
 - (i) land that has been rehabilitated to a stable landform and either capped or revegetated in accordance with the acceptance criteria set out in the environmental authority but only still awaiting maintenance and monitoring of the rehabilitation over a specified period of time to demonstrate rehabilitation success; or
 - (ii) land that has partially been rehabilitated and monitoring demonstrates the relevant part of the landform with which the water has been in contact does not cause environmental harm to waters or groundwater, for example:
 - a. areas that are been capped and have monitoring data demonstrating hazardous material adequately contained with the site;

- b. evidence provided through monitoring that the relevant surface water would have met the water quality parameters for mine affected water release limits in this environmental authority, if those parameters had been applicable to the surface water runoff; or

(iii) both.

‘minor early works’ means preconstruction surveying, establishment of work site security arrangements (including signs, fences, safety barriers and temporary security personnel facilities), demolition and removal of structures and required public utility works up to the boundary of construction sites, but does not include any vegetation clearing associated with these activities.

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

‘mS/cm’ means milli-Siemens per centimetre.

‘NATA’ means National Association of Testing Authorities, Australia.

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

‘non polluting’ means having no adverse impacts upon the receiving environment.

‘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 (mm/s).

‘protected area’ means – a protected area under the *Nature Conservation Act 1992*; or

- a) a marine park under the *Marine Parks Act 1992*; or
- b) a World Heritage Area.

‘receiving environment’ in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. The receiving environment includes (but is not limited to:

- a) a watercourse;
- b) groundwater; and
- c) an area of land that is not specified in the table of activities at the start of this environmental authority.

The term does not include land that is specified in the table of activities at the start of this environmental authority.

‘receiving waters’ means the waters into which this environmental authority authorises releases of mine affected water.

‘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

'release event' means a surface water discharge from mine affected water storages or contaminated areas on the licensed place.

'RL' means reduced level, relative to mean sea level as distinct from depths to water.

'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.

'saline drainage' The movement of waters, contaminated with salts, as a result of the mining activity.

'sensitive place' means:

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

f) a public park or gardens.

Note: The definition of ‘sensitive place’ and ‘commercial place’ is based on Schedule 1 of EPP Noise. That is, a sensitive place is inside or outside on a dwelling, library & educational institution, childcare or kindergarten, school or playground, hospital, surgery or other medical institution, commercial & retail activity, protected area or an area identified under a conservation plan under *Nature Conservation Act 1992* as a critical habitat or an area of major interest, marine park under *Marine Parks Act 2004*, park or garden that is outside of the mining lease and open to the public for the use other than for sport or organised entertainment. A commercial place is inside or outside a commercial or retail activity.

A mining camp (i.e., accommodation and ancillary facilities for mine employees or contractors or both, associated with the mine the subject of the environmental authority) is not a sensitive place for that mine or mining project, whether or not the mining camp is located within a mining tenement that is part of the mining project the subject of the environmental authority. For example, the mining camp might be located on neighbouring land owned or leased by the same company as one of the holders of the environmental authority for the mining project, or a related company. Accommodation for mine employees or contractors is a sensitive place if the land is held by a mining company or related company, and if occupation is restricted to the employees, contractors and their families for the particular mine or mines which are held by the same company or a related company.

For example, a township (occupied by the mine employees, contractors and their families for multiple mines that are held by different companies) would be a sensitive place, even if part or all of the township is constructed on land owned by one or more of the companies.

‘significant residual impact’ means an adverse impact, whether direct or indirect, of the mining activities on all or part of *State Significant Biodiversity Value* that—

- remains, or will or is likely to remain, (whether temporarily or permanently) despite on-site mitigation measures for the mining activities; and
- is, or will or is likely to be, significant.

‘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.

‘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.

‘the Act’ means the *Environmental Protection Act 1994*.

‘void’ means any constructed, open excavation in the ground.

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

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

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

‘water quality’ means the chemical, physical and biological condition of water.

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

‘water 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 DEFINITIONS

Figure 1 – Map of land disturbance categories

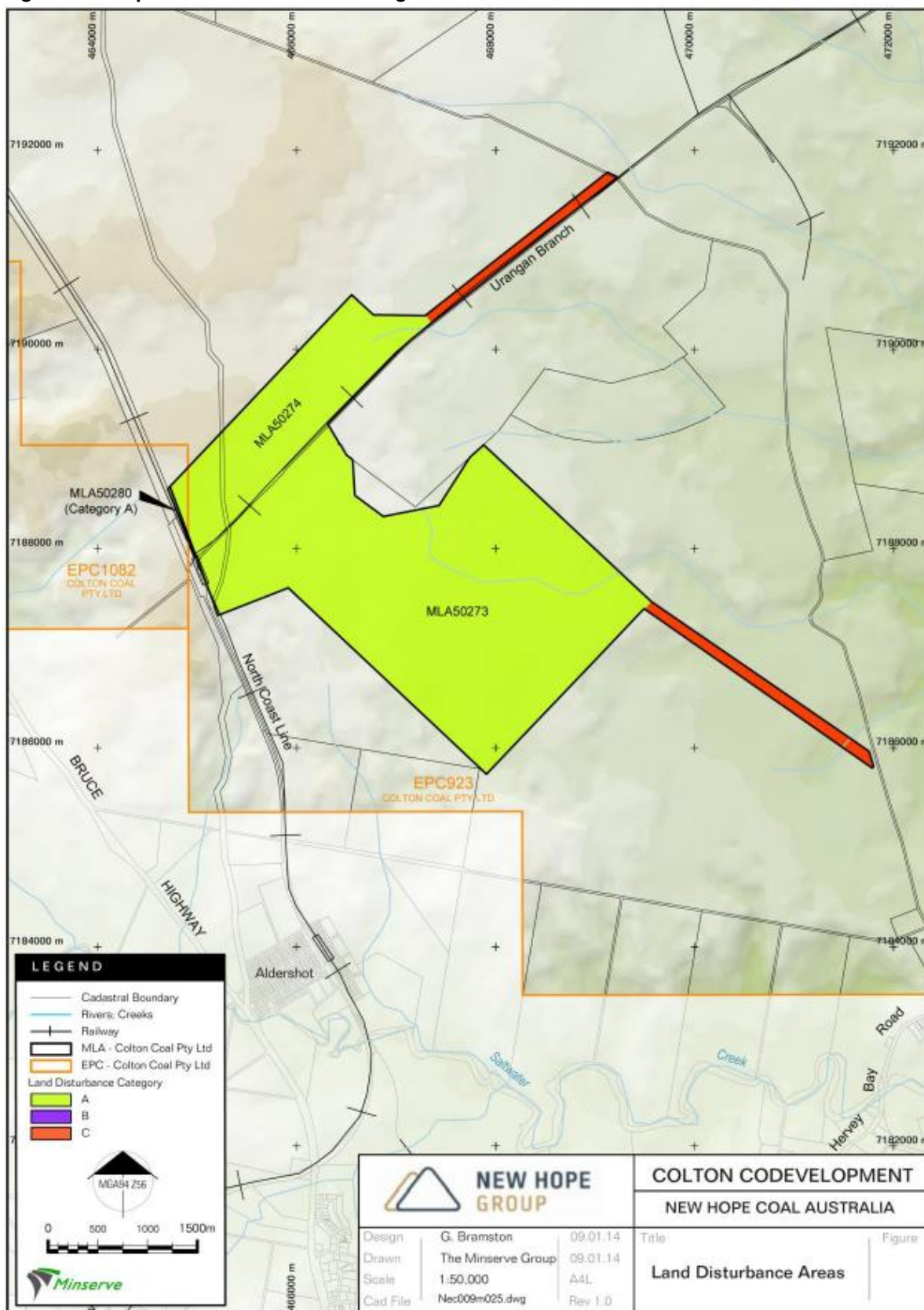


Figure 2 – Location of air monitoring

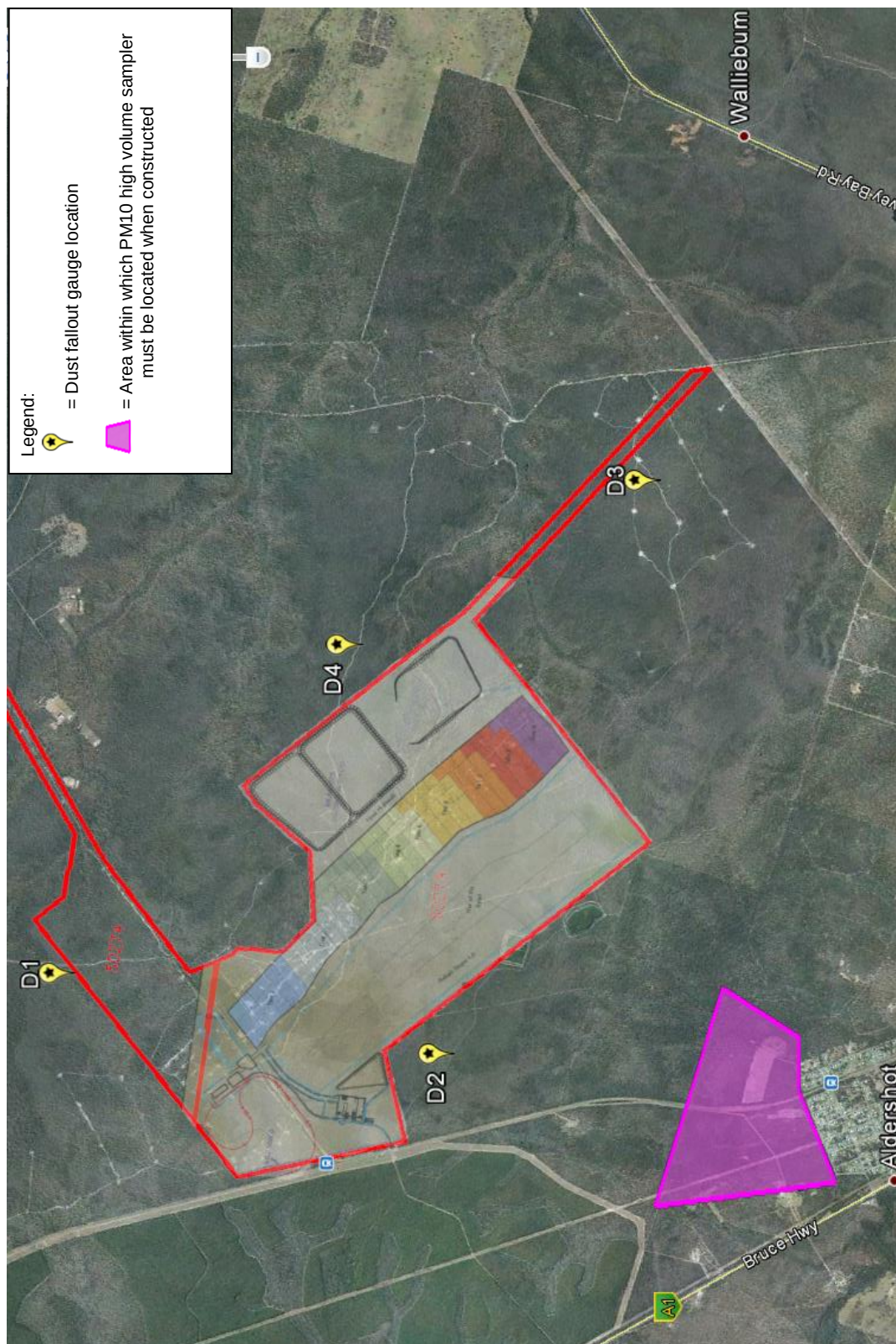


Figure 3 – Location of noise limit locations

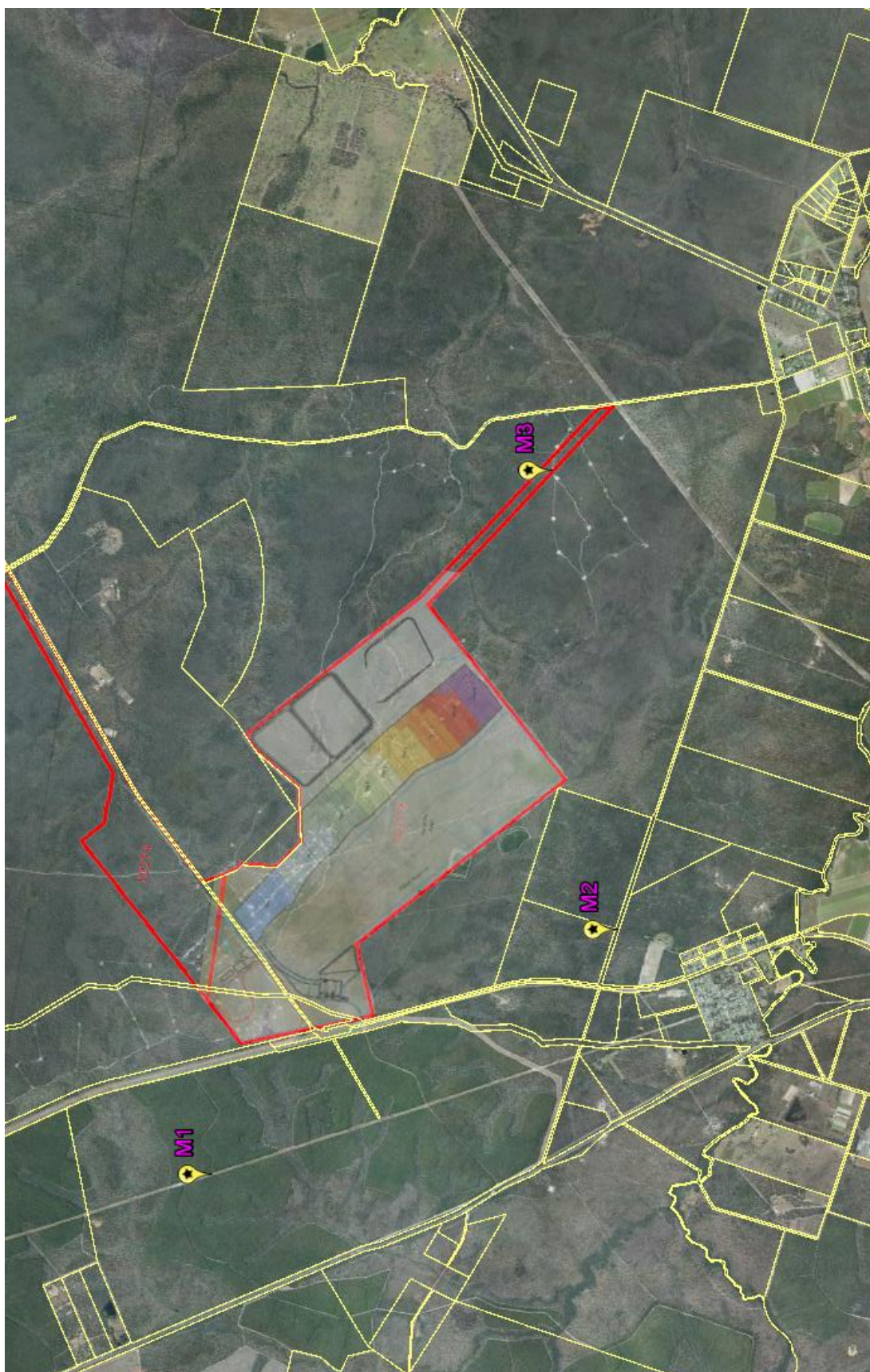


Figure 4 - Location of groundwater monitoring bores

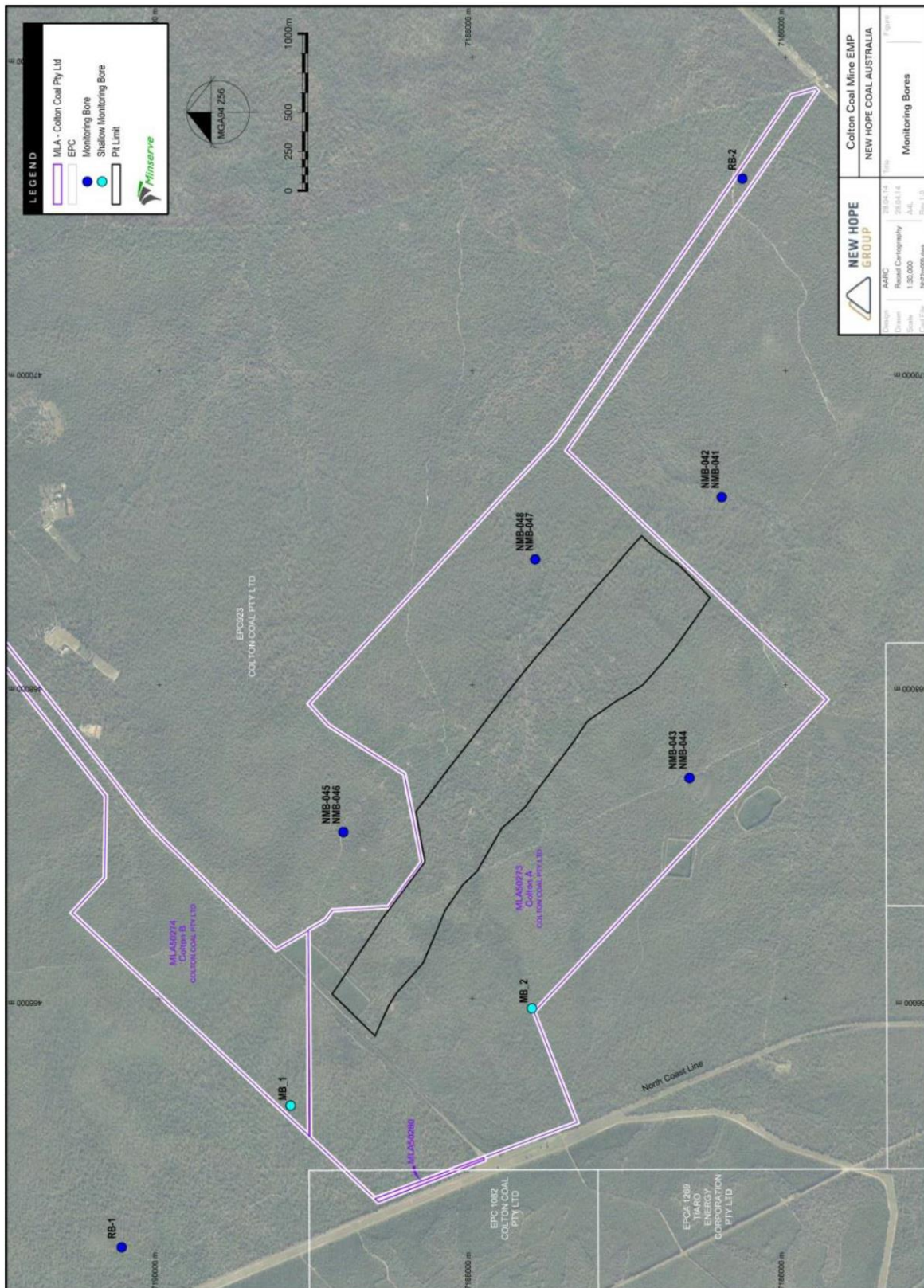
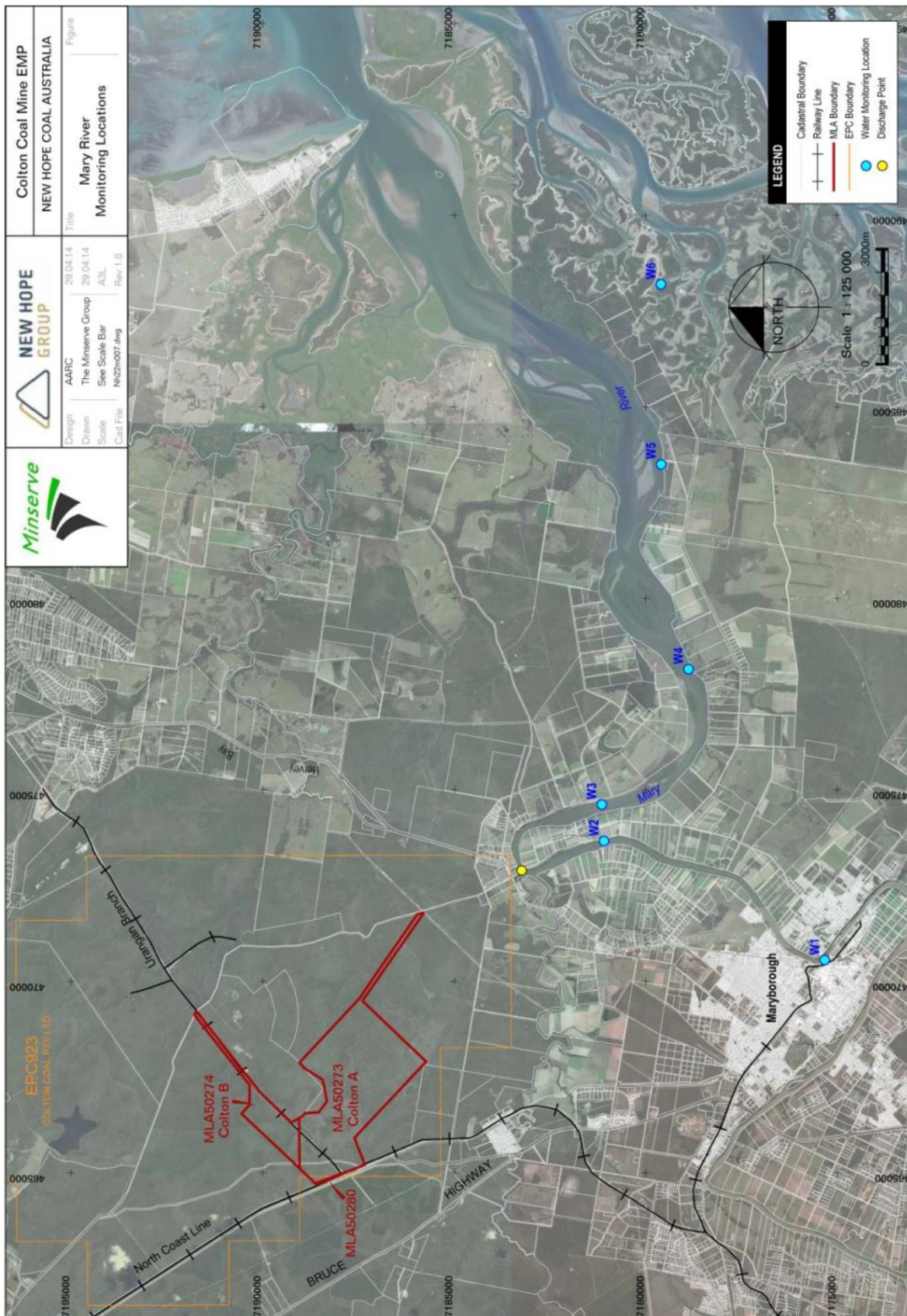


Figure 5 – Location of Mine affected water release points and receiving waters



END OF ENVIRONMENTAL AUTHORITY