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 25 May 2022

Environmental authority holder(s)

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

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 - 13 - Mining black coal	ML700014 ML700027 ML70379 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)	ML700014 ML700027 ML70379 ML70417
Ancillary 15 - Fuel burning - Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	ML700014 ML700027 ML70379 ML70417

ABN 46 640 294 485

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

Additional information for applicants

Environmentally relevant activities

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

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

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

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

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days)

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

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

Take effect

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

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority - on the nominated day; or

b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or

c) otherwise on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

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

The anniversary day of this environmental authority is the same day each year as the original take effect date unless you apply to change the anniversary day. The payment of the annual fee will be due each year on this day. An annual return will be due each year on 01 April.

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.

	**31 May 2022**
Signature	Date

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

Issue date: 31 May 2022

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Privacy statement

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

Obligations under the *Environmental Protection Act 1994*

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

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

Other permits required

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

Conditions of environmental authority

Schedule A: General	
Condition number	**Condition**
A1	**Scope of activity** This environmental authority authorises the mining of 5.7 million tonnes of run of mine (ROM) coal per annum.
A2	**Prevent and /or minimise likelihood of environmental harm** 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.
A3	**Maintenance of measures, plant and equipment** The environmental authority holder must ensure: a) that all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed; b) that such measures, plant and equipment are maintained in a proper condition; c) that such measures, plant and equipment are operated in a proper manner; and d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.
A4	**Monitoring and records** Record, compile and keep for a minimum of **five (5) years** all monitoring results required by this environmental authority and provide all or any of these records upon request by the administering authority.
A5	Where monitoring is a requirement of this environmental authority, ensure that an appropriately qualified person(s) conducts all monitoring.
A6	**Notification of emergencies, incidents and exceptions** 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.
A7	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: a) results and interpretation of any samples taken and analysed; and b) proposed actions to prevent a recurrence of the emergency or incident.

A8	The notification in **Conditions A6 and A7** must include, but not be limited to, the following: 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: 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	**Risk Management** 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)".
A10	The environmental authority holder must not implement a risk management system that contravenes or prevents the implementation of any condition of this environmental authority.
A11	**Emergency Response and Contingency Planning** An emergency response/contingency plan must be developed and implemented to manage unacceptable environmental risks identified in the risk management system or the associated monitoring.

A12	The emergency response/contingency plan must address the following matters: 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	**Third Party Audit** 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**.
A14	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**.
A15	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: 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	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: 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.

A17	**Activity** All land subject to mining activities must be rehabilitated to a safe, stable and non-polluting landform, with a self-sustaining vegetation cover (except for the residual voids), in accordance with **Condition G9**.
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	**Definitions** 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.

Schedule B: Air	
Condition number	**Condition**
B1	**Dust nuisance** 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.
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.

B3	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: 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. 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 (excluding natural events such as bushfires and dust storms), when monitored in accordance with the most recent version of either: i. Particulate matter – determination of suspended particulate PM10 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 – PM10 high volume sampler with size-selective inlet – Gravimetric method; or 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. c) The use of alternative methods of monitoring dust and particulate matter, in accordance with the administering authority's 'Air Quality Sampling Manual' must be approved in writing by the administering authority prior to implementation.
B4	If monitoring indicates exceedance of the relevant limits in **Conditions B3**, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; b) immediately implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance; and c) notify the administering authority within **five (5) business days**.
B5	**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.
B6	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.

B7	If the administering authority determines the odour released to constitute an environmental nuisance the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance.
B8	**Meteorological monitoring** 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): a) "AS 2923-1987: Ambient air – Guide for measurement of horizontal wind for air quality applications" or its successor. b) "AS/NZS 3580.1.1:2016: Methods for sampling and analysis of ambient air. Guide to siting air monitoring equipment" or its successor.

Schedule C: Surface Water	
Condition number	**Condition**
C1	**Contaminant release** Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities, except as permitted under the conditions of this environmental authority.
C2	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.

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

Release point (RP)	Easting (GDA94, MGA 55)	Northing (GDA94, MGA 55)	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 C29 to C30** 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 (µS/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) (80th percentile of reference sites detailed in Table C6)	Flow <2m^3/s 562 mg/L Flow >2m^3/s 1062 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.
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 2000

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 ICPMS	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 ICPMS	Commencement of release and thereafter weekly during release
Silver	1	For aquatic ecosystem protection, based on LOR for ICPMS	Commencement of release and thereafter weekly during release
Uranium	1	For aquatic ecosystem protection, based on LOR for ICPMS	Commencement of release and thereafter weekly during release

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	For aquatic ecosystem protection, based on LOR for GC-FID	Commencement of release and thereafter weekly during release
Petroleum hydrocarbons (C10-C36)	100	For aquatic ecosystem protection, based on LOR for GC-FID	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 (mg/L)	180	Based on the Australian Drinking Water Guidelines (NHMRC,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/GC-FID – analytical methods required to achieve LOR.

C6	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: 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; 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 28 days of receiving the result, outlining: 1. details of the investigations carried out; and 2. actions taken to prevent environmental harm. Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with **C6(b)(ii)** of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.
C7	If an exceedance in accordance with **Condition C6(b)(ii)** is identified, the holder of the environmental authority must notify the administering authority in writing within **twenty four** (**24) hours** of receiving the result.
C8	**Mine affected release events** 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**.
C9	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.**
C10	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**.
C11	The daily quantity of mine affected water released from each release point must be measured, recorded and provided to the administering authority on request.

C12	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.
C13	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: 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, MGA 55)	Gauging station Northing, (GDA94, MGA 55)	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)	Low Flow 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
					Medium flow > 2 m^3/s	1.12 m^3/s	Electrical conductivity (µS/cm) 1500. Sulfate (SO_4^{2-}): 250 mg/L
					High flow > 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
					Very High Flow >25 m^3/s	2.1 m^3/s	Electrical conductivity (µS/cm) <6000. Sulfate (SO_4^{2-}): 500 mg/L

C14	The holder of this environmental authority must notify the administering authority, via WaTERS, as soon as practicable (and within twenty four hours) after cessation of a release notified under **Condition C13**. The cessation notification must include the following information: a. release cessation date/time; b. release points; c. release rates; d. water quality of release; e. total volume of water released; f. natural flow rate in the receiving water; and g. details regarding the compliance of the release with the conditions of Schedule F Water of this environmental authority. Note: Successive or intermittent releases occurring within twenty four hours of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purpose of compliance with **Conditions C13**, **C14** and **C15**, provided the relevant details are submitted in the final cessation and 28 day report in accordance with **Conditions C14** and **C15**.
C15	The holder of this environmental authority must within twenty eight days after cessation of a release event notified under **Condition C13** provide a report and supporting raw data to the administering authority via WaTERS, which must include the following information: a. all continuous and in-situ water quality monitoring results (including laboratory analyses); and b) any further matters pertinent to the water release event.
C16	**Notification of release event exceedance** 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.

C17	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: 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.
C18	**Receiving environment monitoring and contaminant trigger levels** 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**.
C19	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: a) where the downstream result is the same or a lower value than the upstream value for the quality characteristic, then no action is to be taken; or b) where the downstream results exceed the upstream results, complete an investigation into the potential for environmental harm and provide a written report to the administering authority within **three (3) months**, outlining: i. details of the investigations carried out; and ii. actions taken to prevent environmental harm.

Table C5: Receiving Waters Contaminant Trigger Levels

Quality characteristic	Trigger level	Monitoring frequency
pH	6.5 – 8.5	Daily during the release
Electrical Conductivity (µS/cm)	700	
Suspended Solids (mg/L) (80th percentile* of reference**)	562 at Flow <2m^3/s	
	1062 at 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, MGA 55)	Northing (GDA94, MGA 55)
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.

C20	**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.

C21	The REMP must: a) assess the condition or state of receiving waters, including upstream conditions, spatially within the REMP area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality); 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 C6: 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 Potential Contaminants**); 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.
C22	A REMP Design Document that addresses the requirements of the REMP must be prepared and made available to the administrating authority upon request.
C23	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.

C24	**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 written consent of the third party) for the purpose of: a) stock watering; b) irrigation; or c) dust suppression; with water quality limits appropriate for the intended purpose.
C25	If the responsibility for mine affected water is given or transferred to another person in accordance with **Condition C24:** a) the responsibility for the mine affected water must only be given or transferred in accordance with a written agreement (the third party agreement); and b) the third party agreement must include a commitment from the person utilising the mine affected water to use it in such a way as to prevent environmental harm or public health incidents and generally make the persons aware of the General Environmental Duty (GED) under section 319 of the *Environmental Protection Act 1994*, environmental sustainability of the water disposal and protection of environmental values of waters; and **c)** the third party agreement must be signed by both parties to the agreement.
C26	**Water general** All determinations of water quality and biological monitoring must be performed by an appropriately qualified person.
C27	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 C29 to C30** inclusive: 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.

C28	**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: 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.
C29	**Water Management Plan** 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: 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: 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.
C30	A copy of the Water Management Plan must be provided to the administering authority on request.
C31	**Saline drainage** 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
C32	**Acid rock drainage** 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

C33	**Stormwater and water sediment controls** An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater. 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.
C34	Stormwater, other than mine affected water, is permitted to be released to waters from: a) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by **Condition C33**; and b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with **Conditions C29 to C30** inclusive, for the purpose of ensuring water does not become mine affected water.
C35	**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.
C36	Treated effluent from the sewage treatment plant must only be discharged from the authorised discharge points, as specified in Table C7: Effluent Discharge Locations.

Table C7: Effluent Discharge Locations

Authorised discharge points	Location
STP Discharge Point 1	Tailings Storage Facility

C37	Treated effluent must not be released to land, or used for irrigation or dust suppression.
C38	Treated effluent must not be released from the site to any waters or the bed and banks of any waters.
C39	Water or stormwater contaminated by sewage treatment activities must not be released to any waters or the bed and banks of any waters.
C40	**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 authority's systems and standard; and b) re-used under a relevant approval issued by the administering authority

Schedule D: Groundwater	
Condition number	**Condition**
D1	**Groundwater monitoring and management program** The holder of this environmental authority must implement a groundwater monitoring and management program. The program must be able to detect a significant change to groundwater quality values due to the mining activities conducted under this environmental authority.
D2	The groundwater monitoring and management program required by **Condition D1** must: a) identify potential sources of contamination to groundwater from the mining activity; b) identify and minimise the potential for environmental harm on relevant groundwater environmental values; c) document sampling and monitoring methodology; d) ensure that the parameters being monitored are appropriate for use; e) ensure that monitoring bores are chemically representative of the target aquifer ; f) ensure sufficient information to allow the holder to determine predicted seasonal fluctuations of groundwater levels; g) ensure that adequate groundwater monitoring and data analysis is undertaken to achieve the following objectives: i. detect any impacts to groundwater levels due to the activity; detect any impacts to groundwater quality due to the activity; ii. determine compliance with **Condition D1**; iii. determine trends in groundwater quality; iv. include an appropriate quality assurance and quality control program; and v. include a conceptual groundwater model that includes groundwater flow parameters.

D3	The groundwater monitoring and management program required by **Condition D1**, must be reviewed on an annual basis by an appropriately qualified person. The review must include: a) an assessment of groundwater levels and groundwater quality value data collected in relation to **Schedule D –** Groundwater of this environmental authority; b) an assessment of the suitability of the monitoring network to detect a significant change to groundwater quality values; c) an assessment of the program against the requirements under **Condition D2**; d) recommended actions and reasonable timeframes for these actions to ensure that actual and potential environmental impacts are effectively identified and managed; e) identification of any amendments to the groundwater monitoring and management program following the review; f) identification of any changes in water quality in the monitoring bores; g) maps showing the actual water level drawdown contours caused by the take of associated water for each aquifer; h) details of any review undertaken of the numerical groundwater model since the previous Annual Monitoring Report; i) an assessment of any differences between the actual water level impact and the impact predicted for the same period in the most current numerical groundwater model; and j) details of any bores which are predicted by the most current numerical groundwater model to be located in the affected area.
D4	A report outlining the findings and outcomes of the review required by **Condition D3** must be prepared by the appropriately qualified person and provided to the administering authority within 6 months of the end of the annual period to which the review relates. The report must include: a) an outline of the findings and outcomes of the assessments required by **Condition D3**; and b) any groundwater monitoring data obtained by the environmental authority holder under **Condition D1** and an outline of the findings and outcomes of any analysis undertaken in relation to that data under **Condition D2**; and c) an outline of any actions and their associated timeframes recommended by the appropriately qualified person under **Condition D3 (d)**; and d) all groundwater data to be submitted to the administering authority via WaTERS.
D5	The holder of this environmental authority must attach to the review report required by **Condition D4**, a written response detailing the actions taken or to be taken by the holder of this environmental authority: a) to ensure compliance with this environmental authority; and b) to minimise impacts or potential impacts on groundwater resources by the mining activities carried out under this environmental authority.

D6	The recommended actions detailed under **Condition D3 (d)** must be completed within the associated timeframes detailed under **Condition D3 (d)**, unless the administering authority has approved otherwise in writing.
D7	**Groundwater Monitoring** Groundwater quality must be monitored at the locations and frequencies specified in **Table D1: Groundwater Quality Monitoring Locations and Frequency** for the parameters identified in **Table D2: Groundwater Quality Investigation Trigger Levels**.
D8	The groundwater investigation trigger levels limit type 'Median" referred to in **Table D2: Groundwater Quality Investigation Trigger Levels** must be determined on the most recent three (3) consecutive routine monitoring samples.

Table D1: Groundwater Quality Monitoring Locations and Frequency

Monitoring points	Easting (GDA 94, MGA 55)	Northing (GDA 94, MGA 55)	Target Aquifer	Monitoring frequency
MW2	667,603	7,471,239	Tertiary	Quarterly
MW3 [a]	670,647	7,469,955	Tertiary	
MW4	667,683	7,468,659	Intrusives and Girrah coal seam	
MW5M [b]	667,790	7,475,131	Middlemount coal seam	
MW5P [b]	667,796	7,745,130	Pisces coal seam	
MW6	669,452	7,468,670	Tertiary	
MW8FR [b]	669,941	7,472,277	Fort Cooper Coal Measures	
MW9A	670,246	7,469,610	Tertiary	
MW9M	670,243	7,469,619	Middlemount coal seam	
MW9P	670,251	7,469,592	Pisces coal seam	
MW10A	669,783	7,475981	Tertiary	
MW11A	672,355	7,472,275	Tertiary	
MW12A	671,640	7,469,853	Tertiary	
MW16A	666,878	7,472,826	Tertiary and weathered Fort Cooper Coal Measures	
MW17A	669,790	7,475,985	Weathered and fresh Fort Cooper Coal Measures	
MW18A	666,452	7,478,605	Tertiary and weathered Fort Cooper Coal Measures	

Note:
[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.

D9	Subject to requirements of **Condition D7**, if the groundwater investigation trigger levels defined in **Table D2: Groundwater Quality Investigation Trigger Levels** are exceeded then the environmental authority holder must: 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.

D10	The exceedance investigation under **Condition D9** must be completed and submitted to the administering authority via WaTERS within **three (3) months** of the exceedance.
D11	Where it is identified that there is potential for environmental harm, an action plan to mitigate potential harm must be developed by an appropriately qualified person and implemented within **three (3) months** of the completion of the investigation under **Condition D9**.
D12	Groundwater levels affected by the mining activities must be monitored at the locations and frequencies defined in **Table D3: Groundwater Level Monitoring Locations.**
D13	In the event that groundwater fluctuations exceed the groundwater level trigger values defined in **Table D4: Groundwater Level Trigger Values** at the groundwater monitoring locations nominated in **Table D3: Groundwater Level Monitoring Locations**, an investigation must be undertaken within **fourteen (14) days** of detection to determine if the fluctuations are a result of: a) mining activities; b) pumping from licensed bores; or c) seasonal variation.
D14	If the results of the investigation undertaken in accordance with **Condition D13** 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.

Table D2: Groundwater Quality Investigation Trigger Levels

Parameter	Unit	Trigger Levels	Limit Type
pH	pH Units	6.0 – 8.5	Minimum/ Maximum
Electrical Conductivity	μS/cm	35,000	Maximum
Total Dissolved Solids	mg/L	23,550	Maximum
Calcium Magnesium Sodium Potassium CO^3 HCO^3	mg/L	No triggers or limit set for these parameters. Analysis is conducted for groundwater quality interpretation only.	
Chloride	mg/L	12,700	Median
SO_4^{2-}	mg/L	2,000	Median
Iron	mg/L	14	Maximum
Mercury	mg/L	0.002	Maximum
Selenium	mg/L	0.05	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 D3: Groundwater Level Monitoring Locations

Monitoring points	Easting (GDA94, MGA 55)	Northing (GDA94, MGA 55)	Surface RL (mAHD)	Target Aquifer	Frequency
MW2	667,603	7,471,239	163.12	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
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
MW6	669,452	7,468,670	158.26	Tertiary	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	7,475981	175.75	Tertiary	Quarterly
MW11A	672,355	7,472,275	156.21	Tertiary	Quarterly
MW12A	671,640	7,469,853	158.28	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 D4: Groundwater Level Trigger Values

Monitoring points	Groundwater Fluctuation Trigger Level Threshold
MW2	>2 metres per year
MW3 [a]	total groundwater level of <115.39 m AHD
MW4	>2 metres per year
MW6	Observation only
MW9A	total groundwater level of <113.17 m AHD
MW10A	>2 metres per year
MW11A	>2 metres per year
MW12A	>2 metres per year
MW16A	total groundwater level of <129.2 m AHD
MW17A	total groundwater level of <135.6 m AHD
MW18A	>2 metres per year
MW19VWP-VW3	total groundwater level of <130.8 m AHD
MW19VWP-VW2	>2 metres per year
MW19VWP-VW1	>2 metres per year
MW20VWP-VW2	>3 metres per year

Notes:
[a]MW3 will continue to be monitored until pit progression prevents monitoring. MW9A installed as a replacement well for MW3.

D15	**Groundwater monitoring** The following information must be recorded in relation to all water sampling: 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.
D16	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.
D17	**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* (2012)(or its latest version).
D18	The construction, maintenance and management, and decommissioning of groundwater bores (including groundwater monitoring bores) must be undertaken in a manner that prevents or minimises impacts to the environment and ensures the integrity of the bores to obtain accurate monitoring.

Schedule E: Acoustic	
Condition number	**Condition**
E1	**Noise nuisance** Subject to **Conditions E2 and E3**, noise from the mining activity must not cause an environmental nuisance at any noise sensitive or commercial place.
E2	**Noise monitoring** 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: 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.
E3	If the environmental authority holder can provide evidence through monitoring that the limits defined in **Table E1: Noise Limits**, are not being exceeded then the holder is not in breach of **Condition E1**.
E4	If monitoring indicates the noise component from the Project exceeds the limits in **Table E1: Noise Limits**, then the environmental authority holder must: 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 E1: 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.

E5	The method of measurement and reporting of noise monitoring must comply with the current edition of the administering authority's Noise Measurement Manual.
E6	**Vibration nuisance** Vibration from the licensed activities must not cause an environmental nuisance at any sensitive or commercial place.
E7	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.
E8	Vibration monitoring must include the following descriptors, characteristics and conditions: 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.
E9	If monitoring indicates exceedance of the relevant limits in **Table E2: Vibration Limits**, then the environmental authority holder must: 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.
E10	The airblast overpressure level from blasting operations on the premises must not exceed the limits defined in **Table E3: Airblast Overpressure Level** at any nuisance sensitive or commercial place.

Table E3: Airblast Overpressure Level

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.

E11	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.
E12	Airblast overpressure monitoring must include the following descriptors, characteristics and conditions: 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.
E13	If monitoring indicates exceedance of the relevant limits in **Table D3: Airblast Overpressure Level**, then the environmental authority holder must: 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.
E14	The method of measurement and reporting of airblast overpressure levels must comply with the current edition of the administering authority's Noise Measurement Manual.

Schedule F: Waste	
Condition number	**Condition**
F1	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.

F2	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.
F3	**Mine waste** 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 at a minimum include: 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 (SO_4); 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.
F4	Within **twenty (20) business days** of receiving comments from the administering authority as per **Condition F3**, the Mining Waste Management Plan must be updated to address the comments and submitted to the administering authority.

F5	**Acid Sulfate soils** Treat and manage acid Sulfate soils in accordance with the latest edition of the Queensland Acid Sulfate Soil Technical Manual.

Schedule G: Land	
Condition number	**Condition**
G1	**Topsoil** Topsoil must be strategically stripped ahead of mining in accordance with a Topsoil Management Plan.
G2	**Preventing contaminant release to land** 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.
G3	**Chemicals Storage** 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.
G4	Spillage of all chemicals and fuels must be controlled in a manner that prevents environmental harm.
G5	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.
G6	**Spill Kit** 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.
G7	Anyone operating with wastes, chemicals or flammable and combustible liquids under this approval must be trained in the use of the spill kit
G8	**Infrastructure** 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

G9	All areas significantly disturbed by mining activities must be rehabilitated to a safe, stable and non-polluting landform, with a self-sustaining vegetation cover (except for the residual voids), in accordance with: a) Table G1: Landform Design Criteria; b) Table G2: Final Land Use and Rehabilitation Approval Schedule; c) Table G3: Residual Void Design; d) Table G4: Rehabilitation Schedule; e) Attachment C: Final Landform f) Attachment F: Rehabilitation Requirements; and g) As otherwise detailed in **Condition G21**.

Table G1: 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 G2: 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	111	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 (*Eucalyptus crebra* and other *Eucalyptus spp*. And *Corymbia spp*. Woodland on Cainozoic sand plains/remnant surfaces.)
Roads including haul roads	46	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 (*Eucalyptus populnea* woodland on alluvial plains) Regional Ecosystem 11.7.2 (*Acacia spp*. Woodland on Cainozoic lateritic duricrust. Scarp retreat zone) Regional Ecosystem 11.5.9 (*Eucalyptus crebra* and other *Eucalyptus spp*. And *Corymbia spp*. Woodland on Cainozoic sand plains/remnant surfaces)
Creek diversion and levee banks	371	Low density cattle grazing on native vegetation	5	Retained, with recreated RE 11.3.25 (*Eucalyptus terticornis* or *E. camaldulensis* woodland fringing drainage lines) Thirteen Mile Gully Diversion would be revegetated with species characteristic of RE 11.3.1b (Open forest dominated by *Acacia harpophylla* and/or *Casuarina cristata*), RE 11.3.2c (*Eucalyptus populnea* woodlands on floodplains) and RE 11.3.25 (*Eucalyptus tereticornis* or *Eucalyptus camaldulensis* woodland fringing drainage lines)

In-pit and out-of-pit overburden spoil dumps (Slopes)	691	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 (*Eucalyptus populnea* +/- *E. melanophloia* +/- *Corymbia clarksoniana* on Cainozoic sand plains/remnant surfaces)
In-pit and out-of-pit overburden spoil dumps (upper surface)	1458	Low density cattle grazing on native vegetation and Stage 1 bulk sample pit	5	Native ecosystem** with recreated RE 11.5.3 (*Eucalyptus populnea* +/- *E. melanophloia* +/- *Corymbia clarksoniana* on Cainozoic sand plains/remnant surfaces)
Low wall spoil (above natural ground level)	60	Low density cattle grazing on native vegetation and Stage 1 bulk sample pit	5	Native ecosystem** with recreated RE 11.5.3 on benches (*Eucalyptus populnea* +/- *E. melanophloia* +/- *Corymbia clarksoniana* on Cainozoic sand plains/remnant surfaces)
North residual void	358	Low density cattle grazing on native vegetation	N/A	Residual void
South residual void	163	Low density cattle grazing on native vegetation	N/A	Residual void
Water storage/water management dams	68	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 (*Acacia spp*. Woodland on Cainozoic lateritic duricrust. Scarp retreat zone)

Notes:** Where native ecosystem is defined as recreating 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 G3: 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	358	235	285,870,000
South Void	59	36	30	30	163	199	157,960,000

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 G4: 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

G10	Self-sustaining vegetation, as per **Attachment F**, must be consistent with the reference sites identified in **Table G5: Reference Sites.**

Table G5: Reference Sites

Reference Site	Domain Reference	Easting (GDA94, MGA 55)	Northing (GDA94, MGA 55)	Description
1	• In-pit and out-of-pit spoil dumps	662,226	7,475,606	RE 11.5.3
2	• MIA and CHPP area • Roads including haul roads • Tailings Storage Facility	665,455	7,469,732	RE 11.5.9
3	▪ Roads including haul roads	665,832	7,470,708	RE 11.7.2

G11	Rehabilitation must commence and be undertaken progressively in accordance with: a) the Rehabilitation Management Plan; and **b) Table G4: Rehabilitation Schedule.**

G12	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: 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 G3: 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 G1: Landform Design Criteria**, including end of mine design and schematic representation of final landform inclusive of: 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; 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.
G13	Where there is any inconsistency between the Rehabilitation Management Plan and this environmental authority, the conditions of this environmental authority prevail.
G14	**Rehabilitation Monitoring Program** 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.
G15	The environmental authority holder must review the Rehabilitation Monitoring Program required by **Condition G14** 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: 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.

G16	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: 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 G12** 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 G5: Reference Sites**; f) a statistical analysis of how areas of rehabilitation are meeting the requirements of **Condition G9**; g) the sampling and monitoring intensity used in the Rehabilitation Monitoring Program required by **Condition G14**; 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 G14**.
G17	**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.
G18	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.
G19	Complete an investigation into residual voids and submit a report to the administering authority proposing acceptance criteria to meet the outcomes in **Conditions G17 and G18** and landform design criteria by **31 October 2021**. The investigation must at a minimum include the following: 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. Note: These studies will be undertaken during the life of the mine, and must include detailed research and modelling.
G20	All reasonable and practical measures must be taken to minimise the size of the void remaining after mining activities cease.

G21	**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: 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.
G22	The Post Closure Management Plan must include the following elements: a) operation and maintenance of: 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: 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: i. soil contamination; and ii. landform failure.
G23	Within **twenty (20) business days** of receiving comments from the administering authority on the Post Closure Management Plan submitted in accordance with **Condition G21**, the Post Closure Management must be updated to address the comments and resubmitted to the administering authority.

G24	**Impacts to Prescribed Environmental Matters** Significant residual impacts to prescribed environmental matters as per the *Environmental Offsets Act 2014*, are only authorised to occur: a) for the prescribed environmental matter specified in **Table G6: 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 G6: Significant residual impacts to prescribed environmental matters**, the impacts do not exceed the maximum extent of impact specified for that prescribed environmental matter.
G25	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.

Table G6: 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	63	Yes
Of Concern Regional Ecosystem (not within an urban area) RE 11.3.2b	1	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
Regional ecosystems within the defined distance of a vegetation management watercourse (RE 11.3.2, 11.3.7 and RE 11.3.25)	3.7	Yes
Connectivity areas		
Connectivity area that is a regional ecosystem (not in urban area)	439.5	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 – *Denisonia maculata* (ornamental snake)*	15.5*	No*
	12.81	No
Habitat for an animal that is vulnerable wildlife – *Geophaps scripta scripta* (squatter pigeon)*	569.5*	No*
	233	No
Habitat for an animal that is vulnerable wildlife – *Petauroides volans* (greater glider)*	175*	No*
	63.3	Yes
Habitat for an animal that is vulnerable wildlife – *Phascolarctos cinereus* (koala)*	175*	No*
	63.3	Yes
Habitat for an animal that is special least concern wildlife – *Tachyglossus aculeatus* (short-beaked echidna)	351.5	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.

G26	**Exploration Activities on Mining Lease 70379** The environmental authority holder is authorised to conduct exploration activities, including rehabilitation activities, on Mining Lease (ML) 70379.
G27	**Conditions G28 to G40** only apply to parts of ML70379 where surface rights are held for exploration drilling only.

G28	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 1000 metres squared. Sump size must not exceed 100 metres squared and 2 metres deep.
G29	All clearing of mature trees must be prevented or minimised
G30	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**.
G31	The holder of the environmental authority must not carry out activities within 100m of a Historical, Archaeological or Ethnographic site.
G32	The holder of the environmental authority must not drill, excavate or clear vegetation: 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.
G33	The holder of this environmental authority must consult with the landowner prior to establishing any new roads and tracks.
G34	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.
G35	Tracks are not to be constructed greater than 5m in width.
G36	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: 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. For drill holes that will be mined through within 2 years, the hole must be capped and the sump backfilled as soon as practical, but no later than 6 months after the hole was drilled.

G37	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 **two (2) months** after the hole was drilled, apart from those holes that are still required for monitoring purposes if: 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.
G38	**Conditions G39** and **G40** do not apply to a non-artesian exploration drill hole if: 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.
G39	The holder of the environmental authority must ensure that exploration drill holes do not strike artesian flows of water.
G40	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.
G41	**Rehabilitation of exploration activities on ML70379** For all exploration drill holes on ML70379, the holder of the environmental authority must complete the rehabilitation processes as soon as practical and within **six (6) months** of the completion of exploration activities at those areas. For drill holes that will be mined through within 2 years, the hole must be capped and the sump backfilled as soon as practical, but no later than 6 months after the hole was drilled.
G42	**Condition G43** 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.
G43	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**.

G44	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.

Schedule H: Regulated Structures	
Condition number	**Condition**
H1	**Assessment of consequence category** The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933) at the following times: 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.
H2	A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
H3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933).
H4	**Design and construction[1] of a regulated structure** **Conditions H5 to H9** inclusive do not apply to existing structures. [1] Construction of a dam includes modification of an existing dam — refer to the definitions.
H5	All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933).
H6	Construction of a regulated structure is prohibited unless the holder has submitted a consequence category assessment report and certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.
H7	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933), and must be recorded in the Regulated Dams-Levees register.

H8	Regulated structures must: a) be designed and constructed in accordance with and conform to the requirements of the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (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: i. floodwaters from entering the regulated dam from any watercourse or drainage line; and ii. wall failure due to erosion by floodwaters arising from any watercourse or drainage line.
H9	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and b) construction of the regulated structure is in accordance with the design plan.
H10	**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: a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with **Condition H6**; b) a set of 'as constructed' drawings and specifications; c) certification of those 'as constructed drawings and specifications' in accordance with **Condition H9**; d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan; e) the requirements of this authority relating to the construction of the regulated structure have been met; f) the holder has entered the details required under this authority, into a Register of Regulated Dams; and g) there is a current operational plan for the regulated structures.

H11	For existing structures that are regulated structures: a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within **twelve (12) months** of the commencement of this condition a copy of the certified system design plan including that structure; and b) there must be a current operational plan for the existing structures
H12	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings
H13	**Mandatory reporting level** **Conditions H14 to H17** inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
H14	The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.
H15	The holder must, as soon as practical and within **forty-eight (48) hours** of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
H16	The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
H17	The holder must record any changes to the MRL in the Register of Regulated Structures
H18	**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.
H19	By **1 November** of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).
H20	The holder must, as soon as possible and within **forty-eight (48) hours** of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on **1 November** of any year, notify the administering authority.
H21	The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on **1 November** of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.

H22	**Annual inspection report** Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
H23	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.
H24	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933).
H25	The holder must: a) within **20 business days** of receipt of the annual inspection report, provide to the administering authority: i. the recommendations section of the annual inspection report; and ii. if applicable, any actions being taken in response to those recommendations; and b) if, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within **ten (10) business** days of receipt of the request.
H26	**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
H27	**Decommissioning and rehabilitation** Dams must not be abandoned but be either: a) decommissioned and rehabilitated to achieve compliance with Conditions **G21** to **G31** of this environmental authority; or b) be left in-situ for a beneficial use(s) provided that: i. it no longer contains contaminants that will migrate into the environment; and ii. it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and iii. the administering authority, the holder of the environmental authority and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies).

H28	**Register of Regulated Dams** A Register of Regulated Dams must be established and maintained by the holder for each regulated dam
H29	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
H30	The holder must make a final entry of the required information in the Register of Regulated Dams once compliance with **Condition H10 and H11** has been achieved.
H31	The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.
H32	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.
H33	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.
H34	**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.
H35	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in **Table H1: 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
H36	**Table H1: Transitional hydraulic performance requirements for existing structures** ceases to apply for a structure once any of the following events has occurred: a) it has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or b) it has been decommissioned; or c) it has been certified as no longer being assessed as a regulated structure.
H37	Certification of the transitional assessment required by **Conditions H34 and H35** (as applicable) must be provided to the administering by **22 February 2015**.

Table H1: 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 I: Watercourse Diversion	
Condition number	**Condition**
I1	**Permanent watercourse diversion – Thirteen Mile Gully and Roper Creek** 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.
I2	Permanent watercourse diversions must be designed and constructed to: 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.
I3	**Design plan – All diversions** A certified Design Plan that achieves **Condition I2** must be submitted to the administering authority at least **ten (10) business days** before commencing construction of the diversion.
I4	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
I5	**Construction and operation – All diversions** 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: 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.

I6	**Register – All diversions** 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.

End of Conditions

Definitions

Key terms and/or phrases used in this document are defined in this section. 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.

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).

"affected person" means an affected person under section 38 of the *Environmental Protection Act 1994.*

"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'.

"chemical" means

a) an agricultural chemical product or veterinary chemical product under the *Agricultural and Veterinary Chemicals Code Act 1994* (Cwlth); or

b) a dangerous good under the dangerous goods code; or

c) a drug or poison mentioned on the current Poisons Standard under the Therapeutic Goods Act 1989 (Cwlth); or

d) a substance intended for use as

i) a fertiliser for agricultural, horticultural or garden use, other than mushroom growing substrate or compost; or

ii) a paint or paint solvent, pigment, dye printing ink, industrial polish, degreasing agent, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, biocide or firefighting foam; or

iii) a pesticide, insecticide, fungicide, herbicide, rodenticide, nematicide, miticide, fumigant or related product; or

iv) a surface active agent, including, for example, soap and detergent; or

e) class 1 and 2 combustible liquids under AS1940; or

f) a chemical toxicant for which guidelines are prescribed under the Australian water quality management guidelines.

"commercial place" means any of the following types of premises

a) a hotel, motel, caravan park, café, food store or canteen;

b) an assembly building, institution building, kindergarten, child minding centre, school or other building used for education;

c) premises where a sport or game is ordinarily played in public

d) an exhibition round, show ground or racecourse

e) an office, shop or other premises where business or work, other than a manufacturing process, is carried out.

"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).

"cover material" means any soil or rock suitable as a germination medium or landform armouring.

"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 (e.g. 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.

"land capability" as defined in the DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland.

"land suitability" as defined in the DSITI 2015 "Guideline for Agricultural Land Evaluation in Queensland".

"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;

   (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:

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;

   (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 form 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.

"**total groundwater level**" means the total groundwater level drawdown observed within each monitoring bore measured since the commencement of mining.

"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*.

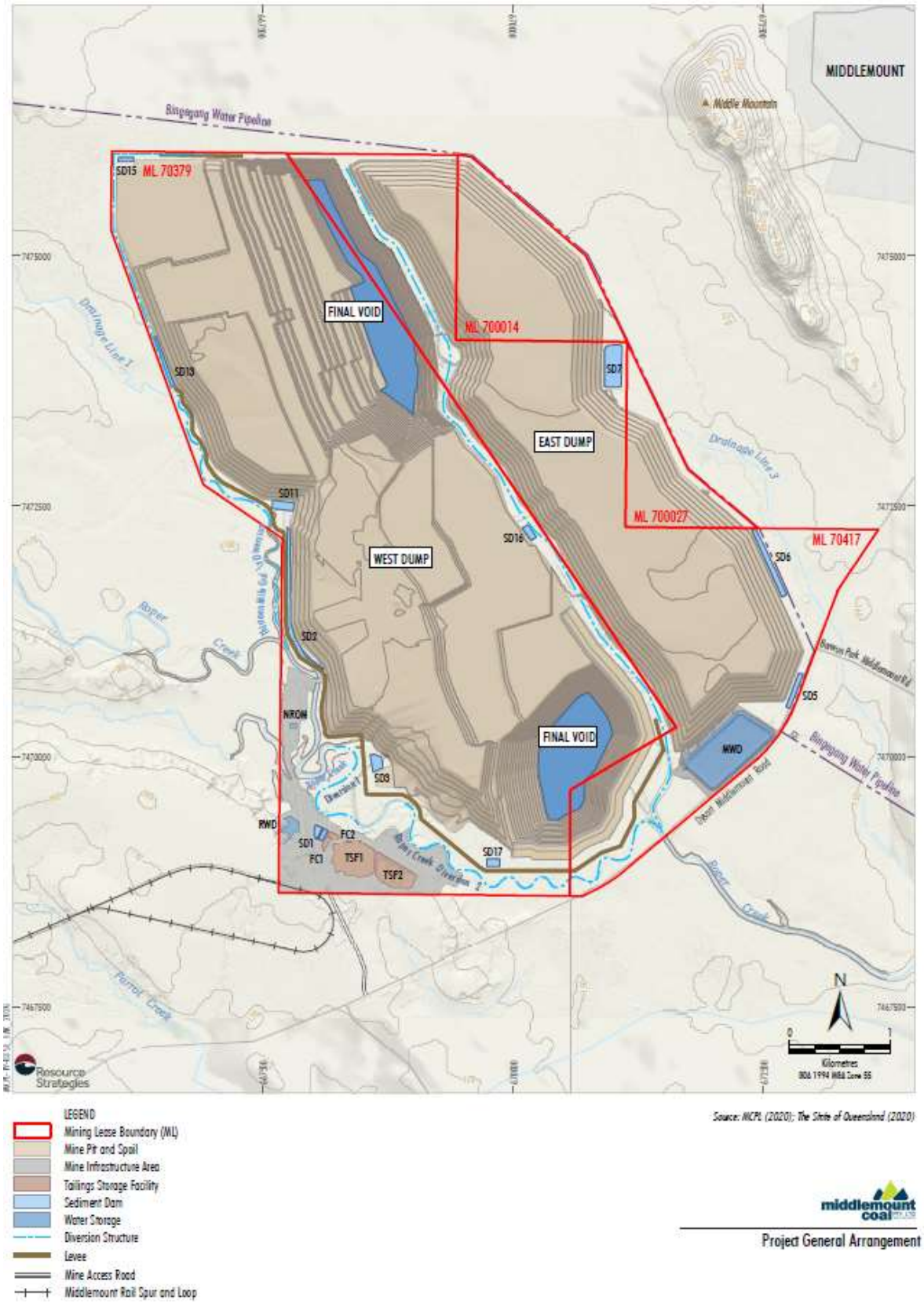
"water quality" means the chemical, physical and biological condition of water.

"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.

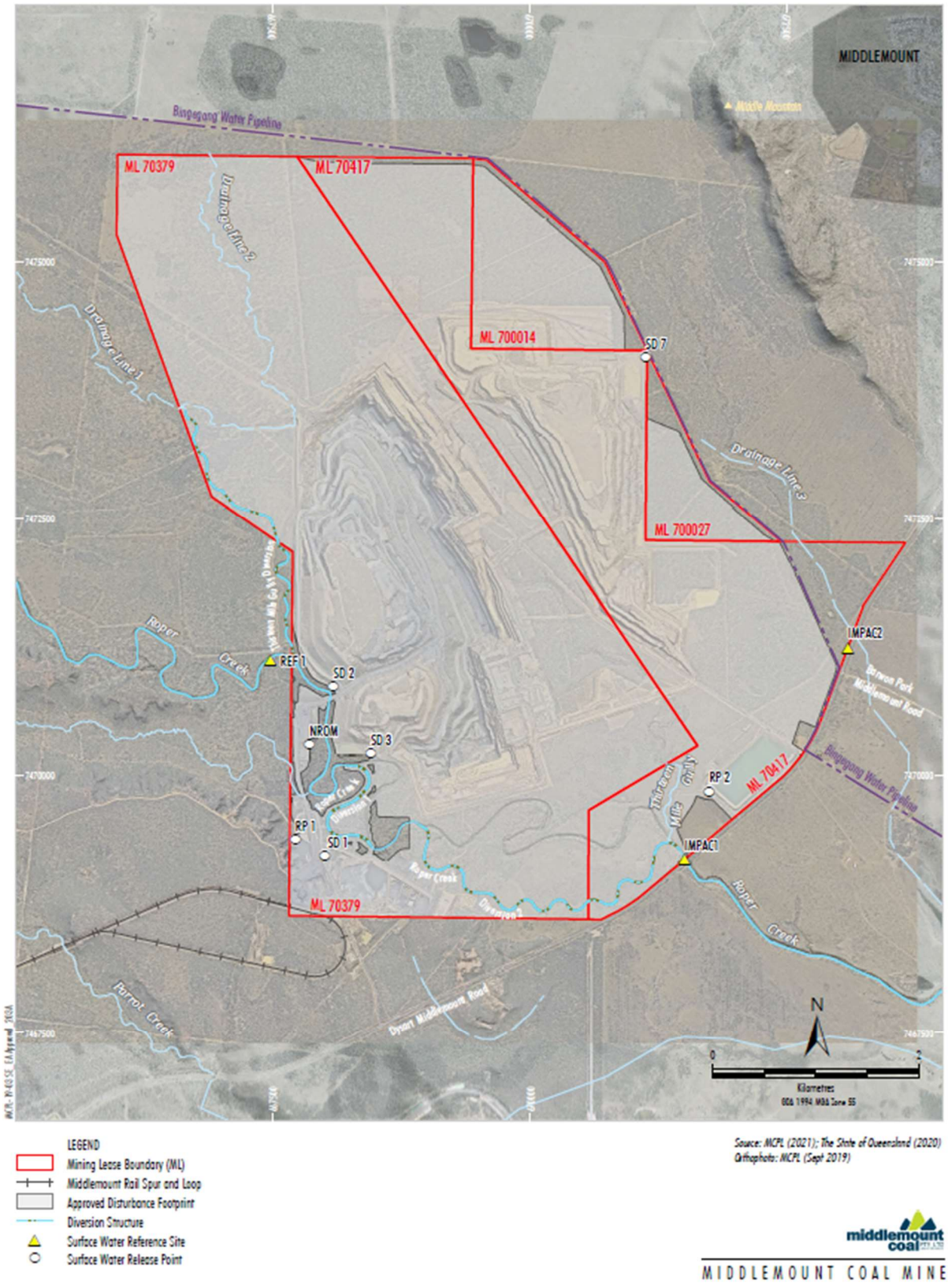
End of Definitions

Appendices

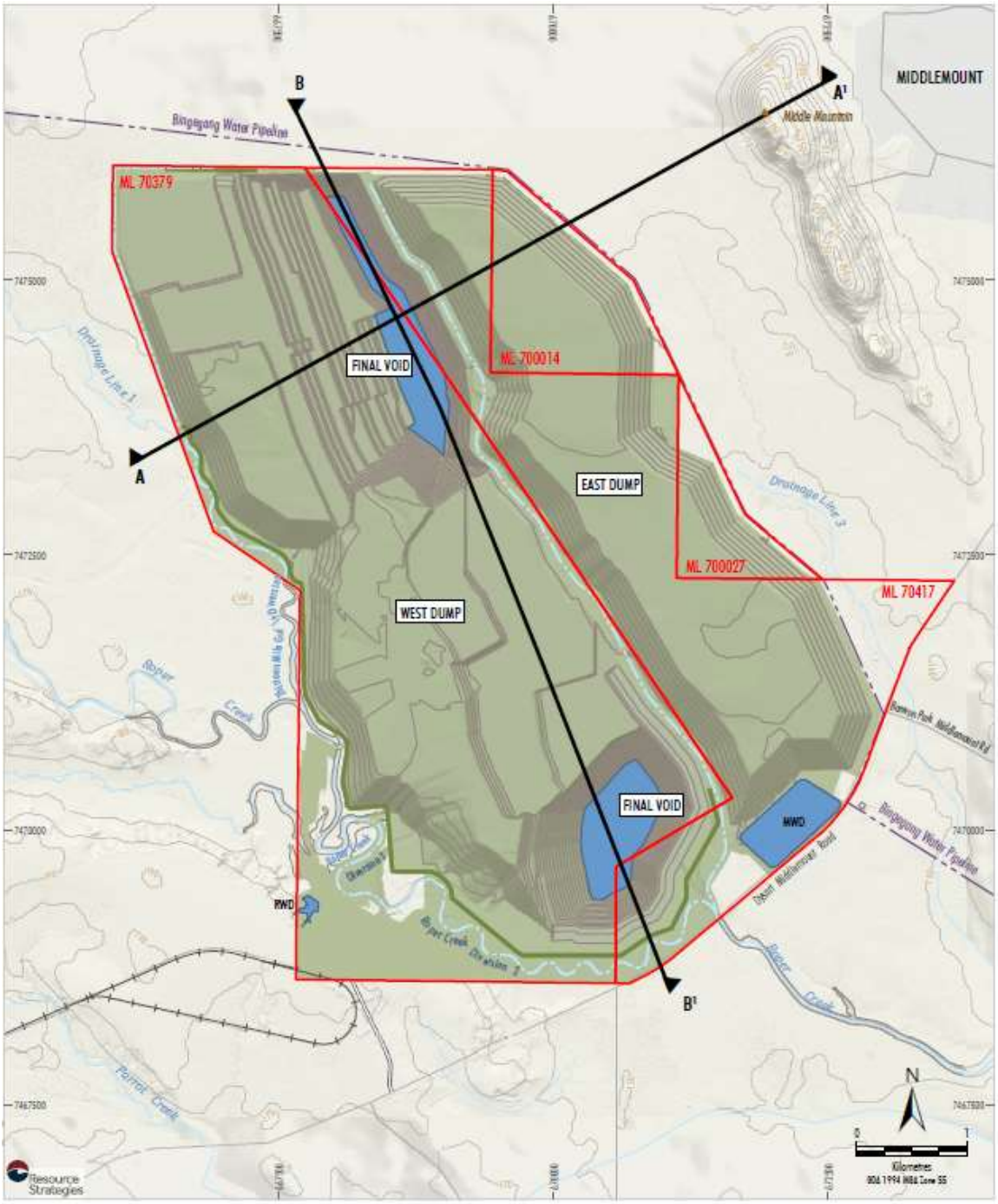
Attachment A: Mining Activities

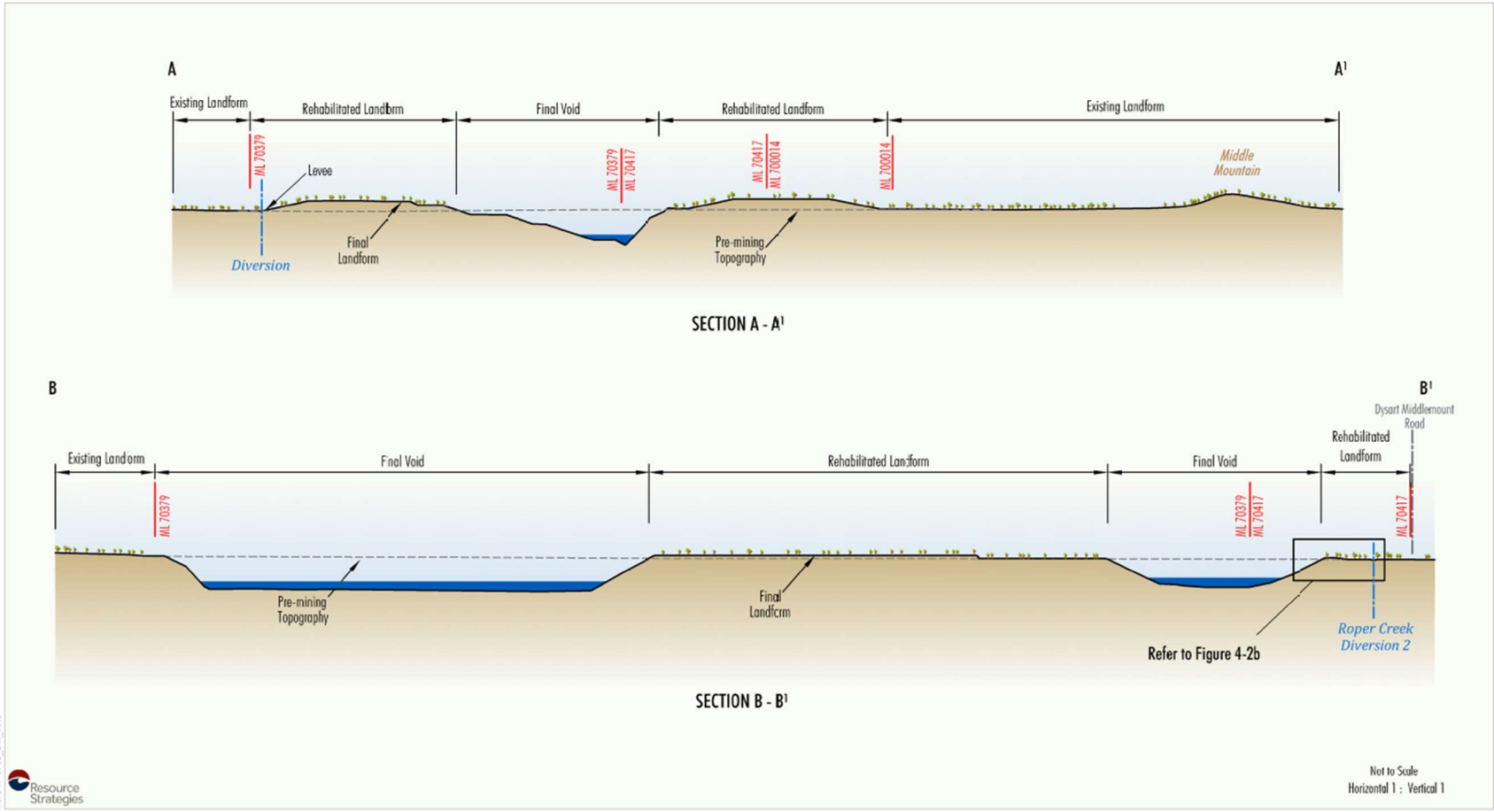


Attachment B: Mine affected water release points



Attachment C: Final Landform



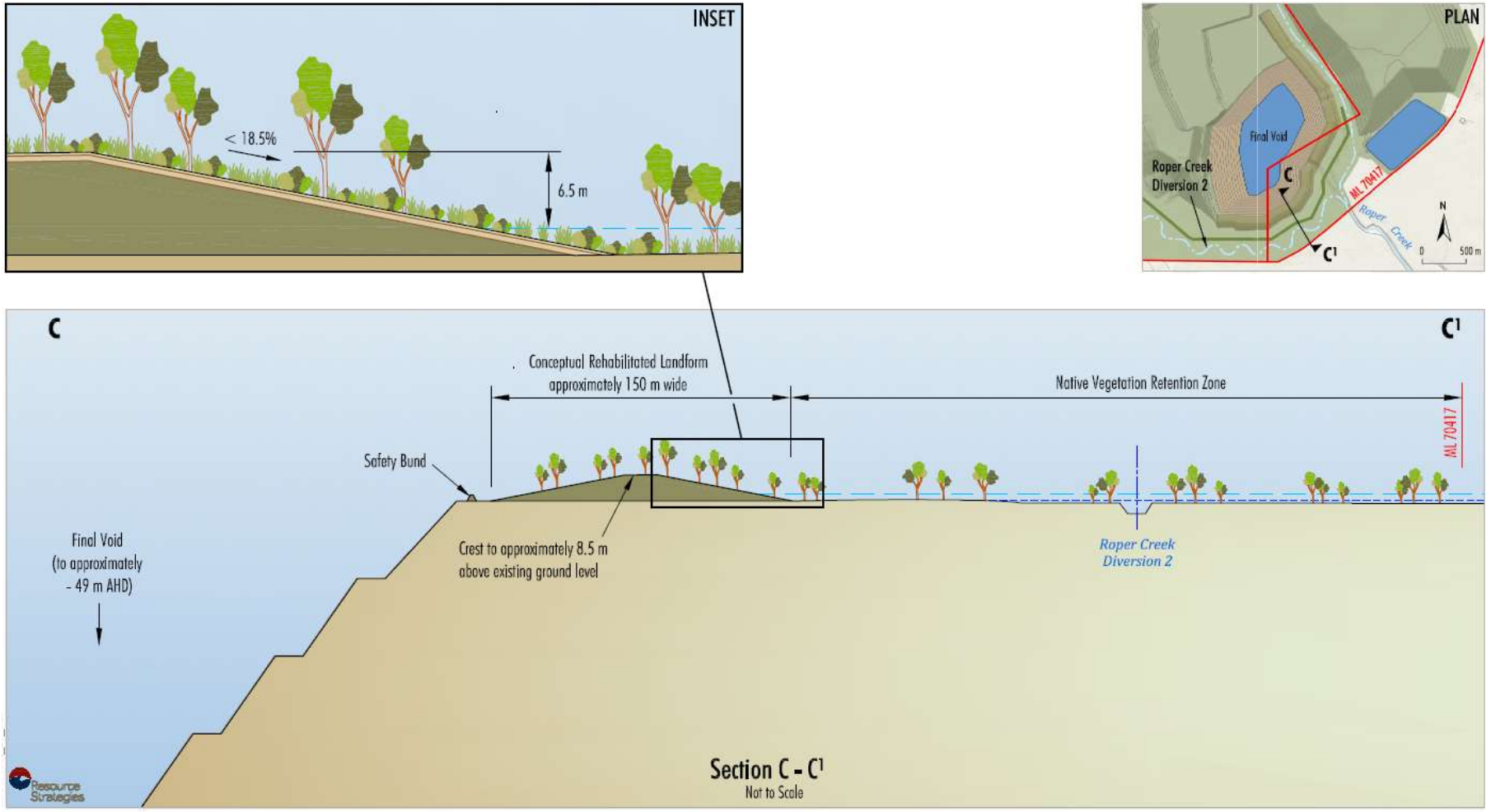


Source: MCPL (2020); AGE (2020)

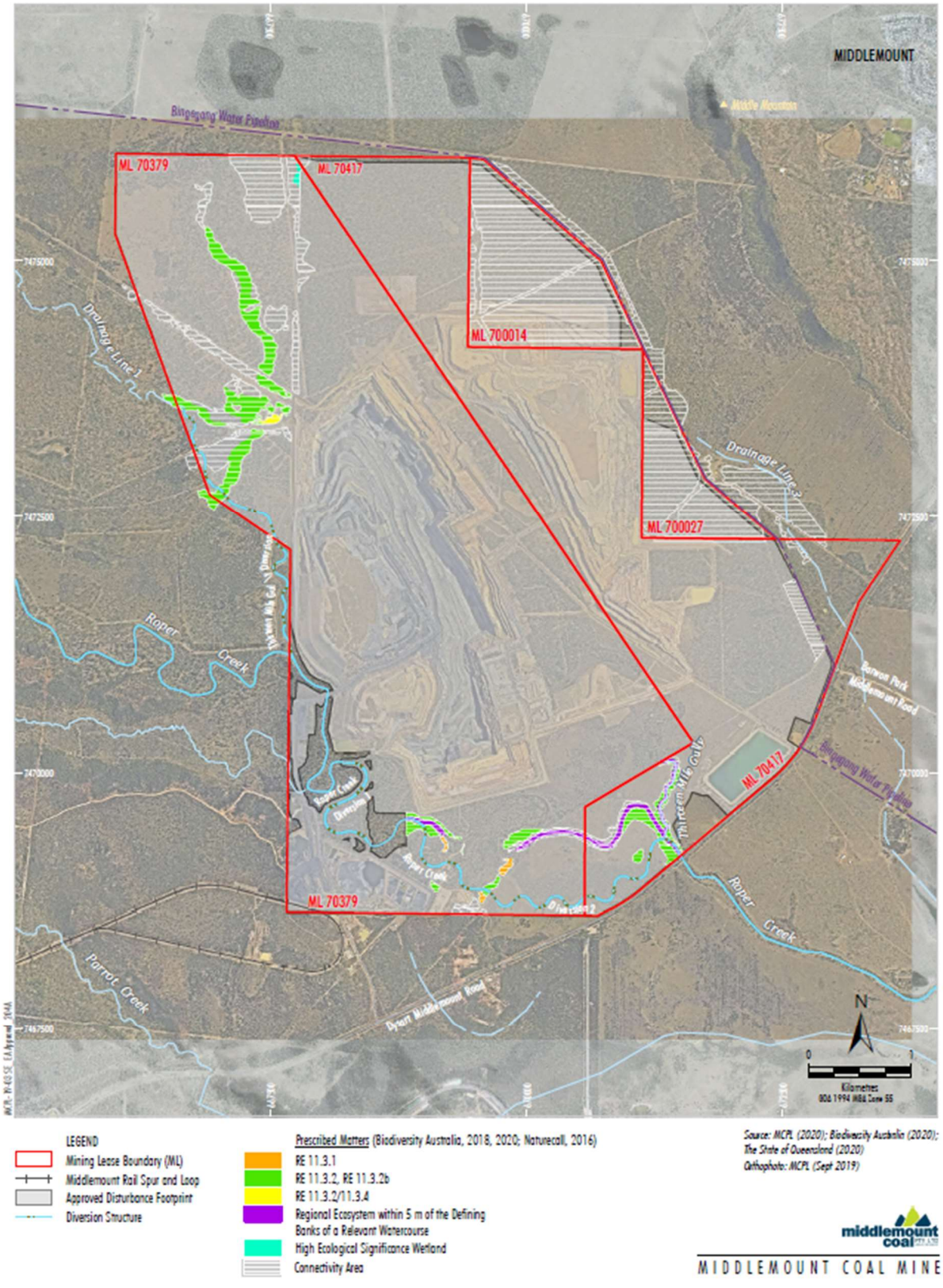
Refer Figure 4-1 for Cross Section locations.

middlemount coal

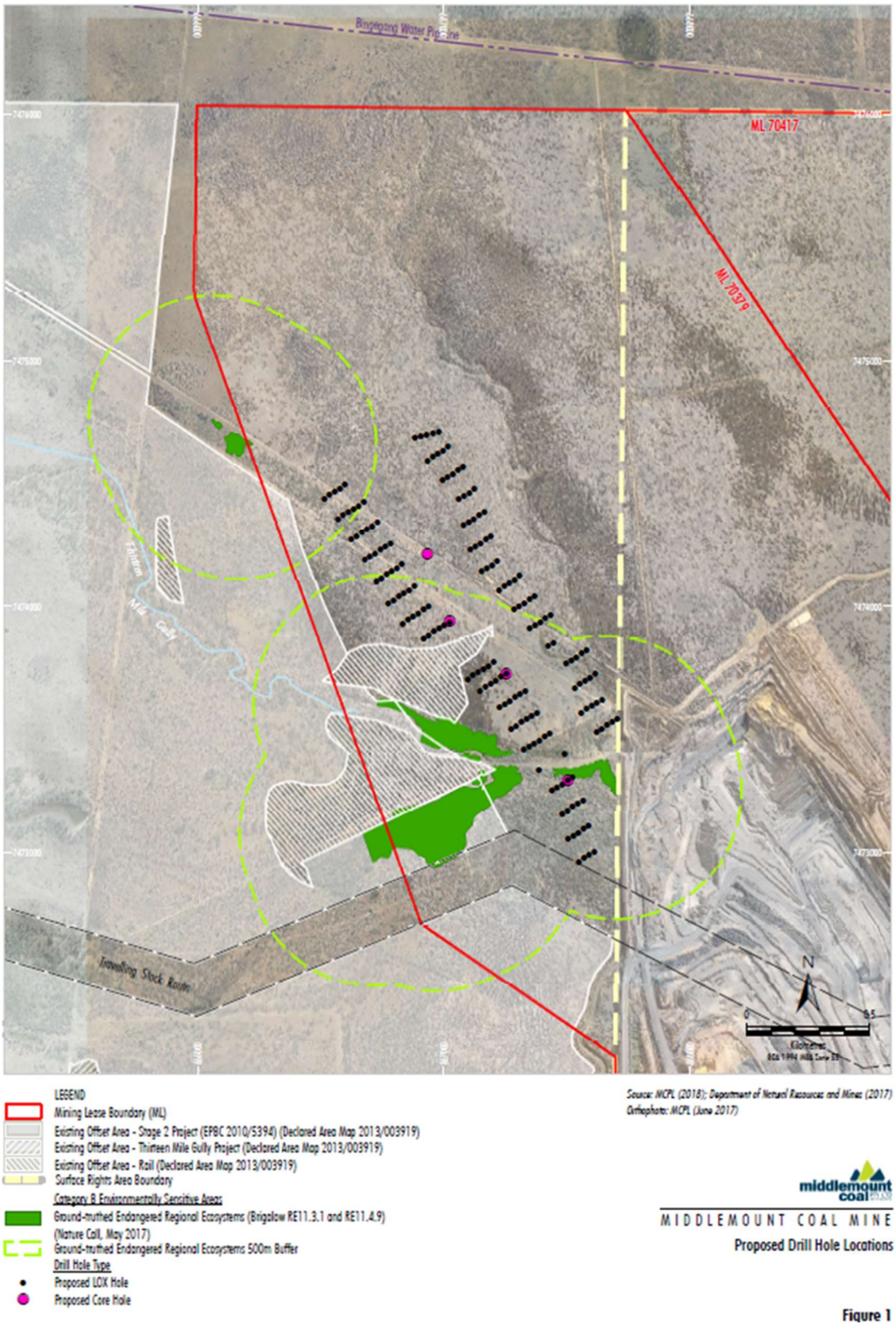
Conceptual Cross Secions of the Rehabilitated Mine Landform


INSET
< 18.5%
6.5 m
PLAN
Final Void
Roper Creek Diversion 2
C
C1
ML 70417
Roper Creek
N
0
500 m
C
C1
Conceptual Rehabilitated Landform approximately 150 m wide
Native Vegetation Retention Zone
ML 70417
Safety Bund
Final Void (to approximately - 49 m AHD)
Crest to approximately 8.5 m above existing ground level
Roper Creek Diversion 2
Section C - C1
Not to Scale
LEGEND
0.1% AEP Flood Level (approximately 155 m AHD) (WRM, 2020)
Probable Maximum Flood (PMF) Level (approximately 156.5 m AHD) (WRM, 2020)
Source: MCPL (2020); WRM (2020); AGE (2020)
middlemount coal
Conceptual Final Landform Design
Relative to the Roper Creek Floodplain

Attachement D: Location of authorised impcts to prescribed enviroenmtal matters



Attachment E: Drill Hole Locations ML70379



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: - 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.	Certification by an appropriately qualified person that the land is safe for the post-mining land use.
			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.	▪ 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		
		No contamination of surface water and groundwater resources.		▪ 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.

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	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: - 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: - 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 m^2 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

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Landform design achieves appropriate erosion rates	Erosion rates and gully formation.	▪ 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	▪ Evidence, certified by an appropriately qualified person, that: - 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	▪ Evidence certified by an appropriately qualified person that: - 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; - Weeds do not dominate native species after disturbance or after rain;

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				- 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	Evidence certified by an appropriately qualified person that for areas established to cattle grazing: - Cattle stocking rate is comparable to designated reference sites; and
			Rehabilitation progress and success rate	

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
			Ongoing sustainability of agreed final land use.	- land maintenance requirements are comparable to designated reference sites ▪ Evidence certified by an appropriately qualified person that for areas established to regional ecosystems: - 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.	Certification by an appropriately qualified person, that final voids are stable, including: - 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

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				foreseeable future, and direct surface water flow away from residual voids; - 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.	Evidence which has been certified by an appropriately qualified person that: ▪ Hydrocarbon, heavy metal or other contamination levels are within allowable departmental limits;
			Risk to humans and animals	- 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	Evidence which is certified by an appropriately qualified person that: - 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		

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: ▪ 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.	Evidence which has been certified by an appropriately qualified person that: - 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.

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: ▪ 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 percent.
	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: ▪ 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: - 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:

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Very low probability of slope slippage with serious consequences.	slope angle, length and profile.	▪ 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 percent.
		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.	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: - 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.
			Topsoil and subsoil support the proposed land use.	

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: ▪ Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence; ▪ Evidence of generational succession of trees and shrubs is apparent is 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.	▪ Evidence certified by an appropriately qualified person that for areas established to cattle grazing: - 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: - 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

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				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.	Evidence which has been certified by an appropriately qualified person that: - 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.	Evidence certified by an appropriately qualified person that: ▪ 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	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: ▪ 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.
			Performance of capping.	

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: ▪ 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. Very low probability of slope slippage with serious consequences.	Safety assessment of landform stability including slope angle, length and profile.	Evidence certified by an appropriate person that: ▪ 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 $5m^2$ 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.
		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.

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: ▪ 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: ▪ 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 is 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; ▪ densities of native tree, shrub and grass species are representative of the target Regional Ecosystems as

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				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.
		Establish land use with comparable management requirements to similarly used non-mining land.	Ongoing sustainability of agreed final land use. Rehabilitation progress and success rate. Achievement of agreed final land use	▪ Evidence certified by an appropriately qualified person that for areas established to cattle grazing: - Cattle stocking rate is comparable to designated reference sites; and - land maintenance requirements are comparable to designated reference sites.

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				▪ Evidence certified by an appropriately qualified person that for areas established to regional ecosystems: - 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.
Low wall spoil (above natural ground level)	Safe to humans and wildlife	Hazardous materials adequately managed.	• Safety assessment of dumps, voids and other slopes. • landform stability including slope angle, length and profile.	Evidence, certified by an appropriately qualified person, that: - 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.		Evidence, certified by an appropriately qualified person, that: ▪ Geotechnical stability has been achieved and geotechnical investigations demonstrating this have been undertaken and reported.

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				▪ 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: ▪ 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: ▪ 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: ▪ 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.
			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

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		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: ▪ 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: ▪ 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: - densities of native tree, shrub and grass species are representative of the target Regional Ecosystems as
			Achievement of agreed final land use	

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
			Ongoing sustainability of agreed final land use.	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.
Water storage/ water management dams	Safe to humans and wildlife	Hazardous materials adequately managed	Contaminated land assessment	Evidence, certified by an appropriately qualified person, that: ▪ 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.	Evidence, certified by an appropriately qualified person, that: ▪ 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:

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.	▪ 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: ▪ 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 m^2 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: ▪ 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: ▪ 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;

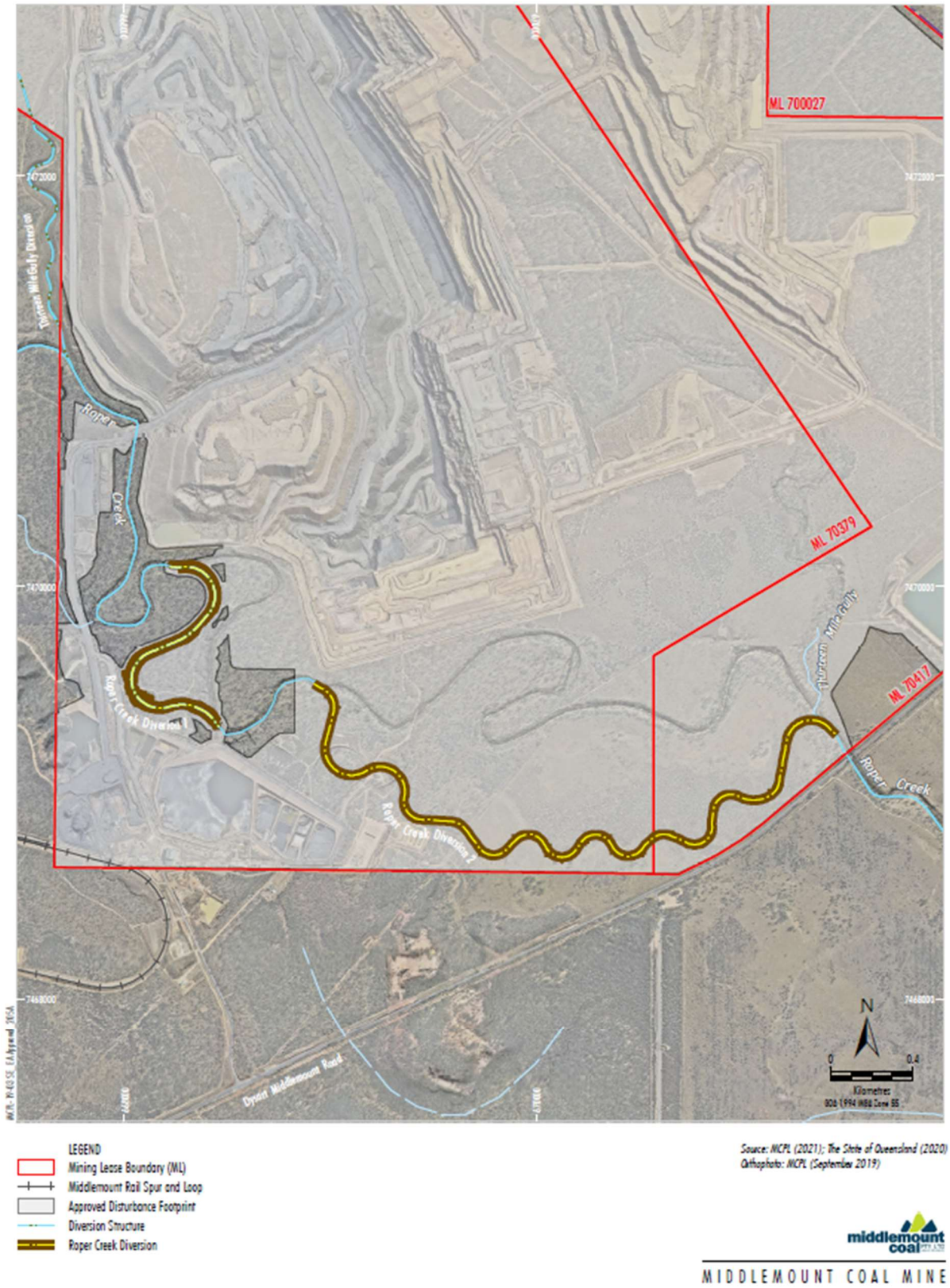
Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				▪ vegetative material layer(s) (e.g. leaf litter) is evident and contributing to nutrient cycling and development of microbial mass; and ▪ nutrient cycling processes are comparable to designated references sites 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.	Evidence, certified by an appropriately qualified person, that: ▪ 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.	Evidence certified by an appropriately qualified person that for areas established to regional ecosystems: - 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.	

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				▪ 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	▪ 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.

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	Able to sustain an agreed post mining land use			▪ 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

Attachment H: Diversion Footprints - Roper Creek



END OF ENVIRONMENTAL AUTHORITY