Permit

Environmental Protection Act 1994

Environmental authority EPML02090614

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

Environmental authority number: EPML02090614

Environmental authority takes effect on 28 November 2022.

The anniversary date of this environmental authority is 22 December each year.

Environmental authority holder(s)

Name(s)	Registered address
BOWEN PCI PTY LTD	Level 7, 167 Eagle Street BRISBANE CITY QLD 4000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 - 13 - Mining black coal	ML80194
Ancillary 08 - Chemical Storage - 1 - Storing a total of 50t or more of chemicals of dangerous goods class 1 or class 2, division 2.3 under subsection (1)(a)	ML80194
Ancillary 08 - Chemical Storage - 3 - Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)	ML80194
Ancillary 60 - Waste disposal - 1(a) - Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) - less than 50,000t	ML80194
Ancillary 63 - Sewage Treatment - 1(b-ii) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of more than 100 but not more than 1500EP - otherwise	ML80194

ABN 46 640 294 485

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).

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 *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

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

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

	28 November 2022
Signature	Date

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

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Privacy statement

Pursuant to section 540 of the EP Act, the Department is required to maintain a register of certain documents and information authorised under the EP Act. A copy of this document will be kept on the public register. The register is available for inspection by members of the public who are able take extracts, or copies of the documents from the register. Documents that are required to be kept on the register are published in their entirety unless alteration is required by the EP Act. There is no general discretion allowing the Department to withhold documents or information required to be kept on the public register. For more information on the Department's public register, search 'public register' at www.qld.gov.au. For queries about privacy matters please email privacy@des.qld.gov.au or telephone 13 74 68.

Obligations under the *Environmental Protection Act 1994*

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

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

Other permits required

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

Conditions of environmental authority

Schedule A: General	
Condition number	**Condition**
A1	**Scope of approval** 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	The environmental authority holder is only permitted to conduct mining activities in the area(s) defined in **Table A1: Mining Domains** and **Attachment 1 – Project Layout**.

Table A1 – Mining Domains

Domain	Area (Ha)	Location
Mine Industrial Area and Run-of-Mine	23.4	Attachment 1 – Project Layout.
Operational Pit	138.6	
East Dump	105.1	
West Dump	283	
Sediment dams and drains	14.7	
Total disturbance	564.8	
Residual void	48.8	

A3	This environmental authority authorises the extraction of no more than 1.8 million tonnes of run-of-mine (ROM) coal per annum.
A4	**Estimated Rehabilitation Cost (ERC)** The environment authority holder must not carry out, or allow the carrying out of, a resource activity under this environment authority unless – a) An ERC decision is in effect for the resource activity being carried out; and b) The environmental authority holder has paid a contribution to the scheme fund or given a surety for the environmental authority under the *Mineral and Energy Resources (Financial Provisioning) Act 2018*; and c) The holder has complied with the requirements under the *Mineral and Energy Resources (Financial Provisioning) Act 2018* for paying a contribution to the scheme fund, or giving a surety for the authority, as required from time to time.

A5	**New Estimated Rehabilitation Cost (ERC) decision before expiry** When ERC decision is in force for this environment authority, the environmental authority holder must apply, under section 298 of the *Environmental Protection Act 1994*, for a new ERC decision, at least **three (3) months** before the ERC period to which the decision relates ends.
A6	**When holder must re-apply for Estimated Rehabilitation Cost (ERC) decision** When ERC decision is in force for this environmental authority, the environmental authority holder must re-apply within **ten (10) business days** under section 298 of the *Environmental Protection Act 1994* for an ERC decision when: a) there is an increase in the likely maximum amount of disturbance to the environment as a result of the holder carrying out the resource activity; or b) there is a change relating to the carrying out of the resource activity that may result in an increase in the ERC for the resource activity.
A7	**Maintenance and measures** The environmental authority holder must: a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; b) maintain such measures, plant and equipment in a proper and efficient condition; c) operate such measures, plant and equipment in a proper and efficient manner; and d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are calibrated and certified by an appropriately qualified person.
A8	**Monitoring** All monitoring records or reports required by this environmental authority must be kept for a period of not less than **five (5) years**.
A9	**Risk Management System** The environmental authority holder must develop and implement a Risk Management System for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000), or the latest edition of an Australian standard for risk management, to the extent relevant to environmental management, by **30 November 2019**.
A10	**Notification of emergencies, incidents and exceedances** The environmental authority holder must notify the administering authority by written notification within **twenty-four (24) hours**, after becoming aware of any emergency, incident or exceedance that results in the release of contaminants not in accordance the conditions of this environmental authority.
A11	Within **ten (10) business days** following the initial notification of an emergency, incident or exceedance, or receipt of monitoring results, further advice must be provided to the administering authority, including the following: a) results and interpretation of any samples taken and analysed; b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and c) proposed actions to prevent a recurrence of the emergency, incident or exceedance.

A12	**Complaints** The environmental authority holder must record all environmental complaints received about the mining activities including: a) name, address and contact number of the complainant; b) time and date of complaint; c) reasons for the complaint; d) investigations undertaken; e) conclusions formed; f) actions taken to resolve the complaint; g) any abatement measures implemented; and h) person responsible for resolving the complaint.
A13	The environmental authority holder must, when requested by the administering authority, undertake relevant specified monitoring to investigate any complaint of environmental nuisance or 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 **ten (10) business days** of completion of the investigation, or no later than **ten (10) business days** after the end of the timeframe nominated by the administering authority to undertake the investigation.

Schedule B: Air	
Condition number	**Condition**
B1	The release of dust or particulate matter or both resulting from the authorised mining activities must not cause an environmental nuisance at any sensitive place or commercial place.
B2	**Dust and particulate matter monitoring** Dust and particulate matter emissions generated by the mining activities must not exceed the following levels when measured at any sensitive place or commercial place: a) Dust deposition of 120 milligrams per square metre per day, averaged over one (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 ten (10) micrometres (PM_{10}) suspended in the atmosphere of fifty (50) micrograms per cubic metre over a 24-hour averaging time when monitored in accordance with the most recent version of either: i) Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM_{10} high volume sampler with size-selective inlet – Gravimetric method; ii) Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM_{10} low volume sampler—Gravimetric method; or iii)Any alternative method of sampling PM_{10}, approved by the administering authority. c) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a one (1) year averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.3 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method.
B3	The environmental authority holder must monitor air quality which must include, but not be limited to: a) continuous monitoring in accordance with condition **B2(b);** b) meteorological monitoring including, but not limited to, temperature, wind speed and direction, as a single location representative of the Bluff Coal Mine; c) monitoring locations must comply with Australian Standard AS/NZS 3580.1.1 Methods for siting and analysis of ambient air. Part 1.1: Guide to siting air monitoring equipment; and, d) investigation of all exceedances to determine the cause of emissions from Bluff Coal Mine. Note: The administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition **C2** is contravened due to unforeseen events including, but not limited to, mischief or wilful damage, power failure or scheduled maintenance.
B4	When requested by the administering authority, dust and particulate monitoring must be undertaken in accordance with Condition **B2(a)** and **B2(c)** at a location(s) and within a timeframe nominated by the administering authority, and the results must be submitted within **ten (10) business days** to the administering authority following completion of monitoring.
B5	a) If the monitoring, carried out in accordance with conditions **B3** and **B4**, indicates an exceedance of the relevant limits in condition **B2**, then the environmental authority holder must investigate whether the exceedance is due to emissions from the activity. If the mining activity is found to be the cause of the exceedance then the environmental authority

	holder must immediately implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance.
B6	**Air Emissions Management Plan** An Air Emissions Management Plan must be developed and implemented by an appropriately qualified person for all stages of the authorised mining activities. The Air Emissions Management Plan must be submitted to the administering authority for review and comment by **30 November 2019**.
B7	The Air Emissions Management Plan required by condition **B6** must include: a) a preventative management system for PM10 and TSP; and b) monitoring program for PM_{10} and TSP between the mine and the township of Bluff.
B8	Within **twenty (20) business days** of receiving comments from the administering authority as per condition **B6**, the Air Emissions Management Plan must be updated to address the comments, amended to adopt any recommendations and be submitted to the administering authority.
B9	An annual report on the Air Emissions Management Plan required by condition **B5** must be submitted to the administering authority with each annual return. The report must include: a) a review of the suitability of the dust management system; b) recommendations or improvements to the Air Emissions Management Plan, including whether additional monitoring locations are required; and c) the results of the monitoring program and the actions taken to reduce potential impacts on sensitive receptors and commercial places from the authorised mining activities, when applicable.
B10	**Dust management - Coal transport** Take reasonable and practicable **measures** necessary to prevent release of windblown dust from vehicles used for transporting coal extracted from the **site.** Reasonable and practicable **measures** may include but are not limited to: a) wetting down the load prior to transport; b) having the entire load covered with a tarpaulin or similar material for the duration of transport; and c) clearing of spillages from side rails, tail gates and draw bars of vehicles prior to and after delivery.
B11	**Dust control - trafficable areas** Trafficable areas (including entry and exit points from Capricorn Highway) must be maintained using reasonable and practicable measures necessary to minimise the release of windblown or traffic generated dust to the atmosphere. Reasonable and practicable measures may include but are not limited to: a) keeping surfaces clean; b) sealing with bitumen or other suitable material; c) using water sprays; d) installing an effective truck body and wheel wash facility; and e) using dust suppressants and wind breaks.

B12	**Odour nuisance** The release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the mining activity must not cause an environmental nuisance at any sensitive or commercial place.
B13	When requested by the administering authority, odour monitoring must be undertaken within a timeframe nominated by the administering authority to investigate any complaint of environmental nuisance at any sensitive or commercial place, and the results must be notified within **ten (10) business days** to the administering authority following completion of monitoring.
B14	If the administering authority determines the odour released to constitute an environmental nuisance, then the environmental authority holder must immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance.

Schedule C: Noise	
Condition number	**Condition**
C1	**Noise limits** The environmental authority holder must ensure that noise generated by the mining activities does not cause the criteria in **Table C1 – Noise limits** to be exceeded at a sensitive or commercial place.

Table C1 – Noise limits

Sensitive Place						
Noise level dB(A) measured as:	**Monday to Saturday**			**Sundays and Public Holidays**		
	7am to 6pm	**6pm to 10pm**	**10pm to 7am**	**9am to 6pm**	**6pm to 10pm**	**10pm to 9am**
$LA_{eq, adj\ 15\ mins}$	50	45	40	45	40	35
$LA_{1\ adj\ 15\ mins}$	55	50	45	50	45	40
Commercial Place						
Noise level dB(A) measured as:	**Monday to Saturday**			**Sundays and Public Holidays**		
	7am to 6pm	**6pm to10pm**	**10pm to7am**	**7am to 6pm**	**6pm to 10pm**	**10pm to 7am**
$LA_{eq\ adj\ 15\ mins}$	55	50	45	50	45	40

C2	**Monitoring and reporting** The environmental authority holder must conduct noise monitoring to determine compliance with **Table C1: Noise limits**, which must include, but not be limited to: a) continuous noise monitoring, in accordance with relevant Australian Standards and at the locations identified in the Noise Management Plan required by condition **C5**; b) quarterly attended monitoring, undertaken by an appropriately qualified person, at the sensitive place in accordance with the most current version of the administering authority's Noise Monitoring Manual; c) meteorological monitoring including, but not limited to, temperature, wind speed and direction; d) the monitoring locations must comply with the relevant Australian Standards and the most current version of the administering authority's Noise Monitoring Manual; and, e) investigation of all measured exceedances to determine the cause of noise emissions from Bluff Coal Mine. Note: The administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition **C2** is contravened due to unforeseen events including, but not limited to, mischief or wilful damage, power failure or scheduled maintenance.
C3	Noise monitoring and recording required by condition **C2** must include the following descriptors, 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) f) location, date and time of monitoring; and 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.

C4	a) If an exceedance in accordance with condition **C1** and **Table C1: Noise Limits** is identified and attributable to mine noise, the environmental authority holder must notify the administering authority within **ten (10) business days** of receiving the result.
C5	**Noise Management Plan** A Noise Management Plan must be developed by a suitably qualified person(s) for all stages of the mining activity. A plan must be submitted to the administering authority for review and comment by **31 January 2020.** The Noise Management Plan must include: a) a description of noise monitoring locations, including GPS coordinates and monitoring frequency; b) a description of noise monitoring procedures to identify potential noise exceedances; c) noise trigger values to prevent exceedances at sensitive receptors; d) management and mitigation strategies to reduce noise levels at sensitive receptors; e) Trigger Action Response Plan; f) a description of the complaint management and investigation process; and, g) an annual review of the acquired monitoring data and the suitability of the noise management plan.
C6	Within **twenty (20) business days** of receiving comments from the administering authority as per condition **C5**, the Noise Management Plan must be updated to address the comments, amended to adopt any recommendations and submitted to the administering authority.
C7	**Vibration and airblast overpressure nuisance** The environmental authority holder must ensure that blasting does not cause the limits for peak particle velocity and air blast overpressure in **Table C2 – Blasting noise limits** to be exceeded at a sensitive or commercial place.

Table C2 – Blasting limits

Blasting noise limits	**Sensitive or commercial place 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

C8	a) If an exceedance in accordance with **Condition C7** and **Table C2: Blasting limits** is identified, investigated and determined to be representative of mining noise the environmental authority holder must notify the administering authority within **ten (10) business days** of receiving the results.

Schedule D: Water	
Condition number	**Condition**
D1	Contaminants must not be released to any waters as a result of the authorised mining activities, except as permitted under the conditions of this environmental authority.

D2	**Monitoring and reporting** All determinations of water quality and biological monitoring must be performed by a suitably qualified and experienced person.
D3	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 D1 - Mine affected water release points, sources and receiving waters** and depicted in **Attachment 4 – Mine affected water release points** of this environmental authority.
D4	The release of mine affected water is not authorised to occur until the administering authority approves the discharge points, monitoring points, trigger limits and release limits identified in **Table D1 - Mine affected water release points, sources and receiving waters; Table D2 - Mine affected water release limits; Table D3 - Release contaminant trigger investigation levels, potential contaminants; Table D4 - Mine affected water release during flow events; Table D5 - Receiving waters contaminant trigger levels;** and **Table D6 - Receiving water upstream background sites and downstream monitoring points** of this environmental authority.
D5	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 **D33** is permitted.

Table D1 - 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
As per condition D32	As per condition D32	As per condition D32	As per condition D32	As per condition D32	As per condition D32
As per condition D32	As per condition D32	As per condition D32	As per condition D32	As per condition D32	As per condition D32

D6	The release of mine affected water to waters in accordance with condition **D3** must not exceed the release limits stated in **Table D2 - Mine affected water release limits** when measured at the monitoring points specified in **Table D1 - Mine affected water release points, sources and receiving waters** for each quality characteristic.

Table D2 - Mine affected water release limits

Quality Characteristic	Release Limits	Monitoring frequency
Electrical conductivity (µS/cm)	Release limits specified in **Table D4** for variable flow criteria.	Daily during release (the first sample must be taken within 2 hours of commencement of release, daily during release and at conclusion of release)
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	

Total Suspended Solids	As per condition D32	

D7	The release of mine affected water to waters from the release points must be monitored at the locations specified in **Table D1 - Mine affected water release points, sources and receiving waters** for each quality characteristic and at the frequency specified in **Table D2 - Mine affected water release limits** and **Table D3 - Release contaminant trigger investigation levels, potential contaminants**.
D8	The administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition **D7** 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.

Table D3 - Release contaminant trigger investigation levels

Quality Characteristic	Trigger Levels (µg/L)	Comment on Trigger Level	Monitoring Frequency
Aluminium	55	*For aquatic ecosystem protection, based on SMD guideline*	First sample must be taken within 2 hours of commencement of release, weekly during release and at conclusion of release
Arsenic	13	*For aquatic ecosystem protection, based on SMD guideline*	
Cadmium	0.2	*For aquatic ecosystem protection, based on SMD guideline*	
Chromium	1	*For aquatic ecosystem protection, based on SMD guideline*	
Copper	2	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Iron	300	*For aquatic ecosystem protection, based on low reliability guideline*	
Lead	4	*For aquatic ecosystem protection, based on SMD guideline*	
Mercury	0.2	*For aquatic ecosystem protection, based on LOR for CV FIMS*	
Nickel	11	*For aquatic ecosystem protection, based on SMD guideline*	
Zinc	8	*For aquatic ecosystem protection, based on SMD guideline*	
Boron	370	*For aquatic ecosystem protection, based on SMD guideline*	
Cobalt	1.4	*For aquatic ecosystem protection, based on low reliability guideline*	
Manganese	1900	*For aquatic ecosystem protection, based on SMD guideline*	
Molybdenum	34	*For aquatic ecosystem protection, based on low reliability guideline*	
Selenium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Silver	1	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Uranium	1	*For aquatic ecosystem protection, based on LOR for ICPMS*	

Vanadium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Ammonia	900	*For aquatic ecosystem protection, based on SMD guideline*	
Nitrate	1100	*For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN*	
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000	*Protection of livestock and short term irrigation guideline*	
Sodium	As per condition D32		
Total Suspended Solids	As per condition D32		
Sulphate (SO^4_2-) (mg/L)	As per condition D32	*Drinking water environmental values from NHMRC 2006 guidelines OR ANZECC*	

Table D3 - Release contaminant trigger investigation levels, potential contaminants *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.*

D9	If quality characteristics of the release exceed any of the trigger levels specified in **Table D3 - Release contaminant trigger investigation levels, potential contaminants** during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in **Table D3 - Release contaminant trigger investigation levels, potential contaminants** and: a) where the trigger values are not exceeded then no action is to be taken; or b) where the downstream results exceed the trigger values specified **Table D3 - Release contaminant trigger investigation levels, potential contaminants** for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and: (i) if the result is less than the background monitoring site data, then no action is to be taken; or (ii) if the result is greater than the background monitoring site data, complete an investigation into the potential for environmental harm and provide a written report to the administering authority within **ninety (90) days** of receiving the result, outlining: (A) details of the investigations carried out; and (B) actions taken to prevent environmental harm.
D10	Where an exceedance of a trigger level has occurred and is being investigated, in accordance with condition **D9(b)(ii)**, no further reporting is required for subsequent trigger events for that quality characteristic.
D11	If an exceedance in accordance with condition **D9(b)(ii)** is identified, the environmental authority holder must notify the administering authority in writing within **twenty-four (24) hours** of receiving the result.
D12	**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 D4 – Mine affected water release during flow events**.
D13	Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with condition **D3** must only take place during periods of natural flow in accordance with the receiving water flow criteria for discharge specified in **Table D4 - Mine affected water release during flow events** for the release point(s) specified in **Table D1 - Mine affected water release points, sources and receiving waters**.
D14	The release of mine affected water to waters in accordance with condition **D3** must not exceed the Maximum Release Rate (for all combined release point flows) for each receiving water flow criterion for discharge specified in **Table D4 - Mine affected water release during flow events** when measured at the monitoring points specified in **Table D1 - Mine affected water release points, sources and receiving waters**.

Table D4 - Mine affected water release during flow events

Receiving waters/ stream	Release Point (RP)	Gauging station	Gauging Station Latitude (decimal degree, GDA94)	Gauging Station Longitude (decimal degree, GDA94)	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for discharge (m^3/s)	Maximum release rate (for all combined RP flows)	Electrical Conductivity Release Limits
Columba Creek Downstream	CCD	As per condition D32	As per condition D32	As per condition D32	Continuous (minimum daily)	**Low Flow** As per condition D32	As per condition D32	As per condition D32
						Medium Flow As per condition D32	As per condition D32	As per condition D32
						High Flow As per condition D32	As per condition D32	As per condition D32
Rufus Creek Downstream	RCD	As per condition D32	As per condition D32	As per condition D32	Continuous (minimum daily)	**Low Flow** As per condition D32	As per condition D32	As per condition D32
						Medium Flow As per condition D32	As per condition D32	As per condition D32
						High Flow As per condition D32	As per condition D32	As per condition D32

D15	The daily quantity of mine affected water released from each release point must be measured and recorded.
D16	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.
D17	**Notification of release event** The environmental authority holder must notify the administering authority via WaTERS as soon as practicable and no later than **twenty-four (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 **Water conditions** of this environmental authority (that is, contaminant limits, natural flow, discharge volume); c) release point/s; d) release rate; e) release salinity; and f) receiving water/s including the natural flow rate.
D18	a) The environmental authority holder must notify the administering authority via WaTERS as soon as practicable and nominally no later than **twenty-four (24) hours** after cessation of a release event notified under condition **D17** and within **twenty-eight (28) days** provide the following information in writing: i. release cessation date/time; ii. natural flow rate in receiving water; iii. volume of water released; iv. details regarding the compliance of the release with the **Water Conditions** of this environmental authority (i.e. contaminant limits, natural flow, discharge volume); v. all in-situ water quality monitoring results; and i. any other matters pertinent to the water release event. *Note: Successive or intermittent releases occurring within **twenty-four (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 **D17** and **D18**, provided the relevant details of the release are included within the notification provided in accordance with conditions **D17** and **D18**.*
D19	**Notification of release event exceedance** If the release limits defined in **Table D2 - Mine affected water release limits** are exceeded, the environmental authority holder must notify the administering authority within **twenty-four (24) hours** of receiving the results.

D20	The environmental authority holder must, within **twenty-eight (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; and h) any other matters pertinent to the water release event.
D21	**Receiving environment monitoring and contaminant trigger levels** The quality of the receiving waters must be monitored at the locations specified in **Table D6 - Receiving water upstream background sites and downstream monitoring points** and **Attachment 5 - Surface Water Monitoring Points** for each quality characteristic and at the monitoring frequency stated in **Table D5 - Receiving waters contaminant trigger levels**.

Table D5 - Receiving waters contaminant trigger levels

Quality Characteristic	Quality limits	Limit	Monitoring Frequency
pH	*As per Condition E32*		First sample must be taken within 2 hours of commencement of release, weekly during release and at conclusion of release
Aluminium (µg/L)		*For aquatic ecosystem protection, based on SMD guideline*	
Arsenic (µg/L)		*For aquatic ecosystem protection, based on SMD guideline*	
Cadmium (µg/L)		*For aquatic ecosystem protection, based on SMD guideline*	
Chromium (µg/L)		*For aquatic ecosystem protection, based on SMD guideline*	
Copper (µg/L)		*For aquatic ecosystem protection, based on LOR for ICPMS*	
Iron (µg/L)		*For aquatic ecosystem protection, based on low reliability guideline*	
Lead (µg/L)		*For aquatic ecosystem protection, based on SMD guideline*	
Mercury (µg/L)		*For aquatic ecosystem protection, based on LOR for CV FIMS*	
Nickel (µg/L)		*For aquatic ecosystem protection, based on SMD guideline*	
Zinc (µg/L)		*For aquatic ecosystem protection, based on SMD guideline*	
Boron (µg/L)		*For aquatic ecosystem protection, based on SMD guideline*	
Cobalt (µg/L)		*For aquatic ecosystem protection, based on low reliability guideline*	
Manganese (µg/L)		*For aquatic ecosystem protection, based on SMD guideline*	
Molybdenum (µg/L)		*For aquatic ecosystem protection, based on low reliability guideline*	
Selenium (µg/L)		*For aquatic ecosystem protection, based on LOR for ICPMS*	
Silver (µg/L)		*For aquatic ecosystem protection, based on LOR for ICPMS*	
Vanadium (µg/L)		*For aquatic ecosystem protection, based on LOR for ICPMS*	
Nitrate (as N) (µg/L)		*For aquatic ecosystem protection, based on SMD guideline (Hickey and Martin, 2009)*	
Petroleum hydrocarbons (C6-C9) (µg/L)		*Model condition*	
Petroleum hydrocarbons (C10-C36) (µg/L)		*Model condition*	
Fluoride (total) (µg/L)		*Protection of livestock and short term irrigation guideline*	
Total Suspended Solids			
Sodium (µg/L)		*Irrigation value based on ANZECC 2000*	
Suspended Solids (µg/L)		*Based on receiving water reference data*	
Sulphate (SO_4^{2-}) (mg/L)		*Drinking water environmental values from NHMRC 2006 guidelines OR ANZECC*	

Notes:

1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Compliance limit for metal/metalloids apply if dissolved results exceed trigger.

Table D6 - Receiving water upstream background sites and downstream monitoring points

Monitoring Points	Receiving Waters Location Description	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)
Upstream Background Monitoring Points			
CCU	Columba Creek	-23.599	149.085
DCU	Duckworth Creek	-23.577	149.069
Downstream Monitoring Points			
CCD	Columba Creek	-23.584	149.081
RCD	Rufus Creek	-23.584	149.098
DCD	Duckworth Creek	-23.571	149.109

Note: The data from background monitoring points must not be used where they are affected by releases from other mines.

D22	If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in **Table D5 - Receiving waters contaminant trigger levels** during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and: a) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; or b) where the downstream results exceed the upstream results, complete an investigation into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: i) details of the investigations carried out; and ii) actions taken to prevent environmental harm. *Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with condition **D22(b)** of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*
D23	All determinations of water quality and biological monitoring must be performed by an appropriately qualified person.

D24	**Receiving Environment Monitoring Program (REMP)** The environmental authority holder must develop and implement a REMP to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while mine affected water is being discharged from the site. For the purposes of the REMP, the receiving environment is the waters of the Columba, Duckworth and Rufus Creeks and connected or surrounding waterways within **10km** downstream of the release, including Taunton National Park. The REMP must encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly or indirectly affected by an authorised release of mine affected water.
D25	The REMP must: a) assess the condition or state of receiving waters, including upstream conditions, spatially within the REMP area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g., seasonality); b) be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; c) include monitoring from background reference sites (e.g., upstream or background) and downstream sites from the release (as a minimum, the locations specified in **Table D6 - Receiving water upstream background sites and downstream monitoring points**); d) specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the Queensland Water Quality Guidelines 2006. This must include monitoring during periods of natural flow irrespective of mine or other discharges; e) include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in **Table D2 - Mine affected water release limits** and **Table D3 - Release contaminant trigger investigation levels, potential contaminants**; f) include, where appropriate, monitoring of metals and metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000; Batley and/or most recent version of AS5667.1: Guidance on Sampling Bottom Sediments); g) include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas method; h) apply procedures and/or guidelines from ANZECC & AMRCANZ 2000 and other relevant guideline documents; i) describe sampling and analysis methods and quality assurance and control; and j) incorporate stream flow and hydrological information in the interpretations of water quality.
D26	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions **D24** and **D25** must be prepared annually and made available to the administrating authority by **31 March 2019**. 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.
D27	**Water reuse** a) Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority.

D28	**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, Mines and Energy (or its successor) *Guideline – Activities in a Watercourse, Lake or Spring associated with Mining Activities*.
D29	**Water Management Plan** A Water Management Plan must be developed by an appropriately qualified person and must be submitted to the administering authority for review and comment by **31 March 2019**.
D30	The Water Management Plan must include: a) a contaminant source study; b) site water balance and model; c) onsite water quality sampling, including stratification sampling of pits used for water storages; d) a water management system; e) saline drainage prevention and management measures; f) acid rock drainage prevention and management measures (if applicable); g) erosion and sediment control measures; h) maintenance of water management and erosion and sediment control infrastructure; i) emergency and contingency planning; and j) monitoring and review.
D31	Within **twenty (20) business days** of receiving comments from the administering authority, as required by **D30**, the Water Management Plan must be updated to address the comments, amended to adopt any recommendations, and be submitted to the administering authority.
D32	The environmental authority holder must determine and submit to the administering authority, via an amendment to the environmental authority that is deemed to be a valid application, by **30 November 2019**: a) location details for the release points and monitoring points, including GPS co-ordinates in the format specified in **Table D1: Mine affected water release points, sources and receiving waters**; b) release limit for total suspended solids specified in **Table D2: Mine affected water release limits**; c) trigger levels for sodium, sulphate and total suspended solids specified in **Table D3: Release contaminant trigger investigation levels**; d) release criteria as specified in **Table D4: Mine affected water release during flow events**; and e) trigger levels for all parameters specified in **Table D5: Receiving water trigger levels.**
D33	**Groundwater** The environmental authority holder must not release contaminants to groundwater.
D34	Groundwater quality and levels must be monitored at the locations and frequencies defined in **Table D8 – Groundwater monitoring locations and frequency** and **Attachment 3 – Groundwater Bore Monitoring Locations** of this environmental authority for quality characteristics identified in **Table D9 - Groundwater quality triggers and limits**.

Table D7 - Groundwater monitoring locations and frequency

Monitoring Point	Location		Surface RL (m AHD)[1]	Monitoring Frequency	Aquifer
	Easting (GDA94 – Zone 54)	Northing (GDA94 – Zone 54)			
Reference Bores[2]					
MB05	713,497	7,388,060	187.44	SWL - Monthly for the first 12 months of operation and quarterly thereafter Quality - quarterly	Rewan Formation
Compliance Bores					
MB02	712,557	7,389,331	178.77	SWL – Monthly for the first 12 months of operation and quarterly thereafter Quality – quarterly (except VWP)	Rewan Formation
MB03	712,450	7,389,294	174.20		Interburden Fault F10 (Rewan Formation)
MB04	713,197	7,338,598	185.44		Rewan Formation
VWP2	712,697	7,388,600	179.47		Aries 2, Interburden (fault), Pollux 1, Orion 2, Pisces 1

1) 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.

2) *Monitoring Bores MB02, MB03 and MB04 are located within the disturbance footprint for the project and will be removed as mining progresses. These bores must be monitored in accordance with the conditions of this environmental authority prior to removal. The proponent must establish replacement monitoring bores prior to the removal of each bore.*

Table D8 - Groundwater quality trigger and contaminant limits

Parameter	Contaminant Triggers (µg/L)	Contaminant Limit (µg/L)
Aluminium	As per condition D38	As per condition D38
Antimony		
Arsenic		
Calcium		
Chloride		
CO_3		
Total Dissolved Solids (TDS)		
Electrical Conductivity		
HCO_3		
Iron		
Magnesium		
Mercury		
Molybdenum		
Total Petroleum		
pH		
Potassium		
Selenium		
Silver		
SO_4		
Sodium		

D35	Groundwater levels when measured at the monitoring locations specified in **Table D7 - Groundwater monitoring locations and frequency** must not exceed the groundwater level trigger change thresholds specified in **Table D9 - Groundwater level monitoring** below.

Table D9 - Groundwater level monitoring

Monitoring location	Level trigger threshold
MB05	As per condition D38
MB02	
MB03	
MB04	
VWP2	

Note: Monitoring Bores MB02, MB03 and MB04 are located within the disturbance footprint for the project and will be removed as mining progresses. These bores must be monitored in accordance with the conditions of this environmental authority prior to removal. The proponent must establish replacement monitoring bores prior to the removal of each bore.

D36	**Exceedance investigation** If quality characteristics of groundwater from compliance bores identified in **Table D7 - Groundwater monitoring locations and frequency** exceed any of the trigger levels stated in **Table D8 - Groundwater quality triggers and limits** or exceed any of the groundwater level trigger thresholds stated in **Table D9 - Groundwater level monitoring**, the environmental authority holder must compare the compliance monitoring bore results to the reference bore results and complete an investigation in accordance with the ANZECC and ARMCANZ 2000.
D37	Results of monitoring of groundwater from compliance bores identified in **Table D7 - Groundwater monitoring locations and frequency**, must not exceed any of the limits defined in **Table D8 - Groundwater quality triggers and limits.**
D38	The environmental authority holder must determine and submit to the administering authority, via an amendment to the environmental authority, by **30 November 2019**: a) contaminant trigger levels and contaminant limits as specified in **Table D8: Groundwater quality trigger and contaminant limits**; and b) standing water levels as specified in **Table D9: Groundwater level monitoring.**
D39	**Bore construction, 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.

Schedule E: Waste management	
Condition number	**Condition**
E1	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.
E2	All regulated waste must be removed and transported from site by a person(s) who has the authority to transport such wastes to a facility that is lawfully able to accept the waste under the *Environmental Protection Act 1994*.
E3	The environmental authority holder may burn vegetation cleared in the course of carrying out extraction activities provided the activity does not cause environmental harm at any sensitive place or commercial place.
E4	**Waste Rock and Spoil Disposal Plan** A Waste Rock and Spoil Disposal Plan must be developed and implemented by a suitably qualified person for all stages of the authorised mining activities. The Waste Rock and Spoil Disposal Plan must be submitted to the administering authority for review and comment by **31 March 2019**.
E5	A Waste Rock and Spoil Disposal Plan must include: a) effective characterisation of the waste rock and spoil to predict under the proposed placement and disposal strategy the quality of runoff and seepage generated concerning potentially environmentally significant effects including salinity, acidity, alkalinity and dissolved metals, metalloids and non-metallic inorganic substances; b) a program of progressive sampling and characterisation to identify dispersive and non-dispersive spoil and the salinity, acid and alkali producing potential and metal concentrations of waste rock; c) a materials balance and disposal plan demonstrating how potentially acid forming and acid forming waste rock will be selectively placed and/or encapsulated to minimise the potential generation of acid mine drainage; d) where relevant, a sampling program to verify encapsulation and/or placement of potentially acid-forming and acid-forming waste rock; e) how often the performance of the plan will be assessed; f) the indicators or other criteria on which the performance of the plan will be assessed; g) a rehabilitation strategy; and h) .periodic review of environmental performance against the plan and continual improvement
E6	Within **twenty (20) business days** of receiving comments from the administering authority, as required by condition **E4**, the Waste Rock And Spoil Disposal Plan must be updated to address the comments, amended to adopt any recommendations and be submitted to the administering authority.
E7	The only contaminant permitted to be released to land is treated sewage effluent in compliance with the release limits stated in **Table E1 - Contaminant release limits to land**.

Table E1 - Contaminant release limits to land

Contaminant	Unit	Release limit	Limit type	Frequency
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

E8	Treated sewage effluent may only be released to land in accordance with the conditions of this environmental authority for the purpose of dust suppression and/or firefighting.
E9	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; and c) there is no run-off of effluent.
E10	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 must be taken to avoid consuming or otherwise coming into unprotected contact with the effluent.
E11	All sewage effluent released to land must be monitored at the frequency and for the parameters specified in **Table E1 - Contaminant release limits to land**.
E12	The daily volume of effluent release to land must be measured and records kept of the volumes of effluent released.
E13	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.

Schedule F: Land and Rehabilitation	
Condition number	**Condition**
F1	**Preventing contaminant release to land** Contaminants must not be released to land which constitutes nuisance, material or serious environmental harm.
F2	Land disturbed by mining must be rehabilitated to a safe, stable and non-polluting landform, with a self-sustaining vegetation cover in accordance with **Attachment 2 – Rehabilitation Requirements** of this environmental authority.
F3	Rehabilitation must commence progressively in accordance with the Rehabilitation Management Plan required by condition **F5**.
F4	**Rehabilitation Management Plan** A Rehabilitation Management Plan must be developed and implemented by an appropriately qualified and experienced person for all stages of the authorised mining activities. The Rehabilitation Management Plan must be submitted to the administering authority for review and comment by **22 October 2019**.
F5	A Rehabilitation Management plan must include: a) a map of existing and proposed rehabilitation including a classification of stage (i.e. time since establishment); b) a strategy for progressive rehabilitation, including a progressive rehabilitation schedule; c) details of the design objectives for rehabilitation of each domain to achieve rehabilitation requirements detailed in **Attachment 2 – Rehabilitation Requirements**; d) specification of spoil characteristics, soil analysis and soil separation for use on rehabilitation; e) identification of any topsoil deficit and describe how any deficit will be managed for successful rehabilitation; f) details of rehabilitation methods to be applied to specific domains; g) details of landform design including conceptual end of mine design; h) details of how landform design will be consistent with the surrounding topography; i) identification of planned native vegetation rehabilitation areas and corridors; j) a description of a minimum of **three (3)** reference sites for use in rehabilitation monitoring; k) a description of rehabilitation indicators and how these will be monitored; l) a description of management actions to address unsuccessful rehabilitation or redesign; and m) a post closure management and monitoring program, including: n) operation and maintenance of: (i) wastewater collection and reticulation systems; (ii) wastewater treatment systems; (iii) the groundwater monitoring network; (iv) final cover systems; and (v) vegetation cover. (vi) monitoring of:

	(A) surface water quality; (B) groundwater quality; (C) seepage rates; (D) erosion rates; (E) the integrity and effectiveness of cover systems; and (F) the health and resilience of native vegetation cover.
F6	Within **twenty (20) business** days of receiving comments from the administering authority, as required by condition **F5**, the Rehabilitation Management Plan must be updated to address the comments, amended to adopt any recommendations and be submitted to the administering authority.
F7	**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.
F8	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 **F3**.
F9	Minimise the potential for contamination of land by hazardous contaminants.
F10	**Infrastructure** All infrastructure, constructed by or for the environmental authority holder during the approved mining activities, including water storage structures, must be removed from the site prior to surrender, except where agreed in writing by the post mining land owner. This exception is not applicable where the land owner is also the environmental authority holder.
F11	**Chemicals and flammable or combustible liquids** All explosives, hazardous chemicals, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the latest edition of AS1940—The storage and handling of flammable and combustible liquids, AS3833-The storage and handling of mixed classes of dangerous goods, in packages and intermediate bulk containers and AS4452-The storage and handling of toxic substances. Where no relevant Australian standard exists, store such materials within an effective on-site containment system.
F12	**Biodiversity offsets – Queensland Biodiversity Offset Policy** Conditions **F13** and **F14** apply only to the Bluff Coal Mine Stage One Offsets.
F13	The environmental authority holder must deliver an offset for impacts on applicable state significant biodiversity values, in accordance with Queensland Biodiversity Offset Policy. The biodiversity offset must be consistent with the requirements for an offset as identified in the Biodiversity Offset Strategy (as per condition **F14**) and must be provided:

	a) prior to impacting on state significant biodiversity values; or b) where a land based offset is to be provided, within **twelve (12) months** of the later of either of the following (i) the date of issue of this environmental authority; or (ii) the relevant stage identified in the Biodiversity Offset Strategy submitted under condition **F14**; or c) where an offset payment is to be provided, within **four (4) months** of the later of either of the following (i) the date of issue of this environmental authority; or (ii) the relevant stage identified in the Biodiversity Offset Strategy submitted under conditions **F14**.
F14	A Biodiversity Offset Strategy must be developed and submitted to the administering authority within either **thirty (30) days**, or a lesser period agreed to by the administering authority, prior to impacting on the applicable state significant biodiversity values outlined in **Table F1 - Significant residual impacts to State Significant Biodiversity Values (SSBV) – Stage One, Figure 1a – Impact on SSBV (flora) – Bluff Coal Mine Stage One** and **Figure 1b - Impact on SSBV (fauna) – Bluff Coal Mine Stage One**.
F15	**Biodiversity offsets – Queensland Environmental Offsets Policy** Conditions **F16** to **F21** apply only to the Bluff Coal Mine Stage Two Offsets.
F16	Significant residual impacts to prescribed environmental matters, are only authorised to occur if: a) for the prescribed environmental matters specified in **Table F2 – Significant residual impacts to prescribed environmental matters**, the impacts occur at the location(s) specified for that prescribed environmental matter in **Figure 2a – Impact on MSES – Bluff Coal Mine Stage Two**. b) for the prescribed environmental matter specified in **Table F2 – Significant residual impacts to prescribed environmental matters**, the impacts do not exceed the maximum extent of impact specified for that prescribed environmental matter.
F17	Records demonstrating that each impact to a prescribed environmental matter not listed in **Table F2 – Significant residual impacts to prescribed environmental matters** did not, or is not likely to, result in a significant residual impact to that matter must be: a) completed by an appropriately qualified person; and b) kept for the life of the environmental authority.
F18	An environmental offset made in accordance with *the Environmental Offsets Act 2014* and Queensland Environmental Offsets Policy, as amended from time to time, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in **Table F2 - Significant residual impacts to prescribed environmental matters**, unless a lesser extent of the impact has been approved in accordance with condition **F20**.
F19	Prior to the commencement of any impacts to a prescribed environmental matter for which an environmental offset is required by condition **F18**, a report completed by an appropriately qualified person that contains an analysis of the estimated maximum extent of impact to each prescribed environmental matter must be provided to the administering authority.
F20	The report required by condition **F19** must be approved by the administering authority before the notice of election, if applicable, is given to the administering authority.

F21	The notice of election for the environmental offset required by condition **F20**, if applicable, must be provided to the administering authority no less than **three (3) months** before the proposed commencement of the significant residual impacts for which the environmental offset is required, unless a lesser timeframe is agreed to by the administering authority.

Table F1 - Significant residual impacts to State Significant Biodiversity Values (SSBV) – Stage One

SSBV	**Stage One extent of impact (ha) mapped RE**	**Location of Impact**
Regulated Vegetation		
Regional ecosystems within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map: Stream Order 1	11.9	Western dump, pit, western track, and ROM Refer to Figure 1a
Regional ecosystems within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map: Stream Order 2	4.7	Western dump Refer to Figure 1a
Connectivity area: • 11.3.25 • 11.5.2 • 11.7.2 TOTAL	 9.3 98.1 94.8 **202.2**	Western dump, pit and western track Refer to Figure 1a and 1b
Protected flora habitat		
Habitat for a plant that is Near Threatened wildlife - native frangipani (*Cerbera dumicola*)	30.2	Western dump Refer to Figure 1a
Habitat for a plant that is Near Threatened wildlife - large-fruited trefoil (*Desmodium macrocarpum*)	78.6	Western dump, pit and western track Refer to Figure 1a
Protected fauna habitat		
Habitat for an animal that is Near Threatened wildlife – golden-tailed gecko (*Strophurus taenicauda*)	107.9	Western dump and western track Refer to Figure 1b
Habitat for an animal that is Near Threatened wildlife – little pied bat (*Chalinolobus picatus*)	199	Western dump, pit and western track Refer to Figure 1b
Protected fauna habitat (to be offset under EPBC Act)		
Habitat for an animal that is Vulnerable wildlife – Squatter pigeon (*Geophaps scripta scripta*)	65	-
Habitat for an animal that is Vulnerable wildlife – Koala (*Phascolarctos cinereus*)	65	-

Table F2 – Significant residual impacts to prescribed environmental matters – Stage Two

Prescribed environmental matters	**Maximum extent of impact (ha) – Stage Two**	**Location of impact**
Regulated vegetation		
Regional ecosystems within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map: RE11.5.2	12	Western dump, eastern dump, and pit Refer to Figure 2a
Regional ecosystems within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map: RE11.7.2	13	Western dump Refer to Figure 2a
Connectivity area: • 11.3.25	 2	Western dump, eastern dump, and pit

• 11.5.2 • 11.5.2a • 11.5.3 • 11.7.2 TOTAL	60 12.5 54.5 114 **243**	Refer to Figure 2a
Protected fauna habitat (to be offset under EPBC Act)		
Habitat for an animal that is Vulnerable wildlife – Squatter pigeon (*Geophaps scripta*)	185	-
Habitat for an animal that is Vulnerable wildlife – Koala (*Phascolarctos cinereus*)	185	-

Schedule : Regulated Structures (Dams and Levees)	
Condition number	**Condition**
G1	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; or b) prior to any change in its purpose or the nature of its stored contents.
G2	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.
G3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635).
G4	**Design and construction of a regulated structure** All regulated structures must be designed by, and constructed[1] under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635).
G5	Construction of a regulated structure is prohibited unless the holder has submitted a consequence category assessment report and certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.
G6	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635), and must be recorded in the Regulated Dams/Levees register.
G7	Regulated structures must: a) be designed and constructed in accordance with and conform to the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635); b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: (i) floodwaters from entering the regulated dam from any watercourse or drainage line; and

[1] Certification of design and construction may be undertaken by different persons.

	(ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line. c) for regulated dams that are dams associated with a failure to contain – seepage: have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.
G8	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; and b) construction of the regulated structure is in accordance with the design plan.
G9	**Operation of a regulated structure** Operation of a regulated structure is prohibited unless the holder has submitted to the administering authority: a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition **G6**; b) a set of 'as constructed' drawings and specifications; c) certification of those 'as constructed drawings and specifications' in accordance with condition **H8**; d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan. e) the requirements of this authority relating to the construction of the regulated structure have been met; f) the holder has entered the details required under this authority, into a Register of Regulated Dams; and g) there is a current operational plan for the regulated structures.
G10	**Mandatory reporting level** Conditions **G11 to G13** inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
G11	The Mandatory Reporting Level (MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.
G12	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.
G13	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. The holder must record any changes to the MRL in the Register of Regulated Structures.
G14	**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.

G15	By **1 November** of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).
G16	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.
G17	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.
G18	**Annual inspection report** Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
G19	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.
G20	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635).
G21	The environmental authority holder must: a) within **twenty (20) business days** of receipt of the annual inspection report, provide to the administering authority: (i) The recommendations section of the annual inspection report; (ii) If applicable, any actions being taken in response to those recommendations; and b) if, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within **ten (10) business days** of receipt of the request.
G22	**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 holder on transfer of this authority.
G23	**Decommissioning and rehabilitation** Dams must not be abandoned but be either: a) decommissioned and rehabilitated to achieve compliance with condition **G24**; 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; 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 environmental authority holder and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies).

G24	After decommissioning, all significantly disturbed land caused by the carrying out of the environmentally relevant activity(ies) must be rehabilitated to meet the following final acceptance criteria: a) the landform is safe for humans and fauna; b) the landform is stable with no subsidence or erosion gullies for at least three (3) years; c) any contaminated land (e.g. contaminated soils) is remediated and rehabilitated d) not allowing for acid mine drainage; or e) there is no ongoing contamination to waters (including groundwater); f) rehabilitation is undertaken in a manner such that any actual or potential acid sulfate soils on the area of significant disturbance are treated to prevent or minimise environmental harm in accordance with the *Instructions for the treatment and management of acid sulfate soils* (2001) g) all significantly disturbed land is reinstated to the pre-disturbed soil suitability class; h) for land that is not being cultivated by the landholder: (i) groundcover, that is not a declared pest species is established and self-sustaining (ii) vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining, and (iii) the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the petroleum activity(ies). i) for land that is to be cultivated by the landholder, cover crop is revegetated, unless the landholder will be preparing the site for cropping within **three (3) months** of mining activities being completed.
G25	**Register of Regulated Dams** A Register of Regulated Dams must be established and maintained by the holder for each regulated dam.
G26	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.
G27	The environmental authority holder must make a final entry of the required information in the Register of Regulated Dams once compliance with condition **G9** has been achieved.
G28	The environmental authority holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.
G29	All entries in the Register of Regulated Dams must be approved by the chief executive officer for the environmental authority holder, or their delegate, as being accurate and correct.
G30	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

1.1 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* (the Act) or subordinate legislation, the definition in the Act or subordinate legislation must be used.

'the Act' means the *Environmental Protection Act 1994*.

'acid rock 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.

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

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

a) exactly what has been assessed and the precise nature of that determination;

b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;

c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and

d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

'authority' means this environmental authority , authorised under Chapter 5 of the Act.

'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.

'**calendar month'** means the period from a day of one month to the corresponding day for the next month if such exists or if not to the last day of the next month (e.g. as from 3 January to 3 February or from 31 January to 28 (or 29) February).

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

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

'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, nematicide, 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.

'complaint' means:

a) a statement, made by a complainant, expressing dissatisfaction; or,
b) a formal allegation against the environmental authority holder.

'construction' or **'constructed'** in relation to a regulated structure includes building a new regulated structure and lifting or otherwise modifying an existing regulated structure, but does not include investigations and testing necessary for the purpose of preparing a design plan.

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

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

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

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

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

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

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

'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.

'estimated rehabilitation cost' for a resource activity, see section 300(2) of the *Environmental Protection Act 1994.*

'ERC decision' means a decision of the administering authority under section 300 of the *Environmental Protection Act 1994* about the estimated rehabilitation cost for a resource activity.

'**ERC Period'** for the estimated rehabilitation cost for a resource activity, means—

a) if a PRCP schedule applies for the activity—the period of between 1 and 5 years stated in the application for an ERC decision under section 298(2)(b); or

b) if the activity is a petroleum activity that is an ineligible ERA, other than a petroleum activity to which a plan of operations applies, or the activity relates to a 1923 Act petroleum tenure granted under the Petroleum Act 1923—the period of between 1 and 5 years stated in the ERC decision about the estimated rehabilitation cost; or

c) if a plan of operations applies for the activities—the plan period for the plan of operations; or

d) otherwise—the total period during which the resource activity is likely to be carried out under the environmental authority for the activity.

'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.

'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.

'ha' means hectares.

'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, this 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.

'LAeq, adj 15 mins' means the average equivalent A-weighted sound pressure level, adjusted for noise character and measured over a time period of not less than 15 minutes. **'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.

'LpLIN,T' means linear sound pressure over a period of time.

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

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

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

'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.

'maximum extent of impact' means the total, cumulative, residual extent and duration of impact to a prescribed environmental matter that will occur over a project's life after all reasonable avoidance and reasonable on-site mitigation measures have been, or will be, undertaken.

'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.

'mining activity' means

a) an activity that is an authorised activity for a mining tenement under the *Mineral Resources Act 1989*; or,
b) another activity that is authorised under the *Mineral Resources Act 1989* that grants rights over land.

'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.

'modification' or **'modifying'** (see definition of 'construction').

'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' for a regulated structure 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).

'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 as a disturbed area in Attachment 1 – Project Layout of this environmental authority.

The term does not include land that is specified as a disturbed area in Attachment 1 – Project Layout 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; and

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.

'residual void' means a void approved to remain post-mining.

'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 Environmental Protection Policy (Noise) 2008*. 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' has the meaning in section 8 *Environmental Offsets Act 2014*.

'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:

a) for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.

b) 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.

'trafficable areas' means the full width of any access road for Bluff Coal Mine including entry and exit points from Capricorn Highway.

'µS/cm' means micro siemens per centimetre.

'valid application' means an application which meets the criteria under sections 226 and 226A of the *Environmental Protection Act 1994.*

'void' means any constructed, open excavation in the ground.

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

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

'waters' includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), storm water channel, storm water drain, and groundwater and any part thereof.

END OF DEFINITIONS

Attachment 1 – Project Layout

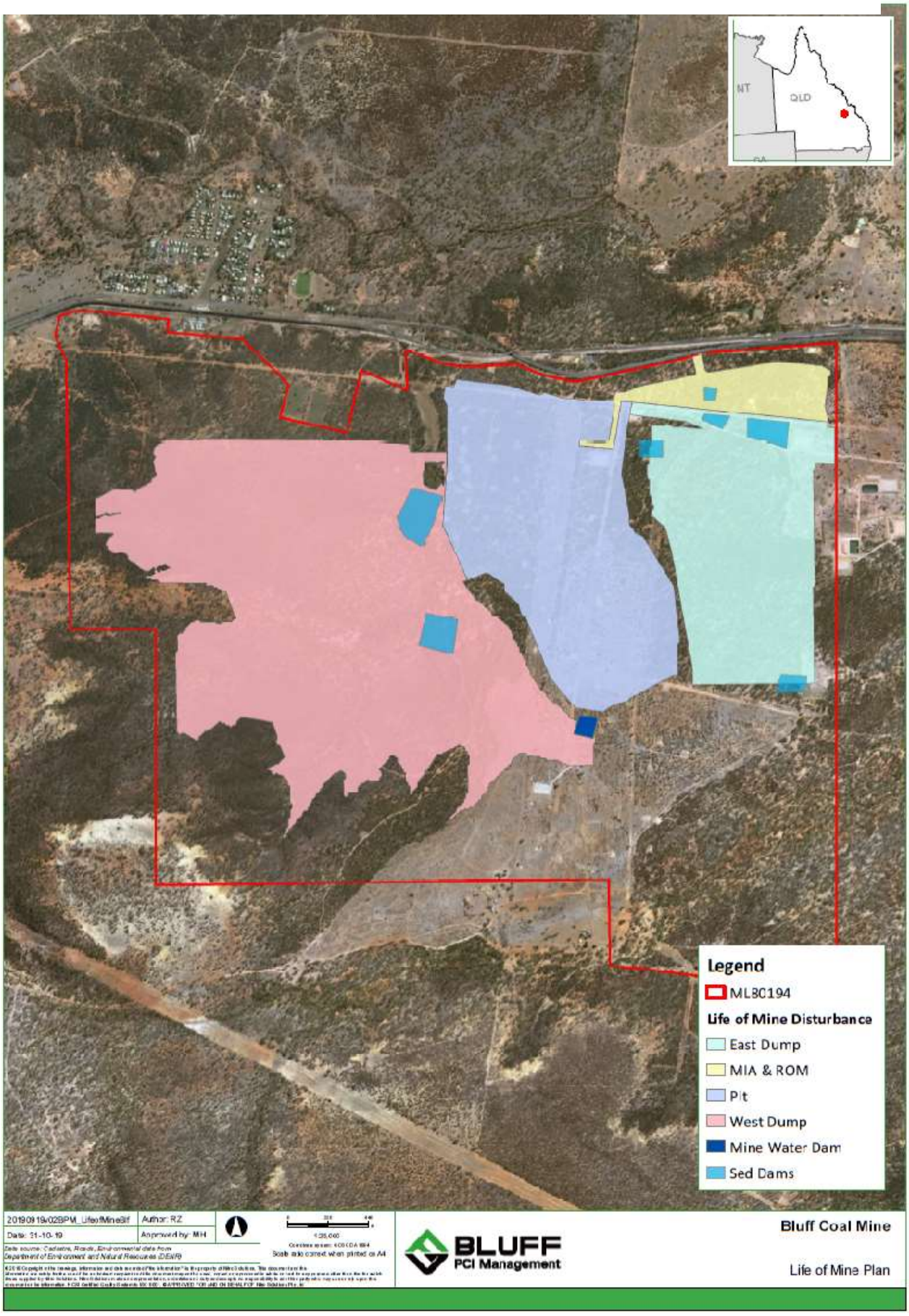


Figure 1a: Impact on SSBV (flora) – Bluff Coal Mine Stage One

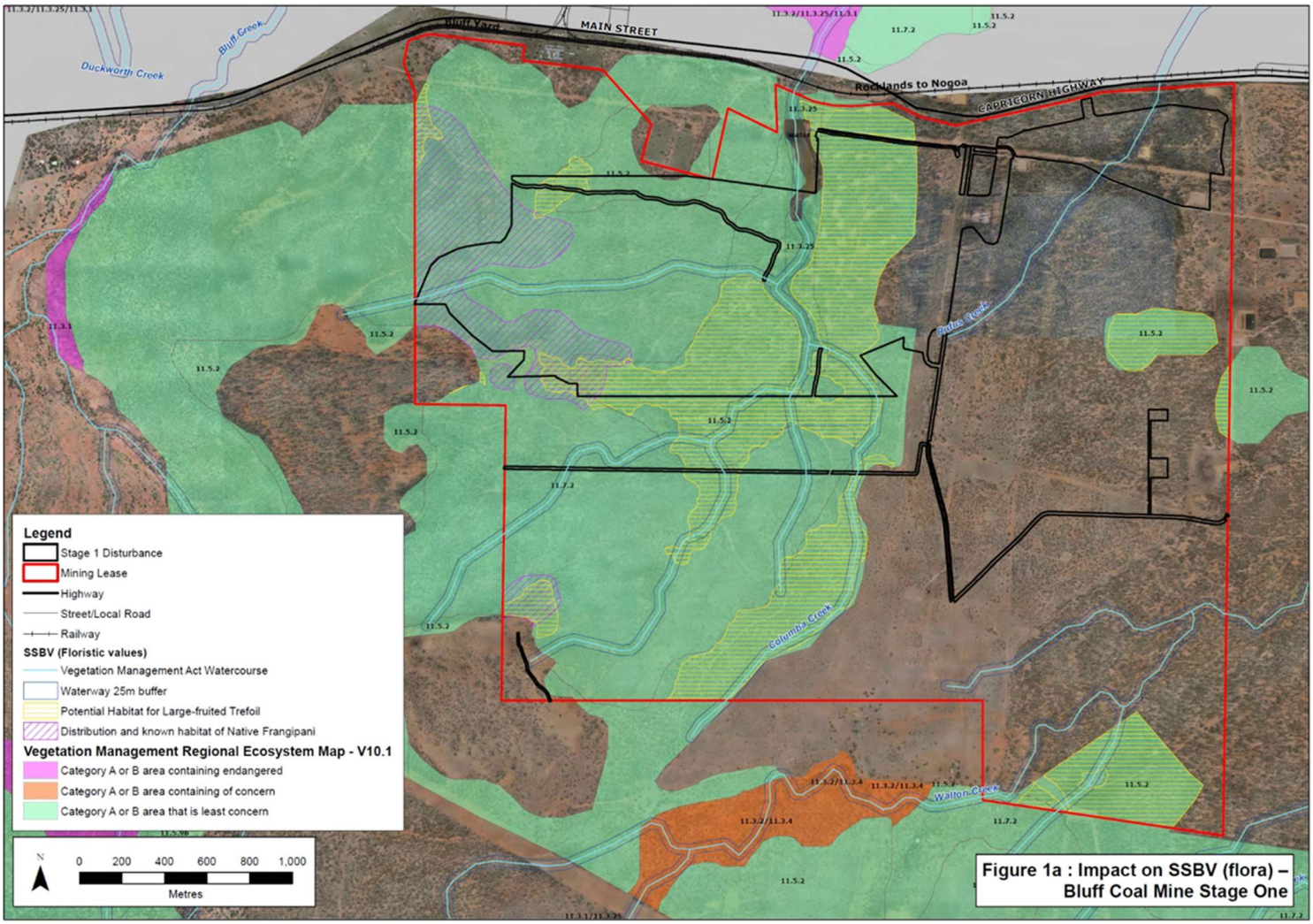


Figure 1b: Impact on SSBV (fauna) – Bluff Coal Mine Stage One

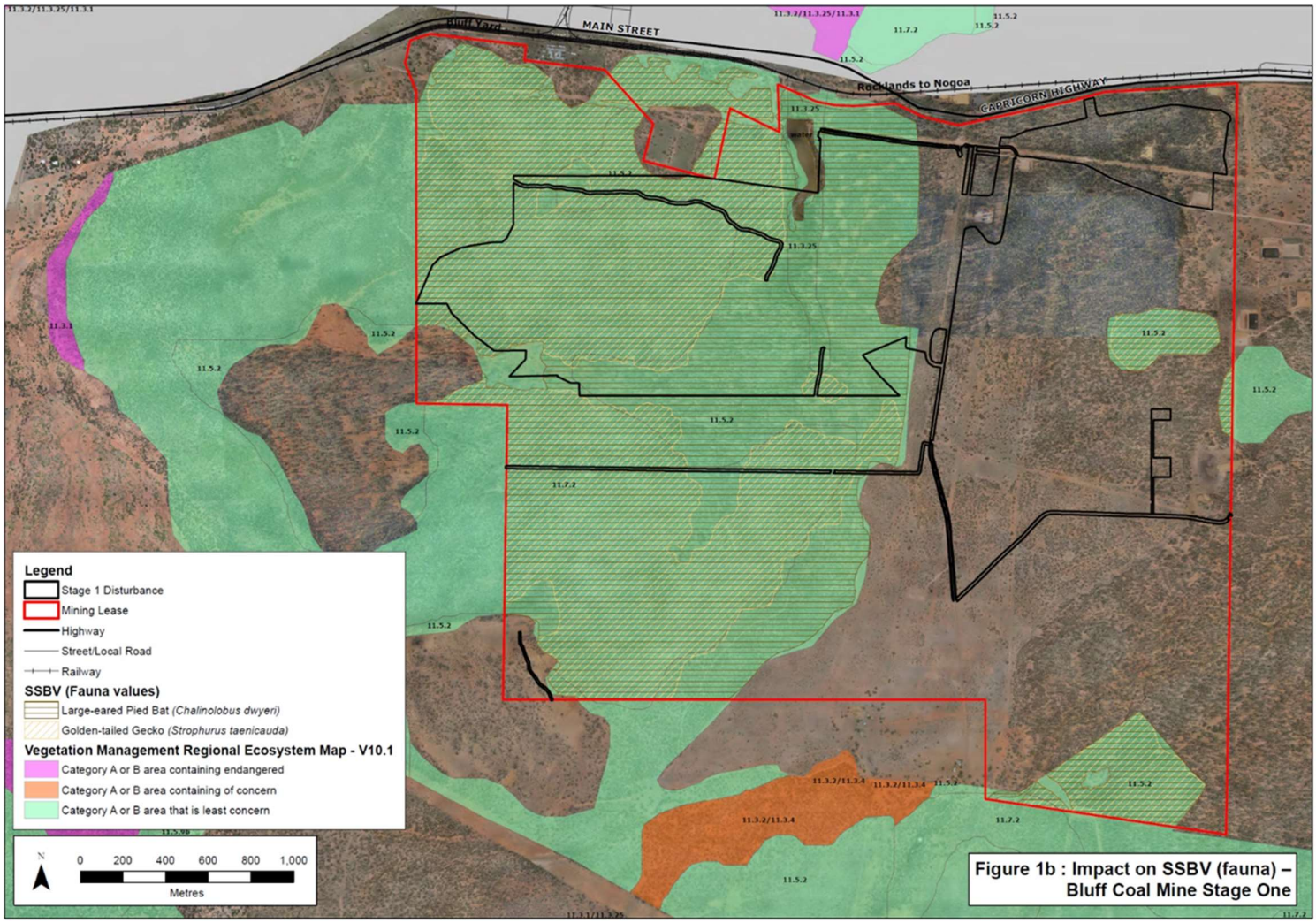
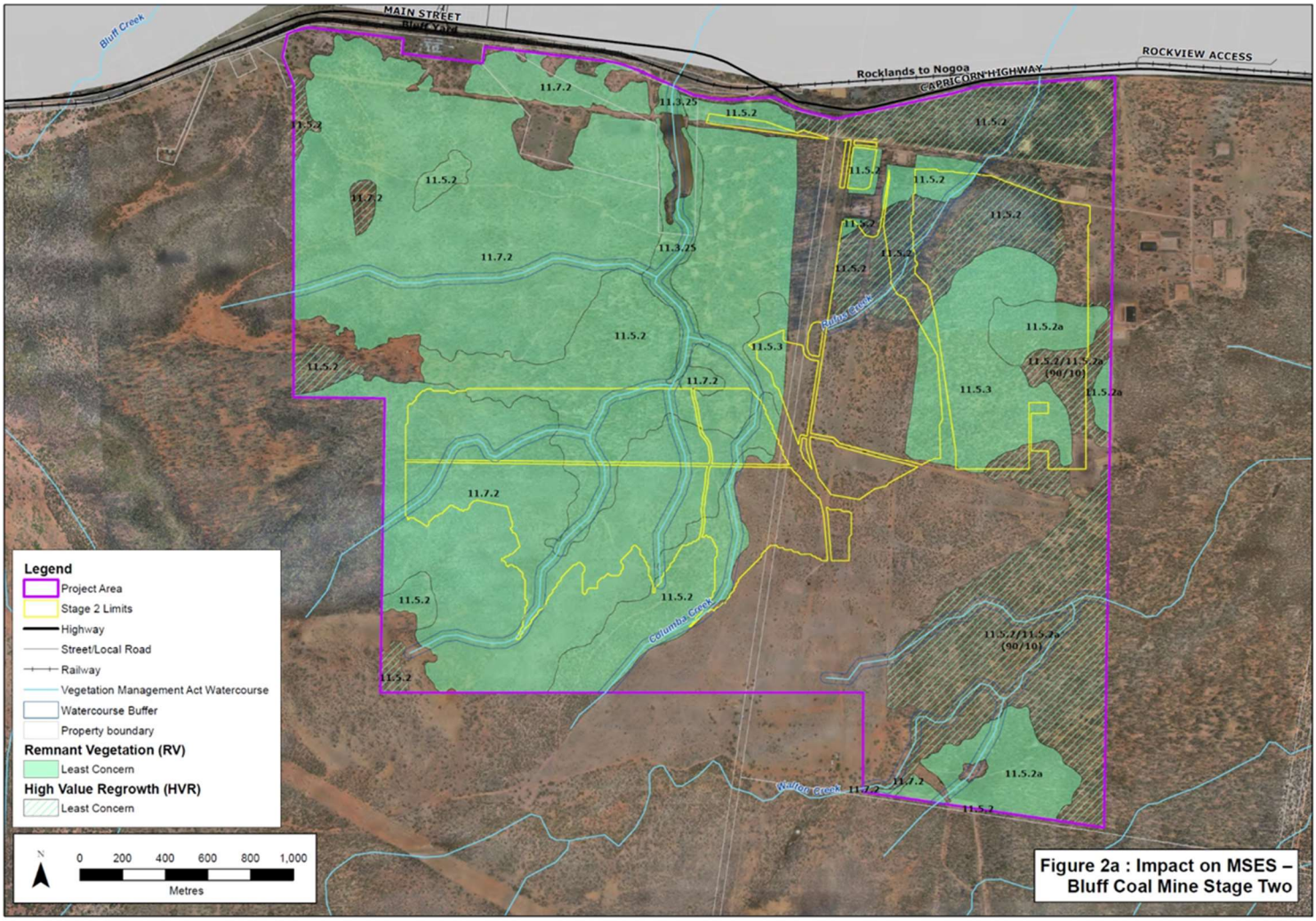


Figure 2a: Impact on MSES – Bluff Coal Mine Stage Two



Attachment 2 – Rehabilitation Requirements

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Final Void	Final Void	Long-term safety	Site is safe for humans and animals now and in the foreseeable future.	Presence and/or absence of physical risk factors which could result in injury or death. Geotechnical Study report Risk Assessment documentation.	A Geotechnical study has been completed within three (3) years prior to mine closure to confirm: • that Highwall slopes are stable and safe; and • the criteria of 33º (65%) for Lowwall and an average of 40 degrees (84%) for Highwall slopes are achievable and sustainable over the long term. • a safety assessment of Highwall slopes that are >30 Degrees and >5m in height has been conducted. • risk assessment relative to safety of humans, stock and wildlife completed and risk mitigation measures have been implemented in accordance with relevant guidelines and Australian Standards such as ISO31000 Risk Management. • completion of a Rehabilitation Report by an appropriate and qualified person at the end of the mine life to ensure successful rehabilitation of the final void and other landforms. This Rehabilitation Report has been completed in accordance with the relevant guidelines and Australian standards.
Final Void	Final Void	Long-term safety	Site is safe for humans and animals now and in the foreseeable future.	Presence and availability of heavy metals and other toxic material or other introduced contaminants.	The identification of potential hazardous materials during mine life through water quality monitoring and material characterisation has been conducted. During the 5 years prior to mine closure surface water monitoring and leaching tests have been undertaken in compliance with guidelines derived from ANZECC 2000. Hydrological modelling has been conducted of the groundwater environment in the vicinity of the final void to establish relationship between water in the final void and the groundwater. Evidence has been included in decommissioning records of elimination of any exposed carbonaceous material that may present a spontaneous combustion risk.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
					Evidence in decommissioning records that carbonaceous material has been encapsulated within an inert cover.
Final Void	Final Void	Long-term safety	Site is safe for humans and animals now and in the foreseeable future.	Adequacy and long term performance of safety barriers, etc.	Final void design has included: • Bund walls; • Remediated waterways; • Fencing; and • Signage. Cattle have been excluded from accessing bunding. A Landholder program has been conducted. Where risk mitigation measures include fencing and appropriate signage around a perimeter to restrict access; these have been erected in accordance with relevant guidelines and Australian Standards.
Final Void	Final Void	Non -polluting	Polluted water contained on site.	Water quality. Leachate and drainage control	Surface water monitoring has been conducted with water quality criteria derived from ANZECC 2000 for 3 years post mining operation. Evidence that effective leachate prevention has been conducted through testing of mining waste and management in accordance with a documented Mine Waste Management Plan. Evidence from surface water monitoring that successful prevention measures have been implemented for poor quality leachate or discharge mobilisation from the void to watercourses. A groundwater study has been conducted on the long-term groundwater levels and on the post-mining aquifer recovery (once the details of the final void for mine closure has been finalised). Evidence that no significant difference in water quality has occurred relative to historic (background) groundwater quality. Successful establishment of adequate drainage control between the Final Void edge and location of bunds has been made to redirect any runoff away from the edge of the void.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
					Evidence in the Rehabilitation Report that the void water levels have remained similar to modelled scenarios and the risk of void overflow have been maintained as minimal where appropriate.
Final Void	Final Void	Non -polluting	Hazardous and toxic materials are not buried within the mine area.	A life of mine hazardous materials register indicating the volumes used and disposal methods is available.	Evidence has been included in Rehabilitation Report that required waste management measures have been implemented. An audit of the hazardous materials register has been conducted to identify the location, use and disposal of potentially hazardous materials during the life of the mine.
Final Void	Final Void	Stable	Very low probability of subsidence, slope slippage or degradation of the Highwall.	Laboratory and field studies conducted to determine probabilities of landform failure.	A Geotechnical study has been completed and assessment that Highwall slopes are stable and safe by appropriately qualified persons has been conducted. Safety assessment has been made of Highwall slopes that are >30 Degrees and>5m in height. Completion of an assessment report by a Registered Professional Engineer of Queensland (RPEQ) on the geotechnical issues and erosivity of the proposed final landforms, including final voids, to demonstrate long-term landform stability. Reference has been made to the Queensland Mining Guidelines (or subsequent reprints) during the completion of this assessment.
Final Void	Final Void	Stable	Landform design achieves appropriate erosion rates. Rates of soil loss will reduce over a three year period post-closure to acceptable levels.	Rate of soil loss will be similar to sites in the general area surrounding the mine.	Benchmark erosion study has been conducted based on rainfall and sediment run-off rates in undisturbed region (to be conducted by appropriately qualified persons). Mulch, if required has been applied. The erosion rates on disturbed land are similar to rates on the reference (undisturbed) areas within 3 years of cessation of mining.
Final Void	Final Void	Stable	Vegetation cover established on the lowwall. Establish specified self-sustaining natural vegetation and habitats.	Self-sustaining vegetation assemblage growing on the Lowwall over a period of 3 years post-mine closure. Presence of key local species and diversity.	Groundcover species have been sown into the Lowwall and species which may include Buffel, Panic and Rhodes Grasses and associated legumes. Compatible with the rehabilitation program outlined below, standard establishment techniques have included Contour deep ripping and:

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
					• Small shrub species have been established; • Medium shrub species have been established; • Small tree species have been established; and • Tree species have been established. Environmental Audit has been conducted by appropriately qualified persons to grade success of: • Erosion mitigation program; • Vegetation program; • Water monitoring program; and • Weed management.
Final Void	Final Void	Sustainable land use	Post mine land use for the residual voids is water storage.	Physical and Chemical properties of contained water.	Final void water quality: Consistent with surrounding groundwater quality.
Final Void	Final Void	Sustainable land use	Post mine land use for areas between Final Void crest and safety bund walls is vegetation establishment, which excludes cattle.	Groundcover and erosion.	Evidence has shown ground cover between the void crests and bunds as being >70% where ground cover is defined as any cover that assists in controlling erosion and may include live cover. Results have shown that significant active erosion features are not present and that any initial erosion has been stabilised by vegetation cover.
Elevated Landform	Overburden dumps, quarry and sections of ROM crushing and screening areas.	Long-term safety	Site is safe for humans and animals now and in the foreseeable future.	Presence and or absence of physical risk factors which could result in injury or death. Risk assessment documentation	A Geotechnical study has been completed within 3 years prior to mine closure to confirm: • that elevated landform slopes are stable and safe; • the criteria of 10% for landform slopes are achievable and sustainable over the long term. • A safety assessment of elevated sections of the landform has been conducted.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
					• Evidence that final landform construction has met the design requirements of Rehabilitation Management Plan. • Risk assessment relative to safety of humans, stock and wildlife completed and risk mitigation measures have been implemented in accordance with relevant guidelines and Australian Standards such as ISO 31000 Risk Management.
Elevated Landform	Overburden dumps, quarry and sections of ROM crushing and screening areas.	Long-term safety	Site is safe for humans and animals now and in the foreseeable future.	Exposure to and availability of heavy metals and other toxic material or other introduced contaminants.	Potential hazardous materials have been identified during mine life and removed, or selected capping material has been applied with cover thickness appropriate to the contaminant. Ongoing overburden and reject characterisation programs. Surface water monitoring has been conducted consistent with guidelines derived from ANZECC 2000 for the final 5 years of mine operation and for 3 years post mine operation Local program of fire control and proscribed weeds and woody weeds control have been conducted.
Elevated Landform	Overburden dumps, quarry and sections of ROM crushing and screening areas.	Long-term safety	Site is safe for humans and animals now and in the foreseeable future.	Adequacy and long term performance of safety barriers.	Fencing and appropriate signage is in place to restrict access has been conducted. Cattle are excluded. Where risk mitigation measures include fencing and appropriate signage around a perimeter to restrict access, these have been erected in accordance with relevant guidelines and Australian Standards.
Elevated Landform	Overburden dumps, quarry and sections of ROM crushing and screening areas.	Non -polluting	Hazardous overburden, tailings and reject materials adequately handled.	A program of identification of hazardous and benign overburden, tailings, and reject materials.	Selective burial of hazardous materials tailings and rejects and covering of landforms with benign materials including topsoil has been conducted. If required, a selection of an appropriate “barrier layer” beneath the top capping suitable to the level of contaminants not removed, has been applied. Compliance with the site’s Topsoil Management Plan. Topsoil characteristics are broadly similar to surrounding reference (undisturbed) areas.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Elevated Landform	Overburden dumps, quarry and sections of ROM crushing and screening areas.	Non -polluting	Elimination of all permanent water storages on the site outside the final void.	Polluted water contained on site. Leachate and drainage control	Mine water has been transferred to the final mining void at cessation of operations. Surface and groundwater water monitoring has been conducted according to guidelines derived from ANZECC 2000 for 5 years during mine operation and for 3 years post mine operation. Minor drainage works to reinforce and consolidate natural drainage to the north of site as part of final landform have been completed. Evidence in the Rehabilitation Report, as prepared by an appropriately qualified person, that the rock lined drains have remained stable. Average broad range topsoil characteristics similar to reference (undisturbed) areas.
Elevated Landform	Overburden dumps, quarry and sections of ROM crushing and screening areas.	Stable	Very low probability of subsidence or slope slippage.	Design criteria. Safety assessment. Erosion rate. Slope stability.	A Geotechnical study and assessment that the elevated landforms are stable and safe has been conducted by qualified entity. All elevated landform batters regraded to 10% overall where possible. Evidence provided in the Rehabilitation Report that the reshaping of elevated sections of the landform have complied with the site's final landform design criteria. Erosion rates from disturbed areas and rehabilitated areas are comparable with reference (undisturbed) areas. Evidence that the reshaping of the upper surface of the elevated landforms has been to a stable gradient to direct runoff to the rock-lined waterway and prevent gully erosion. Slopes on elevated sections of the landform are geotechnically stable enough to maintain covers constructed for containment of hazardous material and for ecosystem support.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Elevated Landform	Overburden dumps, quarry and sections of ROM crushing and screening areas.	Stable	Landform design achieves appropriate erosion rates.	Slope angle and length.	All batters of elevated sections of the landform have been graded to 10%. Slope breaks are such that the length of slope between breaks will be less than 220 metres. Slope breaks include a waterway and a graded bank. constructed at a slope of less than 2%.
Elevated Landform	Overburden dumps, quarry and sections of ROM crushing and screening areas.	Stable	Landform design achieves appropriate erosion rates.	Rate of soil loss.	A benchmark erosion study has been conducted based on rainfall and sediment run- off rates in undisturbed region (to be conducted by qualified entity). Drainage points have been established at least every 220 meters on exposed slopes. Mulch has been applied if required. Erosion rates similar to the surrounding undisturbed region have been achieved within 3 years of cessation of mining Results have shown that significant active erosion features are not present and that any initial erosion has been stabilised by vegetation cover; Evidence has been included in Rehabilitation Report.
Elevated Landform	Overburden dumps, quarry and sections of ROM crushing and screening areas.	Stable	Vegetation cover to minimise erosion. Resilience to Disturbance. A perennial, self-sustaining ground cover is maintained that is resilient to environmental stresses such as fire, drought and pest species is extensive enough to control erosion; and	Vegetation type and density.	Scarification with direct seeding and fertiliser (primary grasses and legumes) has been completed. Contour ripping has been completed. Revegetation works have been implemented in accordance with the Rehabilitation Management Plan and standard establishment techniques have included contour deep ripping: and • Shrub species have been established; and • Tree species have been established. Desirable grass species comprise at least 60% of total grass cover. Tree density and height of >25 stems per 5ha each being >2m in height have been established.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
			contributes to the integrity of constructed covers.		Evidence of utilised revegetation techniques has been included in the Rehabilitation Report.
Elevated Landform	Overburden dumps, quarry and sections of ROM crushing and screening areas.	Sustainable land use	Soil properties to support the final land use proposed to be a self-sustaining native ecosystem comprising of local native vegetation assemblages.	Physical and Chemical properties of surface materials.	Testing to confirm achievement of broad characteristics similar to reference (undisturbed) areas.
		Sustainable land use	Establish specified self-sustaining natural vegetation and habitats.	Presence of key species. Species type and diversity. Weeds.	Environmental Audit has been conducted by qualified entity to grade success of: • Erosion mitigation program; • Vegetation program; • Water monitoring program; and • Weed management. Species from surrounding remnant vegetation communities have been introduced into the revegetation seed mix and establishment has been attempted:
Elevated Landform	Overburden dumps, quarry and sections of ROM crushing and screening areas.	Sustainable land use	Establish land use with comparable management requirements to similarly used non-mined land.	Initial establishment of native species to form the basis of a longer term self-sustaining native ecosystem.	Baseline Land Suitability Class has been determined in accordance with *Technical Guidelines for Environmental Management of Exploration and Mining Queensland* (QDME 1995). Environmental audit conducted by appropriately qualified persons to: • Establish progress towards a native ecosystem; • Identify the Land Suitability Class; and • Establish adequacy and predicted long-term performance of safety barriers.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Long-term safety	Site is safe for humans and animals now and in the foreseeable future.	Unless the subsequent landholder agrees in writing to assume responsibility for infrastructure components such as roads, the final rehabilitation plan will include the following indicators and activities. Removal of all constructed structures including dams, concrete to a depth of 1m, disused industrial equipment and materials.	Excavations have been backfilled. Risk assessment relative to safety of humans, stock and wildlife completed and risk mitigation measures have been implemented in accordance with relevant guidelines and Australian Standards such as ISO 31000 Risk Management. Any remaining infrastructure has written agreement with post-mining landholder.
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Long-term safety	Site is safe for humans and animals now and in the foreseeable future.	Exposure to and availability of heavy metals and other toxic material or other introduced contaminants.	The identification of potential hazardous materials during mine life and their removal, or selected capping material applied with cover thickness appropriate to the contaminant. Topsoil has been spread over disturbed areas in accordance with the site Topsoil Management Plan. Surface water monitoring has been conducted and complies with guidelines derived from ANZECC 2000 for 5 years during mine operation and for 3 years post mine operation. Local program of fire control and proscribed weeds and woody weeds control has been implemented.
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Long-term safety	Site is safe for humans and animals now and in the foreseeable future.	Adequacy and long term performance of safety barriers.	Fencing and appropriate signage around a perimeter is in place to restrict access; these have been erected in accordance with relevant guidelines and Australian Standards.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Non -polluting	Hazardous material adequately handled.	Technical design of capping. Compliance with risk assessment documentation.	Capping requirement has been established over mine life. If required, an appropriate "barrier layer" has been selected and implemented beneath the top capping suitable to the level contaminants not removed. Average broad range topsoil characteristics similar to reference (undisturbed) areas. Appropriate storage of all chemicals and fuels has been undertaken in accordance with AS10940 – *The Storage and Handling of Flammable and Combustible Liquids*. Evidence has shown removal of all infrastructure including concrete, steel and timber. Compliance with the Rehabilitation Management Plan. Completion of a post-mine contamination assessment report. Evidence of decommissioning has been included in the Rehabilitation Report.
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Non -polluting	Polluted water contained on site.	Surface, groundwater and downstream monitoring.	Mine water transferred to the final mining void at cessation of operations. Surface water monitoring in accordance with guidelines derived from ANZECC 2000 has been conducted for 5 years during mine operation and for 3 years post mine operation. Minor drainage works to reinforce and consolidate natural drainage has been implemented.
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Stable	Very low probability of subsidence or slope failure.	Design criteria of slopes regraded to a maximum of 10% (average) overall where required.	Completion of a Geotechnical study and assessment that rehabilitated MIA areas are stable and safe by qualified entity.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Stable	Landform design achieves appropriate erosion rates.	Slope angle and length.	All slopes have been regraded to 10% (average).
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Stable	Landform design achieves appropriate erosion rates.	Rate of soil loss.	A benchmark erosion study has been conducted based on rainfall and sediment run- off rates in undisturbed region (to be conducted by qualified entity). Drainage points at least every 220 meters on exposed slopes have been established. Mulch has been applied if required. Evidence in Rehabilitation Report that erosion rates are compatible with surrounding undisturbed region within 5 years of cessation of mining. Compliance with the site's Topsoil Management Plan.
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Stable	Vegetation cover to minimise erosion and to re-establish the pre-mine agricultural capability.	Vegetation type and density to support cattle grazing at the same standard as the pre-mining grazing activity.	Scarification with direct seeding and fertilizer (primarily grasses and legumes) has been conducted. Contour deep ripping, establish grasses and legumes to support cattle grazing has been implemented. The success of the final land use is measured by live weight gain in grazing cattle on mining infrastructure lands. Evidence in the Rehabilitation Report that measured erosion rates have shown to be comparable to unmined land in the same locality. Results have shown that significant active erosion features are not present and that any initial erosion has been stabilised by vegetation cover; Evidence has been included in Rehabilitation Report.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Sustainable land use	All infrastructure to be removed or retained where applicable	Beneficial land use – low intensity grazing - is established and proven to be sustainable.	Predicted economics and /or benefits have been defined and agreed by the stakeholders. Buildings, water management structures, roads (except those used by the public) and other infrastructure have been removed unless stakeholders have entered into formal written agreements for their retention. Where practicable, area accomplishes and remains as sustainable grazing.
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Sustainable land use	Soil properties to support eventual use as grazing land.	Physical and Chemical properties of surface materials.	Testing to confirm achievement of similar topsoil characteristics to reference (undisturbed) areas. Water testing has been conducted of surface water (ANZECC 2000) to ensure livestock standards achieved.
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Sustainable land use	Soil properties to support eventual use as grazing land.	Physical properties.	Regrading to an appropriate gradient has been undertaken for dry-land grazing practices.
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Sustainable land use	Establish specified self-sustaining natural vegetation and habitats.	Presence of key species. Species type and diversity. Weeds.	Environmental Audit has been conducted by qualified entity to grade success of: Erosion mitigation program; Vegetation program; Water monitoring program; and Weed management. Documented usage of re-vegetation methods as per the Rehabilitation Management Plan

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
					Evidence of revegetation work with species forming the vegetation communities associated with surrounding (undisturbed) areas to be included in Rehabilitation Report.
Mine Infrastructure Area (MIA) and Infrastructure areas	Infrastructure, crushing equipment, screening equipment, ROM areas and roads.	Sustainable land use	Establish land use with comparable management requirements to similarly used non-mined land.	Dryland grazing similar to grazing activities on surrounding unmined lands.	Baseline Land Suitability Class has been determined in accordance with *Technical Guidelines for Environmental Management of Exploration and Mining Queensland* (QDME 1995). Environmental audit has been conducted by appropriately qualified persons to: • establish suitability of all areas for dryland grazing practices within 3 years of cessation of mining. • ensure post-mining land is of a Suitability Class; (QDME 1995) similar to the pre-mining Class as determined by the baseline study – Soil, Land and Overburden Assessment prepared by SLR Consulting. • There is long-term performance of safety barriers.

END OF PERMIT