

Permit

Environmental Protection Act 1994

Environmental authority EPML00716913

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

Environmental authority number: EPML00716913

Environmental authority takes effect on 17 December 2020

Environmental authority holder(s)

Name(s)	Registered address
RIBFIELD PTY. LTD.	Level 17 444 Queen St BRISBANE CITY QLD 4000 Australia
MIDDLEMOUNT COAL PTY LTD	Level 17 444 Queen St BRISBANE CITY QLD 4000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 13: Mining black coal	ML700014
Schedule 3 13: Mining black coal	ML70417
Schedule 3 13: Mining black coal	ML70379
Schedule 3 13: Mining black coal	ML700027
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (a-i) 21 to 100EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ML700014
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (a-i) 21 to 100EP if	ML70417

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Environmentally relevant activity/activities	Location(s)
treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (a-i) 21 to 100EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ML70379
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (a-i) 21 to 100EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ML700027
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML700014
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML70417
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML70379
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML700027
Ancillary 15 - Fuel burning Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	ML700014
Ancillary 15 - Fuel burning Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	ML70417
Ancillary 15 - Fuel burning Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	ML70379
Ancillary 15 - Fuel burning Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	ML700027

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Environmentally relevant activity/activities	Location(s)
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)	ML700014
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)	ML70417
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)	ML70379
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)	ML700027

Additional information for applicantsEnvironmentally 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.

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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- one 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.

Dr. Alison Sinclair
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Date Issued: 17 December 2020

Enquiries:
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Department of Environment and Science
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EMERALD QLD 4720
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Obligations under the *Environmental Protection Act 1994*

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

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

Other permits required

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

Obligations under the *Mining and Quarrying Safety and Health Act 1999*

If you are operating a quarry, other than a sand and gravel quarry where there is no crushing capability, you will be required to comply with the *Mining and Quarrying Safety and Health Act 1999*. For more information on your obligations under this legislation contact Mine Safety and Health at www.dnrme.qld.gov.au, or phone 13 QGOV (13 74 68) or your local Mines Inspectorate Office.

Development Approval

This permit is not a development approval under the *Planning Act 2016*. The conditions of this environmental authority are separate, and in addition to, any conditions that may be on the development approval. If a copy of this environmental authority is attached to a development approval, it is for information only, and may not be current. Please contact the Department of Environment and Science to ensure that you have the most current version of the environmental authority relating to this site.

Conditions of environmental authority

Schedule A: General	
Condition number	Condition
A1	<p>Scope of activity</p> <p>This environmental authority authorises the mining of 5.7 million tonnes of run of mine (ROM) coal per annum.</p>
A2	<p>Prevent and /or minimise likelihood of environmental harm</p> <p>In carrying out the environmentally relevant activities, you must take all reasonable and practicable measures to prevent and/or to minimise the likelihood of environmental harm being caused. Any environmentally relevant activity, that, if carried out incompetently, or negligently, may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this authority.</p>
A3	<p>Maintenance of measures, plant and equipment</p> <p>The environmental authority holder must ensure:</p> <ul style="list-style-type: none"> a) that all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed; b) that such measures, plant and equipment are maintained in a proper condition; and c) that such measures, plant and equipment are operated in a proper manner.
A4	<p>Monitoring and records</p> <p>Record, compile and keep for a minimum of five (5) years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.</p>
A5	<p>Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.</p>
A6	<p>Notification of emergencies, incidents and exceptions</p> <p>The holder of this environmental authority must notify the administering authority by written notification within twenty-four (24) hours, after becoming aware of any emergency or incident which results in the release of contaminants, or information about circumstances which results or may result in environmental harm, not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.</p>
A7	<p>Not more than ten (10) business days following the initial notification of an emergency, incident or information about circumstances which result or may result in environmental harm or the release of contaminants, or within twenty-four (24) hours after receiving the results from analysed samples, written advice must be provided to the administering authority in relation to:</p> <ul style="list-style-type: none"> a) results and interpretation of any samples taken and analysed; and b) proposed actions to prevent a recurrence of the emergency or incident.

A8	<p>The notification in Conditions A9 and A10 must include, but not be limited to, the following:</p> <ul style="list-style-type: none"> a) the environmental authority number and name of the holder; b) the name and telephone number of the designated contact person; c) the location of the emergency or incident; d) the date and time of the emergency or incident; e) the time the holder of the environmental authority became aware of the emergency or incident; f) where known: <ul style="list-style-type: none"> i. the estimated quantity and type of substances involved in the emergency or incident; ii. the actual or potential cause of the emergency or incident; iii. a description of the nature and effects of the emergency or incident including environmental risks, and any risks to public health or livestock; g) any sampling conducted or proposed, relevant to the emergency or incident; h) immediate actions taken to prevent or mitigate any further environmental harm caused by the emergency or incident; and i) what notification of stakeholders who may be affected by the emergency or incident has occurred or is being undertaken.
A9	<p>Risk Management</p> <p>The environmental authority holder must maintain and implement a risk management system for mining activities which conforms to the “Risk Management - Principles and Guidelines (AS/NZS ISO 31000:2009)”.</p>
A10	<p>The environmental authority holder must not implement a risk management system that contravenes or prevents the implementation of any condition of this environmental authority.</p>
A11	<p>Emergency Response and Contingency Planning</p> <p>An emergency response/contingency plan must be developed and implemented to manage unacceptable risks identified in the risk management system or the associated monitoring.</p>

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A12	<p>The emergency response/contingency plan must address the following matters:</p> <ul style="list-style-type: none"> a) response procedures to be implemented to reduce the likelihood of environmental harm arising from incidents of unacceptable risk; b) response procedures to minimise the extent and duration of environmental harm by an incident; c) the practices and procedures to be employed to restore the environment or mitigate any environmental impact caused; d) a description of the resources to be used in response to an incident; e) the training of staff that will be called upon to respond to incidents; f) procedures to investigate the cause of any incidents, including releases, and where necessary, implement remedial actions to reduce the likelihood of recurrence of similar events; g) the provision and availability of documented procedures to staff attending any incident to enable them to effectively respond; and h) timely and accurate reporting of the circumstance and nature of incidents to the administering authority.
A13	<p>Third Party Audit</p> <p>The holder of the environmental authority must nominate an appropriate third party auditor to audit compliance with the conditions of this environmental authority. The third party audit must be completed by 3 December 2017, and then at regular intervals not exceeding three (3) years.</p>
A14	<p>The holder must, at its cost, arrange for independent certification by a third party auditor of findings of the audit report required under Condition A13.</p>
A15	<p>Within ninety (90) days of completing the audit, provide a written report to the administering authority detailing any non-compliance issues that were found (if no non-compliance issues were found this should be stated in the report). If non-compliance issues were found the report must also address:</p> <ul style="list-style-type: none"> a) actions taken by the holder of this environmental authority to ensure compliance with this environmental authority; and b) actions taken to prevent a recurrence of non-compliance.
A16	<p>Where a condition of this environmental authority requires compliance with a standard published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority the holder of this environmental authority must:</p> <ul style="list-style-type: none"> a) comply with the amended or changed standard within two (2) years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation; and b) until compliance with the amended or changed standard is achieved, continue to remain in compliance with the standard that was current immediately prior to the relevant amendment or change.

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A17	<p>Activity</p> <p>All land subject to mining activities must be rehabilitated to a non-polluting, safe, stable and self-sustaining landform.</p>
A18	Contaminants must not be released to the receiving environment unless they are in accordance with the contaminant limits authorised by this environmental authority.
A19	This environmental authority does not authorise environmental harm unless a condition contained within the authority explicitly authorises that harm. Where there is no condition or the authority is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.
A20	The only mining activities to be carried out under this environmental authority are the mining activities defined within the parameters in Attachment A of this environmental authority.
A21	<p>Definitions</p> <p>Words and phrases used throughout this environmental authority are defined in the Definitions section of this authority. Where a definition for a term used in this environmental authority is sought and the term is not defined within this environmental authority, the definitions in the Environmental Protection Act 1994, its regulations and policies must be used</p>

Schedule B: Air	
Condition number	Condition
B1	<p>Dust nuisance</p> <p>Subject to Conditions B2 and B3 the release of dust or particulate matter or both resulting from the mining activity must not cause an environmental nuisance at any sensitive or commercial place.</p>
B2	When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.

<p>B3</p>	<p>The environmental authority holder must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that the dust and particulate matter emissions generated by the mining activities do not cause an exceedance of the following levels when measured at any sensitive or commercial place:</p> <p>a) dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air – Determination of particulates – Deposited matter – Gravimetric method.</p> <p>b) a concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (μm) (PM_{10}) suspended in the atmosphere of 50 micrograms per cubic metre over a twenty four (24) hour averaging time, for no more than five exceedances recorded each year, when monitored in accordance with the most recent version of either:</p> <p>i) Particulate matter – determination of suspended particulate PM_{10} high-volume sampler with size-selective inlet – Gravimetric method, when monitored in accordance with Australian Standard AS 3580.9.6 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM_{10} high volume sampler with size-selective inlet – Gravimetric method or</p> <p>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.</p>
<p>B4</p>	<p>If monitoring indicates exceedance of the relevant limits in Conditions B3, then the environmental authority holder must:</p> <p>a) address the complaint including the use of appropriate dispute resolution if required;</p> <p>b) immediately implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance; and</p> <p>c) notify the administering authority within five (5) business days.</p>
<p>B5</p>	<p>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 nuisance sensitive or commercial place.</p>
<p>B6</p>	<p>When requested by the administering authority odour monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.</p>

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B7	<p>If the administering authority determines the odour released to constitute an environmental nuisance the environmental authority holder must:</p> <p style="margin-left: 40px;">a) address the complaint including the use of appropriate dispute resolution if required; and</p> <p style="margin-left: 40px;">b) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance.</p>
B8	<p>Meteorological monitoring</p> <p>The environmental authority holder must establish a permanent, continuous, real time meteorological and dust monitoring network to measure and record wind speed, wind direction, temperature, rainfall, relative humidity and PM10. The station must comply with the following Standards (or their successors):</p> <p style="margin-left: 40px;">a) “AS 2923-1987: Ambient air – Guide for measurement of horizontal wind for air quality applications” or its successor.</p> <p style="margin-left: 40px;">b) “AS/NZS 3580.1.1:2016: Methods for sampling and analysis of ambient air. Guide to siting air monitoring equipment” or its successor.</p>

Schedule C: Water	
Condition number	Condition
C1	<p>Contaminant release</p> <p>Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities, except as permitted under the conditions of this environmental authority</p>
C2	<p>The release of mine affected water to waters must only occur from the release points specified in Table C1: Mine Affected Water Release Points, Sources and Receiving Waters and depicted in Attachment B, attached to this environmental authority.</p>

Table C1: Mine Affected Water Release Points, Sources and Receiving Waters

Release point (RP)	Easting (GDA94)	Northing (GDA94)	Mine affected water source and location	Monitoring point	Receiving waters description
RP 1	667,725	7,469,370	Raw Water Dam	Spillway/pipe	Roper Creek
RP 2	671,743	7,469,842	Mine Water Dam	Spillway/pipe	Roper Creek
SD 1	668,008	7,469,218	Sediment Dam 1	Spillway/pipe	Roper Creek
SD 2	668,093	7,470,858	Sediment Dam 2	Spillway/pipe	Roper Creek
SD 3	668,457	7,470,213	Sediment Dam 3	Spillway/pipe	Roper Creek
SD 7	671,125	7,474,067	Sediment Dam 7	Spillway/pipe	An unnamed drainage feature
NROM	667,858	7,470,294	North ROM Dam	Spillway/pipe	Roper Creek

C3 The release of mine affected water to internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with **Conditions C26 to C27** inclusive is permitted.

C4 The release of mine affected water to waters in accordance with **Condition C2** must not exceed the release limits stated in **Table C2: Mine Affected Water Release Limits** when measured at the monitoring points specified in **Table C1: Mine Affected Water Release Points, Source and Receiving Waters** for each quality characteristic.

Table C2: Mine Affected Water Release Limits

Quality Characteristic	Release Limits	Monitoring Frequency	Comments
Electrical Conductivity ($\mu\text{S/cm}$)	Release limits specified in Table C4 for variable flow criteria	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
pH (pH units)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
Turbidity (NTU)	No limit	Daily during release (first sample within 2 hours of commencement of release)	Turbidity is required to assess ecosystems impacts and can provide instantaneous results.
Suspended Solids (mg/L) (80 th percentile of reference sites detailed in Table C6)	Flow <2m ³ /s 562 mg/L	Daily during release (first sample within 2 hours of commencement of release)	Suspended solids are required to measure the performance of sediment and erosion control measures.
	Flow >2m ³ /s 1062 mg/L		
Sulfate (SO_4^{2-}) (mg/L)	Release limits specified in Table C4 for variable flow criteria	Daily during release (first sample within 2 hours of commencement of release)	Drinking water environmental values from National Health and Medical Research Council 2006 guidelines or ANZECC

C5

The release of mine affected water to waters from the release points must be monitored at the locations specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters** for each quality characteristic and at the frequency specified in **Table C2: Mine Affected Water Release Limits** and **Table C3: Release Contaminant Trigger Investigation Levels Potential Contaminants**.

Table C3: Release Contaminant Trigger Investigation Levels Potential Contaminants

Quality characteristic	Trigger levels (µg/L)	Comment on trigger level	Monitoring frequency
Aluminium	55	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Arsenic	13	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Cadmium	0.2	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Chromium	1	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Copper	2	For aquatic ecosystem protection, based on LOR for ICPS	Commencement of release and thereafter weekly during release
Iron	300	For aquatic ecosystem protection, based on low reliability guideline.	Commencement of release and thereafter weekly during release
Lead	4	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Mercury	0.2	For aquatic ecosystem protection, based on LOR for CV FIMS	Commencement of release and thereafter weekly during release
Nickel	11	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Zinc	8	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Boron	370	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Cobalt	90	For aquatic ecosystem protection, based on low reliability guideline	Commencement of release and thereafter weekly during release
Manganese	1,900	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Molybdenum	34	For aquatic ecosystem protection, based on low reliability guideline	Commencement of release and thereafter weekly during release
Selenium	10	For aquatic ecosystem protection, based on LOR for ICPS	Commencement of release and thereafter weekly during release
Silver	1	For aquatic ecosystem protection, based on LOR for ICPS	Commencement of release and thereafter weekly during release
Uranium	1	For aquatic ecosystem protection, based on LOR for ICPS	Commencement of release and thereafter weekly during release

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Vanadium	10	For aquatic ecosystem protection, based on LOR for ICPMS	Commencement of release and thereafter weekly during release
Ammonia	900	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Nitrate	1,100	For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN	Commencement of release and thereafter weekly during release
Petroleum hydrocarbons (C6-C9)	20		Commencement of release and thereafter weekly during release
Petroleum hydrocarbons (C10-C36)	100		Commencement of release and thereafter weekly during release
Fluoride (total)	2,000	Protection of livestock and short term irrigation guideline	Commencement of release and thereafter weekly during release
Sodium	180,000	Based on the Australian Drinking Water Guidelines (NRMCC, 2011)	Commencement of release and thereafter weekly during release

Note:

1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metals/metalloids apply if dissolved results exceed trigger.
2. SMD – slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).
3. LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical methods required to achieve LOR.

C6	<p>If quality characteristics of the release exceed any of the trigger levels specified in Table C3: Release Contaminant Trigger Investigation Levels Potential Contaminants during a release event, the environmental authority holder must cease the release and compare the downstream results in the receiving waters to the trigger values specified in Table C3: Release Contaminant Trigger Investigation Levels Potential Contaminants and:</p> <ol style="list-style-type: none"> 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 in Table C3: 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; <ol style="list-style-type: none"> 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 90 days of receiving the result, outlining: <ol style="list-style-type: none"> 1. details of the investigations carried out; and 2. actions taken to prevent environmental harm. <p>Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with C6 2(b)(ii) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.</p>
C7	<p>If an exceedance in accordance with Condition C6 2(b) is identified, the holder of the environmental authority must notify the administering authority in writing within twenty four (24) hours of receiving the result.</p>

C8	<p>Mine affected release events</p> <p>The holder must ensure an automatic 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 C4: Mine Affected Water Release During Flow Events.</p>
C9	<p>The release of mine affected water to waters in accordance with Condition C2 must only take place during periods of natural flow events in accordance with the receiving water flow criteria for discharge specified in Table C4: Mine Affected Water Release During Flow Events for the release point(s) specified in Table C1: Mine Affected Water Release Points, Sources and Receiving Waters.</p>
C10	<p>The release of mine affected water to waters in accordance with Condition C2 must not exceed the Electrical Conductivity and Sulfate release limits or the Maximum Release Rate (for all combined release point flows) for each receiving water flow criteria for discharge specified in Table C4: Mine Affected Water Release During Flow Events when measured at the monitoring points specified in Table C1: Mine Affected Water Release Points, Sources and Receiving Waters.</p>
C11	<p>The daily quantity of mine affected water released from each release point must be measured, recorded and provided to the administering authority on request.</p>
C12	<p>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.</p>
C13	<p>The environmental authority holder must notify the administering authority via WaTERS within 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:</p> <ul style="list-style-type: none"> a) Release commencement date and time; b) Details regarding the compliance of the release with the conditions of Department interest: Water 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.

Table C4: Mine Affected Water Release During Flow Events

Release point (RP)	Gauging station	Gauging station Easting, (GDA94)	Gauging station Northing, (GDA94)	Receiving water flow recording frequency	Receiving water flow criteria for discharge	Maximum release rate (for all combined RP flows)	Electrical conductivity and Sulfate release limits
RP1 RP2 SD1 SD2 SD3 SD7 NROM	Ref 1	667,484	7,471,112	Continuous (minimum daily)	<u>Low Flow</u> For a period of 28 days after natural flow events that exceed 2m ³ /s	0.4 m ³ /s	Electrical conductivity (µS/cm) 700. Sulfate (SO ₄ ²⁻): 250 mg/L
					<u>Medium flow</u> > 2 m ³ /s	1.12 m ³ /s	Electrical conductivity (µS/cm) 1500. Sulfate (SO ₄ ²⁻): 250 mg/L
					<u>High flow</u> > 10 m ³ /s	5.6 m ³ /s	Electrical conductivity (µS/cm) 1500. Sulfate (SO ₄ ²⁻): 250 mg/L
					>10 m ³ /s	>1.6 m ³ /s	Electrical conductivity (µS/cm) 3500. Sulfate (SO ₄ ²⁻): 300 mg/L
					<u>Very High Flow</u> >25 m ³ /s	2.1 m ³ /s	Electrical conductivity (µS/cm) <6000. Sulfate (SO ₄ ²⁻): 500 mg/L

C14	<p>The environmental authority holder must notify the administering authority via WaTERS within twenty-four (24) hours after cessation of a release event) of the cessation of a release notified under Condition C13 and within twenty-eight (28) days provide the following information in writing:</p> <ul style="list-style-type: none"> a) Release cessation date and time; b) Natural flow rate in receiving water; c) the total volume of water released from each release point and the daily quantity of mine affected water released from each release point; and d) Details regarding the compliance of the release with the conditions of Department interest; water of this environmental authority (i.e. contaminant limits, natural flow, discharge volume).
C15	<p>Notification of release event exceedance</p> <p>If the release limits defined in Table C2: Mine Affected Water Release Limits are exceeded, the holder of the environmental authority must notify the administering authority via WaTERS within twenty-four (24) hours of receiving the results.</p>
C16	<p>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 via WaTERS detailing:</p> <ul style="list-style-type: none"> a) The reason for the release; b) The location of the release; c) The total volume of the release and the daily quantity of mine affected water released from each release point, and which (if any) part of these releases was non-compliant; d) The total duration of the release and which (if any) part of this period was non-compliant; e) All in situ and any water quality monitoring results (including all laboratory analyses); f) Identification of any environmental harm as a result of the non-compliance; and g) Any other matters pertinent to the water release event.
C17	<p>Receiving environment monitoring and contaminant trigger levels</p> <p>The quality of the receiving waters must be monitored at the locations specified in Table C6: Receiving Water Upstream Background Sites and Downstream Monitoring Points for each quality characteristic and at the monitoring frequency stated in Table C5: Receiving Waters Contaminant Trigger Levels.</p>

C18	<p>If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Table C5: 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:</p> <p>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</p> <p>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 within three (3) months, outlining:</p> <p style="margin-left: 40px;">i) details of the investigations carried out; and</p> <p style="margin-left: 40px;">ii) actions taken to prevent environmental harm.</p>
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Table C5: Receiving Waters Contaminant Trigger Levels

Quality characteristic	Trigger level	Monitoring frequency
pH	6.5 – 8.5	Daily during the release
Electrical Conductivity ($\mu\text{S}/\text{cm}$)	700	
Suspended Solids (mg/L) (80th percentile* of reference**)	562 Flow <2m ³ /s	
	1062 Flow >2m ³ /s	
Sulfate (SO ₄ ²⁻) (mg/L)	250	
Sodium (mg/L)	180	

Note:

* 80th percentiles are calculated using ANZECC (2000) methodology (section 7.4.4.1)

** Reference sites are defined in Table C6.

Table C6: Receiving Water Upstream Background Sites and Downstream Monitoring Points

Monitoring points	Receiving waters location description	Easting (GDA94)	Northing (GDA94)
Upstream background monitoring points			
Ref 1	Roper Creek at western ML70379 boundary (Upstream of Thirteen Mile Gully diversion)	667,484	7,471,112
Downstream monitoring points			
IMPAC1	Roper Creek at Middlemount Road	671,505	7,469,167
IMPAC2	Roper Creek Tributary at Middlemount Road	673,094	7,471,230

Note:

- a) The upstream monitoring point should be within six (6) km of the release point.
- b) The downstream point should not be greater than six (6) km from the release point.
- c) The data from background monitoring points should not be used where they are affected by releases from other mines.

C19**Receiving environment monitoring program (REMP)**

The environmental authority holder must develop and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while mine affected water is being discharged from the site.

For the purposes of the REMP, the receiving environment is the waters of Roper Creek and connected waterways within ten (10) km downstream of the release. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.

C20	<p>The REMP must:</p> <ul style="list-style-type: none"> 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); and b) be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; and 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 8: Receiving Water Upstream Background Sites and Down Stream Monitoring Points); and 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 should include monitoring during periods of natural flow irrespective of mine or other discharges; and e) include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in Table C2: Mine Affected Water Release Limits and Table C3: Release Contaminant Trigger Investigation Levels); and f) include, where appropriate, monitoring of metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 Guidance on Sampling of Bottom Sediments); and g) include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology, and h) apply procedures and/or guidelines from ANZECC & ARMCANZ 2000 and other relevant guideline documents; and 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 and biological data.
C21	<p>A REMP Design Document that addresses the requirements of the REMP must be prepared and made available to the administrating authority upon request.</p>
C22	<p>A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared annually and made available on request to the administrating authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.</p>

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C23	<p>Water reuse Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party (with the consent of the third party) for the purpose of:</p> <ul style="list-style-type: none"> a) stock watering; b) irrigation; or c) dust suppression <p>with water quality limits appropriate for the intended purpose.</p>
C24	<p>Water general All determinations of water quality and biological monitoring must be performed by an appropriately qualified person.</p>
C25	<p>The release of any contaminants as permitted by this environmental authority, directly or indirectly to waters, other than internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with Conditions C27 to C28 inclusive:</p> <ul style="list-style-type: none"> a) must not produce any visible discolouration of receiving waters; and b) must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.
C26	<p>Annual water monitoring reporting The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format with each annual return:</p> <ul style="list-style-type: none"> a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; d) the measured or estimated daily quantity of the mine affected waters released from all release points; e) the release flow rate at the time of sampling for each release point; f) the results of all monitoring and details of any exceedance with the conditions of this environmental authority; and g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.

C27	<p>Water Management Plan</p> <p>A Water Management Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities. The Water Management Plan must:</p> <ul style="list-style-type: none"> a) provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining activity carried out under this environmental authority; and b) be developed in accordance with Department of Environment and Science guideline Preparation of water management plans for mining activities and include: <ul style="list-style-type: none"> i. a study of the source of contaminants; ii. a water balance model for the site; iii. a water management system for the site; iv. measures to manage and prevent saline drainage; v. measures to manage and prevent acid rock drainage; vi. contingency procedures for emergencies; and vii. program for monitoring and review of the effectiveness of the water management plan.
C28	A copy of the Water Management Plan must be provided to the administering authority on request.
C29	<p>Saline drainage</p> <p>The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage</p>
C30	<p>Acid rock drainage</p> <p>The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage</p>
C31	<p>Stormwater and water sediment controls</p> <p>An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.</p> <p>The Erosion and Sediment Control Plan must be reviewed, updated and submitted to the administering authority at an interval no greater than 3 years from the previous submission of an Erosion and Sediment Control Plan.</p>
C32	<p>Stormwater, other than mine affected water, is permitted to be released to waters from:</p> <ul style="list-style-type: none"> a) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by Condition C31; and b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with Conditions C27 to C28 inclusive, for the purpose of ensuring water does not become mine affected water.

C33	Groundwater Groundwater quality affected by the mining activities must be monitored at the locations and frequencies specified in Table C7: Groundwater Quality Monitoring Locations and Frequency for the parameters identified in Table C8: Groundwater Quality Investigation Trigger Levels .
C34	The groundwater investigation trigger levels limit type 'Median" referred to in Table C8: Groundwater Quality Investigation Trigger Levels must be determined on the most recent three (3) consecutive routine monitoring samples.

Table C7: Groundwater Quality Monitoring Locations and Frequency

Monitoring points	Easting (GDA 94)	Northing (GDA 94)	Target Aquifer	Monitoring frequency
Monitoring Point MW2	667,603	7,471,239	Tertiary	Quarterly
Monitoring Point MW3 ^a	670,647	7,469,955	Tertiary	
Monitoring Point MW4	667,683	7,468,659	Intrusives and Girrah coal seam	
Monitoring Point MW5	668,786	7,469,364	Pisces coal seam	
Monitoring Point MW6	669,452	7,468,670	Tertiary	
Monitoring Point MW5M ^b	667,790	7,475,131	Middlemount coal seam	
Monitoring Point MW5P ^b	667,796	7,745,130	Pisces coal seam	
Monitoring Point MW7M ^b	669,668	7,472,167	Middlemount coal seam	
Monitoring Point MW7P ^b	669,777	7,472,247	Pisces coal seam	
Monitoring Point MW8FR ^b	669,941	7,472,277	Fort Cooper Coal Measures	
Monitoring Point MW9A	670,246	7,469,610	Tertiary	
Monitoring Point MW9M	670,243	7,469,619	Middlemount coal seam	
Monitoring Point MW9P	670,251	7,469,592	Pisces coal seam	
Monitoring Point MW10A	669,783	7,475,981	Tertiary	
Monitoring Point MW11A	672,355	7,472,275	Tertiary	
Monitoring Point MW12A	671,640	7,469,853	Tertiary	
Monitoring Point MW13A	669,032	7,468,890	Tertiary	
Monitoring Point MW16A	666,878	7,472,826	Tertiary and weathered Fort Cooper Coal Measures	
Monitoring Point MW17A	669,790	7,475,985	Weathered and fresh Fort Cooper Coal Measures	
Monitoring Point MW18A	666,452	7,478,605	Tertiary and weathered Fort Cooper Coal Measures	

Note:

^aMW3 will continue to be monitored until pit progression prevents monitoring. MW9A installed as a replacement well for MW3.

^bTo be monitored until pit progression prevents monitoring.

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C35	<p>Subject to requirements of Condition C33, if the groundwater investigation trigger levels defined in Table C8: Groundwater Quality Investigation Trigger Levels are exceeded then the environmental authority holder must:</p> <ul style="list-style-type: none"> a) complete an investigation into the potential for environmental harm; and b) notify the administering authority via WaTERS within twenty-eight (28) days of receiving the analysis results.
C36	<p>The exceedance investigation under Condition C35 must be completed and submitted to the administering authority via WaTERS within three (3) months of the exceedance.</p>
C37	<p>Where it is identified that there is potential for environmental harm, an action plan to mitigate potential harm must be developed by a suitably qualified person and implemented within three (3) months of the completion of the investigation under Condition C35.</p>
C38	<p>Groundwater levels affected by the mining activities must be monitored at the locations and frequencies defined in Table C9: Groundwater Level Monitoring Locations.</p>
C39	<p>In the event that groundwater fluctuations exceed the groundwater level trigger values defined in Table C10: Groundwater Level Trigger Values at the groundwater monitoring locations nominated in Table C9: Groundwater Level Monitoring Locations, an investigation must be undertaken within fourteen (14) days of detection to determine if the fluctuations are a result of:</p> <ul style="list-style-type: none"> a) mining activities; b) pumping from licensed bores; or c) seasonal variation.
C40	<p>If the results of the investigation undertaken in accordance with Condition C39 identify that the groundwater fluctuations are a result of mining activities, the holder of the environmental authority must notify the administering authority via WaTERS and provide a copy of a report detailing the findings and outcomes of the investigation within seven (7) days of completing the investigation.</p>

Table C8: Groundwater Quality Investigation Trigger Levels

Parameter	Unit	Trigger Levels	Limit Type
pH	pH Units	6.5 – 8.5	Minimum/ Maximum
Electrical Conductivity	µS/cm	35,000	Maximum
Total Dissolved Solids	mg/L	23,550	Maximum
Calcium	mg/L	1,000	Median
Magnesium	mg/L	2,000	Median
Sodium	mg/L	6,700	Median
Potassium	mg/L	43	Median
Chloride	mg/L	12,700	Median
SO ₄	mg/L	2,000	Median
CO ₃	mg/L	7.7	Median
HCO ₃	mg/L	800	Median
Iron	mg/L	14	Maximum
Mercury	mg/L	0.002	Maximum
Selenium	mg/L	0.034	Maximum
Total Petroleum Hydrocarbons (C10-14)	µg/L	50	Maximum
Total Petroleum Hydrocarbons (C15-28)	µg/L	185	Maximum
Total Petroleum Hydrocarbons (C29-36)	µg/L	90	Maximum

Table C9: Groundwater Level Monitoring Locations

Monitoring points	Easting (GDA94)	Northing (GDA94)	Surface RL (m)	Target Aquifer	Frequency
MW2	667,603	7,471,239	162.54	Tertiary	Quarterly
MW3 ^a	670,647	7,469,955	155.44	Tertiary	Quarterly
MW4	667,683	7,468,659	183.11	Intrusives and Girrah coal seam	Quarterly
MW5	668,786	7,469,364	157.68	Pisces coal seam	Quarterly
MW6	669,452	7,468,670	158.26	Tertiary	Quarterly
MW5M ^b	667,790	7,475,131	174.52	Middlemount coal seam	Quarterly
MW5P ^b	667,796	7,475,130	174.66	Pisces coal seam	Quarterly
MW7M ^b	669,668	7,472,167	161.15	Middlemount coal seam	Quarterly
MW7P ^b	669,777	7,472,247	163.87	Pisces coal seam	Quarterly
MW8FR ^b	669,941	7,472,277	164.33	Fort Cooper Coal Measures	Quarterly
MW9A	670,246	7,469,610	156.32	Tertiary	Quarterly
MW9M	670,243	7,469,619	156.36	Middlemount coal seam	Quarterly
MW9P	670,251	7,469,592	156.26	Pisces coal seam	Quarterly
MW10A	669,783	7,475,981	175.75	Tertiary	Quarterly
MW11A	672,355	7,472,275	156.21	Tertiary	Quarterly
MW12A	671,640	7,469,853	158.28	Tertiary	Quarterly
MW13A	669,032	7,468,890	162.79	Tertiary	Quarterly
MW16A	666,878	7,472,826	162.48	Tertiary and weathered Fort Cooper Coal Measures	Quarterly
MW17A	669,790	7,475,985	175.77	Weathered and fresh Fort Cooper Coal Measures	Quarterly
MW18A	666,452	7,478,605	181.70	Tertiary and weathered Fort Cooper Coal Measures	Quarterly
MW19VWP	671,659	7,469,856	158.38	Weathered Fort Cooper Coal Measures and Fort Cooper Coal Measures ^c	Quarterly
MW20VWP	672,816	7,471,543	155.90	Fort Cooper Coal Measures ^d	Quarterly

Notes:

^a MW3 will continue to be monitored until pit progression prevents monitoring. MW9A installed as a replacement well for MW3;

^b To be monitored until pit progression prevents monitoring.

^c MW19VWP sensors installed at 50 mbgl (VW3) (for the base of weathered Fort Cooper Coal Measures), and 109 mbgl (VW2) and 150 mbgl (VW1) (for the Fort Cooper Coal Measures).

^d MW20VWP sensor installed at 88 mbgl (VW2) (for the Fort Cooper Coal Measures).

Table C10: Groundwater Level Trigger Values

Monitoring points	Trigger Level Threshold
MW2	>2 metres per year
MW3 ^a	total groundwater level of <115.39 metres
MW4	>2 metres per year
MW5	total groundwater level of <116.9 metres
MW6	>2 metres per year
MW9A	total groundwater level of <118.17 metres
MW10A	>2 metres per year
MW11A	>2 metres per year
MW12A	>2 metres per year
MW13A	>2 metres per year
MW16A	total groundwater level of <129.2 metres
MW17A	total groundwater level of <135.6 metres
MW18A	>2 metres per year
MW19VWP-VW3	total groundwater level of <130.8 metres
MW19VWP-VW2	>2 metres per year
MW19VWP-VW1	>2 metres per year
MW20VWP-VW2	>3 metres per year

Notes:

^aMW3 will continue to be monitored until pit progression prevents monitoring. MW9A installed as a replacement well for MW3.

C41	The groundwater monitoring data must be reviewed on an annual basis. The review must include the assessment of groundwater levels and quality data, and the suitability of the monitoring network. The assessment must be submitted to the administering authority within twenty-eight (28) days of receiving the report.
C42	<p>Groundwater monitoring</p> <p>The following information must be recorded in relation to all water sampling:</p> <ul style="list-style-type: none"> a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; d) the results of all monitoring; e) groundwater levels; and f) sampling methodology.
C43	The method of water sampling required by this environmental authority must comply with that set out in the latest edition of the administering authority's Monitoring and Sampling Manual.

C44	Bore construction and maintenance and decommissioning All groundwater bores (including groundwater monitoring bores) must be constructed in accordance with the Minimum Construction Requirements for Water Bores in Australia.				
C45	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.				
C46	Sewage Treatment The daily operation of the sewage treatment plant and pollution control equipment must be carried out by a person(s) with appropriate experience and/or qualifications to ensure the effective operation of that treatment system and control equipment.				
C47	Treated effluent from the sewage treatment plant must only be discharged from the authorised discharge points, as specified in Table C11: Effluent Discharge Locations .				
Table C11: Effluent Discharge Locations					
<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 60%;">Authorised discharge points</th> <th style="width: 40%;">Location</th> </tr> </thead> <tbody> <tr> <td>STP Discharge Point 1</td> <td>Tailings Storage Facility</td> </tr> </tbody> </table>		Authorised discharge points	Location	STP Discharge Point 1	Tailings Storage Facility
Authorised discharge points	Location				
STP Discharge Point 1	Tailings Storage Facility				
C48	Treated effluent must not be released to land, or used for irrigation or dust suppression.				
C49	Treated effluent must not be released from the site to any waters or the bed and banks of any waters.				
C50	Water or stormwater contaminated by sewage treatment activities must not be released to any waters or the bed and banks of any waters.				
C51	Biosolids Biosolids produced by the activity for re-use must be: a) sampled, analysed, graded and classified according to the procedures specified in the administering authorities systems and standard; and b) re-used under a relevant approval issued by the administering authority.				

Schedule D: Acoustic	
Condition number	Condition
D1	Noise nuisance Subject to Conditions D2 and D3 , noise from the mining activity must not cause an environmental nuisance at any noise sensitive or commercial place.

D2	<p>Noise monitoring</p> <p>When requested by the administering authority, noise monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring. Monitoring must include:</p> <ul style="list-style-type: none"> a) $L_{Aeq, adj, 15 mins}$ (external); b) $L_{A1, adj, 15 mins}$ (internal – or a measured external noise level and calculation of corresponding internal noise level); c) the level and frequency of occurrence of impulsive or tonal noise; d) atmospheric conditions including wind speed and direction; e) effects due to extraneous factors such as traffic noise; and f) location, data and time of recording.
D3	<p>If the environmental authority holder can provide evidence through monitoring that the limits defined in Table D1: Noise Limits, are not being exceeded then the holder is not in breach of Condition D1.</p>
D4	<p>If monitoring indicates the noise component from the Project exceeds the limits in Table D1: Noise Limits, then the environmental authority holder must:</p> <ul style="list-style-type: none"> a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.

Table D1: Noise Limits

Noise level dB(A)	Monday to Sunday (including public holidays)		
	7am – 6pm	6pm – 10pm	10pm – 7am
Noise measured at a 'sensitive place' expressed as:			
$L_{Aeq, adj, 15 mins}^*$	RBL + 5	RBL + 5	RBL + 5
$L_{A1, adj, 15 mins}^{**}$	40	40	40
Noise measured at a 'commercial place' expressed as:			
$L_{Aeq, adj, 15 mins}^*$	RBL + 10	RBL + 10	RBL + 10
$L_{A1, adj, 15 mins}^{**}$	45	45	45

NOTE:

* External noise limit

** Internal noise limit

RBL means Rated Background Level as defined in the administering authority's Guideline, Planning for Noise Control.

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D5	The method of measurement and reporting of noise monitoring must comply with the current edition of the administering authority's Noise Measurement Manual				
D6	Vibration nuisance Vibration from the licensed activities must not cause an environmental nuisance at any sensitive or commercial place.				
D7	When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.				
D8	Vibration monitoring must include the following descriptors, characteristics and conditions: <ul style="list-style-type: none"> a) location of the blast(s) within the mining area (including which bench level); b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and c) location, date and time of recording. 				
D9	If monitoring indicates exceedance of the relevant limits in Table D2: Vibration Limits , then the environmental authority holder must: <ul style="list-style-type: none"> a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement vibration abatement measures so that vibration from the activity does not result in further environmental nuisance. 				
D10	The airblast overpressure level from blasting operations on the premises must not exceed the limits defined in Table D3: Airblast Overpressure Level at any nuisance sensitive or commercial place.				
Table D3: Airblast Overpressure Level					
<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 35%;">Location</th> <th>Airblast Overpressure Measured</th> </tr> </thead> <tbody> <tr> <td>Sensitive or commercial place</td> <td>Air blast overpressure level of 115 db (Linear peak) for 9 out of 10 consecutive blasts initiated and not greater than 120 db (Linear peak) at any time.</td> </tr> </tbody> </table>		Location	Airblast Overpressure Measured	Sensitive or commercial place	Air blast overpressure level of 115 db (Linear peak) for 9 out of 10 consecutive blasts initiated and not greater than 120 db (Linear peak) at any time.
Location	Airblast Overpressure Measured				
Sensitive or commercial place	Air blast overpressure level of 115 db (Linear peak) for 9 out of 10 consecutive blasts initiated and not greater than 120 db (Linear peak) at any time.				
D11	When requested by the administering authority, airblast overpressure monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.				

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D12	<p>Airblast overpressure monitoring must include the following descriptors, characteristics and conditions:</p> <ul style="list-style-type: none"> a) location of the blast(s) within the mining area (including which bench level); b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and c) location, date and time of recording.
D13	<p>If monitoring indicates exceedance of the relevant limits in Table D3: Airblast Overpressure Level, then the environmental authority holder must:</p> <ul style="list-style-type: none"> a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement airblast overpressure abatement measures so that airblast overpressure from the activity does not result in further environmental nuisance.
D14	<p>The method of measurement and reporting of airblast overpressure levels must comply with the current edition of the administering authority's Noise Measurement Manual.</p>

Schedule E: Waste	
Condition number	Condition
E1	<p>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.</p>
E2	<p>The holder of this environmental authority 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.</p>

E3	<p>Mine waste</p> <p>A Mining Waste Management Plan must be developed and implemented by an appropriately qualified person for every stage of the mining activities. The Mining Waste Management Plan must be submitted to the administering authority by 29 June 2019 for review and comment. The Mining Waste Management Plan must at a minimum include:</p> <ul style="list-style-type: none"> a) characterisation programs to ensure that all mining waste is progressively characterised during disposal for net acid producing potential, salinity and the following contaminants: pH, Electrical Conductivity (EC), Acid Neutralising Capacity (ANC), Net Acid Generation (NAG) (reporting NAG capacity and NAG pH after oxidation), Total Sulphur (S), Chromium Reducible Sulphur (Scr), Boron (B) Cadmium (Cd), Iron (Fe), Aluminium (Al), Copper (Cu), Magnesium (Mg), Manganese (Mn), Calcium (Ca), Sodium (Na), Zinc (Zn) and Sulfate (SO₄); b) characterisation programs to ensure that the physical properties of the mining waste is progressively characterised during disposal; c) the availability or leachability of metals from the mining waste; d) quantification of PAF from mining waste present; e) review impacts of the PAF mining waste on the rehabilitation; f) management actions for mining waste that has been identified as having a high availability or leachability of metals; g) management actions for mining waste that has been defined as PAF; h) identification of environmental impacts and potential environmental impacts; i) control measures for routine operations to minimise likelihood of environmental harm; j) contingency plans and emergency procedures for non-routine situations; k) periodic review of environmental performance and continual improvement. l) containment of tailings; m) records to indicate locations and characteristics of tailings stored within the tailings storage facility; n) the management of seepage and leachates from tailings storages both during operation and the foreseeable future; o) the control of fugitive emissions to air; and p) a program for progressive sampling and characterisation to identify acid producing potential and metal concentrations of tailings.
E4	<p>Within twenty (20) business days of receiving comments from the administering authority as per Condition E3, the Mining Waste Management Plan must be updated to address the comments and submitted to the administering authority.</p>
E5	<p>Acid Sulfate soils</p> <p>Treat and manage acid Sulfate soils in accordance with the latest edition of the Queensland Acid Sulfate Soil Technical Manual.</p>

Schedule F: Land	
Condition number	Condition
F1	<p>Topsoil</p> <p>Topsoil must be strategically stripped ahead of mining in accordance with a Topsoil Management Plan.</p>
F2	<p>Preventing contaminant release to land</p> <p>Contaminants must not be released to land in a manner which constitutes nuisance, material or serious environmental harm, unless otherwise authorised by a condition of this environmental authority.</p>
F3	<p>Chemicals Storage</p> <p>Chemicals and fuels must be effectively contained and controlled in a manner that prevents environmental harm and where relevant, meet Australian Standards, where such a standard is applicable.</p>
F4	Spillage of all chemicals and fuels must be controlled in a manner that prevents environmental harm.
F5	All explosives, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the relevant Australian Standard, where such a standard is applicable.
F6	<p>Spill Kit</p> <p>An appropriate spill kit, personal protective equipment and relevant operator instructions/emergency procedure guides for the management of wastes, chemicals and flammable and combustible liquids associated with the activity must be kept at the site.</p>
F7	Anyone operating with wastes, chemicals or flammable and combustible liquids under this approval must be trained in the use of the spill kit
F8	<p>Infrastructure</p> <p>All infrastructure, constructed by or for the environmental authority holder during the licensed activities including water storage structures, must be removed from the site prior to surrender, except where agreed in writing by the post-mining landowner/holder and where there is a demonstrated benefit to the post-mining landowner/holder</p>
F9	<p>All areas significantly disturbed by mining activities must be rehabilitated to a safe, stable and non-polluting landform with a self-sustaining vegetation cover in accordance with:</p> <ul style="list-style-type: none"> a) Table F1: Landform Design Criteria; b) Table F2: Final Land Use and Rehabilitation Approval Schedule; c) Table F3: Residual Void Design; d) Table F4: Rehabilitation Schedule; e) Attachment C: Final Landform f) Attachment F: Rehabilitation Requirements; and g) As otherwise detailed in Condition F21.

Table F1: Landform Design Criteria

Disturbance Type	Maximum Projective Surface Area (ha)	Maximum Slope	Vertical Height Range (m)
Elevated Landforms	853	< 18.5%	0-64
Infrastructure Areas	112	< 5%	0-15

Table F2: Final Land Use and Rehabilitation Approval Schedule

Disturbance type	Maximum surface area (ha)	Pre-mine land use	Post-mine land suitability classification for cattle grazing*	Proposed post-mine land use
MIA and CHPP area	105	Stage 1 MIA and CHPP area	3 to 5 (as per pre-mining)	Low density beef cattle grazing or recreated Regional Ecosystem 11.5.9 (<i>Eucalyptus crebra</i> and other <i>Eucalyptus spp.</i> And <i>Corymbia spp.</i> Woodland on Cainozoic sand plains/remnant surfaces.)
Roads including haul roads	48	Stage 1 roads and sparse cattle grazing on native vegetation	3 to 5 (as per pre-mining)	Retained for beneficial reuse where appropriate, or a land use conducive to the surrounding land use including recreation of: Regional Ecosystem 11.3.2 (<i>Eucalyptus populnea</i> woodland on alluvial plains) Regional Ecosystem 11.7.2 (<i>Acacia spp.</i> Woodland on Cainozoic lateritic duricrust. Scarp retreat zone) Regional Ecosystem 11.5.9 (<i>Eucalyptus crebra</i> and other <i>Eucalyptus spp.</i> And <i>Corymbia spp.</i> Woodland on Cainozoic sand plains/remnant surfaces)
Creek diversion and levee banks	286	Low density cattle grazing on native vegetation	5	Retained, with recreated RE 11.3.25 (<i>Eucalyptus tereticornis</i> or <i>E. camaldulensis</i> woodland fringing drainage lines) Thirteen Mile Gully Diversion would be revegetated with species characteristic of RE 11.3.1b (Open forest dominated by <i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i>), RE 11.3.2c (<i>Eucalyptus populnea</i> woodlands on floodplains) and RE 11.3.25 (<i>Eucalyptus tereticornis</i> or <i>Eucalyptus camaldulensis</i> woodland fringing drainage lines)

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In-pit and out-of-pit overburden spoil dumps (Slopes)	495	Low density cattle grazing on native vegetation and Stage 1 bulk sample pit	5	Rock mulched surface with native grass, with exception of the slope of the southern overburden spoil dump relative to the Roper Creek Floodplain which would be native ecosystem with recreated RE 11.5.3 (<i>Eucalyptus populnea</i> +/- <i>E. melanophloia</i> +/- <i>Corymbia clarksoniana</i> on Cainozoic sand plains/remnant surfaces)
In-pit and out-of-pit overburden spoil dumps (upper surface)	1250	Low density cattle grazing on native vegetation and Stage 1 bulk sample pit	5	Native ecosystem with recreated RE 11.5.3 (<i>Eucalyptus populnea</i> +/- <i>E. melanophloia</i> +/- <i>Corymbia clarksoniana</i> on Cainozoic sand plains/remnant surfaces)
Low wall spoil (above natural ground level)	229	Low density cattle grazing on native vegetation and Stage 1 bulk sample pit	5	Native ecosystem with recreated RE 11.5.3 on benches (<i>Eucalyptus populnea</i> +/- <i>E. melanophloia</i> +/- <i>Corymbia clarksoniana</i> on Cainozoic sand plains/remnant surfaces)
North residual void	373	Low density cattle grazing on native vegetation	N/A	Residual void
South residual void	222	Low density cattle grazing on native vegetation	N/A	Residual void
Water storage/water management dams	85	Low density cattle grazing on native vegetation	3-4 (where rehabilitated) 5 (where retained)	Retained for beneficial reuse where appropriate, or a land use conducive to the surrounding land use, including wetlands, recreated RE 11.3.27 (Freshwater wetlands)
TSF and TFC	24	Stage 1 TSF and TFC	5	RE 11.7.2 (<i>Acacia spp.</i> Woodland on Cainozoic lateritic duricrust. Scarp retreat zone)

Note:** Where native ecosystem is defined as reinstating land to a natural ecosystem as similar as possible to the original ecosystem.

Low density cattle grazing is assumed to be up to 0.07 head/hectare. Stocking rates will be revised based on field trials and establishment of reference sites during mine operation.

Table F3: Residual Void Design

Void identification	Void high wall – competent rock slope (degrees)	Void high wall incompetent rock slope (degrees)	Void low wall – competent rock slope (degrees)	Void low wall – incompetent rock slope (degrees)	Void maximum surface area (ha)	Void maximum depth (m)	Void volume* (m ³)
North Void	59	36	30	30	373	120	15,770,000
South Void	59	36	30	30	222	240	12,100,000

Note: * based on the full supply volume at full supply levels of 160 m AHD and 150 m AHD for the North Void and South Void, respectively.

Table F4: Rehabilitation Schedule

End of Calendar year	Maximum total area of disturbance (ha)	Minimum area of rehabilitation (ha)
2023	2,265	348
2028	2,700	821
2032	2,850	1,398

F10 Self-sustaining vegetation, as per Attachment F, must be consistent with the reference sites identified in **Table F5: Reference Sites**.

Table F5: Reference Sites

Reference Site	Domain Reference	Easting (GDA94)	Northing (GDA94)	Description
1	<ul style="list-style-type: none"> In-pit and out-of-pit spoil dumps 	662226	7475606	RE 11.5.3
2	<ul style="list-style-type: none"> MIA and CHPP area Roads including haul roads Tailings Storage Facility 	665455	7469732	RE 11.5.9
3	<ul style="list-style-type: none"> Roads including haul roads 	665832	7470708	RE 11.7.2

F11 Rehabilitation must commence and be undertaken progressively in accordance with:

- a) the Rehabilitation Management Plan; and
- b) **Table F4: Rehabilitation Schedule**.

F12	<p>Complete a Rehabilitation Management Plan for all areas disturbed by authorised mining activities. The Rehabilitation Management Plan must be developed and implemented by an appropriately qualified person that includes, at a minimum:</p> <ul style="list-style-type: none"> a) a map of existing areas of rehabilitation; b) a strategy and schedule for the progressive rehabilitation of all disturbance during the life of the mine; c) a strategy for successfully achieving the rehabilitation requirements of this environmental authority; d) details of rehabilitation methods to be applied to each domain; e) description of rehabilitation indicators and how these will be monitored; f) description of management actions to address unsuccessful rehabilitation or redesign; g) explanation of planned native vegetation rehabilitation areas and corridors; h) details of the objectives and success criteria for rehabilitation of each mining domain to achieve rehabilitation outcomes listed in Attachment F: Rehabilitation Requirements and Table F3: Residual Void Design; i) an assessment of the geotechnical issues and erosivity of the proposed final landforms, including final voids, to demonstrate long-term landform stability. Reference is to be made to the Queensland Mining Guidelines (or subsequent reprints) in making this assessment. Reference is also to be made to the Natural Hazard Management Areas (Landslide) within the SPP 1/03 Guideline. Emergency service agencies will be consulted in relation to any required hazard and risk management advice; j) details of landform design to achieve rehabilitation outcomes listed in Attachment F: Rehabilitation Requirements and Table F1: Landform Design Criteria, including end of mine design and schematic representation of final landform inclusive of: <ul style="list-style-type: none"> i. drainage design and features; ii. slope designs; iii. cover design; iv. erosion controls proposed on reformed land; k) details of how landform design will be consistent with the surrounding topography; l) specify the spoil characteristics, soil analysis and soil separation for use on rehabilitation; m) specify the topsoil requirements for the site and how topsoil will be managed for use in rehabilitation; n) details of any topsoil deficit and how any deficit will be managed for successful rehabilitation; o) identifies 3 reference and 3 rehabilitation sites to be used to develop rehabilitation success criteria; p) description of monitoring of reference sites and rehabilitated areas inclusive of statistical design; q) description of rehabilitation monitoring and maintenance requirements to be applied to all areas of disturbance;
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	<ul style="list-style-type: none"> r) include a cost benefit analysis/triple bottom line assessment (or an alternative assessment method) of the proposed final landform design criteria and alternatives; and s) identification of potential problems and how they will be addressed.
F13	Within twenty (20) business days of receiving comments from the administering authority as per Condition F12 , the Rehabilitation Management Plan must be updated to address the comments and resubmitted to the administering authority.
F14	Where there is any inconsistency between the Rehabilitation Management Plan and this environmental authority, the conditions of this environmental authority prevail.
F15	<p>Rehabilitation Monitoring Program</p> <p>A Rehabilitation Monitoring Program must be developed and implemented by a person possessing appropriate qualifications and experience in the field of rehabilitation management, nominated by the environmental authority holder.</p>
F16	Within twenty (20) business days of receiving comments from the administering authority on the Rehabilitation Monitoring Program submitted in accordance with Condition F19 , the Rehabilitation Monitoring Program must be updated to address the comments and resubmitted to the administering authority.
F17	<p>The environmental authority holder must review the Rehabilitation Monitoring Program required by Condition F15 at intervals no greater than three (3) years from 29 June 2019. If the environmental authority holder needs to make changes to the Rehabilitation Monitoring Program, they must:</p> <ul style="list-style-type: none"> a) submit the Rehabilitation Monitoring Program to the administering authority for review and comment; and b) within twenty (20) business days of receiving comments from the administering authority, the Rehabilitation Monitoring Plan must be updated to address the comments and resubmitted to the administering authority.

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F18	<p>A report of the findings of the Rehabilitation Monitoring Program must be updated and submitted to the administering authority, on 29 June of each calendar year , containing at a minimum:</p> <ul style="list-style-type: none"> a) how the rehabilitation objectives as per Attachment F of this environmental authority will be achieved; b) how the rehabilitation objectives in the Rehabilitation Management Plan required by Condition F12 are being met; c) if rehabilitation objectives are not being met, the corrective actions to be taken; d) specify the minimum sampling intensity for the monitoring of progressive rehabilitation; e) a statistical analysis of how areas of rehabilitation compared to analogue sites listed in Table F5: Reference Sites; f) a statistical analysis of how areas of rehabilitation are meeting the requirements of Condition F9; g) the sampling and monitoring intensity used in the Rehabilitation Monitoring Program required by Condition F15; h) justification of the suitability of the minimum sampling intensity; and i) justification of the sampling and monitoring intensity used in the Rehabilitation Monitoring Program required by Condition F15.
F19	<p>Residual void outcome Residual voids must not cause any serious environmental harm to land, surface waters or any recognised groundwater aquifer, other than the environmental harm constituted by the existence of the residual void itself and subject to any other condition within this environmental authority.</p>
F20	<p>At the completion of decommissioning and rehabilitation, residual voids must be protected from Probable Maximum Floods (PMFs) from nearby watercourses such that the protection is sustainable for the foreseeable future.</p>
F21	<p>Complete an investigation into residual voids and submit a report to the administering authority proposing acceptance criteria to meet the outcomes in Conditions F19 and F20 and landform design criteria by 31 October 2021. The investigation must at a minimum include the following:</p> <ul style="list-style-type: none"> a) a study of options available for minimising final void area and volume; b) a void hydrology study, addressing the long-term water balance in the voids, connections to groundwater resources and water quality parameters in the long term; and c) a pit wall stability study, considering the effects of long-term erosion and weathering of the pit walls and the effects of significant hydrological events. <p>Note: These studies will be undertaken during the life of the mine, and must include detailed research and modelling.</p>
F22	<p>All reasonable and practical measures must be taken to minimise the size of the void remaining after mining activities cease.</p>

F23	<p>Residual Void Water Quality The holder of this environmental authority must complete and submit to the administering authority a Residual Void Water Quality Management Study by 31 December 2019, for review and comment.</p>
F24	<p>The Residual Void Water Quality Management Study must include:</p> <ul style="list-style-type: none"> a) modelling and assessment of the predicted quality of void water between cessation of mining and the post mining equilibrium; b) the predicted catchment area for the voids at the cessation of mining; c) assessment of potential interaction between the North void and South void; d) the predicted storage capacity of void water during AEP 1 in 25, 1 in 50, 1 in 100, 1 in 200 and 1 in 1000 year rainfall events and potential for discharge; e) the predicted dilution of void water during AEP 1 in 25, 1 in 50, 1 in 100, 1 in 200 and 1 in 1000 year rainfall events; f) modelling of predicted evaporation, including the correlation of predicted evaporation rates with AEP 1 in 25, 1 in 50, 1 in 100, 1 in 200 and 1 in 1000 year rainfall events; g) the predicted quality of void water during potential release events; h) the predicted impact on the environment caused by the release of any void water; i) the predicted quality of void water correlated with predicted evaporation rates; j) physical, chemical and biological assessment of void water and habitat quality; k) modelling and assessment of practicable management measures to mitigate contaminant increases; l) develop a monitoring program to be undertaken both during and after mining, to assess the performance of any management measures required; and m) the ability of the void water to meet the rehabilitation criteria of a safe, stable and non-polluting land form.
F25	<p>Within twenty (20) business days of receiving comments from the administering authority on the Residual Void Water Quality Management Study submitted in accordance with Condition F23, the Residual Void Water Quality Management Study must be updated to address the comments and resubmitted to the administering authority.</p>
F26	<p>Post Closure Management Plan A Post Closure Management Plan for the site must be developed and submitted, for review and comment, to the administering authority at least eighteen (18) months prior to the final coal processing on site and implemented for a nominal period of:</p> <ul style="list-style-type: none"> a) at least thirty (30) years following final coal processing on site; or b) a shorter period if the site is proven to be geotechnically and geochemically stable and it can be demonstrated to the satisfaction of the administering authority that no release of contaminants from the site will result in environmental harm.

F27	<p>The Post Closure Management Plan must include the following elements:</p> <ul style="list-style-type: none"> a) operation and maintenance of: <ul style="list-style-type: none"> i. wastewater collection and reticulation systems; ii. wastewater treatment systems; iii. the groundwater monitoring network; iv. the flood protection levee and final landform relative to Roper Creek; v. final cover systems of spoil dumps; and vi. vegetative cover; and b) monitoring of: <ul style="list-style-type: none"> i. surface water quality; ii. groundwater quality; iii. seepage rates; iv. erosion rates; v. the integrity of the flood protection levee and final landform relative to Roper Creek; vi. the integrity and stability all slopes, ramps and voids; and vii. the health and resilience of native vegetation cover. c) Investigation of: <ul style="list-style-type: none"> i. soil contamination; and ii. landform failure
F28	<p>Within twenty (20) business days of receiving comments from the administering authority on the Post Closure Management Plan submitted in accordance with Condition F31, the Post Closure Management must be updated to address the comments and resubmitted to the administering authority.</p>
F29	<p>Impacts to Prescribed Environmental Matters Significant residual impacts to prescribed environmental matters as per the <i>Environmental Offsets Act 2014</i>, are only authorised to occur:</p> <ul style="list-style-type: none"> a) For the prescribed environmental matter specified in Table F6: Significant residual impacts to prescribed environmental matters, and as indicated in Attachment D: Location of Authorised impacts to prescribed environmental matters; and b) For the prescribed environmental matter specified in Table F6: Significant residual impacts to prescribed environmental matters, the impacts do not exceed the maximum extent of impact specified for that prescribed environmental matter.
F30	<p>A notice of election for the environmental offset, must be provided to the administering authority no less than three (3) months before the proposed commencement of the significant residual impacts to the prescribed environmental matters.</p>

Table F6: Significant residual impacts to prescribed environmental matters.

Prescribed environmental matter	Maximum extent of impact (ha)	Environmental offset required
Regulated Vegetation		
Regional ecosystems (not within an urban area) that intersect a watercourse on the vegetation management watercourse map – RE 11.3.25e	1	Yes
Endangered Regional Ecosystem - RE 11.4.9*	0.5*	No*
Endangered Regional Ecosystem - RE 11.3.1*	15*	No*
Of Concern Regional Ecosystem (not within an urban area) - RE 11.3.2	43.5	Yes
Of Concern Regional Ecosystem (not within an urban area) - RE 11.3.2/RE 11.3.4	1.5	Yes
Regional ecosystems (not within an urban area) that intersect a wetland on the vegetation management wetlands map - RE 11.3.27d	1.9	No
Connectivity areas		
Connectivity area that is a regional ecosystem (not in urban area)	371.5	Yes
Wetlands and watercourses		
A wetland of high ecological significance shown on the Map of referable wetlands	0.75	Yes
Protected wildlife habitat		
Habitat for an animal that is vulnerable wildlife – <i>Denisonia maculata</i> (ornamental snake)*	15.5*	No*
Habitat for an animal that is vulnerable wildlife – <i>Geophaps scripta scripta</i> (squatter pigeon)*	569.5*	No*
Habitat for an animal that is vulnerable wildlife – <i>Petauroides volans</i> (greater glider)*	175*	No*
Habitat for an animal that is vulnerable wildlife – <i>Phascolarctos cinereus</i> (koala)*	175*	No*
Habitat for an animal that is special least concern wildlife – <i>Tachyglossus aculeatus</i> (short-beaked echidna)	190.5	No
Legally Secured Offset Area		
Legally secured offset area - Stage 2 Offset Area*	32*	No*
Legally secured offset area - Rail Loop and Spur Offset Area	22	Yes
*This matter will be offset under EPBC Act approval conditions.		
F31	Exploration Activities on Mining Lease 70379 The environmental authority holder is authorised to conduct exploration activities, including rehabilitation activities, on Mining Lease (ML) 70379.	
F32	Conditions F33 to F49 only apply to parts of ML70379 where surface rights are held for exploration drilling only.	

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F33	When conducting exploration activities, the holder of the environmental authority must ensure that the area and duration of disturbance to land and vegetation is minimised. The operational areas of individual drill sites must not exceed 500 metres squared. Sump size must not exceed 10 metres squared and 2 metres deep.
F34	All clearing of mature trees must be prevented or minimised
F35	The holder of the environmental authority must not carry out exploration activities in a Category A or B environmentally sensitive area or riverine areas. Activities involving machinery must not be carried out within 1km of a Category A environmentally sensitive area. The holder of the environmental authority is authorised to undertake no more than 119 drill sites, within the 500 m buffer of Category B environmentally sensitive areas, in accordance with Attachment E: Drill Hole Locations ML70379 .
F36	The holder of the environmental authority must not carry out activities within 100m of a Historical, Archaeological or Ethnographic site.
F37	The holder of the environmental authority must not drill, excavate or clear vegetation: <ul style="list-style-type: none"> a) in standing waters, wetlands or lakes; or b) on the sloped banks or within 3m of the top of the bank or 5m of the toe of the bank; or c) within, or on the levee banks of the normal flow channel.
F38	The holder of this environmental authority must consult with the landowner prior to establishing any new roads and tracks.
F39	When constructing new roads and tracks, the holder of the environmental authority must ensure that the area and duration of disturbance to land, vegetation and watercourses is minimised. Track construction involving blade clearing of established vegetation and or the clearing of mature trees is to be minimised.
F40	Tracks are not to be constructed greater than 5m in width
F41	The holder of the environmental authority must decommission all non-artesian drill holes, apart from those still required for monitoring purposes as soon as practical, but no later than 6 months after the hole was drilled by undertaking the following actions: <ul style="list-style-type: none"> a) where practical dispose of all unused drill chips to the hole or to a sump pit and; b) cap the hole at a depth that is appropriate for the previous land use of the area (unless the land owner stipulates a future use which requires the cap to be placed deeper); and c) backfill the hole above the cap with soil or material similar to the surrounding soil or material.

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F42	<p>The holder of the environmental authority must isolate non-artesian aquifers where a drill hole intersects more than one water bearing strata by casing or plugging the hole as soon as practical after the hole is no longer required, but no later than 2 months after the hole was drilled, apart from those holes that are still required for monitoring purposes if:</p> <ul style="list-style-type: none"> a) the flow difference between aquifers exceeds 500 L/hour; and b) the difference in electrical conductivity of water is greater than 10 percent of the lower value.
F43	<p>Conditions F44 and F45 do not apply to a non-artesian exploration drill hole if:</p> <ul style="list-style-type: none"> a) the land owner and the explorer have agreed that it should be left for conversion to a water bore; and b) the landowner gives a written undertaking to accept responsibility for the hole; and c) the details of the agreement and the drill hole (such as its GPS location and the drill logs showing the water bearing strata and flow rates) are provided to the Department of Natural Resources, Mines and Energy within 30 days of the land owner giving the undertaking; and d) the hole is temporarily capped so as to prevent possible ingress of surface waters and associated sediments and pollutants.
F44	<p>The holder of the environmental authority must ensure that exploration drill holes do not strike artesian flows of water.</p>
F45	<p>The holder of the environmental authority must ensure that exploration drill holes that are to be retained for future mineral resource evaluation purposes are cased and capped. Holes to be retained for more than three years must be capped with steel casing and appropriately identified.</p>
F46	<p>Rehabilitation of exploration activities on ML70379</p> <p>For all exploration drill holes on ML70379, the holder of the environmental authority must complete the rehabilitation processes, apart from those areas currently being utilised for mining activities, as soon as practical and within six (6) months of the completion of exploration activities at those areas.</p>
F47	<p>Condition F48 does not apply to any excavations, drill holes or sampling sites that are to remain after the completion of exploration activities, by agreement with the land owner.</p>
F48	<p>The holder of the environmental authority must rehabilitate areas disturbed by exploration drilling to a stable landform similar to that of surrounding undisturbed areas and in accordance with Attachment F: Rehabilitation Requirements.</p>
F49	<p>The holder of the environmental authority must spread seeds or plant species that will promote vegetation of a similar species and density of cover to that of the surrounding undisturbed areas or vegetation that is appropriate for providing erosion control and stabilisation of the areas disturbed by exploration drilling.</p>

Schedule G: Regulated Structures	
Condition number	Condition
G1	<p>Assessment of consequence category</p> <p>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 (ESR-2016-1933) at the following times:</p> <ul style="list-style-type: none"> a) prior to the design and construction of the structure, if it is not an existing 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 (ESR-2016-1933).
G4	<p>Design and construction¹ of a regulated structure</p> <p>Conditions G5 to G9 inclusive do not apply to existing structures.</p> <p>¹ Construction of a dam includes modification of an existing dam — refer to the definitions.</p>
G5	All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR-2016-1933).
G6	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.
G7	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 (ESR-2016-1933), and must be recorded in the Regulated Dams-Levees register.
G8	<p>Regulated structures must:</p> <ul style="list-style-type: none"> 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 (ESR-2016-1933); b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: <ul style="list-style-type: none"> i. floodwaters from entering the regulated dam from any watercourse or drainage line; and ii. wall failure due to erosion by floodwaters arising from any watercourse or drainage line.

G9	<p>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:</p> <p>a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and</p> <p>b) construction of the regulated structure is in accordance with the design plan.</p>
G10	<p>Operation of a regulated structure Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority:</p> <p>a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with Condition G6;</p> <p>b) a set of 'as constructed' drawings and specifications;</p> <p>c) certification of those 'as constructed drawings and specifications' in accordance with Condition G9;</p> <p>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;</p> <p>e) the requirements of this authority relating to the construction of the regulated structure have been met;</p> <p>f) the holder has entered the details required under this authority, into a Register of Regulated Dams; and</p> <p>g) there is a current operational plan for the regulated structures.</p>
G11	<p>For existing structures that are regulated structures:</p> <p>a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within twelve (12) months of the commencement of this condition a copy of the certified system design plan including that structure; and</p> <p>b) there must be a current operational plan for the existing structures</p>
G12	<p>Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings</p>
G13	<p>Mandatory reporting level Conditions G14 to G17 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.</p>
G14	<p>The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.</p>
G15	<p>The holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.</p>
G16	<p>The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.</p>

G17	The holder must record any changes to the MRL in the Register of Regulated Structures
G18	Design storage allowance The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.
G19	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).
G20	The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.
G21	The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.
G22	Annual inspection report Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
G23	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.
G24	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 (ESR-2016-1933).
G25	The holder must: <ul style="list-style-type: none"> a) Within 20 business days of receipt of the annual inspection report, provide to the administering authority: <ul style="list-style-type: none"> (i) The recommendations section of the annual inspection report; and (ii) If applicable, any actions being taken in response to those recommendations; and b) If, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within ten (10) business days of receipt of the request.
G26	Transfer arrangements The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority

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G27	<p>Decommissioning and rehabilitation Dams must not be abandoned but be either:</p> <p>a) decommissioned and rehabilitated to achieve compliance with Conditions F23 to F33 of this environmental authority; or</p> <p>b) be left in-situ for a beneficial use(s) provided that:</p> <ol style="list-style-type: none"> i. it no longer contains contaminants that will migrate into the environment; and ii. it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and iii. the administering authority, the holder of the environmental authority and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies).
G28	<p>Register of Regulated Dams A Register of Regulated Dams must be established and maintained by the holder for each regulated dam</p>
G29	The holder must provisionally enter the required information in the Register of Regulated Dams when a design plan for a regulated dam is submitted to the administering authority
G30	The holder must make a final entry of the required information in the Register of Regulated Dams once compliance with Condition G10 and G11 has been achieved.
G31	The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.
G32	All entries in the Register of Regulated Dams must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
G33	The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Dams, in the electronic format required by the administering authority.
G34	<p>Transitional arrangements All existing structures that have not been assessed in accordance with either the Manual or the former Manual for Assessing Hazard Categories and Hydraulic Performance of Dams must be assessed and certified in accordance with the Manual within six (6) months of amendment of the authority adopting this schedule.</p>
G35	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in Table G1: Transitional hydraulic performance requirements for existing structures , depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure
G36	<p>Table G1: Transitional hydraulic performance requirements for existing structures ceases to apply for a structure once any of the following events has occurred:</p> <ol style="list-style-type: none"> a) It has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or b) It has been decommissioned; or c) It has been certified as no longer being assessed as a regulated structure.
G37	Certification of the transitional assessment required by Conditions G34 and G35 (as applicable) must be provided to the administering by 22 February 2015 .

Table G1: Transitional hydraulic performance requirements for existing structures

Transition period required for existing structures to achieve the requirements of the Manual for Assessment Consequence Categories and Hydraulic Performance of Dams (ESR/2016/1933)			
Compliance with criteria	High	Significant	Low
>90% and a history of good compliance performance in the last 5 years	No transition required	No transition required	No transitional conditions apply. Review consequence assessment every 7 years.
> 70% to less than or equal to 90%	Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 10 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	No transitional conditions apply. Review consequence assessment every 7 years.
>50% less than or equal to 70%	Within 5 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	No transitional conditions apply. Review consequence assessment every 7 years.
less than or equal 50%	Within 5 years or as per compliance requirements (e.g. Transitional Environmental Program).	Within 5 years or as per compliance requirements (e.g. Transitional Environmental Program).	No transitional conditions apply. Review consequence assessment every 7 years.

Schedule H: Watercourse Diversion

Condition number	Condition
H1	<p>Permanent watercourse diversion – Thirteen Mile Gully and Roper Creek</p> <p>The Thirteen Mile Gully Diversion depicted at Attachment G and the Roper Creek Diversions depicted at Attachment H of this environmental authority are authorised as permanent watercourse diversions.</p>

H2	<p>Permanent watercourse diversions must be designed and constructed to:</p> <ul style="list-style-type: none"> a) incorporate natural features (including geomorphic and vegetation) present at the location of the diversion; b) maintain the pre-existing hydrologic characteristics of surface water and groundwater systems for the area in which the watercourse diversion is located; c) maintain the hydraulic characteristics of the permanent watercourse diversion that are equivalent to other local watercourses and are suitable for the area in which the diversion is located without using artificial structures that require ongoing maintenance; d) maintain sediment transport and water quality regimes that allow the diversion to be self-sustaining, while minimising any impacts to upstream and downstream water quality, geomorphology or vegetation; and e) maintain equilibrium and functionality in all substrate conditions at the location of the diversion.
H3	<p>Design plan – All diversions</p> <p>A certified Design Plan that achieves Condition H2 must be submitted to the administering authority at least ten (10) business days before commencing construction of the diversion.</p>
H4	<p>The certified design plan for any temporary or permanent watercourse diversion must be consistent with the functional design/s that formed a part of the application documents for this authority</p>
H5	<p>Construction and operation – All diversions</p> <p>A certified set of ‘as constructed’ drawings and specifications must be submitted to the administering authority within sixty (60) business days from the completion of construction of the permanent watercourse diversion. These drawings and specifications must state:</p> <ul style="list-style-type: none"> a) that the ‘as constructed’ drawings and specifications meet the original intent of the design plan for the watercourse diversion. b) construction of the watercourse diversion is in accordance with the design plan.
H6	<p>Register – All diversions</p> <p>The details of watercourse diversions planned and constructed under an environmental authority must be accurately recorded on the Register of Watercourse Diversions kept by the holder of the authority. An electronic copy must be provided to the administering authority on request.</p>

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Definitions

Key terms and/or phrases used in the environmental authority EPML00716913 document are defined in this section. Applicants should note that where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

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

- a) vegetation establishment, survival and succession;
- b) vegetation productivity, sustained growth and structure development;
- c) fauna colonisation and habitat development;
- d) ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes;
- e) microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;
- f) effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;
- g) resilience of vegetation to disease, insect attack, drought and fire; and
- h) vegetation water use and effects on groundwater levels and catchment yields.

“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 as a result of mining activity.

“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).

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

- a) against recommendations contained in previous annual inspections reports;
- b) against recognised dam safety deficiency indicators;
- c) for changes in circumstances potentially leading to a change in consequence category;
- d) for conformance with the conditions of this authority;
- e) for conformance with the ‘as constructed’ drawings;
- f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);
- g) for evidence of conformance with the current operational plan.

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

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

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

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

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

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

“authorised place” means the place authorised under this environmental authority/development approval for the carrying out of the specified environmentally relevant activities.

“authority” means this environmental authority (EPML001716913) under the *Environmental Protection Act 1994*.

“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’.

“competent person” means a person with the demonstrated skill and knowledge required to carry out the task to a standard necessary for the reliance upon collected data or protection of the environment.

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

“control measures” means actions that can be taken in order to minimise environmental impacts or environmental harm. Control measures can be, but are not limited to, planning, procedural or engineering controls.

“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* (ESR/2016/1933).

“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 the dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (eg. via spillway)

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

“design storage allowance” or **“DSA”** means an available volume, estimated in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933) 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.

“environmental authority” means the same as “authority”.

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

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

“environmental harm” has the meaning given in the *Environmental Protection Act 1994*.

“environmental impacts” means changes that occur in the environment as a result of the mining activities. Impacts could be positive, negative or neutral.

“environmental offset” has the meaning in section 7 of the *Environmental Offsets Act 2014*.

“environmental value” has the meaning given in the *Environmental Protection Act 1994*;

“environmentally sensitive areas” refer to Schedule 12 of the Environmental Protection Regulation 2008.

“existing structure” means a structure that prior to 22 August 2014 meets any or both of the following:

- a) a structure with a design that is in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933) and that is considerably in progress; or
- b) a structure that is under considerable construction or that is constructed.

“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.

“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* (ESR/2016/1933).

“infrastructure” means water storage dams, roads and tracks, buildings and other structures built for the purpose of mining activities but does not include facilities required for the long term management of mining impacts or the protection of potential resources. Such facilities include dams containing hazardous waste, waste rock dumps, voids, or ore stockpiles and buildings or other structures whose ownership can be transferred and which have a residual beneficial use for the next owner of the operational land or the background land owner.

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

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

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

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

“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* (ESR/2016/1933).

“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* (ESR/2016/1933) published by the administering authority.

“manual” means the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933) published by the administering authority.

“mature tree” means any tree that is 70% or greater of the predominant canopy height.

“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.

“mg/L” means milligrams per litre.

“mine affected water”

a) means the following types of water:

- (i) pit water, tailings dam water, processing plant water;

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- (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.

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

“non polluting” means having no adverse impacts upon the receiving environment.

“notice of election” has the meaning in section 18(2) *Environmental Offsets Act 2014*.

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

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

“NTU” means nephelometric turbidity units.

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

“operational land” means the land on which the mining activities are authorised to be carried out.

“operational plan” includes:

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- a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance); and
- b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

“peak particle velocity (ppv)” means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mms^{-1}).

“prescribed environmental matters” has the meaning in section 10 of the *Environmental Offsets Act 2014*, limited to the matters of State environmental significance listed in schedule 2 of the Environmental Offsets Regulation 2014.

“protected area” means a protected area under the *Nature Conservation Act 1992*; or

- a) a marine park under the *Marine Parks Act 2004*; or
- b) a World Heritage Area.

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

- a) a watercourse;
- b) groundwater; and
- c) an area of land that is not specified in Schedule # – Table # (Authorised Activities) of this environmental authority.

The term does not include land that is specified in Schedule # – Table # (Authorised Activities) of this environmental authority.

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

“reference site” (or analogue site) may reflect the original location, adjacent area or another area where rehabilitation success has been completed for a similar biodiversity. Details of the reference site may be as photographs, computer generated images and vegetation models etc.

“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 (ESR/2016/1933);
- 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
- 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;

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- (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* (ESR/2016/1933) 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.

“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.

“riverine” the land adjoining and associated with watercourses, including the bed, banks adjoining terraced land and riparian vegetation.

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

“saline drainage” means the movement of waters, contaminated with salt(s), as a result of the mining activity.

“self-sustaining” means an area of land which has been rehabilitated and has maintained the required acceptance criteria without human intervention for a period nominated by the administering authority.

“sensitive place” means:

- a) 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 2004 or a World Heritage Area; or
- f) a public park or gardens.

“significant residual impact” has the meaning in section 8 *Environmental Offsets Act 2014*.

“site” means the same as “operational land”

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

“stakeholder” means an individual or group concerned with or affected by the environmental performance of the holder of the environmental authority.

“structure” means dam or levee.

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

“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.

“TFC” means Tailings Flocc Cell.

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

“tolerable limits” means a range of parameters regarded as being sufficient to meet the objective of protecting relevant environmental values. For example, a range of settlement for a tailings capping, rather than a single value, could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation.

“µS/cm” means micro siemens per centimetre.

“void” means any constructed, open excavation in the ground.

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

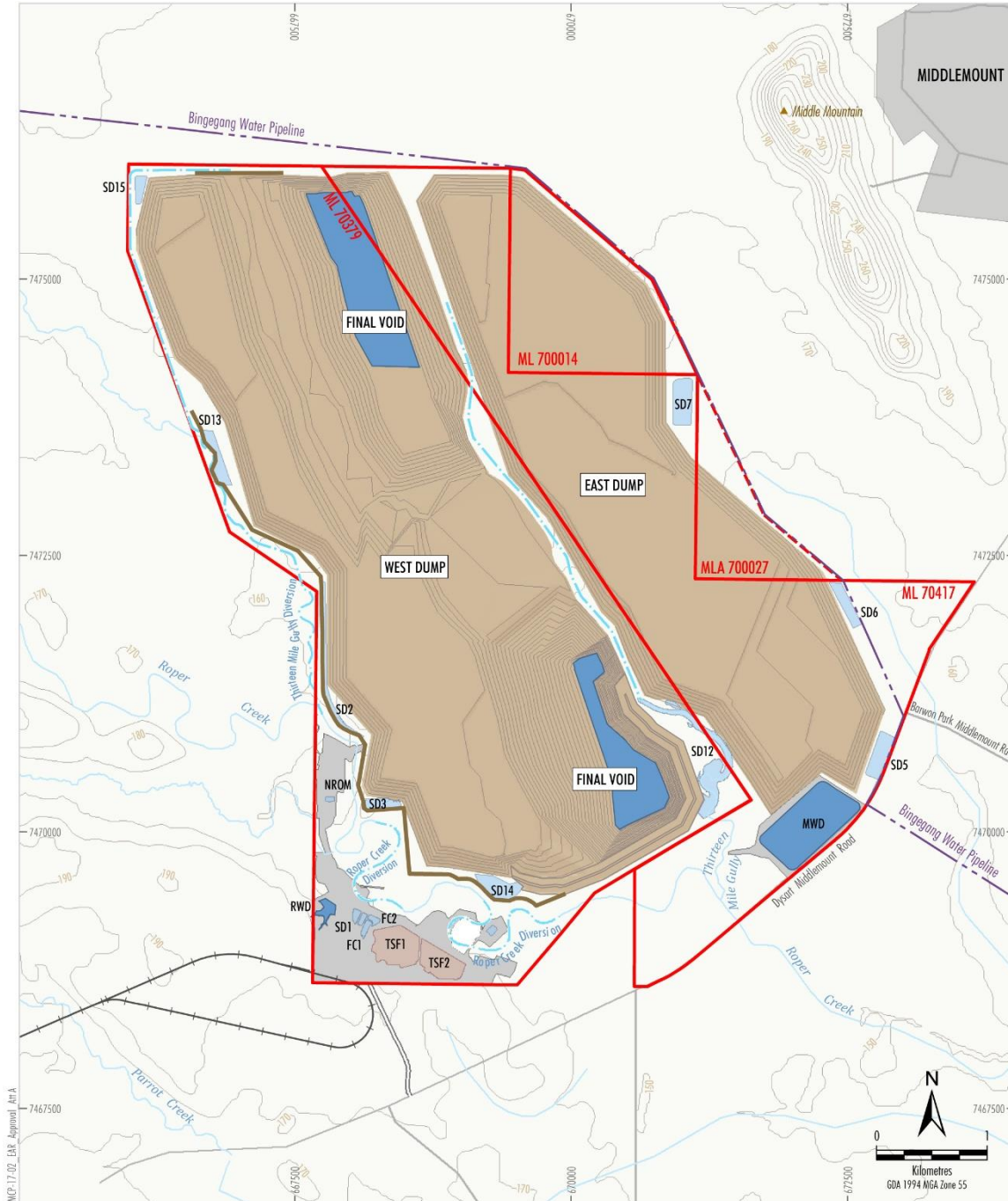
“**water quality**” means the chemical, physical and biological condition of water.

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

End of definitions

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Attachment A: Mining Activities



- LEGEND**
- Mining Lease Boundary (ML)
 - Mining Lease Application Boundary (MLA)
 - Mine Pit and Spoil
 - Mine Infrastructure Area
 - Tailings Storage Facility
 - Sediment Dam
 - Water Storage
 - Levee
 - Diversion Structure
 - Mine Access Road
 - Middlemount Rail Spur and Loop

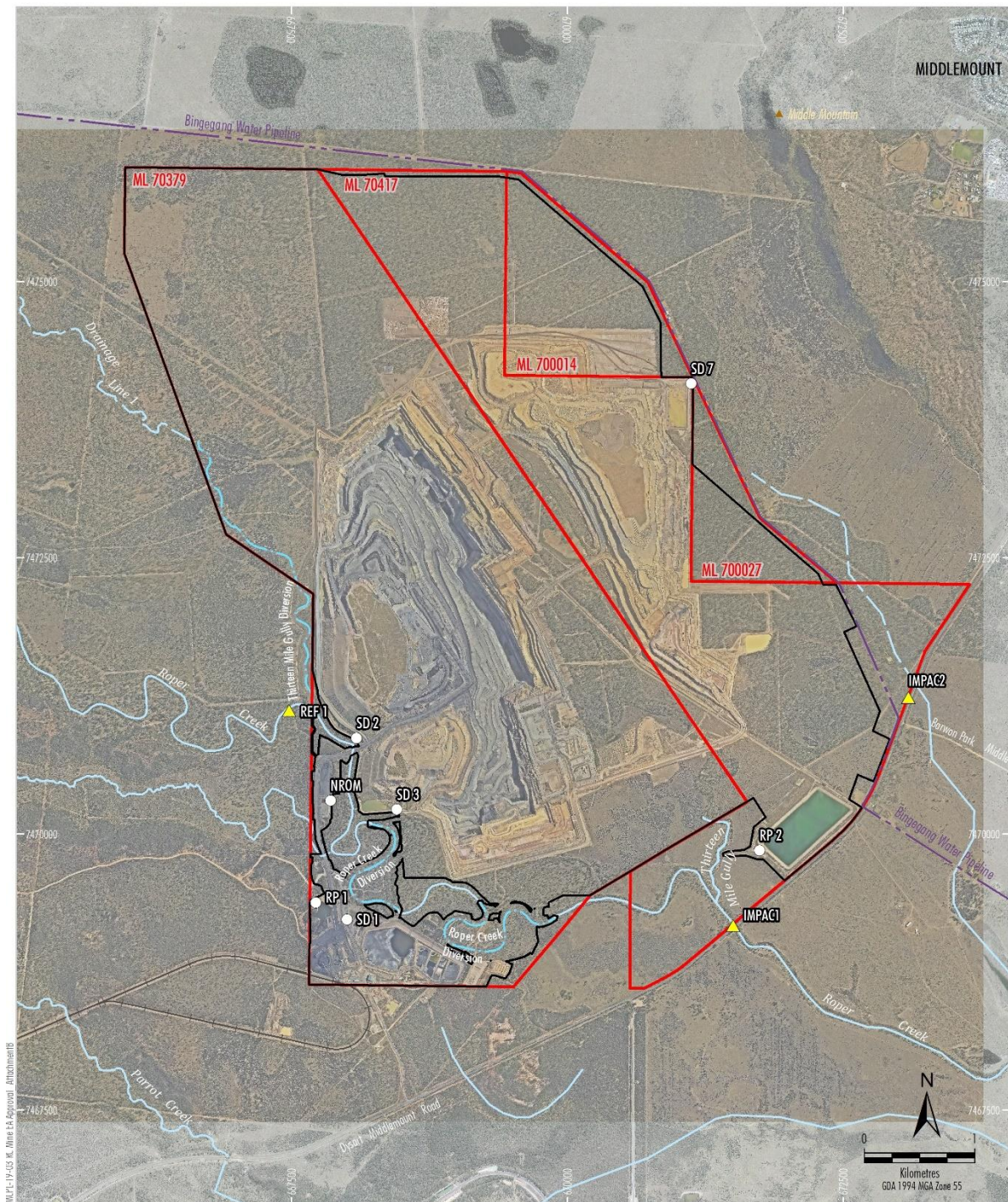
Source: MCPL (2018); Department of Natural Resources and Mines (2017)



MIDDLEMOUNT COAL MINE

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Attachment B: Mine affected water release points



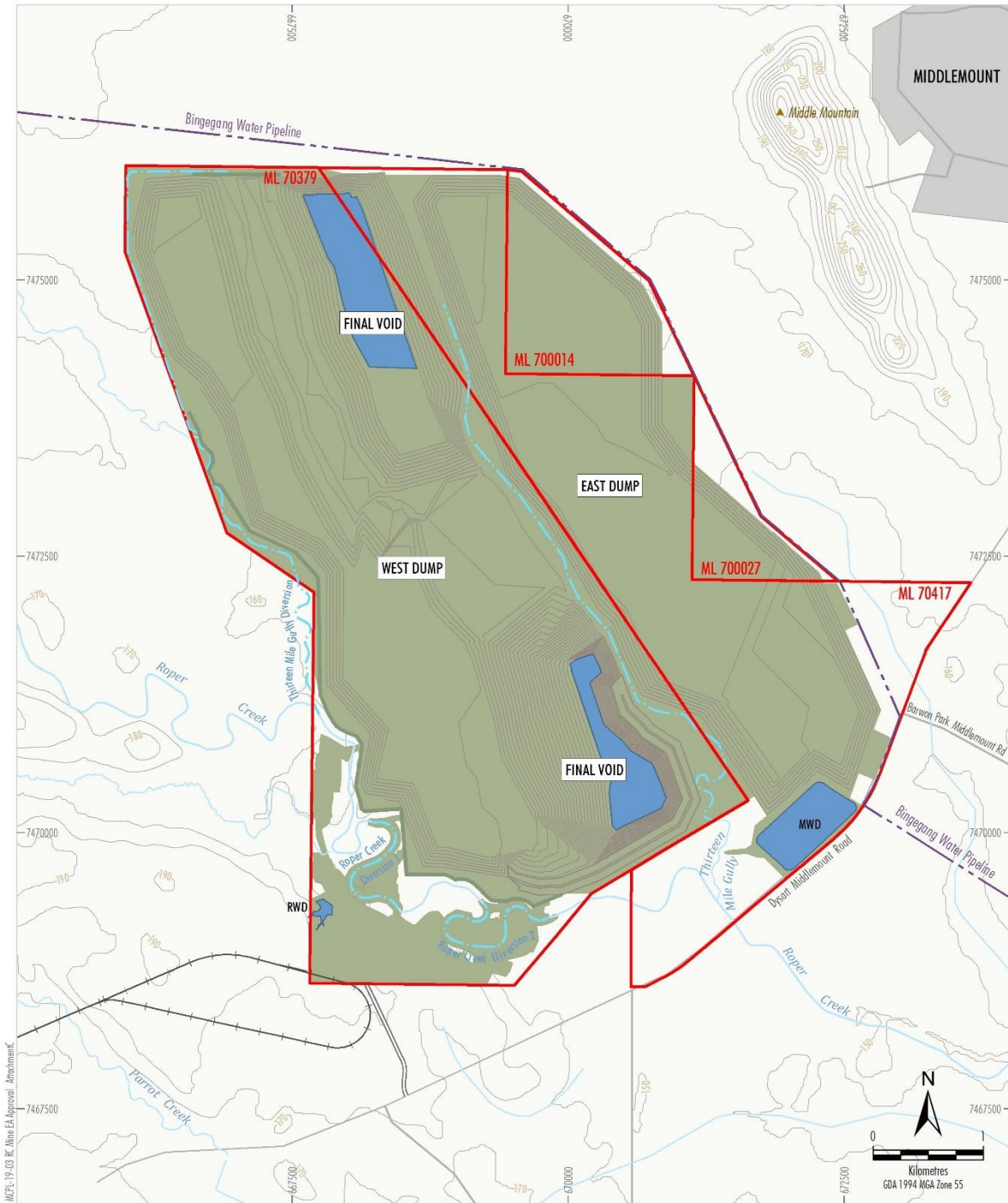
- LEGEND**
- Mining Lease Boundary (ML)
 - Middlemount Rail Spur and Loop (Retained or Rehabilitated)
 - Approved Disturbance Footprint
 - Diversion Structure
 - Watercourse
 - Drainage
 - Minor
 - ▲ Surface Water Reference Site
 - Surface Water Release Point

Source: MCPL (2020); Department of Natural Resources and Mines (2017)
 Orthophoto: MCPL (June 2017, 2014)



MIDDLEMOUNT COAL MINE

Attachment C: Final Landform



MCPL19-03 R. Wine EA Approval Attachment C

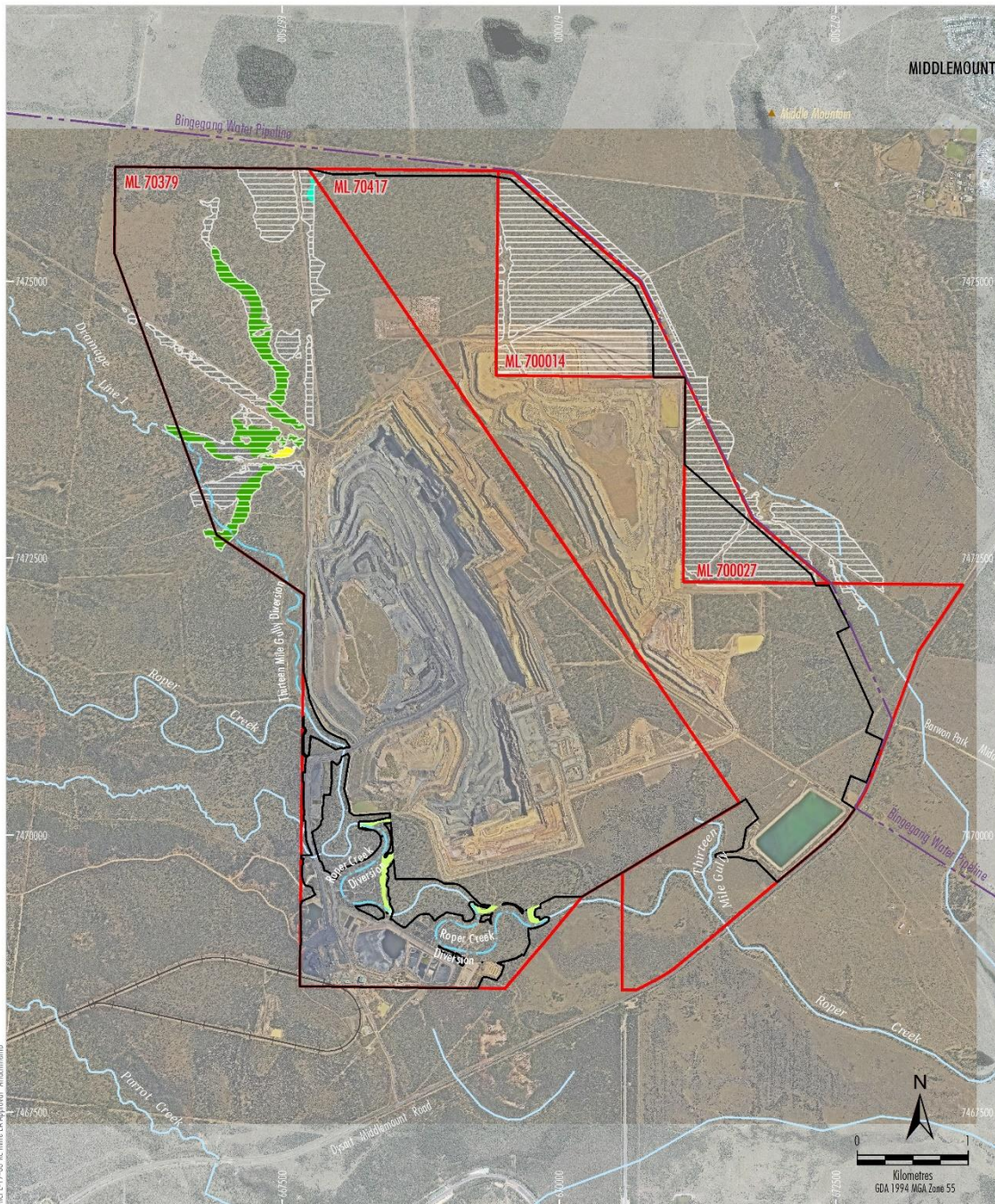
- LEGEND**
- Mining Lease Boundary (ML)
 - Established Rehabilitation
 - Water Storage
 - Diversion Structure
 - Removed Levee (Rehabilitated)
 - Mine Access Road (Retained or Rehabilitated)
 - Middlemount Rail Spur and Loop (Retained or Rehabilitated)

Source: MCPL (2020); AGE (2018); Department of Natural Resources and Mines (2019)



MIDDLEMOUNT COAL MINE

Attachment D: Location of authorised impacts to prescribed environmental matters



MPLC 19-1452, IC, mine & landscape Attachment D

- LEGEND**
- Mining Lease Boundary (ML)
 - Middlemount Rail Spur and Loop (Retained or Rehabilitated)
 - Approved Disturbance Footprint
 - Diversion Structure
 - Watercourse
 - Drainage
 - Minor
 - Prescribed Matters (Parsons Brinckerhoff 2014, Biodiversity Australia, 2018; Naturecall, 2016)
 - 11.3.2
 - 11.3.2/11.3.4
 - 11.3.25e
 - High Ecological Significance Wetland
 - Connectivity Area

Source: MCPL (2020); Department of Natural Resources and Mines (2017)
 Orthophoto: MCPL (June 2017, 2014)



MIDDLEMOUNT COAL MINE

Attachment E: Drill Hole Locations ML70379



- LEGEND**
- Mining Lease Boundary (ML)
 - Existing Off-in-Stream Structure - Stage 2 Project (EPBC 2010/5394) (Declared Area Map 2013/003919)
 - Existing Off-in-Stream Structure - Thirteen Mile Gully Project (Declared Area Map 2013/003919)
 - Existing Off-in-Stream Structure - Rail (Declared Area Map 2013/003919)
 - Surface Rights Area Boundary
 - Category B Environmentally Sensitive Areas**
 - Ground-nurtured Endangered Regional Ecosystems (Brigalow RE11.3.1 and RE11.4.9) (Nature Call, May 2017)
 - Ground-nurtured Endangered Regional Ecosystems 500m Buffer
 - Drill Hole Type**
 - Proposed LOX Hole
 - Proposed Core Hole

Source: MCPL (2018); Department of Natural Resources and Mines (2017)
Orthophotos: MCPL (June 2017)



MIDDLEMOUNT COAL MINE
 Proposed Drill Hole Locations

Figure 1

Permit

Attachment F: Rehabilitation Requirements

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
MIA, CHPP and roads (including haul roads)	Safe to humans and wildlife	Hazardous materials adequately managed or removed.	Contaminated land assessment undertaken by an appropriately qualified person.	Evidence which has been certified by an appropriately qualified person that: <ul style="list-style-type: none"> - Residual soil contamination on the mining leases has been removed, neutralized or isolated. - Hydrocarbon, heavy metal or other contamination levels are within allowable departmental limits - Site added to the Environmental Management Register if required.
			Remediation of contaminated land.	
		Very low probability of subsidence or rock fails with serious consequences.	Safety assessment of landform stability.	
	Appropriate decommissioning of infrastructure.		A risk assessment undertaken by an appropriately qualified person prior to the surrender of the environmental authority to ensure the site is safe and all infrastructure has been decommissioned appropriately and in accordance with the conditions of the environmental authority and any applicable Australian Standard or guideline.	
	Non-polluting	Polluted water contained on site or treated	Upstream and downstream surface and ground water quality (e.g. sediment load, pH, heavy metal content, etc.) meet EA conditions.	<ul style="list-style-type: none"> ▪ Evidence certified by an appropriately qualified person that receiving waters affected by surface water run-off have contaminant limits consistent with those specified in Table C5 of the EA, for the period of the Post Closure Management Plan required by Condition F31.
		Ensure any residual water bodies have a low risk of environmental harm		

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		No contamination of surface water and groundwater resources.		<ul style="list-style-type: none"> ▪ Evidence certified by an appropriately qualified person that groundwater quality characteristics are within those prescribed in Table C8 of the EA, for the period of the Post Closure Management Plan required by Condition F31.
	Stable	Very low probability of subsidence or rock fails with serious consequences	Slope angle, length and profile	Evidence certified by an appropriately qualified person that: <ul style="list-style-type: none"> - Landform recontoured to be conducive to the adjacent landforms. - All slopes are less than 5%. - For slopes over 2%, continuous slope length does not exceed 70 m (i.e. engineered structures such as contour banks, cut-off drains etc. are implemented on all slopes such that continuous slope length does not exceed 70 m.
Very low probability of slope slippage with serious consequences				
Adequate vegetation cover established to minimise erosion		Vegetation type, density and cover.	Evidence certified by an appropriately qualified person that: <ul style="list-style-type: none"> - a minimum of 70% vegetative cover is present and maintained; - non-vegetation cover (stones, rock cover, litter, logs etc) does not cover greater than 30% of the total area; - bare surface areas are not to exceed 20 m² in area, based on a five year average period; and - bare surface areas are not to exceed a length of 10 m along slope, based on a five year average period 	

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Landform design achieves appropriate erosion rates	Erosion rates and gully formation.	<ul style="list-style-type: none"> ▪ Evidence certified by an appropriately qualified person that erosion rates comparable to designated reference sites, for the period of the Post Closure Management Plan required by Condition F31.
	Able to sustain an agreed post mining land use	Soil properties that support and will continue to support the desired final land use	Landscape function, such as rate of soil loss, erosion features, soil physical parameters, organic matter and nutrient content and cycling	<ul style="list-style-type: none"> ▪ Evidence, certified by an appropriately qualified person, that: <ul style="list-style-type: none"> - Vegetation established in accordance with post-mining land use given in Table F2 of the EA; and - Water infiltration, aggregate stability and bulk density rates of rehabilitated areas are comparable to rates at designated reference sites that are representative of the post mining land use.
		Topsoil and subsoil support the proposed land use.		
		Establish specified self sustaining natural vegetation or habitat.	Ecosystem functionality, such as vegetation dynamics, habitat complexity and habitat quality	<ul style="list-style-type: none"> ▪ Evidence certified by an appropriately qualified person that: <ul style="list-style-type: none"> - Nutrient cycling processes are comparable to designated references sites which are representative of the post mining land use; - Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence; - Evidence of generational succession of trees and shrubs is apparent in rehabilitated areas;

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				<ul style="list-style-type: none"> - Weeds do not dominate native species after disturbance or after rain; - Pests do not occur in substantial numbers or visibly affect the development of native plant species; - Vegetative material layer(s) (e.g. leaf litter) is evident and contributing to nutrient cycling and development of microbial mass.
		Establish land use with comparable management requirements to similarly used non-mining land	Achievement of agreed final land use <hr/> Rehabilitation progress and success rate	Evidence certified by an appropriately qualified person that for areas established to cattle grazing: <ul style="list-style-type: none"> - Cattle stocking rate is comparable to designated reference sites; and

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
			Ongoing sustainability of agreed final land use.	<ul style="list-style-type: none"> - land maintenance requirements are comparable to designated reference sites ▪ Evidence certified by an appropriately qualified person that for areas established to regional ecosystems: <ul style="list-style-type: none"> - densities of native tree, shrub and grass species are representative of the target Regional Ecosystems as determined through comparison with designated reference sites; - community structure (groundcover, shrub and tree layers) are representative of the target Regional Ecosystems as determined through comparison with designated reference sites; - non-native cover crop grass species constitute no more than 20% of the area of total vegetative cover; and - native tree, shrub and grass species which are representative of surrounding ecosystems and which will support the post-mine land use are to constitute 80% of the area of established vegetative cover
Final voids below natural ground level (including ramps)	Safe to humans and wildlife	Structurally safe with very low probability of subsidence or rock fails with serious consequences	Safety assessment of landform stability.	<p>Certification by an appropriately qualified person, that final voids are stable, including:</p> <ul style="list-style-type: none"> - Certification that slopes are as per Table F3:Residual Void Design and are geotechnically stable for the foreseeable future; - Certification that drainage structures are sufficiently designed and implemented for operation into the

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				<p>foreseeable future, and direct surface water flow away from residual voids;</p> <ul style="list-style-type: none"> - Certification that erosion and sediment controls are sufficiently designed and implemented for operation into the foreseeable future. - Safety assessment conducted and included in Post Closure Management Plan; and - Geotechnical stability of the high wall, low wall and end walls has been achieved and geotechnical investigations demonstrating this have been undertaken and reported.
		Hazardous materials adequately managed	Contaminated land assessment.	<p>Evidence which has been certified by an appropriately qualified person that:</p> <ul style="list-style-type: none"> ▪ Hydrocarbon, heavy metal or other contamination levels are within allowable departmental limits;
			Risk to humans and animals	<ul style="list-style-type: none"> - No acid rock drainage is occurring or has the potential to occur; and ▪ Fencing and/or safety bunding and prominent signage is installed around the perimeter of the final voids to restrict access.
	Non-polluting	Polluted water contained on site or treated	Residual void water quality	<p>Evidence which is certified by an appropriately qualified person that:</p> <ul style="list-style-type: none"> - The low, high and end walls drain internally to the final void; and - Final void waters comply with specifications detailed in the Residual Void Water Quality Management Plan.
		Ensure any residual water bodies have a low risk of environmental harm		

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		No contamination of surface water and groundwater resources	Upstream and downstream surface and ground water quality (e.g. sediment load, pH, heavy metal content, etc) meet EA conditions	Evidence which is certified by an appropriately qualified person that: <ul style="list-style-type: none"> ▪ Groundwater and monitoring bores have parameters consistent with those specified in Table C8 of the EA, for the period of the Post Closure Management Plan; ▪ Based on up to date groundwater modelling, that any residual void water will not overflow nor potentially contaminate any other surface water bodies; and ▪ Voids do not discharge to any receiving waters, including surface water and groundwater.
	Stable	Very low probability of subsidence or rock fails with serious consequences	Safety assessment of landform stability including slope angle, length and profile.	Certification from an appropriately qualified person that the final voids are stable into the foreseeable future and have been constructed in accordance with RPEQ designs and the criteria defined in Table F3: Residual Void Design of the EA.
		Very low probability of slope slippage with serious consequences		

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Landform design achieves appropriate erosion rates	Erosion rates and gully formation	
In-pit and out-of-pit overburden spoil dumps (slopes)	Safe to humans and wildlife	Hazardous materials adequately managed	Contaminated land assessment.	<p>Evidence which has been certified by an appropriately qualified person that:</p> <ul style="list-style-type: none"> - Hydrocarbon, heavy metal or other contamination levels are within allowable departmental limits; and - No acid rock drainage is occurring or has the potential to occur.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Very low probability of subsidence or rock fails with serious consequences	Safety assessment of landform stability including slope angle, length and profile.	Evidence certified by an appropriately qualified person that: <ul style="list-style-type: none"> ▪ Geotechnical stability has been achieved and geotechnical investigations demonstrating this have been undertaken and reported; ▪ The land is safe for the proposed post mining land use detailed in Table F2 of the EA; ▪ The landform is designed in accordance with the parameters defined in Table F1; and ▪ Slope angle does not exceed 18.5 degrees
	Non-polluting	Polluted water contained on site or treated.	Upstream and downstream surface and ground water quality (e.g. sediment load, pH, heavy metal content, etc) meet EA conditions.	Evidence certified by an appropriately qualified person that: <ul style="list-style-type: none"> ▪ Groundwater monitoring bores have parameters consistent with those specified in Table C8 of the EA, for the period of the Post Closure Management Plan; and ▪ Receiving waters affected by surface water run-off have contaminant limits consistent with those specified in Table C5 of the EA, for the period of the Post Closure Management Plan;
			Performance of capping.	
		Ensure any residual dams have a low risk of environmental harm.	Residual dam water quality.	Evidence certified by an appropriately qualified person that: <ul style="list-style-type: none"> - Water quality in water storage and management dams which are retained for beneficial reuse comply with the limits detailed within ANZECC or ARMCANZ for that beneficial use, for a period of at least five years.
	Stable	Very low probability of subsidence or rock fails with serious consequences.	Safety assessment of landform stability including	Evidence certified by an appropriate person that:

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Very low probability of slope slippage with serious consequences.	slope angle, length and profile.	<ul style="list-style-type: none"> ▪ rock mulch has 100% coverage of the overburden spoil dumps surface area (i.e. no bare areas exist) ▪ Geotechnical stability has been achieved and geotechnical investigations demonstrating this have been undertaken and reported; ▪ The land is safe for the proposed post mining land use detailed in Table F2 of the EA; ▪ The landform is designed in accordance with the parameters defined in Table F1; and ▪ Slope angle does not exceed 18.5 degrees
		Landform design achieves appropriate erosion rates.	Erosion rates and gully formation	Evidence, which has been certified by an appropriately qualified person, that erosion rates of rehabilitated areas are suitable for the post mining land use defined in Table F2 of the EA.
		Adequate vegetation cover established to minimise erosion.	Vegetation type and density	Evidence, which has been certified by an appropriately qualified person, that the vegetation type and density of species in rehabilitated areas are suited to the soil composition, slope, aspect, climate and post mining land use defined in Table F2 of the EA.
	Able to sustain an agreed post mining land use	Soil properties that support and will continue to support the desired final land use.	<p>Landscape function, such as rate of soil loss, erosion features, soil physical parameters, organic matter and nutrient content and cycling.</p> <p>Topsoil and subsoil support the proposed land use.</p>	<p>Evidence, certified by an appropriately qualified person, that:</p> <ul style="list-style-type: none"> - Vegetation established in accordance with post-mining land use given in Table F2 of the EA; and - Water infiltration, aggregate stability and bulk density rates of rehabilitated areas are comparable to rates at designated reference sites that are representative of the post mining land use; and - vegetative material layer(s) (e.g. leaf litter) is evident and contributing to nutrient cycling and development of microbial mass.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Establish specified self-sustaining natural vegetation or habitat.	Ecosystem functionality, such as vegetation dynamics, habitat complexity and habitat quality.	Evidence, certified by an appropriately qualified person, that: <ul style="list-style-type: none"> ▪ Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence; ▪ Evidence of generational succession of trees and shrubs is apparent in rehabilitated areas; ▪ weeds do not dominate native species after disturbance or after rain; and ▪ pests do not occur in substantial numbers or visibly affect the development of native plant species.
		Establish land use with comparable management requirements to similarly used non-mining land	Rehabilitation progress and success rate. Achievement of agreed final land use. Ongoing sustainability of agreed final land use.	<ul style="list-style-type: none"> ▪ Evidence certified by an appropriately qualified person that for areas established to cattle grazing: <ul style="list-style-type: none"> - Cattle stocking rate is comparable to designated reference sites; and - land maintenance requirements are comparable to designated reference sites ▪ Evidence certified by an appropriately qualified person that for areas established to regional ecosystems: <ul style="list-style-type: none"> - densities of native tree, shrub and grass species are representative of the target Regional Ecosystems as determined through comparison with designated reference sites; - community structure (groundcover, shrub and tree layers) are representative of the target Regional Ecosystems as determined through comparison with designated reference sites; - non-native cover crop grass species constitute no more than 20% of the area of total vegetative cover; and

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				<ul style="list-style-type: none"> - native tree, shrub and grass species which are representative of surrounding ecosystems and which will support the post-mine land use are to constitute 80% of the area of established vegetative cover.
In-pit and out-of-pit overburden spoil dumps (upper surface)	Safe to humans and wildlife	Hazardous materials adequately managed.	Contaminated land assessment.	<p>Evidence which has been certified by an appropriately qualified person that:</p> <ul style="list-style-type: none"> - Hydrocarbon, heavy metal or other contamination levels are within allowable departmental limits; and - No acid rock drainage is occurring or has the potential to occur.
		Very low probability of subsidence or rock fails with serious consequences.	Safety assessment of landform stability including slope angle, length and profile.	<p>Evidence certified by an appropriately qualified person that:</p> <ul style="list-style-type: none"> ▪ Geotechnical stability has been achieved and geotechnical investigations demonstrating this have been undertaken and reported; ▪ The land is safe for the proposed post mining land use detailed in Table F2 of the EA; and ▪ Slope angle does not exceed 2%
	Non-polluting	Polluted water contained on site or treated	<p>Upstream and downstream surface and ground water quality (e.g. sediment load, pH, heavy metal content, etc) meet EA conditions.</p> <p>Performance of capping.</p>	<p>Evidence certified by an appropriately qualified person that:</p> <ul style="list-style-type: none"> ▪ Groundwater monitoring bores have parameters consistent with those specified in Table C8 of the EA, for the period of the Post Closure Management Plan; ▪ receiving waters affected by surface water run-off have contaminant limits consistent with those specified in Table C5 of the EA, for the period of the Post Closure Management Plan; and ▪ no long-term (>2 months) ponding of water on soil surface.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria	
		Ensure any residual water bodies have a low risk of environmental harm	Residual dam water quality.	Evidence certified by an appropriately qualified person that: <ul style="list-style-type: none"> Water quality in water storage and management dams which are retained for beneficial reuse comply with the limits detailed within ANZECC or ARMCANZ for that beneficial use, for a period of at least five years. 	
	Stable	Very low probability of subsidence or rock fails with serious consequences.	Safety assessment of landform stability including slope angle, length and profile.	Evidence certified by an appropriate person that: <ul style="list-style-type: none"> Geotechnical stability has been achieved and geotechnical investigations demonstrating this have been undertaken and reported; the land is safe for the proposed post mining land use detailed in Table F2 of the EA; slope angle does not exceed 2%; a minimum of 70% vegetative cover is present and maintained; non-vegetation cover (stones, rock cover, litter, logs etc.) comprise not greater than 30% of the total area bare surface areas do not exceed 5m² in area, over a five year average period; and bare surface areas are not to exceed a length of 5 m along slope, over a five year average period. 	
		Very low probability of slope slippage with serious consequences.			
		Landform design achieves appropriate erosion rates.	Erosion rates and gully formation.		Evidence, which has been certified by an appropriately qualified person, that erosion rates of rehabilitated areas are suitable for the post mining land use specified in Table F2 of the EA.
		Adequate vegetation cover established to minimise erosion.	Vegetation type, density and cover.		Evidence, which has been certified by an appropriately qualified person, that the vegetation type and density of species in rehabilitated areas are suited to the soil composition, slope, aspect, climate and post mining land use defined in Table F2 of the EA.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	Able to sustain an agreed post mining land use	Soil properties that support and will continue to support the desired final land use	Topsoil and subsoil support the proposed land use.	Evidence, certified by an appropriately qualified person, that topsoil has been respread to a suitable depth in rehabilitated areas to sustain the post mining land use specified in Table F2 of the EA.
			Landscape function, such as rate of soil loss, erosion features, soil physical parameters, organic matter and nutrient content and cycling.	Evidence, certified by an appropriately qualified person, that: <ul style="list-style-type: none"> ▪ soil surface crusting occurs in less than 2% of the rehabilitated domain area; ▪ water infiltration, aggregate stability and bulk density rates of rehabilitated areas are comparable to rates at designated reference sites which are representative of the post-mining land use; ▪ nutrient cycling processes are comparable to designated references sites which are representative of the post mining land use; and ▪ vegetative material layer(s) (e.g. leaf litter) is evident and contributing to nutrient cycling and development of microbial mass.
		Establish specified self-sustaining natural vegetation or habitat	Ecosystem functionality, such as vegetation dynamics, habitat complexity and habitat quality	Evidence, certified by an appropriately qualified person, that: <ul style="list-style-type: none"> ▪ vegetation established in accordance with post-mining land use given in Table F2 of the EA; ▪ species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence; ▪ evidence of generational succession of trees and shrubs is apparent in rehabilitated areas; ▪ weeds do not dominate native species after disturbance or after rain; ▪ pests do not occur in substantial numbers or visibly affect the development of native plant species;

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		<p data-bbox="564 807 1003 930">Establish land use with comparable management requirements to similarly used non-mining land.</p>	<p data-bbox="1010 807 1375 874">Ongoing sustainability of agreed final land use.</p> <p data-bbox="1010 879 1375 946">Rehabilitation progress and success rate.</p> <p data-bbox="1010 967 1375 1034">Achievement of agreed final land use</p>	<ul style="list-style-type: none"> <li data-bbox="1435 344 2107 467">▪ densities of native tree, shrub and grass species are representative of the target Regional Ecosystems as determined through comparison with designated reference sites; <li data-bbox="1435 472 2107 595">▪ community structure (groundcover, shrub and tree layers) are representative of the target Regional Ecosystems as determined through comparison with designated reference sites; <li data-bbox="1435 600 2141 667">▪ non-native cover crop grass species constitute no more than 20% of the area of total vegetative cover; and <li data-bbox="1435 671 2107 794">▪ native tree, shrub and grass species which are representative of surrounding ecosystems and which will support the post-mine land use are to constitute 80% of the area of established vegetative cover. <p data-bbox="1435 807 2136 1010">▪ Evidence certified by an appropriately qualified person that for areas established to cattle grazing:</p> <ul style="list-style-type: none"> <li data-bbox="1435 871 2047 938">- Cattle stocking rate is comparable to designated reference sites; and <li data-bbox="1435 943 2074 1010">- land maintenance requirements are comparable to designated reference sites.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				<ul style="list-style-type: none"> ▪ Evidence certified by an appropriately qualified person that for areas established to regional ecosystems: <ul style="list-style-type: none"> - densities of native tree, shrub and grass species are representative of the target Regional Ecosystems as determined through comparison with designated reference sites; and - community structure (groundcover, shrub and tree layers) are representative of the target Regional Ecosystems as determined through comparison with designated reference sites.
<p>Low wall spoil (above natural ground level)</p>	<p>Safe to humans and wildlife</p>	<p>Hazardous materials adequately managed.</p>	<ul style="list-style-type: none"> • Safety assessment of dumps, voids and other slopes. • landform stability including slope angle, length and profile. 	<p>Evidence, certified by an appropriately qualified person, that:</p> <ul style="list-style-type: none"> - Hydrocarbon, heavy metal or other contamination levels are within allowable departmental limits; and - no acid rock drainage is occurring or has the potential to occur.
		<p>Very low probability of subsidence or rock fails with serious consequences.</p>		<p>Evidence, certified by an appropriately qualified person, that:</p> <ul style="list-style-type: none"> ▪ Geotechnical stability has been achieved and geotechnical investigations demonstrating this have been undertaken and reported.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				<ul style="list-style-type: none"> slope angle will be retained at angle specified in Table F2 of the EA.
	Non-polluting	Polluted water contained on site or treated	Upstream and downstream surface and ground water quality (e.g. sediment load, pH, heavy metal content, etc) meet EA conditions	Evidence, certified by an appropriately qualified person, that: <ul style="list-style-type: none"> Groundwater monitoring bores have parameters consistent with those specified in Table C8 of the EA, for the period of the Post Closure Management Plan. receiving waters affected by surface water run-off have contaminant limits consistent with those specified in Table C5 of the EA, for the period of the Post Closure Management Plan.
		Performance of capping		
		Ensure any residual water bodies have a low risk of environmental harm	Residual dam water quality.	Evidence certified by an appropriately qualified person that: <ul style="list-style-type: none"> Water quality in water storage and management dams which are retained for beneficial reuse comply with the limits detailed within ANZECC or ARM CANZ for that beneficial use, for a period of at least five years.
	Stable	Very low probability of subsidence or rock fails with serious consequences	Safety assessment of landform stability including slope angle, length and profile.	Evidence, certified by an appropriately qualified person, that: <ul style="list-style-type: none"> Geotechnical stability has been achieved and geotechnical investigations demonstrating this have been undertaken and reported. slope angle retained at angle specified in Table F2 of the EA.
		Very low probability of slope slippage with serious consequences		
		Landform design achieves appropriate erosion rates	erosion rates and gully formation	Evidence, which has been certified by an appropriately qualified person, that erosion rates of rehabilitated areas are suitable for the post mining land use defined in Table F2 of the EA.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	Able to sustain an agreed post mining land use (benches within low wall spoil only)	Soil properties that support and will continue to support the desired final land use	Topsoil and subsoil support the proposed land use.	Evidence, certified by an appropriately qualified person, that topsoil has been respread to a suitable depth in rehabilitated areas to sustain the post mining land use specified in Table F2 of the EA.
			Landscape function, such as rate of soil loss, erosion features, soil physical parameters, organic matter and nutrient content and cycling.	Evidence, certified by an appropriately qualified person, that: <ul style="list-style-type: none"> vegetative material layer(s) (e.g. leaf litter) is evident and contributing to nutrient cycling and development of microbial mass.
		Establish specified self-sustaining natural vegetation or habitat	Ecosystem functionality, such as vegetation dynamics, habitat complexity and habitat quality.	Evidence, certified by an appropriately qualified person, that: <ul style="list-style-type: none"> evidence of generational succession of trees and shrubs is apparent in rehabilitated areas; vegetation established in accordance with post-mining land use given in Table F2 of the EA on benches within low wall spoil; species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence; weeds do not dominate native species after disturbance or after rain; and pests do not occur in substantial numbers or visibly affect the development of native plant species.
		Establish land use with comparable management requirements to similarly used non-mining land	Rehabilitation progress and success rate.	Evidence certified by an appropriately qualified person that for areas established to regional ecosystems:
		Achievement of agreed final land use	- densities of native tree, shrub and grass species are representative of the target Regional Ecosystems as	

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
			Ongoing sustainability of agreed final land use.	<p>determined through comparison with designated reference sites; and</p> <ul style="list-style-type: none"> ▪ community structure (groundcover, shrub and tree layers) are representative of the target Regional Ecosystems as determined through comparison with designated reference sites.
Water storage/ water management dams	Safe to humans and wildlife	Hazardous materials adequately managed	Contaminated land assessment	<p>Evidence, certified by an appropriately qualified person, that:</p> <ul style="list-style-type: none"> ▪ hydrocarbon, heavy metal or other contamination levels are within allowable departmental limits; ▪ site added to the Environmental Management Register if required.
		Very low probability of subsidence or rock fails with serious consequences	Safety assessment of landform stability.	<p>Evidence, certified by an appropriately qualified person, that:</p> <ul style="list-style-type: none"> ▪ Geotechnical stability has been achieved and geotechnical investigations demonstrating this have been undertaken and reported; and ▪ the land is safe for the proposed post mining land use detailed in Table F2 of the EA.
	Non-polluting	Polluted water contained on site or treated	Contaminated land assessment	Evidence, certified by an appropriately qualified person, that:

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Ensure any residual water bodies have a low risk of environmental harm	Upstream and downstream surface and ground water quality (e.g. sediment load, pH, heavy metal content, etc) meet EA conditions.	<ul style="list-style-type: none"> Receiving waters affected by surface water run-off have contaminant limits consistent with those specified in Table C5 of the EA, for the period of the Post Closure Management Plan. water quality in water storage and management dams which are retained for beneficial reuse comply with the limits detailed within ANZECC or ARMCANZ for that beneficial use, for a period of at least five years.
	Stable	Very low probability of subsidence or rock fails with serious consequences	Safety assessment of landform stability including slope angle, length and profile.	Evidence, certified by an appropriately qualified person, that: <ul style="list-style-type: none"> non-vegetation cover (stones, rock cover, litter, logs etc.) comprise not greater than 30% of the total area; bare surface areas do not exceed 20 m² in area, over a five year average period; and bare surface areas are not to exceed a length of 10 m along slope, over a five year average period.
Very low probability of slope slippage with serious consequences				
Landform design achieves appropriate erosion rates		Erosion rates and gully formation	Evidence, which has been certified by an appropriately qualified person, that erosion rates of rehabilitated areas are suitable for the post mining land use defined in Table F2 of the EA.	
Adequate vegetation cover established to minimise erosion		Vegetation type, density and cover	Evidence, certified by an appropriately qualified person, that: <ul style="list-style-type: none"> minimum of 70% vegetative cover is present and maintained on banks and external dam walls. 	
	Able to sustain an agreed post mining land use	Soil properties that support and will continue to support the desired final land use.	Landscape function, such as rate of soil loss, erosion features, soil physical parameters, organic matter and nutrient content and cycling.	Evidence, certified by an appropriately qualified person, that: <ul style="list-style-type: none"> Soil surface crusting occurs in less than 5% of the rehabilitated domain area; water infiltration, aggregate stability and bulk density rates of rehabilitated areas are comparable to rates at designated reference sites which are representative of the post mining land use;

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				<ul style="list-style-type: none"> ▪ vegetative material layer(s) (e.g. leaf litter) is evident and contributing to nutrient cycling and development of microbial mass; and ▪ nutrient cycling processes are comparable to designated references sites which are representative of the post mining land use.
		Establish specified self-sustaining natural vegetation or habitat.	Ecosystem functionality, such as vegetation dynamics, habitat complexity and habitat quality.	<p>Evidence, certified by an appropriately qualified person, that:</p> <ul style="list-style-type: none"> ▪ Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence; ▪ evidence of generational succession of trees and shrubs is apparent in rehabilitated areas; ▪ weeds do not dominate native species after disturbance or after rain; and ▪ pests do not occur in substantial numbers or visibly affect the development of native plant species.
		Establish land use with comparable management requirements to similarly used non-mining land	Rehabilitation progress and success rate.	<p>Evidence certified by an appropriately qualified person that for areas established to regional ecosystems:</p> <ul style="list-style-type: none"> - densities of native tree, shrub and grass species are representative of the target Regional Ecosystems as determined through comparison with designated reference sites; and
			Achievement of agreed final land use.	
			Ongoing sustainability of agreed final land use.	

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				<ul style="list-style-type: none"> ▪ community structure (groundcover, shrub and tree layers) are representative of the target Regional Ecosystems as determined through comparison with designated reference sites.
Exploration	Safe to humans and wildlife Non-polluting Stable	Site is safe for humans and animals now and in the foreseeable future	All exploration drill holes undertaken have been rehabilitated	<ul style="list-style-type: none"> ▪ Certification that all exploration dill holes not agreed to in writing with the post-mining landholder to be converted to either a water bore or groundwater monitoring bore have been made safe and stable, and will remain safe and stable.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	Able to sustain an agreed post mining land use			<ul style="list-style-type: none"> ▪ Certification that all aquifers have been isolated where exploration drill holes have intersected more than one water bearing strata, in accordance with the 'Minimum Construction Requirements for Water Bore in Australia' (Australian Government, February 2012) or latest edition. ▪ Evidence of written landholder agreement for the retention of any exploration drill holes to be converted to a water bore. ▪ Certification that all exploration drill holes agreed to in writing with the post-mining landholder to be converted to a water bore, have been converted in accordance with the 'Minimum Construction Requirements for Water Bore in Australia' (Australian Government, February 2012) or latest edition. ▪ Certification that all exploration drill holes converted to water bores as per the written landholder agreement, are compliant with the Water Act 2000.

Attachment G: Diversion footprint - Thirteen Mile Gully



- LEGEND**
- Mining Lease Boundary (ML)
 - Watercourse
 - Drainage
 - Existing Thirteen Mile Gully Diversion Footprint
 - Western Extension Project Diversion (Functional Design)

Source: MCPL (2018); Department of Natural Resources and Mines (2019);
WRM (2019)
Orthophoto: MCPL (Dec 2018)



MIDDLEMOUNT COAL MINE
Diversion Footprint

Attachment H: Diversion Footprints - Roper Creek



- LEGEND**
- Mining Lease Boundary (ML)
 - Middlemount Rail Spur and Loop
 - Roper Creek Diversion

Source: MCPL (2020); The State of Queensland (2019)
Orthophoto: MCPL (Sep 2019)



END OF ENVIRONMENTAL AUTHORITY