

Permit¹

Environmental Protection Act 1994

Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project

Permit¹ Number: MIN101017310 – Alpha Coal Mine

Section 226 Environmental Protection Act 1994

This environmental authority takes effect upon the happening of the following event:

1. The grant of MLA70426

Details

Permit Holder(s)	Name	Address
Principal	Hancock Coal Pty Ltd	Level 15, 295 Ann Street, BRISBANE QLD 4000

Activity(s)	Location(s)
1 Drilling, costeaning, pitting or carrying out geological surveys causing significant disturbance. Schedule 6, <i>Environmental Protection Regulation 2008</i>	Mining Lease 70426
2 Investigating the potential development of a mineral resource by large bulk sampling or constructing an exploratory shaft, adit or open pit. Schedule 6, <i>Environmental Protection Regulation 2008</i>	
5 Mining black coal Schedule 6, <i>Environmental Protection Regulation 2008</i>	
7(3)(d) Chemical Manufacturing Manufacturing in a year, a total of 200t or more of any of the following: - Explosives Schedule 2, <i>Environmental Protection Regulation 2008</i>	
8(3)(b) Chemical Storage Storing the following total quantity of chemicals of class C1 or C2 combustible liquids under AS1940 or dangerous goods class 3: - more than 500m ³ Schedule 2, <i>Environmental Protection Regulation 2008</i>	
14(1) Electricity Generation Generating electricity by using gas at a rated capacity of 10MW electrical or more. Schedule 2, <i>Environmental Protection Regulation 2008</i>	
14(2)(a) Electricity Generation Generating Electricity by using a fuel, other than gas, at a rated capacity of 10MW electrical to 150MW electrical. Schedule 2, <i>Environmental Protection Regulation 2008</i>	
17 Abrasive Blasting Abrasive blasting consists of cleaning equipment or structures on a commercial basis using a stream of abrasives in either a wet or dry pressure system. Schedule 2, <i>Environmental Protection Regulation 2008</i>	
18(b) Boilermaking or Engineering Carrying out the relevant activity for producing, in a year, the following quantity of metal product: - more than 10,000t Schedule 2, <i>Environmental Protection Regulation 2008</i>	
31(2)(b) Mineral Processing Processing, in a year, the following quantities of mineral productions, other than coke: - more than 100,000t Schedule 2, <i>Environmental Protection Regulation 2008</i>	

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

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33 Crushing, grinding, milling or screening more than 5,000t of material in a year. <i>Schedule 2, Environmental Protection Regulation 2008</i>	
38(1)(d) Surface Coating Anodising, electroplating, enamelling or galvanising, using, in a year, the following quantity of surface coating materials: - more than 10,000t <i>Schedule 2, Environmental Protection Regulation 2008</i>	
38(2)(b) Surfacing Coating Coating, painting or powder coating, using, in a year, the following quantity of surface coating materials: - more than 100t <i>Schedule 2, Environmental Protection Regulation 2008</i>	
43 Concrete batching Consisting of producing 200t or more of concrete or concrete products in a year, by mixing cement with sand, rock, aggregate or other similar materials. <i>Schedule 2, Environmental Protection Regulation 2008</i>	
56(1) Regulated waste storage Receiving and storing 5t or more or 500 or more equivalent passenger units, of tyres or parts of tyres. <i>Schedule 2, Environmental Protection Regulation 2008</i>	
60(1)(d) Waste Disposal Operating a facility for disposing of, in a year the following quantity of waste under subsection (1)(a): - more than 200,000t <i>Schedule 2, Environmental Protection Regulation 2008</i>	
63(2)(c) Sewage Treatment Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of: - more than 1,500 to 4,000 Equivalent Persons <i>Schedule 2, Environmental Protection Regulation 2008</i>	
64(3) Water Treatment Treating 10ML or more raw water in a day <i>Schedule 2, Environmental Protection Regulation 2008</i>	

The anniversary date of the environmental authority is **2 September**.

The environmental authority is subject to the attached conditions of approval.

Melissa Wells
Delegate of Administering Authority
Environmental Protection Act 1994
2 September 2014

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Additional advice about the approval

1. This approval pursuant to the *Environmental Protection Act 1994* does not remove the need to obtain any additional approval for this activity or comply with any relevant legislative requirements under other state and/or Commonwealth legislation. Other legislation for which a permit may be required for the mining activities includes but is not limited to the:
 - *Strategic Cropping Land Act 2011*;
 - *Wild Rivers Act 2005*;
 - *Aboriginal Cultural Heritage Act 2003*;
 - *Land Protection (Pest and Stock Route Management) Act 2002*;
 - *Nature Conservation Act 1992*;
 - *Vegetation Management Act 1999*;
 - *Mineral Resources Act 1989*;
 - *Water Act 2000*;
 - *Forestry Act 1959*; and
 - *Environmental Protection and Biodiversity Conservation Act 1999*.
2. This approval pursuant to the *Environmental Protection Act 1994* does not absolve the need for the environmental authority holder to adhere to any provision of the *Environmental Protection Act 1994* or of any relevant State and/or Commonwealth legislation. Such provisions include but are not limited to are:
 - Financial assurance Part 6 and section 367 *Environmental Protection Act 1994*;
 - General environmental duty section 319 *Environmental Protection Act 1994*; and
 - Duty to notify of environmental harm section 320 *Environmental Protection Act 1994*.
3. This environmental authority authorises the mining activities specified within the Alpha Coal Mine Environmental Management Plan. Where discrepancies between the Environmental Management Plan and the environmental authority occur, the environmental authority takes precedence.
4. This environmental authority consists of the following Schedules and Appendices:

Schedule A	General Conditions
Schedule B	Air
Schedule C	Water
Schedule D	Noise & Vibration
Schedule E	Waste
Schedule F	Land
Schedule G	Dams
Schedule H	Sewage Treatment
Schedule I	Water Treatment
Schedule J	Community
Schedule K	Figures
Schedule L	Definitions
Appendix 1	Rehabilitation Requirements

Schedule A: General

Financial assurance

- A1** Provide to the administering authority financial assurance for the amount and in the form acceptable to the administering authority in accordance with the most recent edition of the administering authority's Guideline – *Calculating financial assurance for mining projects*, before the proposed mining activities can commence or be varied.
- A2** The amount of financial assurance must be reviewed by the holder of this environmental authority when a plan of operations is amended or replaced or the environmental authority is amended.

Coal Extraction

- A3** The environmental authority holder is approved for a coal extraction rate of up to 45 million tonnes per annum (Mtpa) of run-of-mine (ROM) ore in accordance with this environmental authority.

Maintenance of measures, plant and equipment

- A4** The environmental authority holder must:
- a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;
 - b) maintain such measures, plant and equipment in a proper and efficient condition; and operate such measures, plant and equipment in a proper and efficient manner.

- A5** No change, replacement or alteration of any plant or equipment is permitted if the change, replacement or alteration increases, or is likely to substantially increase, the risk of unlawful environmental harm caused by the mining activities.

NOTE: Change in this case does not refer to trivial changes e.g. a larger and stronger item of equipment replaces a small and outdated item of equipment, it takes up a slightly larger area (ie. Creating a larger area of disturbance, covered by the plan of operations).

Monitoring and records

- A6** Except where specified otherwise in another condition of this authority, all monitoring records or reports required by this environmental authority must be kept for a period of not less than 5 years.
- A7** Upon request from the administering authority, copies of monitoring records and reports must be made available and/or provided to the administering authority's nominated office within 10 business days or by an alternative timeframe agreed between the administering authority and the holder.

- A8** Any management or monitoring plans, systems or programs required to be developed and implemented by a condition of this environmental authority must be reviewed for effectiveness in minimising the likelihood of environmental harm on an annual basis, and amended promptly if required, unless a particular review date and amendment program is specified in the plan, system or program.

NOTE: Change in this case does not refer to trivial changes e.g. a larger and stronger item of equipment replaces a small and outdated item of equipment, it takes up a slightly larger area (ie. Creating a larger area of disturbance, covered by the plan of operations).

Notification of emergencies, incidents and exceptions

- A9** The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.

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- A10** The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency, incident or information about circumstances which results or may result in environmental harm not in accordance with the conditions of this environmental authority or a contravention of the conditions of this environmental authority.
- A11** Not more than 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, written advice must be provided to the administering authority in relation to:
- a) available results and interpretation of any samples taken and analysed; and
 - b) proposed actions to prevent a recurrence of the emergency or incident;
- A12** The notification in conditions A9 and A10 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.

Risk Management

- A13** The holder of this environmental authority must develop and implement a risk management system for mining activities which conforms to the Standard for Risk Management (ISO31000:2009) within 3 months of issue of Environmental Authority.

NOTE: Implementation of a risk management system is not a defence against a breach of any other condition of this environmental authority.

Emergency Response and Contingency Planning

- A14** An emergency response/contingency plan must be developed and implemented within the current plan of operations to manage unacceptable risks identified in the risk management system or the associated monitoring.

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- A15** The emergency response/contingency plan must address the following matters:
- a) response procedures to be implemented to reduce the likelihood of environmental harm from 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.

Third Party Audit

- A16** The holder of the environmental authority must nominate an appropriate third party auditor to audit compliance with the conditions of this environmental authority within 1 year of the commencement of this environmental authority, and then at regular intervals not exceeding 3 years.
- A17** The holder must, at its cost, arrange for independent certification by a third part auditor of findings of the audit report required under condition A16.
- A18** Within ninety 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.
- A19** 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 issues of this environmental authority the holder of this environmental authority must:
- a) comply with the amended or changed standard within 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.

Activity

- A20** Land subject to mining activities, works previously approved under MDL 285, irrespective of its termination; and early works must be rehabilitated to a non polluting, safe, stable and self sustaining landform.
- A21** Contaminants must not be released to the receiving environment unless they are in accordance with the contaminant limits authorised by this environmental authority.
- A22** This environmental authority authorised environmental harm referred to in the conditions. Where no condition or this environmental authority is silent on matter, the lack of a condition or silence does not authorise environmental harm.

- A23** The authorised mine domains and identified areas associated with each domain are listed in *Table 1: Mining Domains* and *Figure 1: Mining Domains*. The domains must not exceed the maximum disturbance areas listed in *Table 1: Mining Domains* and *Figure 1: Mining Domains*.
- NOTE: Variation of mining activities to those identified in Table 1: Mining Domains is considered to be in accordance with these conditions as long as the variation does not cause a significant increase in environmental harm.*
- NOTE: The extent of a domain relates to the domain as a whole, including major features, rather than each use that forms the domain. The major features are listed in the Sub Domain column of Table 1: Mining Domains.*

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Table 1: Mining Domains

Mine Domain	Sub Domain	Tenure Type and Number	Location (central coordinates)		Maximum disturbance area (ha)
			Easting	Northing	
1. Pits and Mine Waste		ML70426	Central portion of the mining lease: running north to south Refer to Figure 1		16,447
	Pits/Voids/ Overburden and Rejects Emplacement	ML70426	445,644.9	7,431,237.6	
	Run of Mine (ROM) stockpile (north)	ML70426	448,265.5	7,433,436.0	
	Run of Mine (ROM) stockpile (south)	ML70426	447,734.3	7,427,288.9	
2. Tailings Storage Facility		ML70426	East of Domain 1 Located in the south-east of the lease		2,237
	Tailings Dams	ML70426	452,022.1	7,425,922.9	
	Tailings Decant Dam	ML70426	450,921.7	7,427,971.9	
3. Infrastructure		ML70426	Eastern portion of the mining lease: running north to south Refer to Figure 1		2,016
	Product stockpile	ML70426	449,646.8	7,431,670.9	
	Landfill	ML70426	451,794.4	7,431,235.2	
	CHPP	ML70426	449,707.4	7,430,741.9	
	Accommodation Village and Raw Water Dam	ML70426	451,429.5	7,435,608.4	
	LIA	ML70426	451,490.9	7,436,965.0	
	MIA	ML70426	450,314.6	7,429,793.3	
	Water Treatment	ML70426	454,237.1	7,433,195.4	
	Sewage Treatment	ML70426	451,754.1	7,437,629.6	
	Train Load Out facility	ML70426	449,65.8	7,432,627.6	
4. Remainder of Mining Lease Area	Exploration, Utilities and Land Management	ML70426	Areas within the mining lease that are not included in the above three domains. Refer to Figure 1		32,840

A24 Mining activities which will result in land becoming significantly disturbed must only occur within the mine domains identified within *Table 1: Mining Domains*.

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Definitions

- A25** 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

Dust Nuisance

- B1** The release of dust and/or particulate matter resulting from the mining activity must not cause an environmental nuisance at any nuisance-sensitive place
- B2** Exceedence of any of the following levels when measured at any nuisance sensitive place is an environmental nuisance for the purposes of B1:
- a) a level of deposited dust of 120 milligrams per square metre per day based on a monthly average;
 - b) a concentration of total particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1 year averaging time.

Dust Compliance

- B3** The Environmental Authority holder must take all reasonable and practical measures to limit the concentration of particulate matter generated by the mining activities to an aerodynamic diameter of less than 10 micrometres (PM10) of 50 micrograms per cubic metre over a 24-hour averaging time at any nuisance sensitive place with no more than five exceedences recorded over twelve months.
- B4** Where monitoring at location identified in *Table 2: Air Quality Monitoring Details* indicates that the air quality levels detailed in conditions B2 and B3 have been exceeded the holder must investigate the matter and report to the administering authority within 14 days of receipt of monitoring results:
- a) The concentration of PM10 particles or dust deposition rate recorded;
 - b) A description of meteorological conditions occurring at the time; and
 - c) The measures taken to reduce dust generated by the mining activities.

Ambient Dust Monitoring Program

- B5** Prior to the commencement of mining activities other than mineral development maintenance activities for the project, the holder must develop and submit for approval to the administering authority, an Ambient Dust Monitoring Program (as outlined in *Table 2: Air Quality Monitoring Details*), to specify how the ambient dust impacts of the project will be monitored. The program shall include, but not necessarily be limited to:
- a) procedures for monitoring dust emissions from the project, in accordance with the requirements of this approval;
 - b) locations, frequencies and methods for monitoring PM10 and deposited particulate matter;
 - c) provision for the use of at least three Tapered Element Oscillating Microbalance Samplers (TEOMS), five dust depositional gauges and one meteorological station capable of monitoring wind direction and speed;
 - d) investigation of the use of TEOMS as part of the integrated air quality monitoring network. Should an alternative sampling method be proposed; the holder may seek approval from the administering authority to exclude this requirement. In seeking such exclusion, the reasons for the exclusion shall be provided and be fully justified;
 - e) the holder shall utilise real time monitoring data to inform environmental management decisions associated with the project;
 - f) a framework for identifying actual and potential dust impacts, and for applying proactive and reactive mitigation and management measures to address those impacts;
 - g) provision for independent review and auditing of the Program; and

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h) mechanisms for updating the Program.

B6 Ongoing monitoring must be conducted in accordance with the standards, and at the locations specified in *Table 2: Air Quality Monitoring Details*.

Table 2: Air Quality Monitoring Details

Air Quality Determination	Sampling Frequency	Monitoring Standard	Monitoring Point Description	Approximate Monitoring Point Location	
				Easting (m)	Northing (m)
PM ₁₀	Hourly	AS 3580.9.8:2008: Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM ₁₀ continuous direct mass method using a tapered element oscillating microbalance (TEOM) analyser	AQMS(1): Forrester Homestead	446,462	7,460,888
			AQMS(9): Monklands Homestead	445,097	7,411,185
			AQMS(12): Alpha Coal Project Accommodation Village	455,734	7,435,283
Dust deposition	Monthly	AS 3580.10.1:2003: Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method	DG(1): Forrester Homestead	446,462	7,460,888
			DG(2): Monklands Homestead	445,097	7,411,185
			DG(3): Alpha Coal Project Accommodation Village	451,429	7,435,608
			DG(4): Kia-Ora Homestead	437,918	7,414,891
			DG(5): Surbiton Homestead	461,950	7,440,055
Meteorological data ¹	Hourly	AS 2923:1987: Ambient air - Guide for measurement of horizontal wind for air quality applications	MS1: Alpha Coal Project Accommodation Village	455,734	7,435,283

¹ Wind speed and direction, humidity, temperature and precipitation.

B7 Where monitoring at locations identified in condition B6 indicates that the air quality levels detailed in conditions B2 and B3 have been exceeded, the holder of this environmental authority must investigate the matter and report to the administering authority within 14 days of receipt of monitoring results:

- the concentration of PM₁₀ particulates or dust deposition rate recorded;
- a description of meteorological conditions occurring at the time; and
- the measures taken to reduce dust generated by the mining activities.

B8 When requested by the administering authority or as a result of a complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer):

- additional dust and particulate monitoring (including dust deposition, total suspended particles (TSP), PM₁₀ and PM_{2.5}) must be undertaken at a place(s) relevant to the potentially affected nuisance sensitive place in accordance with the standards specified in *Table 2: Air Quality Monitoring Details*; and
- the results of the additional monitoring must be notified to the administering authority within 14 days following the receipt of the results by the holder. This includes providing interim reports if the monitoring lasts for more than one month.

NOTE: This monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place. Monitoring must be conducted in accordance with the appropriate standards.

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- B9** If monitoring conducted as a result of a complaint indicates an exceedance of the air quality levels detailed in conditions B2 and B3, the holder must:
- a) address the complaint through the use of appropriate dispute resolution if required; and
 - b) implement appropriate dust abatement measures.
- B10** The results of PM10, dust deposition and meteorological monitoring must be reported to the administering authority on request.
- B11** If requested, the results of PM10, dust deposition and meteorological monitoring must be made available for use in any air quality monitoring network in the region operated independently of mining activities.

Model Evaluation

- B12** Following one full year of data collection (after the commencement of mining activities) in accordance with an approved Ambient Dust Monitoring Program the holder shall undertake a model validation study to review PM10 and dust deposition levels to assess compliance with the dust impact predictions made in the document entitled "*Alpha Coal Mine Project Air Quality Assessment Report Model Refinements (post consultation update)* (URS, May 2012)" and with the ambient air quality levels specified in Conditions B2 and B3. The model validation study shall be undertaken in accordance with NSW DECC *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (DECC, 2005), or other relevant guideline specified by the administering authority.
- B13** Within 28 days of conducting the dust validation study referred to under condition B12 of this approval, the holder shall provide a copy of the report to the administering authority. If the dust validation study identifies additional exceedances at any nuisance sensitive place to those stated in the ambient air quality levels stated in this environmental authority, the holder shall detail what additional measures would be implemented to further mitigate dust impacts. The holder shall clearly indicate who would implement these measures, when these measures would be implemented, and how the effectiveness of these measures would be assessed and reported to the administering authority.

Dust Management Plan

- B14** The holder must develop and implement a Dust Management Plan to outline measures to minimise and manage any impacts from the operation of the project on local air quality. The Dust Management Plan shall include, but not necessarily be limited to:
- a) identification of all major sources of dust emissions that may occur as result of the operation of the project;
 - b) description of the procedures to manage the dust emissions from the sources identified;
 - c) collection of air quality and meteorological data at location and using the methods described in condition B5;
 - d) identification of adverse meteorological conditions likely to produce elevated levels of PM10 at a nuisance sensitive place due to the mining activities;
 - e) development of a method for using weather forecasting data for on-site dust management;
 - f) integration of the dust control strategy with the weather forecast data feed that would activate the timely management of dust control in addition to the best practice dust control measures during the adverse meteorological conditions;
 - g) protocols for regular maintenance of plant and equipment, to minimise the potential for fugitive dust emissions; and
 - h) description of procedures to be undertaken if any non-compliance is detected.

Dust Control

- B15** The holder must design, construct, commission, operate and maintain the project in a manner that minimises the emission of dust from the site including wind blown and traffic generated dust.
- B16** The holder must design, construct, operate and maintain the project in a manner that minimises the potential generation of fugitive dust emission from plant and equipment.
- B17** For the purpose of avoiding any release of dust or particulate matter from the approved place which could cause an environmental nuisance, the following measures must be taken:
- a) stockpiles must be maintained using all reasonable and practicable measures to minimise the release of wind blown dust or particulate matter to the atmosphere to ensure compliance with air quality levels detailed in condition B2 and B3;
 - b) trafficable areas must be maintained using all reasonable and practicable measures to minimise the release of windblown dust or traffic generated dust to the atmosphere to ensure compliance with air quality levels detailed in condition B2 and B3;
 - c) raw material preparation plants and external transfer conveyors must be operated and maintained using all reasonable and practicable measures to minimise the release of wind blown dust or particulate matter to the atmosphere to ensure compliance with air quality levels detailed in condition B2 and B3; and
 - d) dust mitigation measures must be implemented at all other dust emission sources.

Odour Nuisance

- B18** 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 place.
- B19** 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 nuisance sensitive place, and the results must be notified to the administering authority within 14 days of their receipt by the holder.
- B20** If the administering authority determines that the odour released constitutes an environmental nuisance, then 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.

Meteorological Monitoring

- B21** The environmental authority holder must establish and maintain a permanent automatic meteorological station to continuously measure and record wind speed, wind direction, temperature, relative humidity and rainfall intensity.

NOTE: it is possible for environmental authority holders to utilise relevant and available weather monitoring information collected by other parties as reference data for the purpose of this condition.

- B22** The holder must record, compile and keep all monitoring records obtained from the automatic meteorological station.

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Schedule C: Water

Release of Contaminants

- C1** Contaminants that will or have the potential to cause serious or material environmental harm must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.

Discharge of Mine Affected Water

- C2** Unless otherwise permitted under the conditions of this environmental authority, the release of mine affected water to waters must only occur from the release points specified in *Table 3: Mine Affected Water Release Points, Sources and Receiving Waters* and depicted in *Figure 2: Mine Affected Water Release Points* attached to this environmental authority.

Table 3: Mine Affected Water Release Points, Sources and Receiving Waters

Release Point (RP)	Northing (GDA94)	Easting (GDA94)	Contaminant Source and Location	Monitoring Point	Receiving waters description
RP1	7421246N	447833E	Sediment Dam SD1a	Outlet works direct into Lagoon Creek – from release point.	Lagoon Creek
RP2	7426055N	448273E	Sediment Dam SD2b	Outlet works direct into Lagoon Creek – from release point.	Lagoon Creek
RP3	7434017N	448698E	Sediment Dam SD4b	Outlet works direct into Lagoon Creek – from release point.	Lagoon Creek
RP4	7442446N	449801E	Sediment Dam SD6b	Outlet works direct into Lagoon Creek – from release point.	Lagoon Creek
RP5	7429529N	449501E	Environment Dam 1 (MIA Runoff Containment Dam)	Spillway	Lagoon Creek
RP6	7429529N	449501E	Environment Dam 1 (MIA Runoff Containment Dam)	Outlet works direct into Lagoon Creek – from release point.	Lagoon Creek
RP7	7431115N	449364E	Environment Dam 2 (CHPP Runoff containment dam)	Spillway	Lagoon Creek
RP8	7431115N	449364E	Environment Dam 2 (CHPP Runoff containment dam)	Outlet works direct into Lagoon Creek – from release point.	Lagoon Creek
RP9	7430295N	452551E	Tailings Storage Facility Decant Dam	Spillway	Lagoon Creek
RP10	7430295N	452551E	Tailings Storage Facility Decant Dam	Outlet works direct into Lagoon Creek – from release point	Lagoon Creek
RP11	7430295N	452551E	Brine Dam	Spillway	Lagoon 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 C33 to C38 inclusive is permitted.

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- C4** The release of mine affected water to waters in accordance with condition C2 must not exceed the release limits stated in *Table 4: Mine Affected Water Release Limits*, when measured at the monitoring points specified in *Table 3: Mine Affected Water Release Points, Sources and Receiving Waters*, for each quality characteristic.

Table 4: Mine Affected Water Release Limits

Quality Characteristic	Release Limit	Monitoring Frequency
Electrical conductivity (µS/cm)	Release limits specified in Table 6 for variable flow criteria.	Continuously
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Continuously
Suspended Solids (mg/L)	387	Monitoring to be commenced within 2 hours of commencement of the release, and then at 24 hours thereafter.
Sulphate (SO ₄ ²⁻) (mg/L)	Release limits specified in Table 6 for variable flow criteria.	Monitoring to be commenced within 2 hours of commencement of the release, and then at 24 hours thereafter.

- C5** The release of mine affected water to waters from the release points must be monitored at the locations specified in *Table 3: Mine Affected Water Release Points, Sources and Receiving Waters* for each quality characteristic and at the frequency specified in *Table 4: Mine Affected Water Release Limits* and *Table 5: Release Contaminant Trigger Investigation Levels*.

- C6** If quality characteristics of the release exceed any of the trigger levels specified in *Table 5: Release Contaminant Trigger Investigation Levels* during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in *Table 5: Release Contaminant Trigger Investigation Levels* 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 5: Release Contaminant Trigger Investigation Levels* for any quality characteristics, 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 in the next annual return, outlining:
 - details of the investigations carried out; and
 - 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 authority must notify the administering authority within 14 days of receiving the result.

Table 5: Release Contaminant Trigger Investigation Levels

Quality Characteristic	Trigger Level	Monitoring Frequency
Aluminium (µg/L) ¹	55	Monitoring to be commenced within 2 hours of commencement of the release, and then daily thereafter.
Arsenic (µg/L) ¹	13	
Cadmium (µg/L) ¹	0.2	
Chromium (µg/L) ¹	1	
Copper (µg/L) ¹	2	
Iron (µg/L) ¹	300	
Lead (µg/L) ¹	4	
Mercury (µg/L) ¹	0.2	
Nickel (µg/L) ¹	11	
Zinc (µg/L) ¹	8	
Boron (µg/L) ¹	370	
Cobalt (µg/L) ¹	90	
Manganese (µg/L) ¹	1900	
Molybdenum (µg/L) ¹	34	
Selenium (µg/L) ¹	10	
Silver (µg/L) ¹	1	
Uranium (µg/L) ¹	1	
Vanadium (µg/L) ¹	10	
Ammonia (µg/L) ¹	900	
Nitrate (µg/L) ¹	1100	
Petroleum hydrocarbons (C6-C9) (µg/L) ¹	20	
Petroleum hydrocarbons (C10-C36) (µg/L) ¹	100	
Fluoride (µg/L) ²	2000	
Sodium (µg/L) ¹	180000	

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

² Fluoride must be measured as total (unfiltered).

Mine Affected Water Release Events

- C8** The holder must ensure a stream flow gauging station/s is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in *Table 6: Mine Affected Water Release during Flow Events*.
- C9** Notwithstanding any other condition of this environmental authority, 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 6: Mine Affected Water Release during Flow Events* when measured at the monitoring points specified in *Table 3: Mine Affected Water Release Points, Sources and Receiving Waters*.

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- C10** The release of mine affected water to waters in accordance with condition C2 must not exceed the Electrical Conductivity and Sulphate release limits or the Maximum Release Rate (for all combined release points flows) for each receiving water flow criteria for discharge specified in *Table 6: Mine Affected Water Release during Flow Events* when measured at the monitoring points specified in *Table 3: Mine Affected Water Release Points, Sources and Receiving Waters*.

Table 6: Mine Affected Water Release during Flow Events

Receiving waters	Release Point (RP)	Gauging Station ¹	Gauging Station Northing (GDA94) ¹	Gauging Station Easting (GDA94) ¹	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for discharge (m ³ /s)	Maximum release rate for all combined RP flows (m ³ /s)	Electrical Conductivity and Sulphate Release Limits
Lagoon Creek	RP1 RP2 RP3 RP4 RP5 RP6 RP7 RP8 RP9 RP10 RP11	MP1	7419656	447619	Continuous	<5 m ³ /s	1 m ³ /s	Maximum Electrical Conductivity: 250 µS/cm Maximum Sulphate (SO ₄ ²⁻): 250 mg/L
						>5 m ³ /s to 10 m ³ /s	1.7 m ³ /s	Maximum Electrical Conductivity: 2500 µS/cm Maximum Sulphate (SO ₄ ²⁻): 985 mg/L
						10 m ³ /s to 15 m ³ /s	3.5 m ³ /s	
						15 m ³ /s to 20 m ³ /s	5.2 m ³ /s	
						20 m ³ /s to 25 m ³ /s	6.9 m ³ /s	Maximum Electrical Conductivity: 3500 µS/cm Maximum Sulphate (SO ₄ ²⁻): 1800 mg/L
						25 m ³ /s to 50 m ³ /s	4 m ³ /s	
						> 50 m ³ /s	8 m ³ /s	

- C11** The daily quantity of mine affected water released from each release point must be measured and recorded at the monitoring points in *Table 3: Mine Affected Water Release Points, Sources and Receiving Waters*.

- 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.

Cessation of Release

- C13** During the release of mine affected water to waters from the release points, the receiving waters must be monitored at the locations specified in *Table 7: Receiving waters release limits* for each quality characteristic and at the frequency specified in *Table 7: Receiving waters release limits*.

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- C14** Notwithstanding any other condition of this environmental authority, the release of mine affected water:
- must not commence if the water quality at the upstream site in *Table 7: Receiving water release limits* exceeds the water quality characteristics; and
 - must cease if the water quality characteristics at the downstream or the upstream sites in *Table 7: Receiving waters release limits* are met and or exceeded.

Table 7: Receiving waters release limits

Monitoring Point	Northing (GDA94)	Easting (GDA94)	Quality Characteristic	Limit	Monitoring Frequency
Upstream					
MP1	7419656	447619	Electrical conductivity (µS/cm)	700	Continuously
Downstream					
MP6	7444277	449480	Electrical conductivity (µS/cm)	700	Continuously

- C15** In accordance with conditions C14(b), the release of mine affected water may recommence after a cessation if the water quality characteristics in *Table 7: Receiving waters release limits* are below the water quality characteristics at the downstream and upstream sites in *Table 7: Receiving waters release limits*.

NOTE: If the release of mine affected water is ceased under condition C14, and the water quality within the receiving environment drops below the water quality characteristic limit in Table 7: Receiving water release limits, the release may recommence if all other release conditions are complied with.

Notification of Release Event

- C16** The environmental authority holder must notify the administering authority as soon as practicable and no later than 24 hours after commencing to release mine affected water to the receiving environment. Notification must include the submission of written advice to the administering authority of the following information:
- release commencement date/time;
 - expected release cessation date/time;
 - release point/s;
 - release volume (estimated);
 - receiving water/s including the natural flow rate; and
 - and details (including available data) regarding likely impacts on the receiving water(s).

NOTE: Notification to the administering authority must be addressed to the Manager and Project Manager of the local administering authority via email or facsimile.

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- C17** The environmental authority holder must notify the administering authority as soon as practicable (nominally within 24 hours after cessation of a release event) of the cessation of a release notified under condition C16 and within 28 days provide the following information in writing:
- a) release cessation date/time;
 - b) natural flow volume in receiving water;
 - c) volume of water released;
 - d) details regarding the compliance of the release with the conditions of Department Interest: water of this environmental authority (i.e. contamination limits, natural flow, discharge volume);
 - e) all in-situ water quality monitoring results; and
 - f) any other matters pertinent to the water release event.

NOTE: Successive or intermittent releases occurring within 24 hours of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purpose of compliance with condition C16 and C17, provided the relevant details of the release are included within the notification provided in accordance with conditions C16 and C17.

Notification of Release Event Exceedance

- C18** If the release limits defined in *Table 4: Mine Affected Water Release Limits* are exceeded, the holder of the environmental authority must notify the administering authority within 24 hours of receiving the results.
- C19** The authority holder must, within 28 days of a release that exceeds the conditions of this authority, provide a report to the administering authority detailing:
- a) the reason of the release;
 - b) the location of the release;
 - c) all water quality monitoring results;
 - d) any general observations;
 - e) all calculations; and
 - f) any other matters pertinent to the water release event.

Monitoring of Water Storage Quality

- C20** Water storage containing mine affected water which are accessible to livestock must be monitored for the water quality characteristics and at the monitoring frequency specified in *Table 8: Onsite Water Storage Contaminant Limits*.
- C21** In the event that water storages exceed the contaminant limits defined in *Table 8: Onsite Water Storage Contaminant Limits*, the holder of the environmental authority must implement measures, where practicable, to prevent access to waters by all livestock.

Table 8: Onsite Water Storage Contaminant Limits

Quality Characteristic	Water Storage Contaminant Limit	Monitoring Frequency
pH (pH unit)	6.5 (minimum) 9.0 (maximum)	Quarterly
EC (µS/cm)	5970	
Sulphate (mg/L)	1000 ¹	
Fluoride (mg/L)	2 ¹	
Aluminium (mg/L)	5 ¹	
Arsenic (mg/L)	0.5 ¹	
Cadmium (mg/L)	0.01 ¹	
Cobalt (mg/L)	1 ¹	
Copper (mg/L)	1 ¹	
Lead (mg/L)	0.1 ¹	
Nickel (mg/L)	1 ¹	
Zinc (mg/L)	20 ¹	

¹ All metals and metalloids must be measured as total (unfiltered).

Receiving Environment Monitoring and Contaminant Trigger Levels

- C22** The quality of the receiving waters must be monitored at the locations specified in *Table 9: Receiving Water Upstream Background and Downstream Monitoring Locations* and *Figure 3: Receiving Water Upstream Background and Downstream Monitoring Locations* for each quality characteristic and at the monitoring frequency stated in *Table 10: Receiving Waters Contaminant Trigger Levels*.

Table 9: Receiving Waters Contaminant Trigger Levels

Quality Characteristic	Receiving Water Trigger Level	Monitoring Frequency
pH	6.5 (minimum) 8.0 (maximum)	Continuously
Electrical Conductivity (µS/cm)	700	
Suspended solids (mg/L)	100	Monitoring to be commenced within 2 hours of commencement of the release, and then daily thereafter.
Sulphate (SO ₄ ²⁻) (mg/L)	250	
Sodium (mg/L)	250	

Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations

Monitoring Point (MP)	Receiving Waters Location Description	Northing (GDA94)	Easting (GDA94)
Upstream Background Monitoring Locations			
MP1	Lagoon Creek at upstream mining lease boundary • 2km upstream of RP1 • 12km upstream of RP2	7419656	447619
MP7	Sandy Creek	7438562	440563
MP8	Spring Creek	7424345	438988
Downstream Monitoring Locations			
MP2	Lagoon Creek • 1.3 downstream of RP1 • 7.2 km upstream of RP2	7421437	449121
MP3	Lagoon Creek • 250m downstream of RP2 • 10km downstream of RP1. • 3km upstream of RP9/10 • 4km upstream of RP5	7426268	448139
MP4	Lagoon Creek • 1.5km downstream of RP5/6 • 2.5km downstream of RP9/10 • 2km upstream of RP7/8 • 5km upstream of RP3	7430655	448752
MP5	Lagoon Creek • 3km downstream of RP3, • 8 km upstream of RP4.	7436112	448723
MP6	Lagoon Creek at downstream mining lease boundary • 2km downstream of RP4.	7444277	449480

- C23** If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in *Table 9: 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:
- 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
 - where the downstream results exceed the upstream results complete an investigation into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining:
 - details of the investigations carried out; and
 - actions taken to prevent environmental harm.
- NOTE:** Where an exceedance of a trigger level has occurred and is being investigated, in accordance with C23 b) of this condition, no further reporting is required for the subsequent trigger events for that quality characteristic.

Receiving Environment Monitoring Program (REMP)

- C24** 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 mining affected water is being discharged from the site.
- For the purpose of the REMP, the receiving environment is the waters of Lagoon Creek and Sandy Creek and connected or surrounding waterways within 10km 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 directed affected by an authorised release of mine affected water.
- C25** The Receiving Environment Monitoring Program (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;
 - 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 9: Receiving Water Upstream Background and Downstream Monitoring Locations*;
 - 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;
 - e) include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in *Table 4: Mine Affected Water Release Limits* and *Table 5: Release Contaminant Trigger Investigation Levels*;
 - 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*);
 - g) include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology;
 - h) apply procedures and/or guidelines from ANZECC and ARMCANZ 2000 and other relevant guidelines and documents;
 - i) describe sampling and analysis methods and quality assurance and control; and
 - j) incorporate stream flow and hydrological information in the interpretations of water quality and biological data.
- C26** A Receiving Environment Monitoring Program (REMP) Design Document that addresses each criterion presented in Conditions C24 and C25 must be prepared and submitted to the administering authority prior to commencement of mining activities other than Mineral Development Maintenance Activities. Due consideration must be given to any comments made by the administering authority on the REMP Design Document and subsequent implementation of the program.
- C27** A report outlining the findings of the Receiving Environment Monitoring Program, including all monitoring results and interpretations in accordance with conditions C24 and C25 must be prepared annually and made available on request to the administering authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.

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Water Reuse

- C28** 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 off-lease artificial water storage structures, such as farm dams or tanks, or used directly at off-lease properties owned by the environmental authority holder for a third party for the purpose of:
- a) supplying stock water subject to compliance with the quality release limits specified in *Table 11: Stock water release limits*; or
 - b) supplying water for mining, construction and/or road maintenance in accordance with the conditions of this environmental authority.

Table 11: Stock water release limits

Quality Characteristics	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical Conductivity	µS/cm	N/A	5000

- C29** If the responsibility of mine affected water is given or transferred to another person in accordance with C28:
- a) the responsibility for the mine affected water must only be given or transferred in accordance with a written agreement (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 the *Environmental Protection Act 1994*, environmental sustainability of the water disposal and protection of environmental values; and
 - c) the third party agreement must be signed by both parties to the agreement.
- C30** All determinations of water quality and biological monitoring must be:
- a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements;
 - b) made in accordance with methods prescribed in the latest edition of the administering authorities Monitoring and Sampling Manual;
 - c) collected from the monitoring locations identified within this environmental authority, within 6 hours of each other where access to the monitoring location is practicable;
 - d) carried out on representative samples; and
 - e) analysed at a laboratory accredited (e.g. NATA) for the method of analysis being used.
- C31** 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 of this environmental authority:
- a) must not produce any visible discolouration of receiving waters; and
 - b) must not produce any slick or other visible or odourous evidence of oil, grease or petrochemicals nor contain visible floating oil. Grease, scum, litter or other objectionable matter.

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- C32** 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 mine affected water released from all release points;
 - e) the results of all monitoring and details of any exceedances of the conditions of this environmental authority; and
 - f) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.

Water Management Plan

- C33** A Water Management Plan must be developed by an appropriately qualified and suitable person and implemented prior to the commencement of mining activities.
- C34** 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 the administering authorities 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. a program for monitoring and review of the effectiveness of the water management plan.
- C35** The Water Management Plan must be reviewed each calendar year and a report prepared by an appropriately qualified person. The report must:
- a) assess the plan against the requirements under condition C34;
 - b) include recommended actions to ensure actual and potential environmental impacts are effectively managed for the coming year; and
 - c) identify any amendments made to the water management plan following the review.
- C36** The holder of this environmental authority must attach to the review report required by condition C35, a written response to the report and recommended actions, detailing the actions taken or to be taken by the environmental authority holder on stated dates:
- a) to ensure compliance with this environmental authority; and
 - b) to prevent a recurrence of any non-compliance issues identified.
- C37** The review report required by condition C35 and the written response to the review report required by condition C36 must be submitted to the administering authority with the subsequent annual return under the signature of the appointed signatory for the annual return.
- C38** A copy of the Water Management Plan must be provided to the administering authority on request.

Saline Drainage

- C39** 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.

Acid Rock Drainage

- C40** 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.

Stormwater and Water Sediment Controls

- C41** 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.

- C42** 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 C41;
- b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with C34 inclusive, for the purpose of ensuring water does not become mine affected water.

- C43** The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any receiving waters.

Overflow of Mine Affected Water from Regulated Structures

- C44** The overflow of mine affected water from one or more of the dams listed in *Table 29: Location of Regulated Structures* to receiving waters is authorised if:

- a) the holder has complied with **ALL** conditions listed in *Schedule G – Regulated Structures* of this environmental authority; and
- b) the overflow is a direct result of rainfall events which since November 1 have generated a total rainfall depth in excess of that determined under the Design Storage Allowance (DSA) annual exceedance probability (AEP) event listed in *Table 31: Hydraulic Performance of Regulated Dams* for the relevant dam (or network of linked containment systems); and
- c) the holder has taken all reasonable and practicable measures to prevent an overflow from the relevant dam.

- C45** Any release of mine affected water resulting from an overflow from one or more of the dams listed in *Table 29: Location of Regulated Structures* and *Table 12: Overflow release to the receiving environment* to receiving waters must be monitored at the locations specified in *Table 12: Overflow release to the receiving environment* and *Table 13: Monitoring Locations for Overflow Releases* for those quality characteristics and at the frequencies specified in *Table 14: Release Contaminant Trigger Investigation Levels – Overflow Releases*:

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Table 12: Overflow release to the receiving environment

Release Point (RP)	Northing (GDA94)	Easting (GDA94)	Contaminant Source and Location	Monitoring Point	Receiving waters description
RP12	449413	7429439	Environment Dam 1 (MIA Runoff containment dam)	Spillway	Lagoon Creek
RP13	449364	7431115	Environmental Dam 2 (coal handling and preparation plant containment dam)	Spillway	Lagoon Creek
RP14	450779	7427331	Decant Dam	Spillway	Lagoon Creek
RP15	450779	7427331	Temporary Brine Dam	Spillway	Lagoon Creek

Table 13: Monitoring Locations for Overflow Releases

Monitoring Point	Northing (GDA94)	Easting (GDA94)
Upstream		
MP1	7419656	447619
Downstream		
MP6	7444277	449480

Table 14: Release Contaminant Trigger Investigation Levels – Overflow Releases

Quality Characteristic	Trigger Level	Monitoring Frequency
Electrical conductivity ($\mu\text{S}/\text{cm}$)	700	Continuously
pH (pH Unit)	6 – 8.5	
Turbidity	460	Monitoring to be commenced within 2 hours of commencement of the release and daily thereafter.
Suspended Solids (mg/L)	483	
Sulphate (SO_4^{2-}) (mg/L)	250	
Aluminium ($\mu\text{g}/\text{L}$) ¹	7490	
Arsenic ($\mu\text{g}/\text{L}$) ¹	13	
Cadmium ($\mu\text{g}/\text{L}$) ¹	0.2	
Chromium ($\mu\text{g}/\text{L}$) ¹	16	
Copper ($\mu\text{g}/\text{L}$) ¹	40.6	
Iron ($\mu\text{g}/\text{L}$) ¹	9700	
Lead ($\mu\text{g}/\text{L}$) ¹	12	
Mercury ($\mu\text{g}/\text{L}$) ¹	0.5	
Nickel ($\mu\text{g}/\text{L}$) ¹	11	
Zinc ($\mu\text{g}/\text{L}$) ¹	167	
Boron ($\mu\text{g}/\text{L}$) ¹	370	
Cobalt ($\mu\text{g}/\text{L}$) ¹	90	
Manganese ($\mu\text{g}/\text{L}$) ¹	1900	
Molybdenum ($\mu\text{g}/\text{L}$) ¹	34	
Selenium ($\mu\text{g}/\text{L}$) ¹	10	
Silver ($\mu\text{g}/\text{L}$) ¹	1	
Uranium ($\mu\text{g}/\text{L}$) ¹	1	
Vanadium ($\mu\text{g}/\text{L}$) ¹	20	
Ammonia ($\mu\text{g}/\text{L}$) ¹	900	
Nitrate ($\mu\text{g}/\text{L}$) ¹	1100	
Petroleum hydrocarbons (C6-C9) ($\mu\text{g}/\text{L}$) ¹	20	
Petroleum hydrocarbons (C10-C36) ($\mu\text{g}/\text{L}$) ¹	100	
Fluoride ($\mu\text{g}/\text{L}$) ²	2000	
Sodium ($\mu\text{g}/\text{L}$) ¹	23000	

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

² Fluoride must be measured as total (unfiltered).

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- C46** If quality characteristics of the release exceed any of the trigger levels specified in *Table 14: Release Contaminant Trigger Investigation Levels – Overflow Releases* during an overflow release, the holder must compare the downstream results in the receiving waters to the trigger values specified in *Table 14: Release Contaminant Trigger Investigation Levels – Overflow Releases* and:
- a) where the trigger values are not exceeded at downstream locations then no action is to be taken; or
 - b) where the downstream results exceed the trigger values specified in *Table 14: Release Contaminant Trigger Investigation Levels – Overflow Releases* for any quality characteristics, compare the results of the downstream site to the data from background monitoring sites and from the release point 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 the cessation of the release, outlining:
 - details of the investigations carried out; and
 - 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.

- C47** The holder must notify the administering authority as soon as practicable and no later than 24 hours after the commencement of an overflow release of mine affected water to the receiving environment in accordance with conditions C44 and C45 of this environmental authority. Notification must include the submission of written advise to the administering authority of the following information:
- a) release commencement date/time;
 - b) release points;
 - c) receiving water/s; and
 - d) any details (including available data) regarding likely impacts on the receiving environment.

NOTE: Notification to the administering authority must be addressed to the Manager and Project Manager of the local administering authority via email or facsimile.

- C48** The holder must notify the administering authority as soon as practicable and no later than 24 hours after the cessation of a release notified under condition C47. Notification must include the submission of written advise to the administering authority of the following information:
- a) release cessation date/time;
 - b) volume of water released;
 - c) all in-situ water quality monitoring results; and
 - d) any other matters pertinent to the water release event.

NOTE: Successive or intermittent releases occurring within 24 hours of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purposed of compliance with conditions C47 and C48, provided the relevant details of the release are included within the notification provided in accordance with conditions C47 and C48.

- C49** Within 28 days of a release notified under condition C47, the holder must provide a report to the administering authority demonstrating compliance with condition C44.

Groundwater

- C50** A groundwater monitoring program must be developed and submitted to the administering authority for approval before the commencement of mining activities. The monitoring program must :
- a) allow for the compilation of representative groundwater samples from the aquifers identified as potentially affected by mining activities. The geological units monitored include alluvium, Bandanna Formation, Colinlea Sandstone, Clematis Sandstone, Rewan Formation, and Joe Joe Formation;
 - b) include at least 12 sampling events, no more than 2 months apart over a 2 year period, to determine background groundwater quality;
 - c) obtain background groundwater quality in hydraulically isolated background bore(s), and
 - d) allow for the identification of natural groundwater level trends, hydrochemical trigger levels, and contaminant limits.
- C51** In addition to condition C50 groundwater quality and levels must be monitored at the locations and frequencies specified in *Table 15: Groundwater monitoring network locations and frequency* and *Figure 4: Groundwater Monitoring Locations*.

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Table 15: Groundwater monitoring network locations and frequency

Monitoring Sites	Parameter	Frequency
AMB-01, AMB-02, AMB-03, AMB-04	Water level	At least one reading every 12 hours – electronic loggers
	pH, EC, TDS (lab), cations, anions, selected dissolved metals (Al, As, B, Cd, Cr, Co, Cu, Fe, Pb, Hg, Mn, Mo, Ni, Se, Ag, U, Zn), nutrients	Monthly until sufficient data is compiled
TSF standpipe bores ATSF-01B, ATSF-02, ATSF-03, ATSF-04B, ATSF-07B, ATSF-07C, ATSF-08B, ATSF-08C, ATSF-06B, ATSF-06C, ATSF-05B, ATSF-05C, ATSF-09A, ATSF-09B	Water level	At least one reading every 12 hours – electronic loggers
	pH, EC, TDS (lab), cations, anions, selected dissolved metals (Al, As, B, Cd, Cr, Co, Cu, Fe, Pb, Hg, Mn, Mo, Ni, Se, Ag, U, Zn), nutrients	Monthly until sufficient data is compiled
Proposed monitoring bores adjacent infrastructure AlphaWest1, AlphaWest2, AlphaWest3, Landfill1, Landfill2, Landfill3, MIA, CHPP1, CHPP2, EWT, TLO1, RWD1, ROMSouth, ROMNorth	Water level	At least one reading every 12 hours – electronic loggers
	pH, EC, TDS (lab), cations, anions, selected dissolved metals (Al, As, B, Cd, Cr, Co, Cu, Fe, Pb, Hg, Mn, Mo, Ni, Se, Ag, U, Zn), nutrients, TPH (selected bores only)	Every 2 months (for at least two years)
VWP bores AVP_11, AVP_01, AVP_14, AVP_03, AVP_05, AVP_04, AVP_06, AVP_07, AVP_08, AVP_13, AVP_09, AVP_10	Water level only	At least one reading every 12 hours – electronic data readers
New TSF VWP bores ATSF-01A, ATSF-04A, ATSF-05A, ATSF-06A, ATSF-07A, ATSF-08A	Water level only	At least one reading every 12 hours – electronic data readers
New GAB bores AlphaWest4, AlphaWest5, and AlphaWest6	Water level only	At least one reading every 12 hours – electronic data readers
Proposed monitoring bores - landholder properties: Anderson Property (Location TBA) Currie Property (Location TBA) Cassoni property (Location TBA)	Water level only	At least one reading every 12 hours – electronic data readers
All monitoring bores	Al, As, Sb, B, Cd, Cr, Co, Cu, Fe, Pb, Hg, Mn, Mo, Ni, Se, Ag, U, Zn.	Annually

NOTE: Locations of proposed monitoring bores- landhold properties. Once locations have been determined, the holder must notify the Administering Authority and Table 15 to be amended.

- C52** If groundwater monitoring results greater than the trigger levels (or outside the trigger levels range for pH) specified for the relevant aquifer in *Table 16: Groundwater contaminant limits and trigger levels – Alluvium Aquifers (wet season)* to *Table 20: Groundwater contaminant limits and trigger levels – Joe Joe Formation (inclusive)* are recorded, then the following must be conducted:
- a) the relevant monitoring point(s) will be re-sampled and the samples analysed for major cations and anions, and selected dissolved metals, including Al, As, Sb, B, Cd, Cr, Co, Cu, Fe, Pb, Hg, Mn, Mo, Ni, Se, Ag, U, Zn;
 - b) if elevated concentrations (above trigger) are recorded on two consecutive sampling events then an investigation into cause, optimum response, and the potential for environmental harm must be conducted; and
 - c) if elevated concentrations are recorded on two consecutive sampling events then the administering authority will be notified within 1 month of receiving the analysis results.

NOTE: Table 16 to Table 20 inclusive means the following tables:

- *Table 16: Groundwater contaminant limits and trigger levels – Alluvium Aquifers (wet season); or*
- *Table 17: Groundwater contaminant limits and trigger levels – Alluvium Aquifers (dry season); or*
- *Table 18: Groundwater contaminant limits and trigger levels – Colinlea Sandstone Aquifers; or*
- *Table 19: Groundwater contaminant limits and trigger levels – Bandanna Formation Aquifers; or*
- *Table 20: Groundwater contaminant limits and trigger levels – Joe Joe Formation.*

- C53** If groundwater monitoring results greater than the contaminant limits (or outside the contaminant limits range for pH) specified for the relevant aquifer in *Table 16: Groundwater contaminant limits and trigger levels – Alluvium Aquifers (wet season)* to *Table 20: Groundwater contaminant limits and trigger levels – Joe Joe Formation (inclusive)* are recorded, then an investigation into cause, optimum response, and the potential for environmental harm must be conducted.

NOTE: Table 16 to Table 20 inclusive means the following tables:

- *Table 16: Groundwater contaminant limits and trigger levels – Alluvium Aquifers (wet season); or*
- *Table 17: Groundwater contaminant limits and trigger levels – Alluvium Aquifers (dry season); or*
- *Table 18: Groundwater contaminant limits and trigger levels – Colinlea Sandstone Aquifers; or*
- *Table 19: Groundwater contaminant limits and trigger levels – Bandanna Formation Aquifers; or*
- *Table 20: Groundwater contaminant limits and trigger levels – Joe Joe Formation.*

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Table 16: Groundwater contaminant limits and trigger levels – Alluvium Aquifers (wet season)

Parameter ²	Units	Trigger Levels ³	Contaminant limits
<u>Dissolved metals</u> Aluminium (Al)	µg/L	80 th percentile of background data	99 th percentile of background data
Antimony (Sb)			
Arsenic (As)			
Iron (Fe)			
Molybdenum (Mo)			
Selenium (Se)			
Silver (Ag)			
Total Dissolved Solids	mg/L		
Electrical Conductivity	µS/cm		
<u>Major anions and cations</u>	mg/L		
Sulphate			
Calcium			
Magnesium			
Sodium			
Potassium			
Chloride			
Carbonate			
Bicarbonate			
Total Petroleum Hydrocarbons	ppb	6.5 – 8.5	Note: ± 1 pH unit from highest / lowest readings
pH ¹	unit		
Groundwater level	For interpretational purpose only		

¹Baseline value ±1.0 for pH, means the corresponding variation allowed is 1.0 pH unit above and below average and maximum / minimum pH values determined for the site.

²Parameters and sampling frequency will be revised at the end of background sampling, based on results compiled at each monitoring point and proposed land use.

³The administering authority and the holder will agree to suitable trigger levels and contaminant limits (per aquifer and season) once sufficient hydrochemical data has been compiled.

Table 17: Groundwater contaminant limits and trigger levels – Alluvium Aquifers (dry season)

Parameter ²	Units	Trigger Levels ³	Contaminant limits		
<u>Dissolved metals</u> Aluminium (Al) Antimony (Sb) Arsenic (As) Iron (Fe) Molybdenum (Mo) Selenium (Se) Silver (Ag)	µg/L	80 th percentile of background data	99 th percentile of background data		
Total Dissolved Solids	mg/L				
Electrical Conductivity	µS/cm				
<u>Major anions and cations</u> Sulphate Calcium Magnesium Sodium Potassium Chloride Carbonate Bicarbonate	mg/L				
Total Petroleum Hydrocarbons	ppb				
pH ¹	unit				
Groundwater level	For interpretational purpose only				
				6.5 – 8.5	Note: ± 1 pH unit from highest / lowest readings

¹Baseline value ±1.0 for pH, means the corresponding variation allowed is 1.0 pH unit above and below average and maximum / minimum pH values determined for the site.

²Parameters and sampling frequency will be revised at the end of background sampling, based on results compiled at each monitoring point and proposed land use.

³The administering authority and the holder will agree to suitable trigger levels and contaminant limits (per aquifer and season) once sufficient hydrochemical data has been compiled.

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Table 18: Groundwater contaminant limits and trigger levels – Colinlea Sandstone Aquifers

Parameter ²	Units	Trigger Levels ³	Contaminant limits
<u>Dissolved metals</u> Aluminium (Al)	µg/L	80 th percentile of background data	99 th percentile of background data
Antimony (Sb)			
Arsenic (As)			
Iron (Fe)			
Molybdenum (Mo)			
Selenium (Se)			
Silver (Ag)			
Total Dissolved Solids	mg/L		
Electrical Conductivity	µS/cm		
<u>Major anions and cations</u>	mg/L		
Sulphate			
Calcium			
Magnesium			
Sodium			
Potassium			
Chloride			
Carbonate			
Bicarbonate			
Total Petroleum Hydrocarbons	ppb	6.5 – 8.5	Note: ± 1 pH unit from highest / lowest readings
pH ¹	unit		
Groundwater level	For interpretational purpose only		

¹Baseline value ±1.0 for pH, means the corresponding variation allowed is 1.0 pH unit above and below average and maximum / minimum pH values determined for the site.

²Parameters and sampling frequency will be revised at the end of background sampling, based on results compiled at each monitoring point and proposed land use.

³The administering authority and the holder will agree to suitable trigger levels and contaminant limits (per aquifer and season) once sufficient hydrochemical data has been compiled.

Table 19: Groundwater contaminant limits and trigger levels – Bandanna Formation Aquifers

Parameter ²	Units	Trigger Levels ³	Contaminant limits
<u>Dissolved metals</u>	µg/L	80 th percentile of background data	99 th percentile of background data
Aluminium (Al)			
Antimony (Sb)			
Arsenic (As)			
Iron (Fe)			
Molybdenum (Mo)			
Selenium (Se)			
Silver (Ag)			
Total Dissolved Solids	mg/L		
Electrical Conductivity	µS/cm		
<u>Major anions and cations</u>	mg/L		
Sulphate			
Calcium			
Magnesium			
Sodium			
Potassium			
Chloride			
Carbonate			
Bicarbonate			
Total Petroleum Hydrocarbons	ppb	6.5 – 8.5	Note: ± 1 pH unit from highest / lowest readings
pH ¹	unit		
Groundwater level	For interpretational purpose only		

¹Baseline value ±1.0 for pH, means the corresponding variation allowed is 1.0 pH unit above and below average and maximum / minimum pH values determined for the site.

²Parameters and sampling frequency will be revised at the end of background sampling, based on results compiled at each monitoring point and proposed land use.

³The administering authority and the holder will agree to suitable trigger levels and contaminant limits (per aquifer and season) once sufficient hydrochemical data has been compiled.

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Table 20: Groundwater contaminant limits and trigger levels – Joe Joe Formation

Parameter ²	Units	Trigger Levels ³	Contaminant limits
<u>Dissolved metals</u> Aluminium (Al) Antimony (Sb) Arsenic (As) Iron (Fe) Molybdenum (Mo) Selenium (Se) Silver (Ag)	µg/L	80 th percentile of background data	99 th percentile of background data
Total Dissolved Solids	mg/L		
Electrical Conductivity	µS/cm		
<u>Major anions and cations</u> Sulphate Calcium Magnesium Sodium Potassium Chloride Carbonate Bicarbonate	mg/L		
Total Petroleum Hydrocarbons	ppb		
pH ¹	unit	6.5 – 8.5	Note: ± 1 pH unit from highest / lowest readings
Groundwater level	For interpretational purpose only		

¹Baseline value ±1.0 for pH, means the corresponding variation allowed is 1.0 pH unit above and below average and maximum / minimum pH values determined for the site.

²Parameters and sampling frequency will be revised at the end of background sampling, based on results compiled at each monitoring point and proposed land use.

³The administering authority and the holder will agree to suitable trigger levels and contaminant limits (per aquifer and season) once sufficient hydrochemical data has been compiled.

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- C54** Groundwater contaminant trigger levels for *Table 16: Groundwater contaminant limits and trigger levels – Alluvium Aquifers (wet season)* to *Table 20: Groundwater contaminant limits and trigger levels – Joe Joe Formation (inclusive)* must be finalised based on the Groundwater Monitoring Program approved under condition C50 and submitted to the administering authority 28 days prior to commencing coal extraction.

NOTE: Table 16 to Table 20 inclusive means the following tables:

- *Table 16: Groundwater contaminant limits and trigger levels – Alluvium Aquifers (wet season); or*
- *Table 17: Groundwater contaminant limits and trigger levels – Alluvium Aquifers (dry season); or*
- *Table 18: Groundwater contaminant limits and trigger levels – Colinlea Sandstone Aquifers; or*
- *Table 19: Groundwater contaminant limits and trigger levels – Bandanna Formation Aquifers; or*
- *Table 20: Groundwater contaminant limits and trigger levels – Joe Joe Formation.*

- C55** Groundwater monitoring bores must be constructed in accordance with methods prescribed in the Minimum Construction Requirements for Water Bores in Australia – 3rd Edition (LWBC), or equivalent.

- C56** The monitored data must be reported to the administering authority, and must satisfy the following criteria:
- a) data collected under the monitoring program will be forwarded to the administering authority on a quarterly basis within 30 business days of the end of each quarter and compiled in an annual monitoring report in a format approved by the administering authority;
 - b) the proponent shall undertake an assessment of the impacts of mining on groundwater after the first 12 months of dewatering commencing and thereafter every subsequent calendar year;
 - c) the annual monitoring report will be forwarded to the relevant authority by the first of March each calendar year; and
 - d) the annual monitoring report will include an assessment of impacts, any mitigation strategies as well as any recommendations for changes to the approved monitoring program.
 - e) If there is a requirement to submit a similar groundwater report as part of any condition issued under a water licence under the *Water Act 2000* then the proponent and the relevant administering authorities may agree for the reports to be combined.

Schedule D: Noise and Vibration

Noise Nuisance

- D1** Noise from activities must not cause an environmental nuisance at any nuisance sensitive place.
- D2** Noise from activities must not exceed the levels specified in *Table 21: Noise Limits – Mine Noise* for mine noise, or *Table 22: Noise Limits – Rail Noise* for rail noise, at any nuisance sensitive place.

Noise Monitoring

- D3** When requested by the administering authority, noise monitoring must be undertaken to investigate any complaint of environmental nuisance (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of an authorised officer), and the results notified to the administering authority within 14 days of their receipt by the holder. Monitoring must include:
- a) $L_{A\text{ eq, adj, 15 mins}}$ [free field]– for mine noise;
 - b) $L_{A\text{ 1, 15 mins}}$ [internal – or a measured external noise level and calculation of corresponding internal noise level specific to the complaint's house] – for mine noise;
 - c) $L_{A\text{ eq, 24 hours}}$ [façade corrected] - for rail noise;
 - d) Single Event Maximum Sound Pressure Level (arithmetic average of the loudest 15 rail events in a 24 hour period) [façade corrected] – for rail noise
 - e) the level and frequency of occurrence of impulsive or tonal noise

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- f) atmospheric conditions including wind speed and direction
- g) effects due to extraneous factors such as traffic noise; and
- h) location date and time of recording.

- D4** Noise is not considered to be a nuisance under condition D1 if monitoring shows that noise from the Alpha Coal mining activity does not exceed the levels in the time periods specified in *Table 21: Noise Limits – Mine Noise* for Mine Noise and *Table 22: Noise Limits – Rail Noise* for Rail Noise. For those measurement locations where rail noise cannot be legitimately differentiated from the overall mine noise then the criteria in *Table 21: Noise Limits – Mine Noise* apply to the combined noise emissions from the mine and rail activities.

Table 21: Noise Limits – Mine Noise

Noise level dB(A)	Monday to Saturday			Sundays and public holidays		
	7am - 6pm	6pm - 10pm	10pm - 7am	9am - 6pm	6pm - 10pm	10pm - 9am
$L_{A\text{ eq, adj, 15 mins}}$	$RBL^1 + 3$	$RBL^1 + 3$	$RBL^1 + 3$	$RBL^1 + 3$	$RBL^1 + 3$	$RBL^1 + 3$
$L_{A\ 1, 15\ mins}$	45	45	45	45	45	45

¹ Rated Background Level (RBL) as defined in the administering authority's guidelines, with a minimum RBL of 25 dBA.

Table 22: Noise Limits – Rail Noise

Noise Descriptor	Noise Level dB(A)
$L_{A\text{ eq, 24 hours}}$	65
Single Event Maximum Level (arithmetic average of loudest 15 rail events)	87

- D5** The method of measurement and reporting of noise monitoring must comply with the current edition of the administering authority's *Noise Measurement Manual*.
- D6** If monitoring indicates exceedance of the relevant limits in condition D4, then the holder must:
- a) address the complaint including the use of appropriate dispute resolution if required; and
 - b) implement noise abatement measures as soon as reasonably practicable, so that emissions of noise from the activity do not result in further environmental nuisance.

Vibration nuisance

- D7** Vibration from the licensed activities must not cause an environmental nuisance at any nuisance sensitive place.
- D8** 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 nuisance sensitive place, and the results must be notified to the administering authority within 14 days of their receipt by the holder.
- D9** 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.
- D10** If monitoring indicates exceedance of the relevant limits in *Table 23: Vibration Limits*, then the holder must:
- a) address the complaint including the use of appropriate dispute resolution if required; and
 - b) implement vibration abatement measures as soon as reasonably practicable, so that vibration from the activity does not result in further environmental nuisance.

Table 23: Vibration Limits

Location	Vibration measured
Nuisance sensitive place	10 mm/s for ground vibration of no more than 35 Hz. 25 mm/s for ground vibration of more than 35 Hz.

- D11** Vibration from the licensed activities is not considered to be an environmental nuisance under condition D7 if monitoring shows that the limits specified in *Table 23: Vibration Limits* have not been exceeded.

Airblast Overpressure Nuisance

- D12** The airblast overpressure level from blasting operations must not exceed the limits defined in *Table 24: Airblast overpressure level at any nuisance sensitive place*.

Table 24: Airblast Overpressure Level

Location	Airblast Overpressure Measured
Nuisance sensitive place	115 dB(Z) Peak for 4 out of any 5 consecutive blasts. Any single blast must not exceed 120 dB(Z) Peak.

- D13** 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 nuisance sensitive place, and the results must be notified to the administering authority within 14 days of their receipt by the holder.
- D14** Airblast overpressure monitoring must include the following descriptors, characteristics and conditions:
- location of the blast(s) within the mining area (including which bench level);
 - atmospheric conditions including temperature, relative humidity and wind speed and direction; and
 - location, date and time of recording.
- D15** If monitoring indicates exceedance of the relevant limits in *Table 24: Airblast Overpressure Level* then the holder must:
- address the complaint including the use of appropriate dispute resolution if required; and
 - implement airblast overpressure abatement measures as soon as reasonably practicable so that airblast overpressure from the activity does not result in further environmental nuisance.
- D16** The airblast overpressure level from blasting operations is not considered to be an environmental nuisance under condition D13 if monitoring shows that the limits specified in *Table 24: Airblast Overpressure Level* have not been exceeded.
- D17** The method of measurement and reporting of airblast overpressure levels must comply AS2187.2-2006 or more recent version.

Schedule E: Waste

Scrap Tyres

- E1** Scrap tyres stored awaiting disposal or transport for take-back and recycling, or waste-to-energy options must be stored in stable stacks of up to four tyres or less than three metres high (whichever is greater), and at least 10 m from any other scrap tyre storage area, or combustible or flammable material, including vegetation.
- E2** All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a 10 m radius of the scrap tyre storage area.

E3 Disposing of scrap tyres resulting from the authorised activities in spoil emplacements is acceptable, provided tyres are placed as deep in the spoil as reasonably practicable. A record must be kept of the number and location for tyres disposed.

E4 Scrap tyres resulting from the mining activities disposed within the operational land must not impede saturated aquifers or compromise the stability of the consolidated landform.

Waste Management Plan

E5 A Waste Management Plan, must be developed and implemented prior to the commencement of mining activities and must cover:

- a) how the holder will recognise and apply the waste management hierarchy
- b) characterisations of wastes generated from the Project and general volume trends over the past five (5) years (or for the duration of the environmental authority if it is less than five years old)
- c) waste commitments with auditable targets to reduce, reuse and recycle
- d) waste management control strategies including:
 - i. the type of wastes
 - ii. segregation of the wastes
 - iii. storage of the wastes
 - iv. transport of the wastes
 - v. monitoring and reporting matters concerning the waste
 - vi. emergency response planning, and
 - vii. disposal, reused and recycling options
- e) the potential adverse and beneficial impacts of the wastes generated
- f) the hazardous characteristics of the wastes generated including disposal procedures for hazardous wastes
- g) processes to be implemented to allow for continuous improvement of the waste management systems
- h) identification of responsible staff (positions) for implementing, managing and reporting the Waste Management Plan, and
- i) staff awareness and induction programs that encourage re-use and recycling.

Waste - Landfill

E6 A Landfill Management Plan, in accordance with the administering authority's guideline *ERA 60 – Waste Disposal – Landfill siting, design, operation and rehabilitation*, must be developed and implemented prior to the commencement of disposing of waste as part of the mining activities.

NOTE: It is an offence under the *Stock Act 1915* and *Stock Regulation 1988* to allow or fail to take every reasonable measure to prevent stock access to animal matter or animal-contaminated matter.

E7 The landfill facility must be located within the area identified in *Table 25: Landfill Facility (Waste Disposal)*.

Table 25: Landfill Facility (Waste Disposal)

Waste Disposal Facility Name	Latitude (Decimal Degree GDA94)	Longitude (Decimal Degree GDA94)
Landfill Facility	-23.2225	146.5289
	-23.225	146.5343
	-23.2324	146.5293
	-23.2296	146.5241

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- E8** The release of landfill gas from the landfill facility must not cause environmental harm.
- E9** Landfill gas is not considered to cause environmental harm if:
- a) landfill gas monitoring shows that the release of methane does not exceed the following limits:
 - i. 500 parts per million at a height of 50mm above the final and intermediate cover surface including the batter slopes of the landfill facility;
 - ii. 25 percent of the lower explosive limit when measured in facility structures (but excluding facility structures used for landfill gas and leachate control and landfill gas and leachate recovery system components); and
 - iii. The lower explosive limit at the landfill facility boundary; and/or
 - b) a landfill gas collection system is installed and maintained to allow adequate drainage of gas liners.
- E10** When requested by the administering authority or as a result of a complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer), landfill gas monitoring must be undertaken for the quality limits specified in condition E9(a), and the results thereof notified to the administering authority within 14 days of their receipt by the holder. Monitoring must be carried out at a place(s) relevant to the release of landfill gas.
- E11** When the deposition of waste to the landfill facility ceases, a final cover system to the landfill facility must be installed which minimises:
- a) infiltration of water into the landfill facility;
 - b) the likelihood of any erosion occurring to either the final cover system or the land filled materials; and
 - c) uncontrolled release of landfill gas.
- E12** Post-closure care of the landfill facility must be conducted following deposition of waste in the landfill unit, for:
- a) a period of 30 years; or
 - b) such shorter period until the landfill facility and surrounding site are geotechnically stable and that no release of waste materials, leachate, landfill gas or other contaminants to the environment is likely.
- E13** A landfill facility site management plan pursuant to Chapter 7, Part 8, Division 5 of the *Environmental Protection Act 1994* must be developed and provided to the administering authority at least 12 months before the expected final receipt of waste in the landfill facility. The site management plan must include, but is not to be limited to, the future land use and actions the holder intends to take for compliance with the closure and post closure care requirements of this approval.
- E14** Clear access for fire-fighting vehicles must be provided at all times at the landfill facility.
- E15** An effective fire break must be provided and maintained around the landfill facility.

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- E16** At all times while the landfill facility is operating, at least one person must be present who is responsible for the control and operation of the facility and whose duties must include, but not be limited to:
- a) controlling the reception, storage and removal of waste;
 - b) maintaining the facility;
 - c) controlling all employees working in the facility; and
 - d) supervising all persons entering the facility.

NOTE: For the purposes of this condition, the Landfill Site Based Management Plan required under E6 specifies when the landfill unit is "operating".

- E17** Notwithstanding any condition of this approval, the following waste materials are not permitted or allowed to be deposited in the landfill unit:
- a) liquid or semi liquid waste other than liquid or semiliquid waste which has been produced in carrying out the environmentally relevant activity identified as Waste Disposal;
 - b) hot ash;
 - c) material that is smouldering or aflame;
 - d) material containing a substance which is corrosive, reactive or toxic (other than materials containing a toxic substance from domestic premises) unless this material is to be deposited into a dedicated monocell approved in writing by the administering authority;
 - e) all radioactive wastes, unless otherwise approved under the *Radiation Safety Act 1999* or contaminated soil;
 - f) an explosive; and
 - g) ammunition, other than ammunition that no longer contains explosives, pyrotechnics or propellants apart from trace residues that are no longer capable of supporting combustion or an explosive reaction.

Waste Storage

- E18** A designated area or storage containers must be set aside for the laydown and segregation of wastes.
- E19** An effective fire break must be provided and maintained around all waste laydown areas.
- E20** All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a 10m radius of all waste laydown areas.
- E21** Waste (excluding vegetation) must not be burned or allowed to be burned on the mining lease unless by approval of the administering authority.
- E22** Waste batteries must be stored:
- a) in a bunded and roofed area; or
 - b) palletised and plastic wrapped.

Waste - General

- E23** Waste that is removed from the site must be taken to a facility that is lawfully able to accept the waste under the *Environmental Protection Act 1994*.

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- E24** A record of all wastes removed from site must be kept detailing the following information:
- a) date of pickup of waste;
 - b) description of waste;
 - c) quantity of waste;
 - d) origin of the waste; and
 - e) destination of the waste.
- E25** All regulated waste removed from the site must be removed by a person who holds a current approval to transport such waste under the provisions of the *Environmental Protection Act 1994*.
- E26** Each container of regulated waste must be marked to identify the waste contained therein.

Schedule F: Land

Topsoil

- F1** Topsoil must be strategically stripped ahead of mining in accordance with a Topsoil Management Plan.
- F2** Topsoil and subsoils must be managed to ensure stability and minimise the release contaminants.
- F3** A topsoil inventory which identifies the topsoil requirements for the Alpha Coal Mine project and availability of suitable topsoil on site must be detailed in the Plan of Operations.

Preventing contaminant release to land

- F4** Contaminants must not be released to land in any manner which constitutes nuisance, material or serious environmental harm.
- NOTE: Where the release of contaminants to land is undertaken in accordance with a condition of this environmental authority, the release of contaminants is not considered to contravene condition F4.*
- F5** The environmental authority holder must take all practicable actions necessary to secure loads prior to transporting materials off site to minimise emissions or spillage of any material from vehicles or other transport infrastructure.

Chemicals and flammable or combustible liquids

- F6** All flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents nuisance, material or serious environmental harm and maintained in accordance with the current edition of *AS 1940 – Storage and Handling of Flammable and Combustible Liquids*.
- F7** Spillage of all flammable and combustible liquids must be controlled in a manner that prevents nuisance, material or serious environmental harm.
- F8** All chemicals must be contained within an on-site containment system and controlled in a manner that prevents nuisance, material or serious environmental harm and maintained in accordance with the current version of the relevant Australian Standard.
- F9** Spillage of all chemicals must be controlled in a manner that prevents nuisance, material or serious environmental harm.
- F10** All explosives, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the relevant Australian Standard.

- F11** All chemicals and flammable or combustible liquids stored on site that have the potential to cause environmental harm must be stored in or serviced by an effective containment system that is impervious to the materials stored and managed to prevent the release of liquids to waters or land. Where no relevant Australian Standard is available, the following must be applied:
- a) storage tanks must be bunded so that the capacity and construction of the bund is sufficient to contain at least 110% of a single storage tank or 100% of the largest storage tank plus 10% of the second largest storage tank in multiple storage areas; and
 - b) drum storages must be bunded so that the capacity and construction of the bund is sufficient to contain at least 25% of the maximum design storage volume within the bund.

Spill Kit

- F12** 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.
- F13** Anyone operating with wastes, chemicals or flammable and combustible liquids under this approval must be trained in the use of the spill kit.

Mining Waste

- F14** A Mining Waste Management Plan must be developed by an appropriately qualified and suitable person and implemented prior to the commencement of mining activities other than mineral development maintenance activities.
- F15** The Mining Waste Management Plan must include:
- a) characterisation programs to ensure that all mining waste is progressively characterised prior to disposal for net acid producing potential, salinity and the following contaminants: Iron (Fe), Aluminium (Al), Copper (Cu), Magnesium (Mg), Manganese (Mn), Calcium (Ca), Sodium (Na) and Sulphate (SO₄);
 - b) characterisation programs to ensure that the physical properties of the mining waste is progressively characterised during disposal;
 - c) the process for the quantification of availability or leachability of metals from the mining waste;
 - d) the process for the identification and quantification of Potentially Acid Forming mining waste;
 - e) management actions for mining waste that has been identified as having a high availability or leachability of metals in accordance with condition F15c;
 - f) management actions for mining waste that has been defined as Potentially Acid Forming, including a review of the potential impacts on rehabilitation;
 - g) where the acid producing potential of mining waste material has not been conclusively determined, geochemical kinetic testing to indicate oxidation rates, potential reaction products and effectiveness of control strategies;
 - h) identification of environmental impacts and potential environmental impacts;
 - i) control measures for routine operations to minimise likelihood of environmental harm;
 - j) the keeping of records of mining waste emplacements to indicate locations and characteristics of mining waste;
 - k) a mining waste emplacement area operational plan in accordance with condition F21;
 - l) contingency plans and emergency procedures for non-routine situations; and
 - m) a program for monitoring and review of the effectiveness of the mining waste management plan.

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- F16** The Mining Waste Management Plan must be reviewed each calendar year and a report prepared by an appropriately qualified person. The report must:
- a) assess the plan against the requirements under condition F15;
 - b) include recommended actions to ensure actual and potential environmental impacts are effectively managed for the coming year; and
 - c) identify any amendments made to the Mining Waste Management Plan following the review.
- F17** The holder of this environmental authority must attach to the review report required by condition F16, a written response to the report and recommended actions, detailing the actions taken or to be taken by the environmental authority holder on stated dates:
- a) to ensure compliance with this environmental authority; and
 - b) to prevent a recurrence of any non-compliance issues identified.
- F18** The review report required by condition F16 and the written response to the review report required by condition F17 must be submitted to the administering authority with the subsequent annual return under the signature of the appointed signatory for the annual return.
- F19** A copy of the Mining Waste Management Plan must be provided to the administering authority on request.
- F20** The mining waste emplacement areas shall be designed to prevent environmental harm arising from contaminants being released to the environment.
- F21** An operational plan must be developed and implemented prior to commencement of mining activities and maintained for the mining waste emplacement areas. The operational plan must include but not be limited to:
- a) description of landform development stages of the mining waste emplacement areas;
 - b) placement technique for mining waste and coarse reject waste from the coal handling and processing plant;
 - c) identification of areas that are, or are proposed, to contain Potentially Acid Forming mining waste emplacements;
 - d) identification of areas that are, or are proposed, to contain coarse rejects within mining waste emplacements;
 - e) identification of areas that are, or are proposed, to contain tailings within mining waste emplacements;
 - f) demonstration of how operations of the mining waste emplacement areas are consistent with the accepted design plan for the facility; and
 - g) decommissioning and rehabilitation strategies for the mining waste emplacement areas that demonstrate consistency with the conditions of this environmental authority.
- F22** The mining waste disposed of within the open pit must be designed to ensure all seepage from beneath the mining waste emplacement areas is directed towards the open pit prior to decommissioning and rehabilitation.
- Coal Handling and Preparation Plant Waste**
- F23** A Coal Handling and Preparation Plant Waste Management Plan must be developed by an appropriately qualified and suitable person and implemented prior to the commencement of mining activities other than mineral development maintenance activities.

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- F24** The Coal Handling and Preparation Plant Waste Management Plan must include at a minimum:
- a) programs for progressive characterisation of tailings and coarse reject waste prior to disposal for net acid producing potential and the following contaminants: Iron (Fe), Aluminium (Al), Copper (Cu), Magnesium (Mg), Manganese (Mn), Calcium (Ca), Sodium (Na) and Sulphate (SO₄);
 - b) identification of environmental issues and potential environmental impacts from the CHPP waste;
 - c) control measures for routine operations to minimise the likelihood of environmental harm;
 - d) contingency plans and emergency procedures for non-routine situations;
 - e) a program for monitoring and review of the effectiveness of the Coal Handling and Preparation Plant Waste Management Plan.
 - f) the process for the quantification of availability or leachability of metals from the tailings;
 - g) placement strategies of tailings material within the Tailings Storage Facility;
 - h) the progressive 3D survey of all tailings disposal locations within the mining waste emplacement areas;
 - i) placement strategies of coarse reject waste in the mining waste emplacement area to enable successful rehabilitation outcomes in accordance with conditions of this environmental authority;
 - j) the keeping of records of disposal to indicate locations and characteristics of coarse reject waste disposed of within mining waste emplacement areas.
- F25** The Coal Handling and Preparation Plant Waste Management Plan must be reviewed each calendar year and a report prepared by an appropriately qualified person. The report must:
- a) assess the plan against the requirements under condition F24;
 - b) include recommended actions to ensure actual and potential environmental impacts are effectively managed for the coming year; and
 - c) identify any amendments made to the water management plan following the review.
- F26** The holder of this environmental authority must attach to the review report required by condition F25, a written response to the report and recommended actions, detailing the actions taken or to be taken by the environmental authority holder on stated dates:
- a) to ensure compliance with this environmental authority; and
 - b) to prevent a recurrence of any non-compliance issues identified.
- F27** The review report required by condition F25 and the written response to the review report required by condition F26 must be submitted to the administering authority with the subsequent annual return under the signature of the appointed signatory for the annual return.
- F28** A copy of the Coal Handling and Preparation Plant Waste Management Plan must be provided to the administering authority on request.
- F29** The disposal of all PAF coarse reject waste, identified by condition F24, must be encapsulated with NAF mining waste and disposed in a manner such that the coarse reject waste will not cause significant harm to the environment for the foreseeable future.
- F30** All tailings must be disposed of within an authorised Tailings Storage Facility.
- F31** The coarse reject waste encapsulated within mining waste emplacement areas situated within the open pit must be designed to ensure all seepage from beneath the waste rock emplacement areas is directed towards the open pit prior to decommissioning and rehabilitation.

Future CHPP Waste Disposal

- F32** The holder of the environmental authority must complete an investigation into the technical and economic viability of future Coal Handling and Preparation Plant waste by an appropriately qualified person and submitted to the administering authority by 2 September 2018.
- F33** The investigation under condition F32 must:
- a) provide how the environmental authority holder will manage Coal Handling and Preparation Plant waste beyond 2 September 2019;
 - b) the investigation under condition F32 must, at a minimum, include:
 - i. a justification for the proposed management actions for Coal Handling and Preparation Plant waste, including an outline of waste management strategies that were not considered to be feasible;
 - ii. an identification of the environmental impacts the future management of Coal Handling and Preparation Plant waste may have;
 - iii. an identification of any mitigation measures that would be required to be implemented for future management of Coal Handling and Preparation Plant waste; and
 - iv. an identification of any proposed amendments to the environmental authority that would be required to authorise the future management of Coal Handling and Preparation Plant waste.

Rehabilitation landform criteria

- F34** Land disturbed by mining must be rehabilitated in accordance with *Appendix 1: Rehabilitation Requirements*.
- F35** All areas significantly disturbed by mining activities must be rehabilitated to a stable landform with a self-sustaining vegetation cover in accordance with *Table 26: Final land use and rehabilitation approval schedule*, *Table 27: Landform design criteria* and *Figure 5: Final Landform Rehabilitation*.
NOTE: The proposed final landform depicted in Figure 5: Final Landform Rehabilitation may change following the Wildlife Corridor Strategy completion in accordance with condition F47 and F48.
- F36** Self-sustaining vegetation, as per *Appendix 1: Rehabilitation Requirements*, must be consistent with the reference sites identified in *Table 28: Reference Sites*.

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Table 26: Final land use and rehabilitation approval schedule

	Domains				
	Pits and Mine Waste		Tailings Storage Facility	Infrastructure	Remainder of Mining Lease Area
	Pits	Mine Waste			
Approximate surface area (ha)	1,887	14,613	2,237	2,016	43,937
Pre-mine land use	Combination of low intensity cattle grazing and bushland				
Post-mine land use	Voids to equilibrate with water over time for storage and stock watering.	Combination of low intensity cattle grazing and bushland	Low intensity cattle grazing	Low intensity cattle grazing	Combination of low intensity cattle grazing and bushland
Post-mine land capability classification	Voids – Class V ¹	Land Suitability (Low Intensity Grazing) All other areas – Class III ¹ or IV ¹			
Projective cover range (%)	Not applicable	>70% vegetative cover is present (or 50% if rocks, logs or other features of cover are present),	> 70% vegetative cover is present (or 50% if rocks, logs or other features of cover are present),	> 70% vegetative cover is present (or 50% if rocks, logs or other features of cover are present),	Consistent with existing vegetation as these areas are going to have minimal disturbance.

¹ as per A Land Capability Classification for Agricultural Purposes (J. Rosser, G.L. Swartz, N.M. Dawson and H.S. Briggs, 1974)

Table 27: Landform design criteria

Domains		Target Slope Range (degrees)	Approximate Surface Area (ha)
1. Pits and Mine Waste	Void – Pit 1	Final void batter slopes will be designed and excavated to exhibit permanent geotechnical stability and will have the following slope angles: - Low walls: less than or equal to 37 degrees (from horizontal) - High walls and end walls comprising weathered Permian rock, Permian Laterite, and weathered Tertiary overburdens: less than or equal to 37 degrees (from horizontal); - High walls and end walls comprising fresh Permian rock: less than or equal to 70 degrees (from horizontal).	16,447
	Void – Pit 2		
	Void – Pit 3		
	Void – Pit 4		
	Void – Pit 5		
	Void – Pit 6		
	Borrow Pit	No less than 75% of the rehabilitated area has slopes of less than 10 degrees, and up to 25% of the rehabilitated area has slopes greater than 10 degrees.	
	Overburden	No less than 75% of the rehabilitated area has slopes of less than 10 degrees, and up to 25% of the rehabilitated area has slopes greater than 10 degrees.	
2. Tailings Storage Facility	Tailings Dam	No less than 75% of the rehabilitated area has slopes of less than 5 degrees, and up to 25% of the rehabilitated area has slopes greater than 5 degrees.	2,237
3. Infrastructure	Including CHPP, ROM Stockpiles, workshops, landfill, raw water dam, administration areas, etc.	No less than 75% of the rehabilitated area has slopes of less than 5 degrees, and up to 25% of the rehabilitated area has slopes greater than 5 degrees	2,016
4. Remainder of Mining Lease Area	Roads and tracks	As required	1
	Exploration and groundwater monitoring bores	As required	0.5

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Table 28: Reference Sites

Reference Site	Domain Reference	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)	Description
1	Domain 1	-23.145332	146.517472	10.3.14 ¹
2	Domain 1 Domain 3	-23.287720	146.343353	10.3.27a ¹
3	Domain 1 Domain 2 Domain 3	-23.297833	146.359426	10.3.28/10.5.5a ¹
4	Domain 1 Domain 2 Domain 3	-23.258773	146.406853	10.3.3 ¹
5	Domain 1 Domain 2 Domain 3	-23.285123	146.506636	10.3.4 ¹
6	Domain 1 Domain 2 Domain 3	-23.317758	146.360075	10.5.1 ¹
7	Domain 1 Domain 2 Domain 3	-23.233408	146.385398	10.5.12 ¹
8	Domain 1 Domain 2 Domain 3	-23.246131	146.381927	10.5.5a/10.5.12 ¹
9	Domain 1 Domain 2 Domain 3	-23.181032	146.559931	10.7.3 ¹
10	Domain 1 Domain 2 Domain 3	-23.185727	146.544292	10.7.7 ¹
11	Domain 2 Domain 3	-23.315237	146.510935	11.5.5b ¹
12	Domain 1 Domain 2 Domain 3	-23.313172	146.413752	Non-remnant grassland

¹ a regional ecosystem as defined in the database known as the 'Regional Ecosystem Description Database' as kept by the administering authority.

Rehabilitation Management Plan

- F36** A rehabilitation management plan must be developed by an appropriately qualified person and implemented prior to the commencement of mining activities other than mineral development maintenance activities.

F37 The rehabilitation management plan must:

- a) provide for the effective management of actual and potential environmental impacts and for the rehabilitation of significantly disturbed land resulting from the mining activities carried out under this environmental authority;
- b) be developed in accordance with the administering authorities Guideline – *Rehabilitation requirements for mining projects* and must include at least the following components:
 - i. finalisation of rehabilitation objectives, rehabilitation indicators and completion criteria for inclusion in *Appendix 1: Rehabilitation Requirements*;
 - ii. measures to ensure the rehabilitation objectives defined in *Appendix 1: Rehabilitation Requirements* are met;
 - iii. a justification of the rehabilitation indicators defined in *Appendix 1: Rehabilitation Requirements*, including how the relationship between the indicator and the objective has been established;
 - iv. a justification that the completion criteria defined in *Appendix 1: Rehabilitation Requirements* will determine if the rehabilitation objectives have been met and are suitable to ensure the post mine land use identified in *Table 26: Final land use and rehabilitation approval schedule*;
 - v. monitoring of reference sites identified in *Table 28: Reference Sites* inclusive of statistical design;
 - vi. rehabilitation methods applied to each domain;
 - vii. landform design criteria including:
 - end of mine design, consistent with *Table 27: Landform design criteria*; and
 - the proposed mosaic of vegetation communities representing the reference points identified in *Table 28: Reference Sites*;
 - viii. a justification of how landform design will be consistent with the surrounding topography;
 - ix. a justification of how the landform design criteria identified within *Table 27: Landform design criteria* are suitable to ensure the post mine land use identified in *Table 26: Final land use and rehabilitation approval schedule*;
 - x. schematic representation of final landform inclusive of:
 - drainage design and features;
 - slope designs;
 - cover design;
 - erosion controls proposed on reformed land;
 - xi. explain planned native vegetation rehabilitation areas and wildlife corridors in accordance with condition F47;
 - xii. rehabilitation monitoring and maintenance requirements to be applied to all areas of disturbance, including
 - how the rehabilitation indicators defined in *Appendix 1: Rehabilitation Requirements* are to be measured;
 - how the results of monitoring of indicators defined in *Appendix 1: Rehabilitation Requirements* will be reported and interpreted;
 - how the rehabilitation completion criteria defined in *Appendix 1: Rehabilitation Requirements* are to be measured;
 - how the rehabilitation completion criteria defined in *Appendix 1: Rehabilitation Requirements* will be reported and interpreted;
 - xiii. a program for monitoring all land undergoing rehabilitation and rehabilitated areas including the verification of rehabilitation success, determined by the rehabilitation indicators and rehabilitation completion criteria defined in *Appendix 1: Rehabilitation Requirements*. The program must include:
 - the minimum sampling intensity must be specified for the monitoring of progressive rehabilitation;

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- a justification of the suitability of the minimum sampling intensity;
 - sufficient replication of monitoring to enable statistical analysis of results at an acceptable power; and
 - the provision to be undertaken at no more than twelve monthly intervals.
- xiv. contingency procedures for rehabilitation maintenance or redesign; and
- xv. a program for monitoring and review of the effectiveness of the rehabilitation management plan.

NOTE: it is an offence under the *Land Protection (Pest and Stock Route Management) Act 2002* to fail to control Class 1 or Class 2 pests on a Mining Lease or to move or transport a vehicle containing the reproductive material of a declared pest plant.

- F38** The rehabilitation management plan must be reviewed each calendar year and a report prepared by an appropriately qualified person. The report must:
- a) assess the plan against the requirements under condition F37;
 - b) include recommended actions to ensure actual and potential environmental impacts and areas of significantly disturbed land are effectively managed for the coming year; and
 - c) identify any amendments made to the rehabilitation management plan.
- F39** The holder of this environmental authority must attached to the review report required by condition F38, a written response to the report and recommended actions, detailing the actions taken or to be taken by the environmental authority holder on stated dates:
- a) to ensure compliance with this environmental authority; and
 - b) to prevent a recurrence of any non-compliance issues identified.
- F40** The review report required by condition F38 and the written response to the review report required by condition F37 must be submitted to the administering authority with the subsequent annual return under the signature of the appointed signatory for the annual return.
- F41** A copy of the rehabilitation management plan must be provided to the administering authority on request.
- F42** The rehabilitation management plan must be submitted to the administering authority prior to the commencement of mining activities other than mineral development maintenance activities.
- F43** Rehabilitation objectives, indicators and completion criteria developed as per condition F37(b)(i) and as per *Appendix 1: Rehabilitation Requirements* must be finalised based on the rehabilitation management plan required under condition F36 and submitted to the administering authority prior to the commencement of mining activities other than mineral development maintenance activities.
- Rehabilitation Monitoring Program**
- F44** Once rehabilitation has commenced, the holder of the environmental authority must conduct a rehabilitation monitoring program on a yearly basis, which must include sufficient spatial and temporal replication to enable statistically valid conclusions as established under the rehabilitation management plan.
- F45** The rehabilitation monitoring program must be consistent with the rehabilitation management plan required under condition F37 and be developed and implemented by a person possessing appropriate qualifications and experience in the field of rehabilitation management, nominated by the environmental authority holder.

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- F46** The rehabilitation monitoring program must be included in the Plan of Operations and updated with each subsequent Plan of Operations, describing:
- a) how the rehabilitation objectives as defined in *Appendix 1: Rehabilitation Requirements* will be achieved; and
 - b) verification of rehabilitation success as per the rehabilitation management plan required under condition F37.

Wildlife Corridor Investigation

- F47** A Wildlife Corridor Strategy must be developed by an appropriately qualified person and submitted to the administering authority by 2 September 2019.

- F48** The Wildlife Corridor Strategy must:

- a) provide how the environmental authority holder will successfully reinstate sufficient wildlife corridor(s) (minimum one wildlife corridor) across pits 1 to 6 to facilitate the interaction and movement of native fauna species east-west;
- b) The Wildlife Corridor Strategy must, at a minimum, include:
 - i. details of the fauna species dependent on vegetation and ecosystems which existed prior to the mining project's development in the area of pits 1 to 6 for migration and/or habitat;
 - ii. a discussion on the temporary, or permanent, impacts likely to be experienced by migrating fauna species dependent on vegetation or ecosystems in the area of pits 1 to 6 as a result of mining activities;
 - iii. details of wildlife corridors installed, or to be implemented during the mine's operation along the northern and southern creek diversions, to mitigate the impacts and effects on fauna species dependent on the area of pits 1 to 6 for migration or habitat;
 - iv. a plan to revegetate the proposed corridor(s) with local native vegetation similar in composition to that which existed prior to the mining project's development;
 - v. a discussion of the proposed wildlife corridor's ability to re-establish and support landscape, habitat, ecological and evolutionary connectivity;
 - vi. detailed information to support the proposed width of the corridor(s), such as:
 - the length to width ratio;
 - the maintenance of functionality of the east-west linkage throughout the mining operation(through staged mining and staged rehabilitation); and
 - the maintenance of landform and acceptable slope and stability;
 - vii. include rehabilitation objectives, indicators and success criteria specific to reinstatement of the wildlife corridor(s) in terms of ecosystem function, structure and composition for inclusion in *Appendix 1: Rehabilitation Requirements*;
 - viii. the timing by which the proposed wildlife corridor(s) is to be reinstated and monitoring required to confirm its successful reinstatement.

- F49** Upon the administering authority's consideration and acceptance of the submitted Wildlife Corridor Strategy, the environmental authority holder must revise the Rehabilitation Management Plan required by condition F47 to include details of the wildlife corridor and detail the completion criteria for the areas to be rehabilitated to wildlife corridor(s).

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- F50** Rehabilitation objectives, indicators and success criteria specific to the reinstatement of the wildlife corridor(s) as per *Appendix 1: Rehabilitation Requirements* must be finalised based on the:
- a) Wildlife Corridor Strategy required under condition F47; and
 - b) any comments made by the administering authority with regards to the submitted Wildlife Corridor Strategy;
 - c) and submitted to the administering authority by 2 September 2020.

Residual Void

- F51** The holder of this environmental authority must complete an investigation into residual voids and submit a report to the administering authority by 2 September 2019. The investigation must include:
- 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;
 - c) a study of the measures to protect the residual voids, uncompacted overburden and workings from the probable maximum flood (PMF) level;
 - d) a pit wall stability study, considering the effects for long-term erosion and weathering of the pit wall and the effects of significant hydrological events; and
 - e) a study of void capability to support native flora and fauna.
- F52** 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 of this environmental authority.
- F53** At completion of decommissioning and rehabilitation, the residual void must be protected from probable maximum floods (PMFs) from nearby watercourses such that the protection is sustainable for the foreseeable future.

Post Closure Management Plan

- F54** A Post Closure Management Plan for the site must be developed and submitted to the administering authority at least 18 months prior to the final coal processing on site and implemented for a nominal period of:
- a) at least 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.

F55 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. final cover systems of spoil dumps; and
 - v. vegetative cover; and
- b) monitoring of:
 - i. surface water quality;
 - ii. groundwater quality;
 - iii. seepage rates;
 - iv. erosion rates;
 - v. the integrity and stability all slopes, ramps and voids; and
 - vi. the health and resilience of native vegetation cover.

Infrastructure

F56 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 land owner / holder.

NOTE: This is not applicable where the landowner / holder is also the environmental authority holder.

Exploration

F57 Mining Activities undertaken in Domain 4, identified in *Table 1: Mining Domains* and *Figure 1: Mining Domains* must not include bulk sampling or costeaning.

F58 The holder of the environmental authority must not drill, excavate or clear vegetation for exploration activities:

- a) in standing waters, wetlands or lakes; or
- b) on the sloped banks or within 3m of the top of the bank of 5m of the toe of the bank of any watercourse; or
- c) within, or on the levee banks of the normal flow channel of any watercourse.

NOTE: To provide clarity, geotechnical drilling associated with the design of creek diversions and associated levees is not subject to this condition. Such works will be undertaken in accordance with the latest version of the Guideline - activities in a watercourse, lake or spring associated with mining operations.

Non-artesian Drill Holes

F59 The holder of the environmental authority must decommission and rehabilitate all non-artesian exploration drill holes, apart from those to be converted to a monitoring bore or a water bore, but no later than 3 months after the hole was drilled.

F60 The holder of the environmental authority must isolate sub-artesian water aquifers where a drill hole intersects more than one water bearing strata in accordance with the '*Minimum Construction Requirements for Water Bores in Australia*' (Australian Government, February 2012) or latest edition.

F61 Non-artesian exploration drill holes to be changed to water bores must be converted within 3 months of the exploration drill hole being drilled.

NOTE: Water Bores are licensed under the Water Act 2000.

- F62** The holder of the environmental authority must convert all non-artesian exploration drill holes required for ongoing monitoring and evaluation purposes to monitoring bores:
- a) within 3 months of the exploration drill hole being drilled; and
 - b) in accordance with the '*Minimum Construction Requirements for Water Bores in Australia*' (Australian Government, February 2012) or latest edition.

- F63** The location of each non-artesian exploration drill hole to be converted to a monitoring bore must be included within the Plan of Operations.

Monitoring Bores

- F64** Groundwater monitoring bores must be constructed in accordance with methods prescribed in the '*Minimum Construction Requirements for Water Bores in Australia*' -3rd Edition (LWBC), or equivalent.
- F65** The holder of this environmental authority must decommission and rehabilitate all monitoring bores in accordance with the '*Minimum Construction Requirements for Water Bores in Australia*' (Australian Government, February 2012) or latest edition.

Mineral Development Licence 285

- F66** All outstanding rehabilitation on the area of the superseded Mineral Development Licence 285, previously approved under Environmental Authority MIN100746508 must be rehabilitated in accordance with this Environmental Authority.

Schedule FX: Biodiversity

Biodiversity Offset Plan

FX1 A Biodiversity Offset Plan must be developed by an Appropriately Qualified Person.

NOTE: Where there is inconsistency between the conditions of this environmental authority and conditions contained within Part D of Appendix 2 of the Coordinator-Generals Evaluation Report on the environmental impact statement – Alpha Coal Project dated May 2012, the Coordinator-Generals' conditions prevail.

FX2 The Biodiversity Offset Plan must:

- a) identify each proposed stage of the project that may impact State Significant Biodiversity Values;
- b) provide for how potential impacts to State Significant Biodiversity Values will be assessed in accordance with the *Queensland Biodiversity Offset Policy* or an alternative approach approved by the administering authority; and
- c) include a detailed description of how the Biodiversity Offset Plan aligns with the requirements for offsets imposed on the holder under the *Environmental Protection and Biodiversity Act 1999* (Cth).

NOTE: The holder may apply to change the Biodiversity Offset Plan at any time, by submitting a new Biodiversity Offset Plan or an amendment to the plan to the administering authority for approval.

FX3 The Biodiversity Offset Plan must be submitted to the administering authority and approved prior to the commencement of Mining Activities, other than Minor Early Works and Mineral Development Maintenance Activities.

Assessment of State Significant Biodiversity Values

FX4 In accordance with the Biodiversity Offset Plan, an assessment for each stage of the project identified in the plan must be undertaken by an Appropriately Qualified Person to identify the presence, type, and extent of any State Significant Biodiversity Values, including an Ecological Equivalence Assessment for those areas to be disturbed.

NOTE: commencement of a stage of mining includes undertaking any disturbance associated with Mining Activities.

FX5 The assessment required under condition FX4 for Stages 1 and 2 of the project (as identified in the EPBC Act Report, June 2012) must be submitted together to the administering authority at least 2 months prior to the commencement of Mining Activities, other than Minor Early Works and Mineral Development Maintenance Activities, for the relevant stage.

Biodiversity Offset Strategy

FX6 Where the assessment required by condition FX4 identifies that the proposed Mining Activities for a stage of the project will potentially impact on a State Significant Biodiversity Value, the holder of the environmental authority must develop a Biodiversity Offset Strategy for the proposed stage of mining.

NOTE: The holder may apply to change the Biodiversity Offset Strategy for a mining stage, by submitting a new Biodiversity Offset Strategy or amendment to the strategy to the administering authority for approval.

FX7 The Biodiversity Offset Strategy for the proposed stage of mining must:

- a) quantify the offset requirements for that stage of mining and include a detailed description of the surveyed locations of State Significant Biodiversity Values, having regard to the assessment conducted under condition FX4;
- b) if the holder of the environmental authority proposes to offset impacts to State Significant Biodiversity Values through:
 1. a Legally Secured offset, identify the land within the Galilee Basin bioregions (including the land on which the relevant mining activity is carried out) or on other land in the State which may have the relevant State Significant Biodiversity Values and identify the proposed process by which that land will be investigated (including Ecological Equivalence Assessment) and Legally Secured; and/or
 2. an offset payment:
 - i. Indicate any commitment to make an offset payment in accordance with the *Queensland Biodiversity Offset Policy* or an alternative approach approved by the administering authority, including the amount(s) and timing of that payment; and/or
 - ii. indicate the level of offset delivery for which an offset payment(s) may be considered; and/or
 3. an offset transfer, indicate the level of offset delivery for which an offset transfer may be considered; and
- c) include a proposal that the ecological equivalence assessment of the impacted area and offsets area be undertaken in accordance with the *Queensland Biodiversity Offset Policy* or an alternative approach approved by the administering authority.

FX8 The Biodiversity Offset Strategy required under condition FX6 must:

- (a) be submitted to the administering authority for approval no more than 6 months after the commencement of Mining Activities, other than Minor Early Works and Mineral Development Maintenance Activities, for the stage; and

Offsets Delivery

FX9 The holder must provide a Legally Secured offset for any land identified in condition FX7 in accordance with the *Queensland Biodiversity Offset Policy*, or an alternative approach approved by the administering authority, within 3 years of submitting the relevant Biodiversity Offset Strategy.

FX10 The holder must provide any offset payment(s) identified in condition FX7 in accordance with the *Queensland Biodiversity Offset Policy* or an alternative approach approved by the administering authority:

- (a) in accordance with any commitment given in the Biodiversity Offset Strategy; and
- (b) within 3 years of submitting the relevant Biodiversity Offset Strategy.

FX11 The holder must enter into an agreement with the administering authority to provide any offset transfer identified in condition FX7 in accordance with the *Queensland Biodiversity Offset Policy* or an alternative approach approved by the administering authority within 3 years of submitting the relevant Biodiversity Offset Strategy.

Legally Secured Offsets (Direct Offsets) for land owned by Holder

FX12 The holder must develop an Offset Area Management Plan for the land it owns that is Legally Secured under FX11 in the format specified by the administering authority.

FX13 The Offset Area Management Plan required under condition FX 12 must contain the following information:

- a) management and environmental objectives and outcomes, performance criteria and monitoring requirements;

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- b) an analysis of the risks to achieve the objectives and outcomes;
 - c) any restrictions imposed on the use of the offset area, including the management/control of weeds, cattle and site access;
 - d) the activities that will be undertaken to achieve the objectives and outcomes, including the management/control of weeds, site access, erosion and sediment and fire management;
 - e) a map that shows spatially the areas subject to the Offset Area Management Plan; and
 - f) a reporting programme.

FX14 The Offset Area Management Plans must be submitted to the Administering Authority with 3 months of the land being Legally Secured under condition FX9.

FX15 Land Legally Secured under FX9 must be managed in accordance with the Offset Area Management Plan as approved by the administering authority.

FX16 Land Legally Secured under FX9 must be managed in accordance with the approved Offset Area Management Plan for each stage for a period of 30 years unless otherwise approved.

Offset Transfers

FX17 The holder of the environmental authority must comply with the requirements of any agreement under condition FX11.

Schedule G: Regulated Structures

- G1** The hazard category of any structure must be assessed by a suitably qualified and experienced person:
- a) in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*; and
 - b) in any of the following situations:
 - i. prior to the design and construction of the structure; or
 - ii. prior to any change in its purpose or the nature of its stored contents; and
 - iii. in accordance with the *Manual for assessing Hazard Categories and Hydraulic Performance of Dams*.
- G2** A hazard assessment report and certification must be prepared for any structure assessed and the report may include a hazard assessment for more than one structure.
- G3** The holder must, on receipt of a hazard assessment report and certification, provide to the administering authority one paper copy and one electronic copy of the hazard assessment report and certification.
- G4** 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 Hazard Categories and Hydraulic Performance of Dams*.
- G5** The holder must take reasonable and practical measures so that each dam associated with the mining activity is designed, constructed, operated and maintained in accordance with accepted engineering standards and is fit for the purpose for which it is intended.
- G6** 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 Hazard Categories and Hydraulic Performance of Dams*.
- G7** Construction of a regulated structure is prohibited unless the holder has:
- a) submitted a hazard category assessment report and certification to the administering authority;
 - b) commissioned a suitably qualified and experienced person to prepare a design plan for the structure; and
 - c) received the certification from 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.
- G8** 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 Hazard Categories and Hydraulic Performance of Dams*.

- G9** Regulated structures must:
- a) be designed and constructed in accordance with and conform to the requirements of the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*;
 - 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.
- G10** The design plan for a regulated structure must include, but is not limited to:
- a) certification that the design plan:
 - i. is in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, including subsidiary certifications if necessary; and
 - ii. addresses the requirements in G10(b) to (h)
 - b) A design report which provides:
 - i. a description of all the documents which constitute the design plan;
 - ii. a statement of:
 - a. the applicable standards including engineering criteria, industry guidelines, relevant legislation and regulatory documents, relied upon in preparing the design plan; and
 - b. all relevant facts and data used in preparing the design plan, including any efforts made to obtain necessary facts and data, and any limitations or assumptions to facts and data used in preparing the design plan;
 - c. the hazard category of the regulated structure; and
 - d. setting out the reasoning of the suitably qualified and experienced person who has certified the design plan, as to how the design plan provides the necessary required performance;
 - iii. documentation of hydrological analyses and estimates required to determine all elements of the design including volumes and flow capacities;
 - iv. detailed criteria for the design, operation, maintenance and decommissioning of the regulated structure, including any assumptions;
 - v. design, specification and operational rules for any related structures and systems used to prevent failure scenarios;
 - c) Drawings showing the lines and dimensions, and locations of built structures and land forms associated with the regulated structure;
 - d) Consideration of the interaction of the pit design with the levee or regulated dam design;
 - e) An operational plan that includes:
 - i. normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance);
 - ii. 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;
 - f) A plan for the decommissioning and rehabilitation of the regulated structure at the end of its operational life;
 - g) Details of reports on investigations and studies done in support of the design plan;
 - h) Any other matter required by the suitably qualified and experienced person.

- G11** Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:
- a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure;
 - b) construction of the regulated structure is in accordance with the design plan;
- G12** Where a regulated dam is to be managed as part of an integrated containment system and the DSA volume is to be shared across the integrated containment system, the design and operating rules for the system as a whole must be documented in a system design plan that is certified by a suitably qualified and experienced person.
- G13** The system design plan must contain:
- a) the design plans, and
 - b) the 'as constructed' plans, and
 - c) the operational rules for each individual regulated dam that forms part of the integrated system, and
 - d) the standards of serviceability and accessibility of water transfer equipment or structures, and
 - e) the operational rules for the system as a whole.

Operation of a regulated structure

- G14** Operation of a regulated structure is prohibited unless:
- a) the holder has submitted to the administering authority:
 - i. one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition G7, and
 - ii. a set of 'as constructed' drawings and specifications, and
 - iii. certification of those 'as constructed drawings and specifications' in accordance with condition G8, and
 - iv. where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan.
 - b) the requirements of this authority relating to the construction of the regulated structure have been met; and
 - c) Relevant details for the dam have been included in *Table 29: Location of Regulated Structures* and *Table 30: Basic Details of Regulated Dams* of this authority.
- G15** Each regulated structure must be maintained and operated in a manner that is consistent with the current design plan, the current operational plan, and the associated certified 'as constructed' drawings for the duration of its operational life until decommissioned and rehabilitated.
- G16** The holder must take reasonable and practicable control measures to prevent the causing of harm to persons, livestock or wildlife through the construction and operation of a regulated structure. Reasonable and practicable control measures may include, but are not limited to:
- a) the secure use of fencing, bunding or screening; and
 - b) escape arrangements for trapped livestock and fauna.

Mandatory reporting level

- G17** 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.
- G18** The holder must, as soon as practical and within forty-eight hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the Mandatory Reporting Level.

- G19** The holder must, immediately on becoming aware that the Mandatory Reporting Level has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.

Annual inspection report

- G20** Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
- G21** At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed:
- a) against the most recent hazard assessment report and design plan (or system design plan);
 - b) against recommendations contained in previous annual inspections reports;
 - c) against recognised dam safety deficiency indicators;
 - d) for changes in circumstances potentially leading to a change in hazard category;
 - e) for conformance with the conditions of this authority;
 - f) for conformance with the 'as constructed' drawings;
 - g) 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);
 - h) for evidence of conformance with the current operational plan.
- G22** A suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and including recommended actions to ensure the integrity of the regulated structure.
- G23** The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*.
- G24** The holder must:
- a) upon receipt of the annual inspection report, consider the report and its recommendations and take action to ensure that the regulated structure will safely perform its intended function; and
 - b) within twenty business days of receipt of the annual inspection report, notify the administering authority in writing, of the recommendations of the inspection report and the actions being taken to ensure the integrity of each regulated structure.
- G25** A copy of the annual inspection report must be provided to the administering authority upon request and within ten business days of receiving a request from the administering authority under this condition.

Design storage allowance

- G26** On 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).
- G27** The holder must, as soon as possible and within forty-eight hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the Design Storage Areas volume on 1 November of any year, notify the administering authority.

- G28** 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 Design Storage Area volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.

Performance review

- G29** 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.

- G30** The holder must take action to modify its water management or linked containment system so as to ensure that the regulated dam or linked containment system will perform in accordance with the requirements of this authority, for the subsequent November to May period.

NOTE: Action may include seeking the necessary approvals for physical modification of a regulated dam.

Transfer arrangements

- G31** 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, hazard assessment, design plan and other supporting documentation, to a new holder and the administering authority on transfer of this authority.

Decommissioning and rehabilitation

- G32** Prior to the cessation of the environmentally relevant activity, each regulated structure must be decommissioned such that:

- a) ongoing environmental harm is minimised by the regulated structure:
 - i. becoming a safe site for humans and animals at the completion of rehabilitation; and
 - ii. becoming a stable landform, that no longer contains flowable substances and minimises erosion impacts; and
 - iii. not allowing for acid mine drainage; and
 - iv. being approved or authorised under relevant legislation for a beneficial use; and
 - v. being a void authorised by the administering authority to remain after decommissioning; and
- b) the regulated structure is compliant with all other relevant rehabilitation requirements of this authority.

Regulated structures location and performance

- G33** Each regulated structure named in Column 1, *Table 29: Location of Regulated Structures* must be wholly located within the control points noted in columns 2 and 3 of *Table 29: Location of Regulated Structures*, below, for that structure.

Table 29: Location of Regulated Structures

Column 1	Column 2	Column 3	Column 4 Levees only
Name of Regulated Structure ¹	Latitude ² (GDA 94)	Longitude ² (GDA 94)	Unique Location ID ³
Alpha Bulk Sample Test Pit Site Water Control Pond	446066 446295 446241 446029	7431127 7431241 7431797 7430823	N/A
Alpha Bulk Sample Test Pit	446047 446282 446241 446029	7430780 7430752 7430300 7430326	N/A
Alpha Bulk Sample Test Pit Flood Protection Levee	447112 447082 446758 446744 446564 446534 446587 446553 446409 446350 446325 446217 446229 445962 446058 446293	7431158 7430892 7430931 7430794 7430669 7430574 7430441 7430361 7430298 7430239 7430165 7430194 7430275 7430305 7431130 7231254	Control Point 1 Control Point 2 Control Point 3 Control Point 4 Control Point 5 Control Point 6 Control Point 7 Control Point 8 Control Point 9 Control Point 10 Control Point 11 Control Point 12 Control Point 13 Control Point 14 Control Point 15 Control Point 16
Tailings Storage Facility	453281 453700 452625 451407 451069 452337	7423761 7428263 7430578 7429219 7422290 7420777	N/A
Tailings Storage Decant Dam	451079 450779 450850 451149	7427316 7427331 7428779 7428764	N/A
Environmental Dam 1	449535 449794 449651 449413	7429538 7429254 7429142 7429439	N/A
Environmental Dam 2	449452 449298 449207 449374	7432296 7432301 7431092 7431086	N/A
Environmental Dam 3	447884 447605 447763 447908	7422476 7421973 7421841 7422218	N/A
Environmental Dam 4	447940 447940 447740 447740	7425841 7425641 7425641 7425841	N/A
Environmental Dam 5	447586 447420 447335 447501	7429465 7429605 7429331 7429192	N/A
Environmental Dam 6	448409 448409 448133 448133	7434995 7434495 7434495 7434995	N/A

Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project
 Permit¹ Number:
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Column 1	Column 2	Column 3	Column 4 Levees only
Name of Regulated Structure ¹	Latitude ² (GDA 94)	Longitude ² (GDA 94)	Unique Location ID ³
Environmental Dam 7	449124 449317 449158 448965	7441073 7440914 7440721 7440881	N/A
Environmental Dam 8	448067 447980 447815 447899	7430116 7429796 7429839 7430156	N/A
Environmental Dam 9	448368 448119 448098 448347	7434237 7434258 7434008 7433988	N/A
Sediment Dam 1A	447578 447728 447507 447306	7421942 7421819 7421306 7421784	N/A
Sediment Dam 1B	447643 447616 447389 447231 447409 447453	7422645 7422422 7422094 7422244 7422424 7422648	N/A
Sediment Dam 2A	447604 447980 447950 447589	7425476 7425493 7425316 7425403	N/A
Sediment Dam 2B	447880 447878 447698 447619 447472 447636	7426092 7425934 7425890 7425736 7425832 7426073	N/A
Sediment Dam 3A	447236 447339 447346 447149 447278	7428326 7428336 7428213 7427921 7427860	N/A
Sediment Dam 3B	447799 447732 447793 447603 447690	7430857 7430504 7430980 7430574 7430970	N/A
Sediment Dam 4A	447889 447785 447722 447879	7432358 7432340 7432061 7432023	N/A
Sediment Dam 4B	447889 447856 447763 447748	7433761 7433441 7433454 7433754	N/A
Sediment Dam 5A	447921 447797 447799 447928	7434378 7434407 7434698 7434692	N/A
Sediment Dam 5B	448322 448314 448450 448452	7436630 7436919 7436917 7436623	N/A

Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project

Permit¹ Number:

Environmental Authority: MIN101017310

Column 1	Column 2	Column 3	Column 4 Levees only
Name of Regulated Structure ¹	Latitude ² (GDA 94)	Longitude ² (GDA 94)	Unique Location ID ³
Sediment Dam 6A	449004 448886 449011 448873	7440229 7440252 7440543 7440549	N/A
Sediment Dam 6B	449419 449678 449479 449702 449205	7442640 7442647 7443002 7441773 7442208	N/A
Brine Dam (within Decant Dam Footprint)	451079 450779 450850 451149	7427316 7427331 7428779 7428764	N/A
Lagoon Creek Levee	449637 449739 449350 448642 448823 448319 447930 448279 447941 447945 447059 446547	7442801 7441934 7440418 7438497 7437965 7430137 7428717 7425054 7423700 7422213 7420020 7419967	Ch 23835 Ch 22960 Ch 21395 Ch 19346 Ch 18275 Ch 10930 Ch 9455 Ch 5750 Ch 4375 Ch 2885 Ch 520 Ch 0
Sandy Creek Southern Levee (Pit Protection)	449229 447876 443777 443197 443447 444443 444040 443483 442285 442204 441803 442203 442178 441347 442026 441592	7443497 7443942 7443995 7443354 7441628 7439345 7438153 7437492 7436510 7434159 7432951 7432157 7430387 7428934 7427704 7426286	Ch 25553 Ch 24120 Ch 20000 Ch 18916 Ch 17155 Ch 14660 Ch 13422 Ch 12566 Ch 11000 Ch 8378 Ch 7325 Ch 6416 Ch 4343 Ch 3044 Ch 1513 Ch 0
Sandy Creek Northern Levee (Off-Lease Protection)	449299 449278 447969 443777 443080 443309 443624	7443977 7443641 7444077 7444110 7443409 7441690 7440995	Ch 25466 Ch 25553 Ch 24179 Ch 20000 Ch 18977 Ch 17715 Ch 16500
Spring Creek Northern Levee (Pit Protection)	449299 449278 447969 443777 443080 443309 443624	7443977 7443641 7444077 7444110 7443409 7441690 7440995	Ch 25466 Ch 25553 Ch 24179 Ch 20000 Ch 18977 Ch 17715 Ch 16500
Spring Creek Southern Levee (Off-Lease Protection)	449229 447876 443777 443197 443447 444443 444040 443483 442285 442204 441803 442203	7443497 7443942 7443995 7443354 7441628 7439345 7438153 7437492 7436510 7434159 7432951 7432157	Ch 25553 Ch 24120 Ch 20000 Ch 18916 Ch 17155 Ch 14660 Ch 13422 Ch 12566 Ch 11000 Ch 8378 Ch 7325 Ch 6416

Column 1	Column 2	Column 3	Column 4 Levees only
Name of Regulated Structure ¹	Latitude ² (GDA 94)	Longitude ² (GDA 94)	Unique Location ID ³
	442178 441347 442026 441592	7430387 7428934 7427704 7426286	Ch 4343 Ch 3044 Ch 1513 Ch 0

¹ The 'name of the regulated structure' should refer to the name for example, process residue facility and decant dam.

² A minimum of three control points is required to constrain the location of all activities associated with the regulated structure. Additional infrastructure which forms part of any regulated dam may include appurtenant works consisting of seepage collections systems, runoff diversion bunds, containment systems, pressure relief wells, decant and recycle water systems. Note that details on tailing discharge pipelines would be included in this table only if they have not been included in the design plan required in condition G10.

³ This location reference is the reference for *Table 29: Location of Regulated Structures* flood level and crest level.

G34 Each regulated dam named in column 1 of *Table 29: Location of Regulated Structures*, must be consistent with the details noted in columns 2 through to and including 7 of *Table 30: Basic Details of Regulated Dams*, below, for that dam.

Table 30: Basic Details of Regulated Dams

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Name of Regulated dam ¹	Hazard Category	Surface area of dam at spillway (ha)	Max. volume of dam at spillway (ML)	Max. depth of dam ² at spillway (m)	Spillway Level (mAHD)	Use of dam ³
Alpha Bulk Sample Test Pit Site Water Control Pond	Significant	9.12	250	6	308	Storage of storm/flood water contaminated by the activities
Alpha Bulk Sample Test Pit	Significant	TBA	-	Max depth of void	-	Residual bulk sample pit void, within the footprint of future mining operations
Tailings Storage Facility	High	TBA	20000	TBA	TBA	Tailings Disposal
Tailings Storage Decant Dam	High	TBA	1000	TBA	TBA	Tailings Decant and Process Water Return
Environmental Dam 1	Significant	TBA	400	TBA	TBA	Capture MIA runoff and supply for reuse
Environmental Dam 2	Significant	TBA	700	TBA	TBA	Capture CHPP runoff and supply for reuse
Environmental Dam 3	Significant	TBA	1000	TBA	TBA	Pit water containment and supply for reuse
Environmental Dam 4	Significant	TBA	1000	TBA	TBA	Pit water containment and supply for reuse
Environmental Dam 5	Significant	TBA	1000	TBA	TBA	Pit water containment and supply for reuse
Environmental Dam 6	Significant	TBA	1000	TBA	TBA	Pit water containment and supply for reuse
Environmental Dam 7	Significant	TBA	1000	TBA	TBA	Pit water containment and supply for reuse
Environmental Dam 8	Significant	TBA	900	TBA	TBA	Capture ROM runoff and supply for reuse
Environmental Dam 9	Significant	TBA	1000	TBA	TBA	Capture ROM runoff and supply for reuse
Sediment Dam 1A	Significant	TBA	500	TBA	TBA	Capture mine spoil runoff
Sediment Dam 1B	Significant	TBA	700	TBA	TBA	Capture mine spoil runoff
Sediment Dam 2A	Significant	TBA	700	TBA	TBA	Capture mine spoil runoff
Sediment Dam 2B	Significant	TBA	600	TBA	TBA	Capture mine spoil runoff
Sediment Dam 3A	Significant	TBA	600	TBA	TBA	Capture mine spoil runoff
Sediment Dam 3B	Significant	TBA	700	TBA	TBA	Capture mine spoil runoff
Sediment Dam 4A	Significant	TBA	800	TBA	TBA	Capture mine spoil runoff
Sediment Dam 4B	Significant	TBA	300	TBA	TBA	Capture mine spoil runoff
Sediment Dam 5A	Significant	TBA	600	TBA	TBA	Capture mine spoil runoff
Sediment Dam 5B	Significant	TBA	600	TBA	TBA	Capture mine spoil runoff
Sediment Dam 6A	Significant	TBA	700	TBA	TBA	Capture mine spoil runoff
Sediment Dam 6B	Significant	TBA	700	TBA	TBA	Capture mine

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Name of Regulated dam ¹	Hazard Category	Surface area of dam at spillway (ha)	Max. volume of dam at spillway (ML)	Max. depth of dam ² at spillway (m)	Spillway Level (mAHD)	Use of dam ³
						spoil runoff
Brine Dam	High	TBA [*]	TBA [*]	TBA [*]	TBA [*]	Temporary storage for brine from water treatment plant

¹ The name of the regulated dam should refer to the name of the dam, for example, process residue facility and decant dam and should be the same name used in *Table 28: Location of Regulated Structures* for the dam.

² For regulated dams which do not require a dam wall, input the maximum void depth, for example, where dams are formed by excavating below the land surface or backfilling a residual void.

³ The use or purpose of the regulated dam should outline the designed function, for example, "the permanent containment of tailings resulting from the extraction of nickel, cobalt and other metals at the XYZ refinery".

G35 Each regulated dam named in column 1 of *Table 29: Location of Regulated Structures*, must meet the hydraulic performance criteria noted in columns 2 through to and including 4 of *Table 31: Hydraulic Performance of Regulated Dams*, below, for that dam.

Table 31: Hydraulic Performance of Regulated Dams

Column 1	Column 2	Column 3	Column 4
Name of Regulated dam	Spillway Capacity AEP	Design Storage Allowance AEP	Mandatory Reporting Level AEP
Alpha Bulk Sample Test Pit Site Water Control Pond	1:1000 AEP	1:1000 AEP	1:20 AEP 72 hr rainfall
Alpha Bulk Sample Test Pit Tailings Storage Facility	1:10000 AEP	Water Balance	1:100 AEP 72 hr rainfall
Tailings Storage Decant Dam	1:10000 AEP	Water Balance	1:100 AEP 72 hr rainfall
Environmental Dam 1	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Environmental Dam 2	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Environmental Dam 3	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Environmental Dam 4	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Environmental Dam 5	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Environmental Dam 6	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Environmental Dam 7	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Environmental Dam 8	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Environmental Dam 9	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 1A	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 1B	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 2A	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 2B	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 3A	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 3B	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 4A	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 4B	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 5A	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 5B	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 6A	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Sediment Dam 6B	1:1000 AEP	20yr 3 months	1:10 AEP 72 hr rainfall
Brine Storage Dam	1:1000 AEP	Water Balance	1:100 AEP 72 hr rainfall

- G36** Each regulated levee named in column 1 of *Table 29: Location of Regulated Structures*, must be consistent with the details noted in columns 2 through to and including 6 of *Table 32: Basic Details of Regulated Levees*, below, for that levee.

Table 32: Basic Details of Regulated Levees

Column 1 Name of Regulated Levee	Column 2 Design AEP	Column 3 Design Flood Level1 (mAHD)	Column 4 Minimum Levee Level1 (mAHD)	Column 5 Schedule D Table 1 Location ID1	Column 6 Use of levee
Alpha Bulk Sample Test Pit Flood Protection Levee	1:1000 AEP	309.8	310	Control Point 1 Control Point 2 Control Point 3 Control Point 4 Control Point 5 Control Point 6 Control Point 7 Control Point 8 Control Point 9 Control Point 10 Control Point 11 Control Point 12 Control Point 13 Control Point 14 Control Point 15 Control Point 16	Operational Flood Protection of Pit and Pond
Lagoon Creek Levee	1:3000 AEP	303.158 303.28 303.801 306.179 307.075 312.15 313.007 315.005 316.777 317.745 319.853 320.597	303.658 303.78 304.301 306.679 307.575 312.65 313.507 315.505 317.277 318.245 320.353 321.097	Ch 23835 Ch 22960 Ch 21395 Ch 19346 Ch 18275 Ch 10930 Ch 9455 Ch 5750 Ch 4375 Ch 2885 Ch 520 Ch 0	Provides 3000yr ARI flood immunity to pits and mining infrastructure
Sandy Creek Southern Levee (Pit Protection)	1:3000 AEP	303.74 306.147 310.25 313.314 315.841 318.898 319.683 321.541 323.798 325.474 326.383 326.556 327.277 329.937 331.43 335.227	304.24 306.647 310.75 313.814 316.341 319.398 320.183 322.041 324.298 325.974 326.883 327.056 327.777 330.437 331.93 335.727	Ch 25553 Ch 24120 Ch 20000 Ch 18916 Ch 17155 Ch 14660 Ch 13422 Ch 12566 Ch 11000 Ch 8378 Ch 7325 Ch 6416 Ch 4343 Ch 3044 Ch 1513 Ch 0	Provides 3000yr ARI flood immunity to pits and mining infrastructure
Sandy Creek Northern Levee (Off-Lease Protection)	1:3000 AEP	303.912 303.74 306.063 310.25 313.202 315.164 316.903	304.412 304.24 306.563 310.75 313.702 315.664 317.403	Ch 25466 Ch 25553 Ch 24179 Ch 20000 Ch 18977 Ch 17715 Ch 16500	Provides protection to off-lease areas from flooding from the diversion to a 3000 yr ARI flood event
Spring Creek Northern Levee (Pit Protection)	1:3000 AEP	319.929 320.331 320.77 338.839 340.889 341.458 340.199 337.983 336.808 338.297 338.404	320.429 320.831 321.27 339.339 341.389 341.958 340.699 338.483 337.308 338.797 338.904	Ch 11175 Ch 10693 Ch 10300 Ch 5791 Ch 5403 Ch 4945 Ch 4376 Ch 3230 Ch 2229 Ch 760 Ch 463	Provides 3000yr ARI flood immunity to pits and mining infrastructure
Spring Creek Southern Levee (Off-Lease Protection)	1:3000 AEP	319.929 320.331 320.77	320.429 320.831 321.27	Ch 11175 Ch 10693 Ch 10300	Provides protection to off-lease areas

Column 1 Name of Regulated Levee	Column 2 Design AEP	Column 3 Design Flood Level1 (mAHD)	Column 4 Minimum Levee Level1 (mAHD)	Column 5 Schedule D Table 1 Location ID1	Column 6 Use of levee
		338.839 340.257 340.889	339.339 340.757 341.389	Ch 5791 Ch 5596 Ch 5403	from flooding from the diversion to a 3000 yr ARI flood event

¹ Design flood levels, and hence regulated levee levels, are expected to vary along the length of that levee. The location IDs listed (Column 5) must correspond with location IDs listed in *Table 29: Location of Regulated Structures* and, together with Columns 3 and 4, define the minimum design level envelope for the longitudinal crest of the structure.

Schedule H: Sewage Treatment

- H1** The daily operation of the wastewater treatment plant must be carried out by a person(s) with appropriate experience and/or qualifications to ensure the effective operation of that treatment system.
- H2** Pipelines and fittings associated with the effluent irrigation system must be clearly identified. Lockable valves or removable handles must be fitted to all release pipelines situated in public access areas.
- H3** Treated effluent from the sewage treatment plant must only be discharged from the authorised discharge points, as specified in *Table 33: Effluent discharge locations* and discharged to the areas shown in *Table 35: Effluent irrigation locations*, in compliance with the limits stated in *Table 34: Effluent release limits* and the conditions of this authority.

Table 33: Effluent Discharge Locations

Authorised Discharge Point	Location	Easting (GDA94)	Northing (GDA94)
Exploration Camp Effluent Discharge Point 1	Exploration Camp Sewage Treatment Plant Holding Tank 1	449964	7436955
Exploration Camp Effluent Discharge Point 2	Exploration Camp Sewage Treatment Plant Holding Tank 2	449999	7436957
Exploration Camp Effluent Discharge Point 3	Exploration Camp Sewage Treatment Plant Holding Tank 3	449989	7437064
Exploration Camp Effluent Discharge Point 4	Exploration Camp Sewage Treatment Plant Holding Tank 4	450046	7437048
Construction and Operations Camp Effluent Discharge Point 1	Construction and Operations Camp Sewage Treatment Plant Effluent Discharge Point 1	451754	7437629

Table 34: Effluent Release Limits

Quality characteristics	Release limits		
	Minimum	Median	Maximum
5 day Biological oxygen demand (mg/L)	-	-	20
Suspended solids (mg/L)	-	-	30
Thermotolerant coliforms (Cfu/100mL ²)	-	10	-
Total phosphorus (mg/L)	-	-	15
Total nitrogen (mg/L)	-	-	30
Electrical Conductivity (µS/cm)	-	1600	-
pH	6.5	-	8.5

Table 35: Effluent Irrigation Area

Authorised Discharge Point	Effluent Irrigation Location	Northing (GDA94)	Easting (GDA94)
Exploration Camp Effluent Discharge Point 1	Exploration Camp Effluent Irrigation Area 1	449917	7437070
		449877	7437081
		449884	7437101
		449919	7437085
Exploration Camp Effluent Discharge Point 2	Exploration Camp Effluent Irrigation Area 2	449984	7437052
		449954	7437060
		449956	7437079
		449987	7437067
Exploration Camp Effluent Discharge Point 3	Exploration Camp Effluent Irrigation Area 3	450042	7437039
		450014	7437047
		450019	7437063
		450050	7437052
Exploration Camp Effluent Discharge Point 4	Exploration Camp Effluent Irrigation Area 4	450082	7437027
		450053	7437038
		450060	7437051
		450088	7437040
Construction and Operations Camp Effluent Discharge Point 1	Construction and Operations Camp Effluent Irrigation Area 1	452170	7437175
		452170	7437679
		452675	7437175
		452675	7437679

- H4** Subject to condition H3, releases of effluent must not have any properties nor contain any organisms or other contaminants in concentrations that are capable of causing environmental harm.
- H5** Treated effluent must not be used for dust suppression.
- H6** Treated effluent must not be released from the site to any waters or the bed and banks of any waters.
- H7** Water or storm water contaminated by sewage treatment activities must not be released to any waters or the bed and banks of any waters.

Land Disposal

- H8** The holder must develop and implement an Irrigation Management Plan which adequately addresses the following:
- a) efficiency of application;
 - b) control of sodicity in the soil;
 - c) minimisation of degradation of soil structure;
 - d) control of build ups of nutrients and heavy metals in the soil and subsoil from effluent and other sources;
 - e) preventing impacts on the groundwater resource through infiltration;
 - f) preventing subterranean flows of effluent to waters;
 - g) method of application; and,
 - h) health and safety in relation to effluent handling and irrigation.
- H9** The irrigation of effluent must be carried out in accordance with the Irrigation Management Plan, such that:
- a) there is no surface ponding of effluent;
 - b) soil erosion and soil structure damage is avoided;
 - c) percolation of effluent beyond the plant root zone is minimised;
 - d) the accumulation of nutrients and heavy metals in the soil and subsoil is minimised; and,
 - e) the quality of groundwater is not adversely affected.
- H10** Notices must be prominently displayed on areas undergoing effluent irrigation, warning the public that the area is irrigated with effluent and not to use or drink the effluent. These notices must be maintained in a visible and legible condition.
- H11** The daily volume of contaminants released to land must be determined or estimated by an appropriate method, (such as a flow meter), and records kept of such determinations and estimates.
- H12** When conditions prevent the irrigation of treated effluent to land (such as during or following rain events), the contaminants must be directed to a wet weather storage or alternative measures must be taken to store or lawfully dispose of effluent (such as tanking off site or transfer to another treatment plant).
- H13** A record of the removal of treated effluent from site must be kept detailing the following information:
- a) date of pickup of treated effluent;
 - b) volume of treated effluent removed from the site;
 - c) destination of the treated effluent; and
 - d) the transporter.

- H14** The responsibility for disposal of treated effluent by a third party must only be given or transferred in accordance with a written agreement (the third party agreement) that:
- a) contains a commitment from the third party to dispose of or use the effluent in such a way as to prevent environmental harm or public health incidents and specifically makes the third party aware of the General Environmental Duty (GED) under section 319 of the *Environmental Protection Act 1994*, environmental sustainability of any effluent disposal, and the protection of environmental values of waters;
 - b) requires the giving and transferring of treated effluent to cease where the holder of this environmental authority is notified or otherwise becomes aware that the third party's use of effluent is causing or threatens to cause unlawful environmental harm or is posing a human health risk, and the third party does not rectify the situation upon written request; and
 - c) requires the third party to have implemented an Irrigation Management Plan that satisfies the requirements of condition H8.

Effluent Monitoring

- H15** Monitoring at all effluent discharge points must be undertaken for the parameters specified in *Table 36: Effluent Monitoring Parameters* on a monthly basis. Records of the monitoring program must be kept for a period of five years.

Table 36: Effluent Monitoring Parameters

Quality characteristics	Units
5 day Biological oxygen demand	mg/L
Suspended solids	mg/L
Thermotolerant coliforms	cfu/100mL
Total phosphorus	mg/L
Total nitrogen	mg/L
Electrical Conductivity	µS/cm
pH	pH units

- H16** The following information must be recorded in relation to all effluent 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 measured or estimated daily flow of effluent at the time of sampling; and
 - e) the results of all monitoring.

Schedule I: Water Treatment

- I1** The daily operation of the water treatment plant must be carried out by a person(s) with appropriate experience and/or qualifications to ensure its effective operation.
- I2** Brine and any contaminated water generated from the water treatment plant must only be released from the authorised discharge points specified in *Table 37: Brine Water Management Infrastructure* to the water management infrastructure specified in *Table 37: Brine Water Management Infrastructure*.

Table 37: Brine Water Management Infrastructure

Authorised Discharge Point	Northing (GDA94)	Easting (GDA94)	Water Management Infrastructure
Brine Discharge Point 1	450921	7427971	Temporary Brine Dam
Brine Discharge Point 2	450921	7427971	Decant Dam

- I3** Disposal of brine and any contaminated water to the Temporary Brine Dam must cease once the Decant Dam is operational.

-
- I4** The hazard category of the Temporary Brine Dam must be determined by a suitably qualified and experienced person, prior to its construction and at least once every two years thereafter.
- I5** On cessation of operation of the Temporary Brine Dam, that dam must be maintained so as to avoid unlawful environmental harm until that dam is decommissioned.
- I6** The Temporary Brine Dam must be decommissioned within 12 months of the cessation of operation of the Temporary Brine Dam such that it:
- a) either:
 - i. becomes a stable landform, that no longer contains flowable substances, or
 - ii. is approved or authorised under relevant legislation for a beneficial use, or
 - iii. is a void authorised by the administering authority to remain after decommissioning; and
 - c) is compliant with the rehabilitation requirements of this environmental authority.

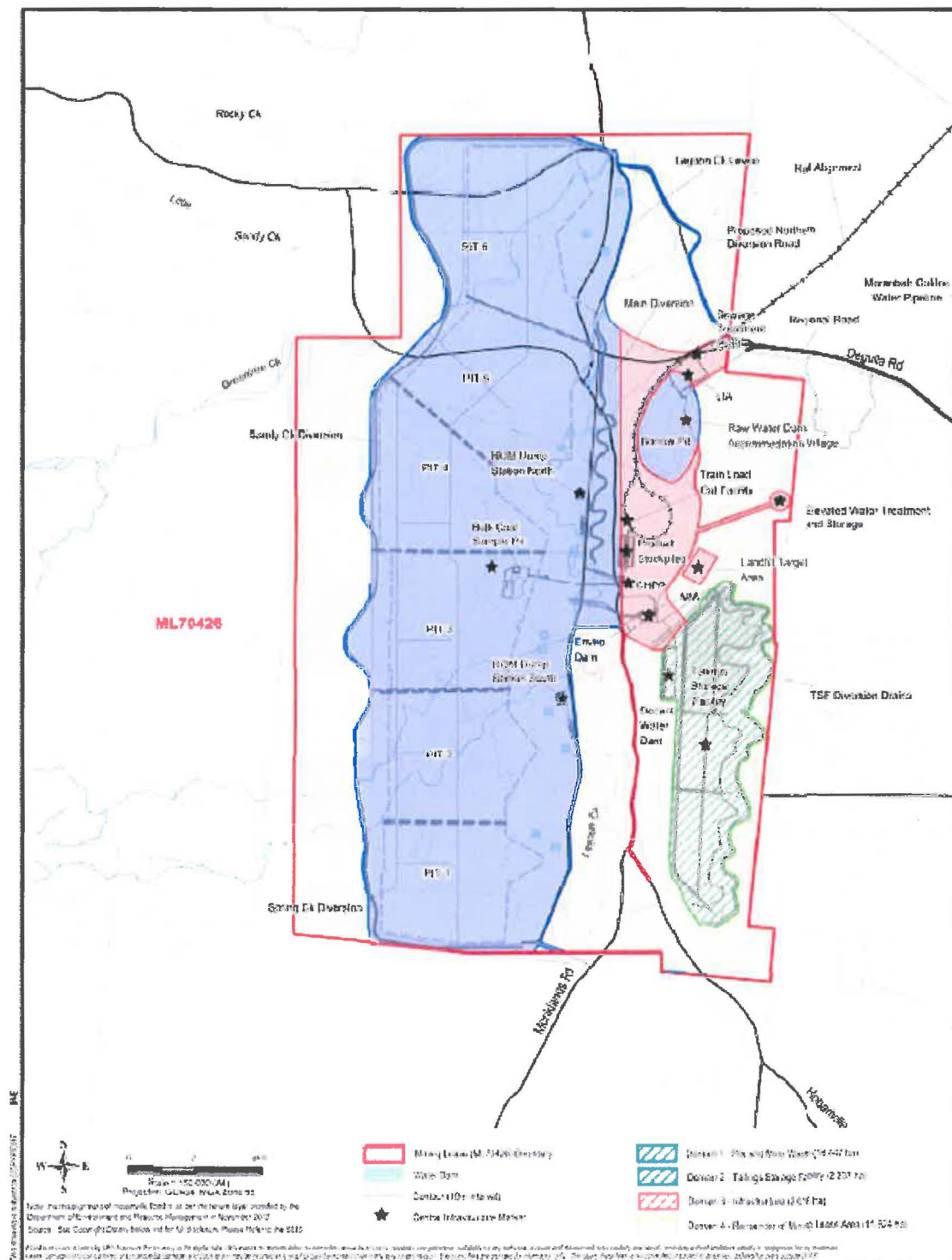
Schedule: Community

- J1** The holder of this environmental authority must record the following details for all complaints received and provide this information to the administering authority on request:
- a) name, address and contact number for complainant;
 - b) time and date of complaint;
 - c) investigations undertaken;
 - d) conclusions formed;
 - e) actions taken to resolve the complaint;
 - f) any abatement measures implemented; and
 - g) person responsible for resolving the complaint.
- J2** The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within 10 business days of completion of the investigation, or no later than 10 business days after the end of the timeframe nominated by the administering authority to undertake the investigation.

END OF CONDITIONS

Schedule K: Figures

Figure 1: Mining Domains



HANCOCK COAL
PTY LTD

ENVIRONMENTAL AUTHORITY

DOMAINS

ALPHA COAL MINE

1

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Conclusions

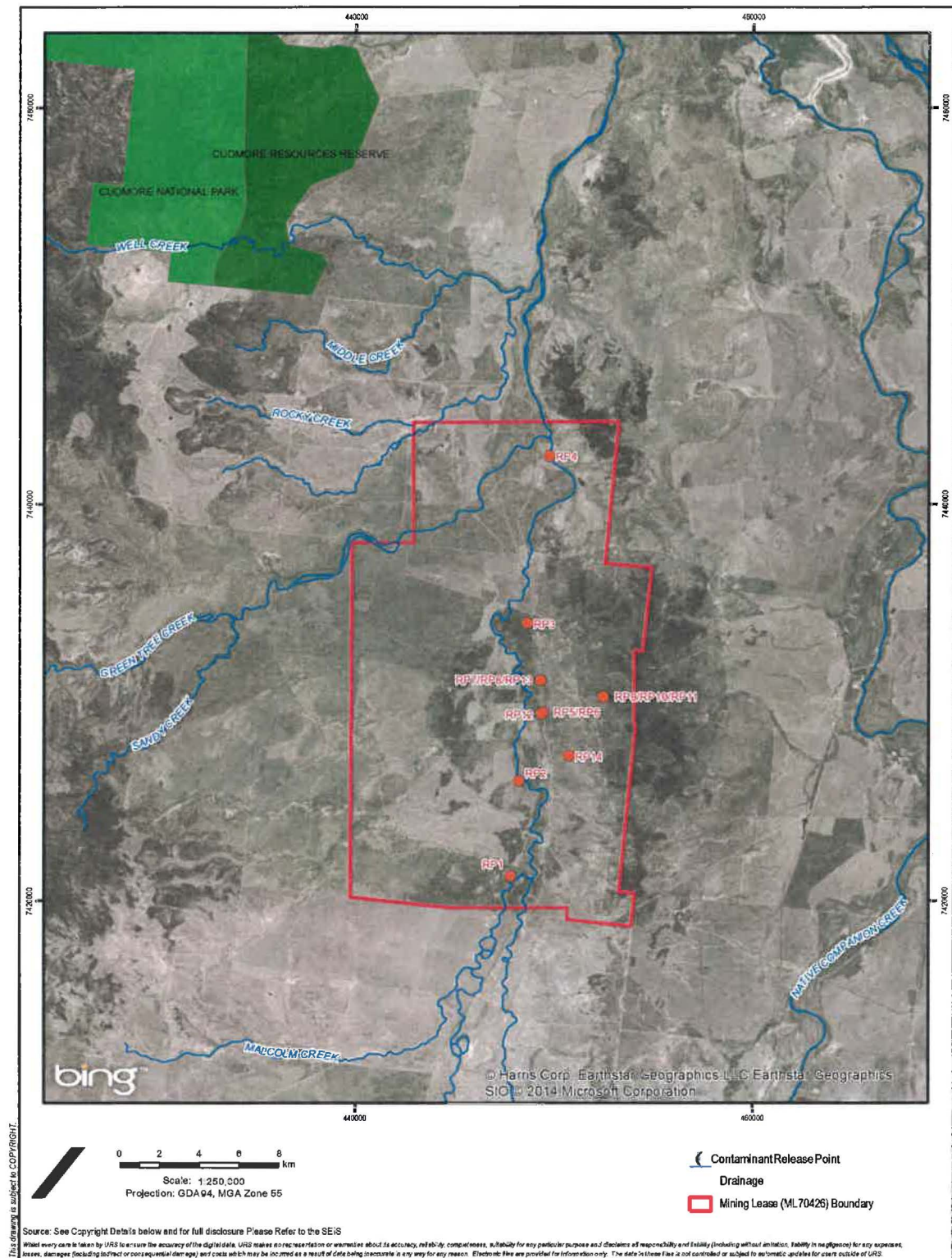
Appendix

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Figure 2: Mine Affected Water Release Points



HANCOCK COAL
PTY LTD

ENVIRONMENTAL AUTHORITY

CONTAMINANT
RELEASE POINTS

URS

ALPHA COAL MINE

Figure: 2

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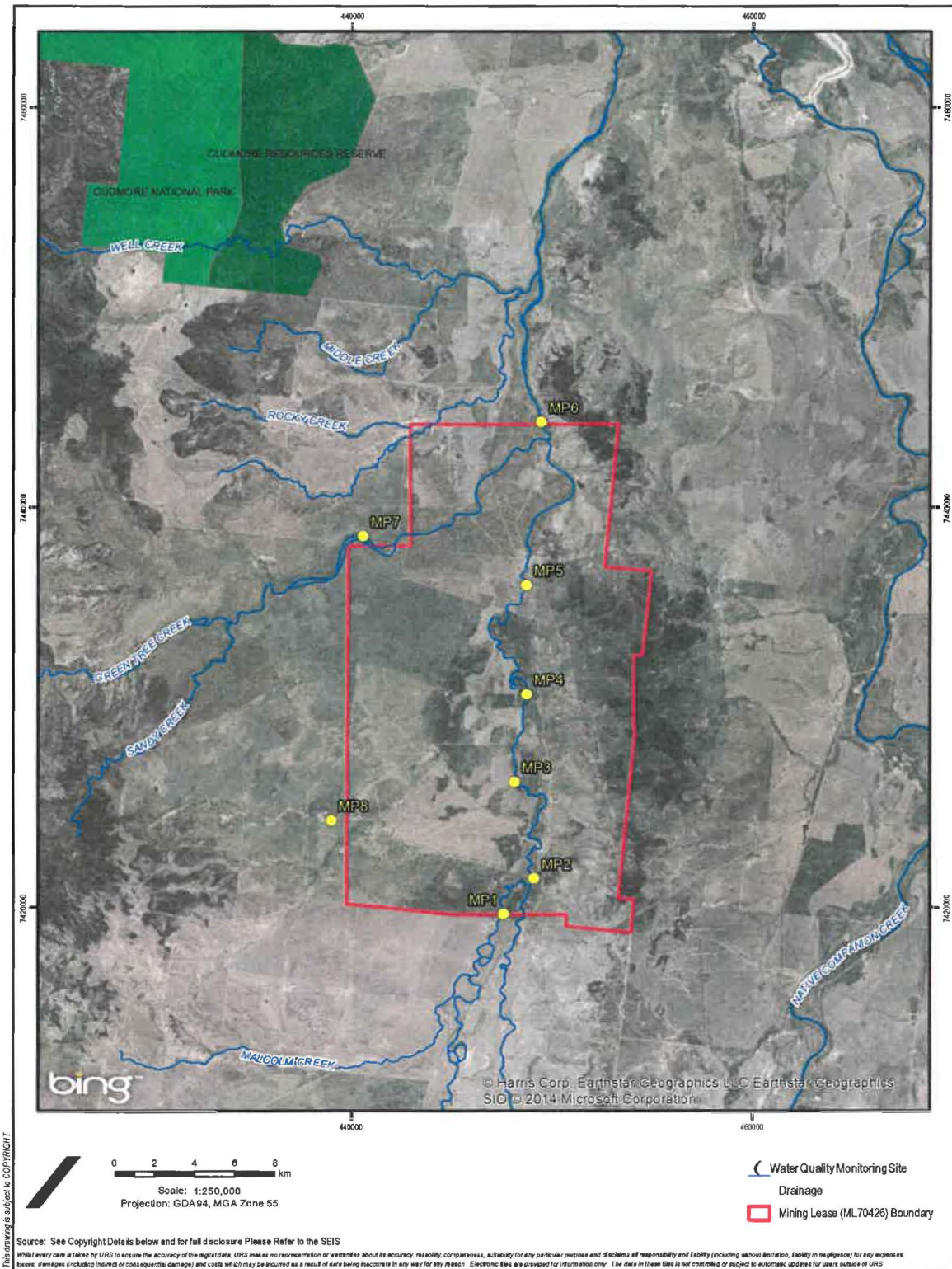
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Date: 06-06-2014

Rev: C: A4

Figure 3: Receiving Water Upstream Background and Downstream Monitoring Locations



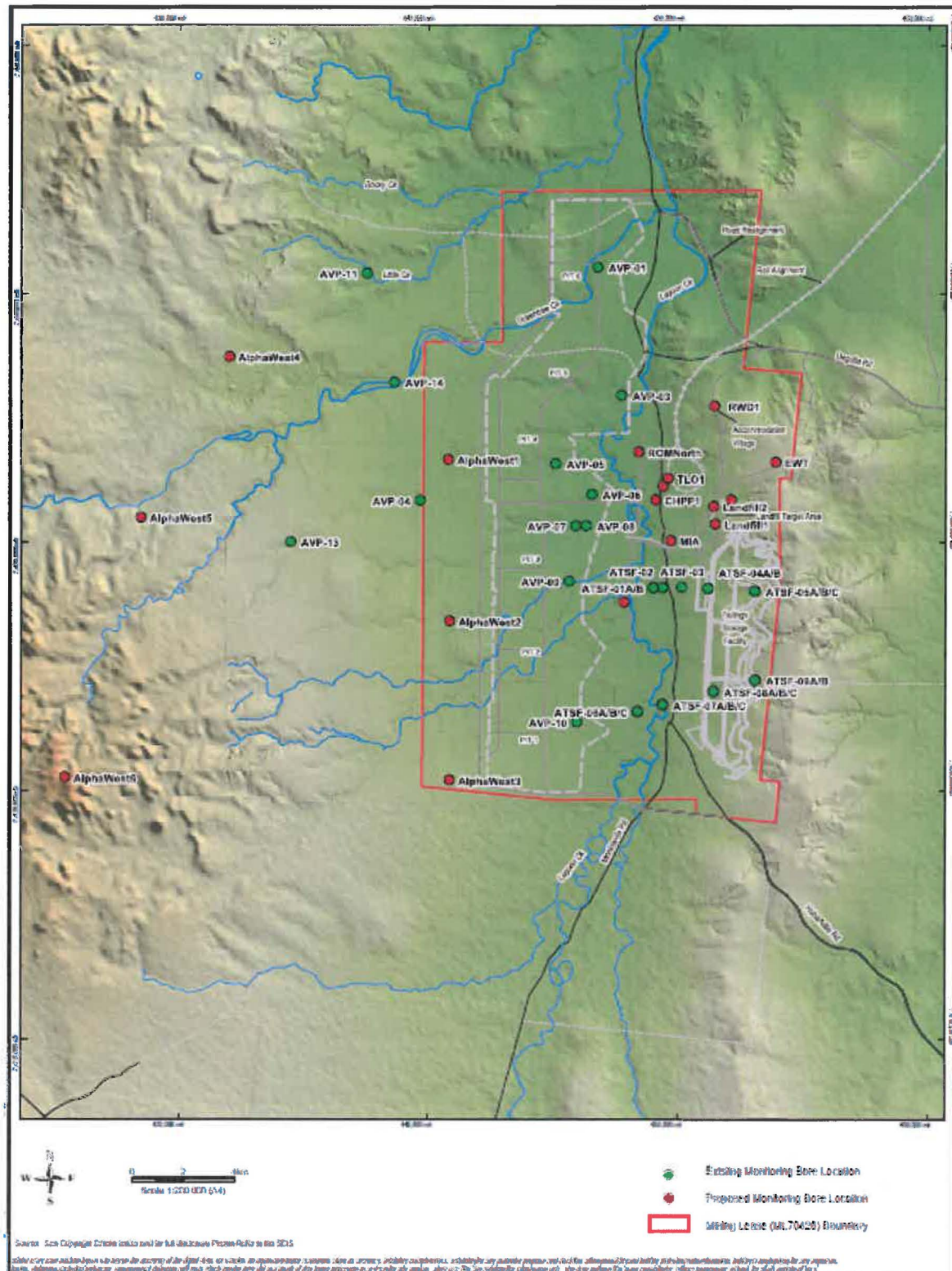
HANCOCK COAL
PTY LTD

ENVIRONMENTAL AUTHORITY

REMP LOCATIONS

URS	ALPHA COAL MINE		Figure: 3
	File No: 42626880-g-192.mxd	Drawn: RG	Approved: RS
	Date: 06-06-2014	Rev: C	A4

Figure 4: Groundwater Monitoring Locations



HANCOCK COAL
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ENVIRONMENTAL AUTHORITY

GROUNDWATER MONITORING
BORE LOCATIONS

URS

ALPHA COAL MINE

Figure: 4

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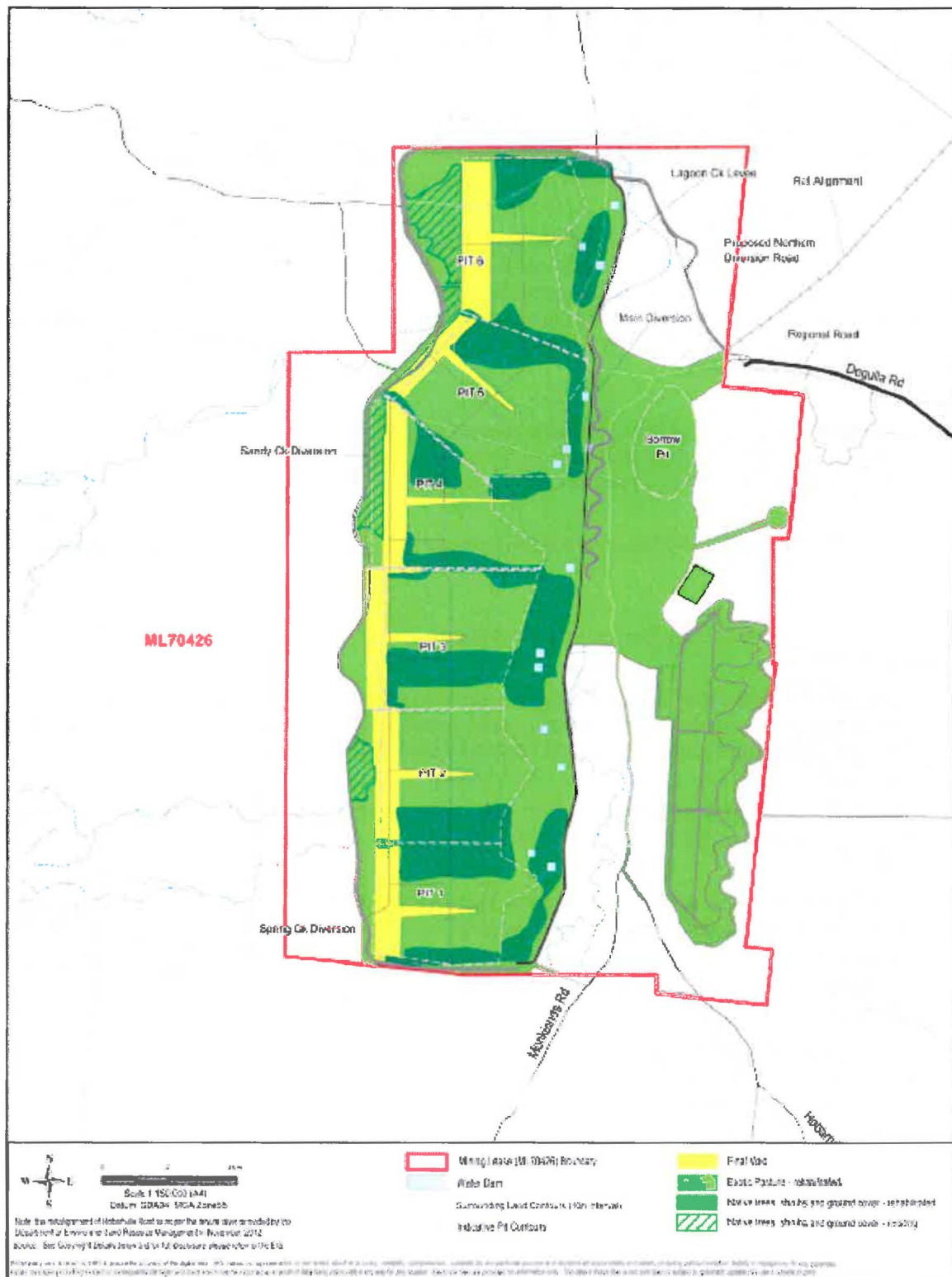
Approved: RS

Date: 06-09-2014

Rev D

A4

Figure 5: Final Landform Rehabilitation



HANCOCK COAL
 PTY LTD

ENVIRONMENTAL AUTHORITY

FINAL REHABILITATED
 LANDFORM

URS

ALPHA COAL MINE

Figure 5

File No: 42626880-g-195.wor

Drawn: RG

Approved: RS

Date: 06-06-2014

Rev: B

A4

Schedule L: Definitions

Words and phrases used throughout this licence are defined below except where identified in the *Environmental Protection Act 1994* or subordinate legislation. Where a word or term is not defined, the ordinary English meaning applies, and regard should be given to the Macquarie Dictionary.

"20th percentile flow" means the 20th percentile of all daily flow measurements (or estimations) of daily flow over a 10 year period for a particular site. The 20th percentile calculation should only include days where flow has been measured (or estimated), i.e. not dry weather days.

"accepted engineering standards" in relation to dams, means those standards of design, construction, operation and maintenance that are broadly accepted within the profession of engineering as being good practice for the purpose and application being considered. In the case of dams, the most relevant documents would be publications of the Australian National Committee on Large Dams (ANCOLD), guidelines published by Queensland government departments, and relevant Australian and New Zealand Standards.

"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.

"administering authority" means the Department of Environment and Heritage Protection or its successor.

"AEP" means the Annual Exceedance Probability.

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

"ambient noise" at a place, means the level of noise at the place from all sources (near and far), measured as the Leq for an appropriate time interval.

"annual exceedance probability" means the probability that at least one event in excess of a particular magnitude will occur in any given year.

"ANZECC" means the *Australian and New Zealand Guidelines for Fresh Marine Water Quality 2000*.

"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.

"artesian bore" includes a shaft, well, gallery, spear or excavation, and any works constructed in connection with the shaft well, gallery, spear or excavation, that taps an aquifer and the water flows, or has flowed, naturally to the surface.

“assessed” or “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.

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

“bed and banks” for a waters, river, creek, stream, lake, lagoon, pond, swamp, wetland or dam means land over which the water of the waters, lake, lagoon, pond, swamp, wetland or dam normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed and banks that is from time to time covered by floodwater.

“beneficial use” in respect of dams means that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:

- a) of benefit to that owner in that it adds real value to their business or to the general community;
- b) in accordance with relevant provisions of the *Environmental Protection Act 1994*;
- c) sustainable by virtue of written undertakings given by that owner to maintain that dam; and
- d) the transfer and use have been approved or authorised under any relevant legislation.

“bioregion” has the meaning defined in the *Queensland Biodiversity Offset Policy*.

“biosolids” means the treated and stabilised solids from sewage.

“blasting” means the use of explosive materials to fracture:

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

“brine” means saline water with a total dissolved solid concentration greater than 40,000 mg/L, generated through water treatment activities.

“brine dam” means a regulated dam that is designed to receive, contain or evaporate brine.

“broker agreement” has the meaning given to it in the *Queensland Biodiversity Offset Policy*.

“bunded” means within bunding consistent with Australian Standard 1940.

“coal handling and processing plant waste” means coarse reject and tailings.

“certification” means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams, 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”.

“class 1 pest” has the meaning given to it under the *Land Protection (Pest and Stock Route Management) Act 2002*.

“class 2 pest” has the meaning given to it under the *Land Protection (Pest and Stock Route Management) Act 2002*.

“commencement of mining activities” means the commencement of activities permitted by the issue of a mining lease under the *Mineral Resources Act 1989* for the operational land not including early works.

“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.

“completion criteria” means the measures by which the actions implemented to rehabilitate the land are deemed to be complete. The completion criteria indicate the success of the rehabilitation outcome or remediation of areas which have been significantly been disturbed by the mining activities. Completion 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 ground water levels and catchment yields.

“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.

“contaminate” means to render impure by contact or mixture.

“contaminated” means the substance has come into contact with a contaminant.

“contaminant” A contaminant can be –

- a) a gas, liquid or solid; or
- b) an odour; or
- c) an organism (whether alive or dead), including a virus; or
- d) energy, including noise, heat, radioactivity and electromagnetic radiation; or
- e) a combination of contaminants.

“control measure” means any action or activity that can be used to prevent or eliminate a hazard or reduce it to an acceptable level.

“costeaning” means the digging of a trench or put across the seam or ore body for exposing, sampling and mapping of the ore body.

“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. A dam does not mean a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container.

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

“declared pest” has the meaning given to it under the *Land Protection (Pest and Stock Route Management) Act 2002*.

“deed of agreement” means a legal agreement between the holder of the environmental authority and the administering authority. The deed of agreement governs the obligations of the holder of the environmental authority in relation to the Queensland Biodiversity Offset Policy (Version 1 dated 3 October 2011). For clarity, the term deed of agreement in this environmental authority includes any subsequent version or amendment of the signed deed of agreement.

“design plan” is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include design and investigation reports, specifications and certifications, together with the planned decommissioning and rehabilitation works and outcomes. A design plan may include ‘as constructed’ drawings.

“design storage allowance” means an available volume, estimated in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* published by the Department of Environment and Heritage Protection (or its successor), that 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.

“direct offset” has the meaning given to it in the *Queensland Biodiversity Offset Policy*.

“domain” means land management units within a mine site, usually with similar geophysical characteristics.

“dwelling” means any of the following structures or vehicles that is principally used as a residence –

- a) a house, unit, motel, nursing home or other building or part of a building; or
- b) a caravan, mobile home or other vehicle or structure on land; or
- c) a water craft in a marina.

“early works” means preconstruction surveying, establishment of work site security arrangements (including signs, fences, safety barriers and temporary security personnel facilities), demolition and removal of structures and required public utility works up to the boundary of construction sites, and vegetation clearing associated with these activities.

“effluent” treated waste water discharged from sewage treatment plants.

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

“end of pipe” means the location at which water is released to waters or land.

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

“EPBC Act Report” means the Alpha Coal Project Mine Rail EPBC Act Report (ELA, June 2012)

“factor of safety” means the ratio of resisting forces to driving forces. The resisting force is the friction developed in a material along a potential failure plane under given loading conditions. The driving force is primarily gravity but can also include vibration loading and unbalanced groundwater pressures.

“financial assurance” means a security required under the *Environmental Protection Act 1994* by the Administering Authority to cover the cost of rehabilitation or remediation of disturbed land or to secure compliance with the environmental authority.

“financial surety” has the meaning defined in the *Queensland Biodiversity Offset Policy*.

“floodwater” means water overflowing, or that has overflowed, from waters, river, creek, stream, lake, pond, wetland or dam onto or over riparian land that is not submerged when the watercourse or lake flows between or is contained within its bed and banks.

“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.

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

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

“hazard category” means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*.

“holder” means any person who is the holder of, or is acting under the environmental authority.

“hydraulic performance” means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category in the *Manual of Assessing Hazard Categories and Hydraulic Performance of Dams*.

“impacts to State significant biodiversity values” means those impacts and State Significant Biodiversity values stated in the Site Based Offsets Plan.

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

“LA 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.

“LA 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

“LA, 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.

“lake” includes –

- a) lagoon, swamp or other natural collection of water, whether permanent or intermittent; and
- b) the bed and banks and any other element confining or containing the water.

“land” in Schedule F: Land 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 *DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland*.

“land use” term to describe the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

“landfill” means land used as a waste disposal site for lawfully putting solid waste on the land.

“leaf litter” means the uppermost layer of organic material in a soil, consisting of freshly fallen or slightly decomposed organic materials such as leaves, twigs and sticks, which have accumulated on the ground surface.

“legally secured” has the meaning defined in the October 2011 version of the *Queensland Biodiversity Offset Policy*.

“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 hazard dam” means any dam that is not a high or significant hazard category as assessed using the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams.

“lower explosive limit” means the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25°C and atmospheric pressure.

“mandatory reporting level” means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* published by the administering authority.

“mg/L” means milligrams per litre.

“mineral” means a substance which normally occurs naturally as part of the earth's crust or is dissolved or suspended in water within or upon the earth's crust and includes a substance which may be extracted from such a substance, and includes—

- a) clay if mined for use for its ceramic properties, kaolin and bentonite;
- b) foundry sand;
- c) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil therefrom;
- d) limestone if mined for use for its chemical properties;
- e) marble;
- f) mineral oil or gas extracted or produced from shale or coal by in situ processes;
- g) peat;
- h) salt including brine;
- i) shale from which mineral oil may be extracted or produced;
- j) silica, including silica sand, if mined for use for its chemical properties;
- k) rock mined in block or slab form for building or monumental purposes;

But does not include—

- a) living matter;
- b) petroleum within the meaning of the *Petroleum Act 1923*;
- c) soil, sand, gravel or rock (other than rock mined in block or slab form for building or monumental purposes) to be used or to be supplied for use as such, whether intact or in broken form;
- d) water.

“mine affected water” means the following types of water:

- a) pit water, tailings dam water, processing plant water;
- b) 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 other than effluent or brine;
- c) 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 runoff containing sediment only, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water;
- d) groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;
- e) groundwater from the mine's dewatering activities;
- f) a mix of mine affected water (under any of paragraphs i)-v)) and other water.

“mineral development maintenance activities” means:

- a) the operation and maintenance of regulated structures constructed on MDL285, previously authorised under environmental authority MIN100746508;
- b) the operation of the accommodation camp and associated facilities constructed on MDL285, previously authorised under environmental authority MIN100746508;
- c) maintenance of the existing groundwater monitoring network constructed on MDL285, previously authorised under environmental authority MIN100746508;
- d) expansion of the groundwater monitoring network by drilling new monitoring bores within the Mining Lease boundary and converting existing exploration drill holes constructed on MDL285, previously authorised under environmental authority MIN100746508, to monitoring bores in accordance with condition F64 and F65; and
- e) geotechnical sampling involving shallow small diameter drill holes using a truck mounted rig or small test pits to investigate ground conditions to support the design of mine infrastructure.

NOTE: Mineral development maintenance activities are mining activities as defined under section 147 of the Environmental Protection Act 1994.

“mining waste” means waste rock, spoil of overburden.

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

“modification” or **“modifying”** see construction.

“MRL” means Mandatory Reporting Level.

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

“nature” includes:

- a) ecosystems and their constituent parts; and
- b) all natural and physical resources; and
- c) natural dynamic processes.

“non-artesian exploration drill hole” means an exploration drill hole that does not intersect aquifers of an artesian basin.

“noxious” means harmful or injurious to health or physical well being.

“nuisance sensitive place” includes –

- a) a dwelling, residential allotment, mobile home or caravan park, residential marina;
- b) or other residential premises; or
- c) a motel, hotel or hostel; or
- d) an educational institutional; or
- e) a medical centre or hospital; or
- f) a protected area; or
- g) a public thoroughfare, park or gardens; or

h) a place used as a workplace, and office or for business or commercial purposes and includes a place within the cartilage of such a place reasonably used by persons at the place; except where located on the mining lease.

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

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

“operational plan” for a dam means a document that amongst other things sets out procedures and criteria to be used for operating a dam during a particular time period. The operational plan as defined herein may form part of a plan of operations or plan otherwise required in legislation.

“offset” means either a:

- direct land based offsets:
 - values to be offset using a direct land based offset;
 - an assessment of the offset area to demonstrate how it meets the requirements of the Biodiversity Offset Policy;
 - an assessment of ecological equivalence carried out in accordance with the Ecological Equivalence Methodology.;
 - legally binding mechanism; and
 - offset area management plan.
- offset transfer:
 - values to be offset using an offset transfer
 - evidence that State significant biodiversity values to be impacted can be offset within the landscape;
 - an assessment of ecological equivalence carried out in accordance with the Ecological Equivalence Methodology;
 - Brokers Agreement or applicant letter; and
 - Identification of financial surety amount and calculation method
- offset payment:
 - the values to which the proposed offset payment relates; and
 - offset payment amount and calculation method.

developed in accordance with the *Queensland Biodiversity Offsets Policy* dated [Version 1 dated 3 October 2011].

“offset payment” has the meaning given to it in the *Queensland Biodiversity Offset Policy*.

“offset transfer” has the meaning given to it in the *Queensland Biodiversity Offset Policy*.

“palletised” means stored on a movable platform on which batteries are placed for storage or transportation.

“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).

“PMF” means probable maximum flood.

“probable maximum flood” means the flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in a particular drainage area.

“protected area” means:

- a) a protected area under the *Nature Conservation Act 1992*; or
- b) a marine park under the *Marine Parks Act 1992*; or
- c) a World Heritage Area.

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

“public utility works” means:

- a) the replacement, modification or relocation of public utilities required as a consequence of the project; and
- b) the construction of new utility infrastructure required for the project.

“receiving environment” means all groundwater, surface water, land, and sediments that are not disturbed areas authorised by this environmental authority.

“receiving waters” means all groundwater and surface water that are not disturbed areas authorised by this environmental authority.

“reference site” means an unmined feature against which a mined and rehabilitated feature may be compared. A reference site may reflect the original location or adjacent area of a disturbed area, where representative control plots are established, as nominated by the environmental authority holder.

Reference sites must be:

- areas of similar chemical and physical characteristics to the proposed rehabilitated areas;
- established in typical areas of each pre-mining regional ecosystem (vegetation community);
- not impacted by the mining activity;
- acceptable to the administering authority prior to use;
- in a similar ecological setting;
- utilised in a similar capacity as the proposed post mine land use; and
- under a similar fire regime as the proposed rehabilitated areas.

Rehabilitation must be compared with those reference sites that most typically reflect the pre-mining regional ecosystem that the environmental authority holder is seeking to redevelop in the rehabilitation.

“recycled water” means appropriately treated effluent and urban stormwater suitable for further use.

“regulated dam” means any dam in the significant or high hazard category as assessed using the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* published by the administering authority.

“regulated structure” means either a regulated dam or levee.

“rehabilitation” means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the completion criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.

"representative" means a sample set which covers the variance in monitoring or other data either due to natural changes or operational phases of the mining activities.

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

"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.

"sewage" means the used water of person's to be treated at a sewage treatment plant.

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

"stable" 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.

"stock" has the meaning given to it under the *Stock Act 1915*.

"storm water" means all surface water runoff from rainfall.

"State Significant Biodiversity Values" means the values identified in Appendix 1 State Significant Biodiversity Values of the Queensland Biodiversity Offset Policy (Version 1 dated 3 October 2011).

"subartesian bore" includes a shaft, well, gallery, spear or excavation (excluding the mining pits), and any works constructed in connection with the shaft, well, gallery, spear or excavation, that taps an aquifer and the water does not flow and never has flowed naturally to the surface.

"subartesian water" means water that occurs naturally in, or is introduced artificially into, an aquifer, which if tapped by a bore, would not flow naturally to the surface.

"suitably qualified and experienced person" in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:

- for regulated dams, and RPEQ who is a civil engineer with the required qualifications in dam safety and dam design;
- for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

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

"system design plan" means a plan that manages and integrated containment system that shares the required DSA volume across the integrated containment system.

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

“water” means –

- a) water in waters or spring;
- b) underground water;
- c) overland flow water; or
- d) water that has been collected in a dam.

“water bore” means an artesian bore or a subartesian bore.

“water monitoring bore” means a water bore used for monitoring impacts on underground water caused by the mining activities.

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

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

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

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

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

“µg/L” means micrograms per litre

“µs.cm-1” means microsiemens per centimetre

END OF DEFINITIONS

Appendix 1: Rehabilitation Requirements

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria	
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Long-term Safety	Structurally safe, with no hazardous materials	Safety assessment of landform stability	Certification by an appropriately qualified person, in the rehabilitation report that site slopes are now safe and will remain so.	
				The void is certified by an appropriately qualified person to be in compliance with condition G32.	
				Geotechnical stability of the highwall, low wall and end walls has been achieved and geotechnical investigations demonstrating this have been undertaken and reported.	
			Exposure to and availability of heavy metals and other toxic materials	Certification by an appropriately qualified person, in rehabilitation report that specified cover thickness is in place and predictions about future changes	
				Evidence in rehabilitation report that dust monitoring results at sensitive receptors have complied, and will continue to comply, with limits	
				Evidence in rehabilitation report that measures required in site contaminated land investigation report have been implemented	
		Results of site contaminated land investigation report	Past record of Spontaneous combustion	Certification by an appropriately qualified person in the rehabilitation report that there is no spontaneous combustion evidenced on site and will remain so.	
				Safety assessment of landform stability	Risks assessment has been completed and risk mitigation measures have been implemented. Where risk mitigation measures include bunds, safety fences and warning signs, these have been erected generally in accordance with relevant guidelines and Australian Standards.
					Landform design meets the design requirements of <i>Table 27: Landform design criteria</i> .
		Geotechnical studies	Highwall faces exhibit long-term geotechnical stability and a geotechnical report has been completed.		
			Ramp walls not backfilled exhibit long-term geotechnical stability and a geotechnical report has been completed		
			Landform design meets the design requirements of <i>Table 27: Landform design criteria</i> .		
		Adequacy and predicted long-term performance of safety barriers	Evidence in the Rehabilitation Report that adequate safety plan has been implemented.		
			Safe to people and animals	Stream bank erosion rates	Evidence in the Rehabilitation Report that all creek diversions are stable at closure and are likely to remain that way into the foreseeable future.
				Density and species composition of riparian vegetation	Certification by an appropriately qualified person that the species diversity and densities identified in the site Rehabilitation Management Plan have been achieved.
		Installation of safety barriers and human/wildlife exclusion fencing of final void if required following safety assessment.		Fencing or other suitable barrier installed around the perimeter of the final void to restrict access.	

Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project
Permit¹ Number:
Environmental Authority: MIN101017310

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Non Polluting	Hazardous materials adequately managed	Exposure to and availability of heavy metals and other toxic materials	Evidence that monitoring surface water quality for 5 years post closure has complied with specified guideline values Leaching tests of selected exposed mine waste material meet specified guideline values
			Results of site contaminated land investigation report	Evidence in rehabilitation report that measures required in site contaminated land investigation report have been implemented.
			Reject layers are capped with at least 1.5m of overburden material.	100% disposal or containment of potentially hazardous or contaminated waste material.
		Acid mine drainage will not cause serious environmental harm	Technical design of coarse reject cells	Certification by an appropriately qualified person in the rehabilitation report that the coarse reject placement was in accordance with the Coal Handling and Preparation Plant waste management plan required by condition F23.
		Acid mine drainage will not cause serious environmental harm	Downstream surface and groundwater monitoring	Certification by an appropriately qualified person in the rehabilitation report that the surface and groundwater quality is as predicted and stable.
			Surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> indicate that the quality of water entering the site as monitored at the 'Upstream Background Monitoring Locations' is not impacted by the rehabilitated mining activities and is of similar quality when monitored at the 'Downstream Monitoring Locations'.	Evidence that the surface water quality is not being degraded by rehabilitated land forms. Certification by an appropriately qualified person that surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> identify that the surface water quality is not negatively impacted by the rehabilitated landform.
			Groundwater monitoring undertaken at locations impacted or potentially impacted by the mining activities indicate that groundwater quality has not been degraded by the mining activities when compared to groundwater monitoring undertaken at background reference sites. The geological units to be monitored include alluvium, Bandanna Formation, Colinslea Sandstone, Clematis Sandstone, Rewan Formation and Joe Joe Formation.	Certification by an appropriately qualified person that groundwater monitoring identifies that the groundwater quality is not negatively impacted by the rehabilitated landform.

mw

Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project
Permit¹ Number:
Environmental Authority: MIN101017310

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Non Polluting	Acid mine drainage will not cause serious environmental harm	Pit water quality	Certification by an appropriately qualified person in the rehabilitation report that the water quality within the open cut voids is as predicted by the site groundwater model. Final voids will be contained on site, with no overflows into external surface water systems.
		Polluted water contained on site	Downstream surface and groundwater monitoring.	Certification by an appropriately qualified person in the rehabilitation report that the surface and groundwater quality is as predicted and stable.
			Surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> indicate that the quality of water entering the site as monitored at the 'Upstream Background Monitoring Locations' is not impacted by the rehabilitated mining activities and is of similar quality when monitored at the 'Downstream Monitoring Locations'.	Certification by an appropriately qualified person that surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> identify that the surface water quality is not negatively impacted by the rehabilitated landform.
			Groundwater monitoring undertaken at locations impacted or potentially impacted by the mining activities indicate that groundwater quality has not been degraded by the mining activities when compared to groundwater monitoring undertaken at background reference sites. The geological units to be monitored include alluvium, Bandanna Formation, Colinlea Sandstone, Clematis Sandstone, Rewan Formation and Joe Joe Formation.	Certification by an appropriately qualified person that groundwater monitoring identifies that the groundwater quality is not negatively impacted by the rehabilitated landform.
			No non-seasonal variations in the water level arising from rehabilitated landforms. The geological units to be monitored include alluvium, Bandana Formation, Colinlea Sandstone, Clematis Sandstone, Rewan Formation and Joe Joe Formation.	Certification by an appropriately qualified person that groundwater levels have not been impacted by the rehabilitated landform.

Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project
Permit¹ Number:
Environmental Authority: MIN101017310

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Non Polluting	Polluted water contained on site	Final landform water storages are contained on site, with no overflows into external surface water systems.	TBA ¹
			All permanent diversion channels will meet approved design criteria.	Certification by an appropriately qualified person that the permanent diversion channels have been constructed and are operating in accordance with approved design criteria.
			All permanent regulated structures will meet approved design criteria.	The regulated structures are certified by an appropriately qualified person to be in compliance with condition G32.
			All non-permanent regulated structures will be decommissioned in accordance with the administering authority requirements.	The regulated structures are certified by an appropriately qualified person to be in compliance with condition G32.
			Voids protected from Probable Maximum Flood. Flood modelling indicates that the post mine land form, including any flood protection levee will protect the voids from probable maximum flood.	Certification by an appropriately qualified person in the site Rehabilitation Report that the final voids have an adequate protection system to prevent inundation from a regional PMF.
		Rehabilitation or conversion of exploration drill holes and groundwater monitoring bores.	All non-artesian exploration drill holes undertaken under either this environmental authority or the previously approved environmental authority MIN100746508 (superseded tenure Mineral Development Licence 285) have been rehabilitated or converted to a water bore.	Certification by an appropriately qualified person that all non-artesian exploration drill holes not converted to either a water bore or a groundwater monitoring bore have been rehabilitated.
				Certification by an appropriately qualified person, that all sub-artesian aquifers have been isolated where non-artesian exploration drill holes have intersected more than one sub-artesian water bearing strata, in accordance with the 'Minimum Construction Requirements for Water Bores in Australia' (Australian Government, February 2012) or latest edition.
				Certification by an appropriately qualified person that all non-artesian exploration drill holes converted to a water bore have been converted in accordance with the 'Minimum Construction Requirements for Water Bores in Australia' (Australian Government, February 2012) or latest edition.
				Certification by an appropriately qualified person that all non-artesian exploration drill holes converted to a water bore are compliant with the requirements of the <i>Water Act 2000</i> .
			All monitoring bores undertaken under either this environmental authority or the previous environmental authority MIN100746508 (superseded tenure Mineral Development Licence 285) have been rehabilitated.	Certification by an appropriately qualified person that all monitoring bores have been rehabilitated in accordance with the 'Minimum Construction Requirements for Water Bores in Australia' (Australian Government, February 2012) or latest edition.

cmw

Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project

Permit¹ Number:

Environmental Authority: MIN101017310

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Non Polluting	No spontaneous combustion in spoil emplacements	Past record of Spontaneous combustion	Certification by an appropriately qualified person in rehabilitation report that coal seams in pit are adequately covered to prevent spontaneous combustion
		Diversion design and maintenance achieves appropriate erosion rates	Steam bank stability	Zero occurrence of spontaneous combustion causing fires and inhibiting vegetation.
			The administering authority of the Water Licence under the <i>Water Act 2000</i> has determined that the Water Licence is no longer required.	Confirmation in writing from the administering authority of the Water Licence under the <i>Water Act 2000</i> that the Water Licence is no longer required.
			Surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> indicate that the quality of water entering the site as monitoring and the 'Upstream Background Monitoring Locations' is not impacted by the rehabilitated mining activities and is of similar quality when monitored at the 'Downstream Monitoring Locations'.	Certification by an appropriately qualified person that surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> identify that the surface water quality is not negatively impacted by the rehabilitated landform.
	Stable Landform	Very low probability of slope slippage or failure with serious environmental consequences	Past record of slope failure	Evidence in the rehabilitation report that appropriate control measures are in place to prevent recurrence.
		Landform design achieves appropriate erosion rates	Slope angle and length	Evidence in the rehabilitation report that the rehabilitated slopes have been designed to the specifications outlined in <i>Table 27: Landform design criteria</i> , the Environmental Management Plan and the Rehabilitation Management Plan required under condition F36.
			No less than 75% of the area has slopes <10° and up to 45% of the area has slopes >10°	Evidence in the rehabilitation report that the rehabilitated slopes have been designed to the specifications outlined in <i>Table 27: Landform design criteria</i> .
			Engineered structures to control water flow	Evidence in the rehabilitation report that required contour banks, channel linings, surface armour, engineered drop structures, etc are in place and functioning.
			Rates of "soil" loss	Certification by a suitably qualified person that all land disturbed by the mining activities does not have a rate of soil loss that exceeds that in the reference site, identified in <i>Table 28: Reference Sites</i> for the corresponding locations identified within the Rehabilitation Management Plan. The applicable reference site must have the same chemical and physical characteristics including slope, slope length and fire regime as that of the rehabilitated landform.

Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project
Permit¹ Number:
Environmental Authority: MIN101017310

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Stable Landform	Landform design achieves appropriate erosion rates	Rates of "soil" loss	Certification by a suitably qualified person that all land disturbed by the mining activities does not exhibit any signs of continued erosion greater than that exhibited in the reference site, identified in <i>Table 28: Reference Sites</i> for the corresponding locations identified within the Rehabilitation Management Plan required under condition F36. The applicable reference site must have the same chemical and physical characteristics including slope, slope length and fire regime as that of the rehabilitated landform.
			Dimensions and frequency of occurrence of erosion rills and gullies are no greater than that in the corresponding reference sites.	Evidence that dimensions and frequency of occurrence of erosion rills and gullies are no greater than that in the corresponding reference sites identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.
		Vegetation cover to minimise erosion	Vegetation type and density	Evidence that the vegetation type and density are of species suited to the spoil composition, slope, aspect, climate and other factors, and that the measured erosion rates meet the goals set in the site Rehabilitation Management Plan required under condition F36.
				Vegetation types and density are comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.
			Foliage cover	Minimum of 70% vegetation cover is present (or 50% if rocks, logs or other features of cover are present). No bare surfaces >20% m ² in area or >10 m in length down slope. Foliage cover is comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.
			Leaf litter, humus, depth of growing medium	Evidence as recorded in the Rehabilitation Report that nutrient cycling is occurring and the presence of leaf litter is assisting in limiting erosion of the soil/spoil surface.
				Leaf litter, humus, depth of growing medium comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.
		Very low probability of rock falls with serious environmental consequences	Geotechnical studies	Evidence in the rehabilitation report that appropriate risk assessment has been undertaken and control measures put in place.
			Past record of rock falls	Evidence in the rehabilitation report that appropriate control measures are in place to prevent recurrence.
		The diversions and run off drainage lines mirror natural stream functions	Designed and constructed in accordance with the Queensland Government Natural Resources and Mines, <i>Central West Water Management and Use Regional Guideline: Watercourse Diversions – Central Queensland Mining Industry</i> , (2008)	Documentation in the rehabilitation report how the creek diversions have changed over the course of the Project and that they are stable at closure and are likely to remain that way into the foreseeable future.
			Stream bank erosion rates	Evidence in the rehabilitation report that all creek diversions are stable at closure and are likely to remain that way into the foreseeable future.

mm

Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project
 Permit¹ Number:
 Environmental Authority: MIN101017310

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Sustainable land use	Soil properties support the desired landuse	Chemical properties (e.g. pH, salinity, nutrients, trace elements) of topsoil and in soil profiles support the proposed vegetation	Certification in the Rehabilitation Report that the topsoil chemical properties stipulated in the site Rehabilitation Management Plan are being met in the rehabilitation areas.
			Physical properties (e.g. depth of top soil, plant available water capacity (PAWC))	Certification in the Rehabilitation Report that the topsoil depths and PAWC stipulated in the site Rehabilitation Management Plan are being met in the rehabilitation areas.
			Biological properties (e.g. nutrient cycling, microbial biomass, invertebrates)	Nutrient accumulation and recycling processes are occurring as evidenced by the presence of a litter layer, mycorrhizae and/or other microsymbiots. Adequate macro and micro-nutrients are present.
			The following indicators are comparable with reference sites: Organic matter; Soil nutrients; Invertebrate activity; Topsoil depth; Growth media depth; Physical and chemical property limits; Folia nitrogen and phosphorus.	Certification by an appropriately qualified person that the indicators are comparable for each area of rehabilitation identified in the Rehabilitation Management Plan as required under condition F36 with the corresponding reference site identified in <i>Table 28: Reference Sites</i> .
				Certification by an appropriately qualified person that there is a presence of representatives for a broad range of functional invertebrate species indicator groups involved in different ecological processes.
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes, including: Soil stability; Infiltration capacity; Nutrient cycling; Nutrient capacity; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	Ecosystem Function Analysis monitoring identifies for each area of rehabilitation identified in the Rehabilitation Management Plan as required under condition F36 when compared with the corresponding reference site identified in <i>Table 28: Reference Sites</i> that the rehabilitation is functioning in a manner consistent with the reference site.
				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 reference sites which are representative of the post mining land use.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Sustainable land use	Establish specified self sustaining natural vegetation or habitat	Presence of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that key species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Density of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that the density of key plant species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Composition of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that species diversity identified for each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Native fauna species, identified within the <i>Alpha Coal Project Environmental Impact Statement</i> and <i>Alpha Coal Project Supplementary Environmental Impact Statement</i> as occurring within the mining lease area have re-populated the rehabilitated areas.	Certification by an appropriately qualified person that groundcover, understorey and overstorey structure is similar to that of each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F37.
				Sightings of native fauna species identified within the <i>Alpha Coal Project Environmental Impact Statement</i> and <i>Alpha Coal Project Supplementary Environmental Impact Statement</i> or indicators of the presence of these species within the rehabilitated areas.
				Certification by an appropriately qualified person that the number of vertebrate species does not decrease by more than 25% in the successive seasons prior to mine relinquishment.
			Plant regeneration.	Certification by an appropriately qualified person that habitat structure for fauna species identified within the <i>Alpha Coal Project Environmental Impact Statement</i> and <i>Alpha Coal Project Supplementary Environmental Impact Statement</i> is available, including typical food, shelter and water sources required by the majority of vertebrate and invertebrate species that inhabit that rehabilitation type.
				Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence. Evidence of generational succession of trees and shrubs apparent in rehabilitated areas.
			Abundance of declared plants (weeds) identified through surveys. Records of the control actions taken to eradicate plants declared under local or State legislation.	Certification by an appropriately qualified person that no plants declared under local or State legislation exist on the site. Evidence that actions have been undertaken to eradicate plants declared under local or State legislation.

Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project

Permit¹ Number:

Environmental Authority: MIN101017310

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Sustainable land use	Establish specified self sustaining natural vegetation or habitat	Abundance of declared animals identified through surveys.	TBA ¹
			Records of the management actions taken to control animals declared under local or State legislation.	Records indicating that the holder has actively been managing animals declared under local or State legislation on the site.
			Records that all machinery, plant and equipment used for rehabilitation have been inspected to ensure they are free of declared plant seed by an appropriately qualified person prior to entering and leaving the site.	Records indicating that all machinery, plant and equipment used for rehabilitation was free of declared plant seed and reproductive material prior to entering the site.
				Records indicating that all machinery, plant and equipment use for rehabilitation was free of declared plant seed and reproductive material prior to leaving the site.
			The following indicators are comparable with reference sites: Organic matter; Soil nutrients; Invertebrate activity; Topsoil depth; Growth media depth; Physical and chemical property limits; Folia nitrogen and phosphorus	As for Rehabilitation Objective: Soil properties support the desired landuse
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes, including: Soil stability; Infiltration capacity; Nutrient capacity; Nutrient cycling; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	As for Rehabilitation Objective: Soil properties support the desired landuse

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Sustainable land use	Agricultural Cattle Grazing Agricultural land suitability class III ² and/or class IV ² .	Cattle stocking trials indicate areas nominated for cattle grazing as a post mining land use are sustaining an equal to or better stocking rate than that calculated for each relevant reference site identified in <i>Table 28: Reference Sites</i> .	Certification by an appropriately qualified person in the site Rehabilitation Report that areas nominated for cattle grazing are meeting and maintaining an equal to or better stocking rate than that calculated for each reference site identified in <i>Table 28: Reference Sites</i> .
				Determination of safe carrying capacity for future land use and future management strategies/agreements in place.
			Presence of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that key species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Density of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that the density of key plant species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Composition of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that species diversity identified for each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
				Certification by an appropriately qualified person that groundcover, understorey and overstorey structure is similar to that of each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Landform stability when grazed. Safety of landform for stock and for undertaking management activities associated with stock.	Land maintenance requirements are comparable to designated reference sites. TBA ¹
			Restricted access of stock to water sources that do not meet stock water requirements under ANZECC.	TBA ¹
			Plant regeneration.	Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence. Evidence of generational succession of trees, shrubs and grasses apparent in rehabilitated areas.

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Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project

Permit¹ Number:

Environmental Authority: MIN101017310

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Sustainable land use	Agricultural Cattle Grazing Agricultural land suitability class III ² and/or class IV ² .	The following indicators are comparable with reference sites: Organic matter; Soil nutrients; Invertebrate activity; Topsoil depth; Groth media depth; Physical and chemical property limits; Folia nitrogen and phosphorus.	As for Rehabilitation Objective: Soil properties support the desired landuse
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes, including: Soil stability; Infiltration capacity; Nutrient capacity; Nutrient cycling; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	As for Rehabilitation Objective: Soil properties support the desired landuse
		Wildlife Corridor adequately developed	The width of corridor is equal to or greater than the width specified in the Wildlife Corridor Strategy required under conditions F45 and F46.	Certification by an appropriately qualified person in the site Rehabilitation Report that the nominated wildlife corridor meets the requirements stipulated in the Rehabilitation Management Plan and site Closure Plan.
			Presence of key plant species as required to mimic Regional Ecosystem types – TBA ³ as identified through the Wildlife Corridor Strategy required under conditions F45 and F46.	Rehabilitation Success Criteria TBA ³ following completion of the Wildlife Corridor Strategy required under conditions F45 and F46 b) vii.
			Density of key plant species as required to mimic Regional Ecosystem types – TBA ³ as identified through the Wildlife Corridor Strategy required under conditions F45 and F46.	Rehabilitation Success Criteria TBA ³ following completion of the Wildlife Corridor Strategy required under conditions F45 and F46 b) vii.

cmw

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
1. Pits and Mine Waste (Includes Spoil Emplacement Areas, Final Voids and Creek Diversions)	Sustainable land use	Wildlife Corridor adequately developed	Composition of key plant species as required to mimic Regional Ecosystem types – TBA ³ as identified through the Wildlife Corridor Strategy required under conditions F45 and F46.	Rehabilitation Success Criteria TBA ³ following completion of the Wildlife Corridor Strategy required under conditions F45 and F46 b) vii.
			The Wildlife Corridor is connected to either rehabilitated stands of native vegetation ⁴ or remnant stands of native vegetation.	Rehabilitation Success Criteria TBA ³ following completion of the Wildlife Corridor Strategy required under conditions F45 and F46 b) vii.
			Native fauna species, identified within the <i>Alpha Coal Project Environmental Impact Statement</i> and <i>Alpha Coal Project Supplementary Environmental Impact Statement</i> as occurring within the mining lease area are utilising or have re-populated the Wildlife Corridor.	Rehabilitation Success Criteria TBA ³ following completion of the Wildlife Corridor Strategy required under conditions F45 and F46 b) vii.
		Rehabilitation Objectives TBA ² following completion of the Wildlife Corridor Strategy required under conditions F45 and F46 b) vii.	Rehabilitation indicators TBA ³ following completion of the Wildlife Corridor Strategy required under conditions F45 and F46 b) vii.	Rehabilitation Success Criteria TBA ³ following completion of the Wildlife Corridor Strategy required under conditions F45 and F46 b) vii.
	Further Rehabilitation Objectives, Indicators and Completion Criteria to be developed as part of the Rehabilitation Management Plan, under condition F36 and submitted to the administering authority in accordance with condition F43.			
2. Tailings Storage Facility (Includes tailings Storage Facility, Decant Water Dam, Roads and Rail).	Long-term Safety	Structurally safe, with no hazardous materials	Safety assessment of landform stability.	Certification in the rehabilitation report that site slopes are now safe and will remain so.
				The Tailings Storage Facility is certified by an appropriately qualified person to be in compliance with condition G32.
				The Decant Water Dam is certified by an appropriately qualified person to be in compliance with condition G32.
			Exposure to and availability of heavy metals and other toxic materials	Certification by an appropriately qualified person, in rehabilitation report that specified cover thickness is in place and predictions about future changes
				Evidence in rehabilitation report that dust monitoring results at sensitive receptors have complied, and will continue to comply, with limits.
Results of site contaminated land investigation report	Evidence in rehabilitation report that measures required in site contaminated land investigation report have been implemented			

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
2. Tailings Storage Facility (Includes tailings Storage Facility, Decant Water Dam, Roads and Rail).	Long-term Safety	No Spontaneous combustion in Spoil emplacements	Past record of Spontaneous combustion	Certification by an appropriately qualified person, in the rehabilitation report that there is no spontaneous combustion evidenced on site and will remain so.
		Site is safe for humans and animals now and in the foreseeable future	Appropriate decommissioning of regulated structures and other dams.	Certification by an appropriately qualified person, in the site Rehabilitation Report that the all dams has been decommissioned and rehabilitated.
				The Tailings Storage Facility is certified by an appropriately qualified person to be in compliance with condition G32.
				The Decant Water Dam is certified by an appropriately qualified person to be in compliance with condition G32.
				All regulated structures are certified by an appropriately qualified person to be in compliance with condition G32.
	Non-Polluting	Hazardous materials adequately managed	Exposure to and availability of heavy metals and other toxic materials	Evidence that monitoring surface water quality for 5 years post closure has complied with specified guideline values
				Leaching tests of selected exposed mine waste material meet specified guideline values
		Acid mine drainage will not cause serious environmental harm	Results of site contaminated land investigation report	Evidence in rehabilitation report that measures required in site contaminated land investigation report have been implemented
			Technical design of Tailings Storage Facility	Certification by an appropriately qualified person in the rehabilitation report that the Tailings placement was in accordance with the Coal Handling Preparation Plant waste management plan required under condition F23.
			Downstream surface and groundwater monitoring	Certification by an appropriately qualified person in the rehabilitation report that the surface and groundwater quality is as predicted and stable.
			Surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> indicate that the quality of water entering the site as monitored at the 'Upstream Background Monitoring Locations' is not impacted by the rehabilitated land form and is of similar quality when monitored at the 'Downstream Monitoring Locations'.	Evidence that the surface water quality is not being degraded by the rehabilitated landform.
				Certification by an appropriately qualified person that surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> identify that the surface water quality is not negatively impacted by the rehabilitated landform.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
2. Tailings Storage Facility (Includes tailings Storage Facility, Decant Water Dam, Roads and Rail).	Non-Polluting	Acid mine drainage will not cause serious environmental harm	Groundwater monitoring undertaken at locations impacted or potentially impacted by the mining activities indicate that groundwater quality has not been degraded by the mining activities when compared to groundwater monitoring undertaken at background reference sites. The geological units to be monitored include alluvium, Bandanna Formation, Colinlea Sandstone, Clematis Sandstone, Rewan Formation and Joe Joe Formation.	Certification by an appropriately qualified person that groundwater monitoring identified that the groundwater quality is not negatively impacted by the rehabilitated landform.
		Rehabilitation or conversion of exploration drill holes and groundwater monitoring bores.	All non-artesian exploration drill holes undertaken under either this environmental authority or the previously approved environmental authority MIN100746508 (superseded tenure Mineral Development Licence 285) have been rehabilitated or converted to a water bore.	Certification by an appropriately qualified person that all non-artesian exploration drill holes not converted to either a water bore or a groundwater monitoring bore have been rehabilitated.
				Certification by an appropriately qualified person, that all sub-artesian aquifers have been isolated where non-artesian exploration drill holes have intersected more than one sub-artesian water bearing strata, in accordance with the 'Minimum Construction Requirements for Water Bores in Australia' (Australian Government, February 2012) or latest edition.
				Certification by an appropriately qualified person that all non-artesian exploration drill holes converted to a water bore have been converted in accordance with the 'Minimum Construction Requirements for Water Bores in Australia' (Australian Government, February 2012) or latest edition.
				Certification by an appropriately qualified person that all non-artesian exploration drill holes converted to a water bore are compliant with the requirements of the <i>Water Act 2000</i> .
			All monitoring bores undertaken under either this environmental authority or the previous environmental authority MIN100746508 (superseded tenure Mineral Development Licence 285) have been rehabilitated.	Certification by an appropriately qualified person that all monitoring bores have been rehabilitated in accordance with the 'Minimum Construction Requirements for Water Bores in Australia' (Australian Government, February 2012) or latest edition.
		Polluted water contained on site	Downstream surface and groundwater monitoring	Certification by an appropriately qualified person in the rehabilitation report that the surface and groundwater quality is as predicted and stable.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
2. Tailings Storage Facility (Includes tailings Storage Facility, Decant Water Dam, Roads and Rail).	Non-Polluting	Polluted water contained on site	Surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> indicate that the quality of water entering the site as monitored at the 'Upstream Background Monitoring Locations' is not impacted by the rehabilitated land form and is of similar quality when monitored at the 'Downstream Monitoring Locations'.	Evidence that the surface water quality is not being degraded by the rehabilitated landform.
				Certification by an appropriately qualified person that surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> identify that the surface water quality is not negatively impacted by the rehabilitated landform.
			Groundwater monitoring undertaken at locations impacted or potentially impacted by the mining activities indicate that groundwater quality has not been degraded by the mining activities when compared to groundwater monitoring undertaken at background reference sites. The geological units to be monitored include alluvium, Bandanna Formation, Colinlea Sandstone, Clematis Sandstone, Rewan Formation and Joe Joe Formation.	Certification by an appropriately qualified person that groundwater monitoring identified that the groundwater quality is not negatively impacted by the rehabilitated landform.
			Final landform water storages are contained on site, with no overflows to external surface water systems.	Certification by an appropriately qualified person that surface water monitoring indicates that surface water quality is not negatively impacted by the rehabilitated landform.
			All permanent regulated structures will be decommissioned in accordance with the administering authority requirements.	The regulated structures are certified by an appropriately qualified person to be in compliance with condition G32.
			All non-permanent regulated structures will be decommissioned in accordance with the administering authority requirements.	The regulated structures are certified by an appropriately qualified person to be in compliance with condition G32.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
2. Tailings Storage Facility (Includes tailings Storage Facility, Decant Water Dam, Roads and Rail).	Stable	Landform design achieves appropriate erosion rates	Slope angle and length	Evidence in the rehabilitation report that the rehabilitated slopes have been designed to the specifications outlined in <i>Table 27: Landform design criteria</i> , the Environmental Management Plan and the Rehabilitation Management Plan required under condition F36.
			Engineered structures to control water flow	Evidence in the rehabilitation report that required contour banks, channel linings, surface armour, engineered drop structures, etc are in place and functioning.
			Rates of "soil" loss	Certification by a suitably qualified person that all land disturbed by the mining activities does not have a rate of soil loss that exceeds that in the reference site, identified in <i>Table 28: Reference Sites</i> for the corresponding locations identified within the Rehabilitation Management Plan. The applicable reference site must have the same chemical and physical characteristics including slope, slope length and fire regimes as that of the rehabilitated landform.
				Certification by a suitably qualified person that all land disturbed by the mining activities does not exhibit any signs of continued erosion greater than that exhibited in the reference site, identified in <i>Table 28: Reference Sites</i> for the corresponding locations identified within the Rehabilitation Management Plan required under condition F36. The applicable reference site must have the same chemical and physical characteristics including slope, slope length and fire regime as that of the rehabilitated landform.
			Dimensions and frequency of occurrence of erosion rills and gullies are no greater than that in the corresponding reference sites.	Evidence that dimensions and frequency of occurrence of erosion rills and gullies are no greater than that in the corresponding reference sites identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.
			Vegetation type and density	Evidence that the vegetation type and density are of species suited to the spoil composition, slope, aspect, climate and other factors, and that the measured erosion rates meet the goals set in the Rehabilitation Management Plan required under condition F37.
				Vegetation types and density are comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.
			Foliage cover	Minimum of 70% vegetation cover is present (or 50% if rocks, logs or other features of cover are present). No bare surfaces >20% m ² in area of >10 m in length down slope. Foliage cover is comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.
			Leaf litter, humus, depth of growing medium	Evidence as recorded in the Rehabilitation Report that nutrient cycling is occurring and the presence of leaf litter is assisting in limiting erosion of the soil/spoil surface. Leaf litter, humus, depth of growing medium comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
2. Tailings Storage Facility (Includes tailings Storage Facility, Decant Water Dam, Roads and Rail).	Sustainable land use	Soil properties support the desired landuse	Chemical properties (e.g. pH, salinity, nutrients, trace elements) of topsoil and in soil profiles support the proposed vegetation	Certification in the Rehabilitation Report that the topsoil chemical properties stipulated in the site Rehabilitation Management Plan are being met in the rehabilitation areas.
			Physical properties (e.g. depth of top soil, plant available water capacity (PAWC))	Certification in the Rehabilitation Report that the topsoil depths and PAWC stipulated in the site Rehabilitation Management Plan are being met in the rehabilitation areas.
			Biological properties (e.g. nutrient cycling, microbial biomass, invertebrates)	Nutrient accumulation and recycling processes are occurring as evidenced by the presence of a litter layer, mycorrhizae and/or other microsymbiots. Adequate macro and micro-nutrients are present.
			The following indicators are comparable with reference sites: Organic Matter; Soil nutrients; Invertebrate activity; Topsoil depth; Growth media depth; Physical and chemical property limits; Folia nitrogen and phosphorus.	Certification by an appropriately qualified person that the indicators are comparable for each area of rehabilitation identified in the Rehabilitation Management Plan as required under condition F36 with the corresponding reference site identified in <i>Table 28: Reference Sites</i> .
				Certification by an appropriately qualified person that there is a presence of representatives for a broad range of functional invertebrate species indicator groups involved in different ecological processes.
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes, including: Soil stability; Infiltration capacity; Nutrient cycling; Nutrient capacity; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	Ecosystem Function Analysis monitoring identifies for each area of rehabilitation identified in the Rehabilitation Management Plan as required under condition F36 when compared with the corresponding reference site identified in <i>Table 28: Reference Sites</i> that the rehabilitation is functioning in a manner consistent with the reference site.
				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 reference sites which are representative of the post mining land use.

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Environmental Authority: MIN101017310

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
2. Tailings Storage Facility (Includes tailings Storage Facility, Decant Water Dam, Roads and Rail).	Sustainable land use	Establish specified self sustaining natural vegetation or habitat	Presence of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that key species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Density of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that the density of key plant species identified for each reference site identified in <i>Table 23: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Composition of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F37.	Certification by an appropriately qualified person that species diversity identified for each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Native fauna species, identified within the <i>Alpha Coal Project Environmental Impact Statement</i> and <i>Alpha Coal Project Supplementary Environmental Impact Statement</i> as occurring within the mining lease area have re-populated the rehabilitated areas.	Certification by an appropriately qualified person that groundcover, understorey and overstorey structure is similar to that of each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
				Sightings of native fauna species identified within the <i>Alpha Coal Project Environmental Impact Statement</i> and <i>Alpha Coal Project Supplementary Environmental Impact Statement</i> or indicators of the presence of these species within the rehabilitated areas.
				Certification by an appropriately qualified person that the number of vertebrate species does not decrease by more than 25% in the successive seasons prior to mine relinquishment.
				Certification by an appropriately qualified person that habitat structure for fauna species identified within the <i>Alpha Coal Project Environmental Impact Statement</i> and <i>Alpha Coal Project Supplementary Environmental Impact Statement</i> is available, including typical food, shelter and water sources required by the majority of vertebrate and invertebrate species that inhabit that rehabilitation type.
			Plant regeneration.	Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence. Evidence of generational succession of trees and shrubs apparent in rehabilitated areas.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
2. Tailings Storage Facility (Includes tailings Storage Facility, Decant Water Dam, Roads and Rail).	Sustainable land use	Establish specified self sustaining natural vegetation or habitat	Abundance of declared plants (weeds) identified through surveys.	Certification by an appropriately qualified person that no plants declared under local or State legislation exist on the site.
			Records of the control actions taken to eradicate plants declared under local or State legislation.	Evidence that actions have been undertaken to eradicate plants declared under local or State legislation.
			Abundance of declared animals identified through surveys.	TBA ¹
			Records of the management actions taken to control animals declared under local or State legislation.	Records indicating that the holder has actively been managing animals declared under local or State legislation on the site.
			Records that all machinery, plant and equipment used for rehabilitation have been inspected to ensure they are free of declared plant seed by an appropriately qualified person.	Records indicating that all machinery, plant and equipment used for rehabilitation was free of declared plant seed and reproductive material prior to entering the site.
				Records indicating that all machinery, plant and equipment used for rehabilitation was free of declared plant seed and reproductive material prior to leaving the site.
			The following indicators are comparable with reference sites: Organic Matter; Soil nutrients; Invertebrate activity; Topsoil depth; Growth media depth; Physical and chemical property limits; Folia nitrogen and phosphorus.	As for Rehabilitation Objective: Soil properties support the desired land use.
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes, including: Soil stability; Infiltration capacity; Nutrient cycling; Nutrient capacity; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	As for Rehabilitation Objective: Soil properties support the desired land use.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
2. Tailings Storage Facility (Includes tailings Storage Facility, Decant Water Dam, Roads and Rail).	Sustainable land use	Agricultural Cattle Grazing Agricultural land suitability class III ² and/or class IV ²	Cattle stocking trials indicate areas nominated for cattle grazing as a post mining land use are sustaining an equal to or better stocking rate than that calculated for each relevant reference site identified in <i>Table 28: Reference Sites</i> .	Certification by an appropriately qualified person in the site Rehabilitation Report that areas nominated for cattle grazing are meeting and maintaining an equal to or better stocking rate than that calculated for each reference site identified in <i>Table 28: Reference Sites</i> .
			Presence of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that key species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Density of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that the density of key plant species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Composition of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that species diversity identified for each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Landform stability when grazed. Safety of landform for stock and for undertaking management activities associated with stock.	Certification by an appropriately qualified person that groundcover, understorey and overstorey structure is similar to that of each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
				Land maintenance requirements are comparable to designated reference sites.
			Restricted access of stock to water sources that do not meet stock water requirements under ANZECC	TBA ¹
			Plant regeneration	Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence. Evidence of generation succession of trees, shrubs and grasses apparent in rehabilitated areas.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
2. Tailings Storage Facility (Includes tailings Storage Facility, Decant Water Dam, Roads and Rail).	Sustainable land use	Agricultural Cattle Grazing Agricultural land suitability class III ² and/or class IV ² .	The following indicators are comparable with reference sites: Organic Matter; Soil nutrients; Invertebrate activity; Topsoil depth; Growth media depth; Physical and chemical property limits; Folia nitrogen and phosphorus.	As for Rehabilitation Objective: Soil properties support the desired land use.
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes, including: Soil stability; Infiltration capacity; Nutrient cycling; Nutrient capacity; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	As for Rehabilitation Objective: Soil properties support the desired land use.
			Further Rehabilitation Objectives, Indicators and Completion Criteria to be developed as part of the Rehabilitation Management Plan, under condition F36 and submitted to the administering authority in accordance with condition F43.	
3. Infrastructure (Includes Roads, Rail, Water Storages, Hardstands and Buildings)	Long-term Safety	Site is safe for humans and animals now and in the foreseeable future	Appropriate decommissioning of infrastructure	Certification by an appropriately qualified person in the site Rehabilitation Report that the infrastructure has been decommissioned and rehabilitated.
			Safety assessment of landform stability.	Risks assessment has been completed and risk mitigation measures have been implemented. Where risk mitigation measures include bunds, safety fences and warning signs, these have been erected generally in accordance with relevant guidelines and Australian Standards. Landform design meets the design requirements of <i>Table 27: Landform design criteria</i> .
			Geotechnical studies	Landform design meets the design requirements of <i>Table 27: Landform design criteria</i> .
			Density and species composition of riparian vegetation.	Certification by an appropriately qualified person that the species diversity and densities identified in the site Rehabilitation Management Plan required under condition F36 have been achieved.

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3. Infrastructure (Includes Roads, Rail, Water Storages, Hardstands and Buildings)	Non-Polluting	Removal of potential pollution sources	Rail and road infrastructure removed	Evidence in the rehabilitation report that all infrastructure that could continue to create a pollution hazard is appropriately decommissioned as nominated in the site closure plan.
		Hazardous materials adequately managed	Exposure to and availability of heavy metals and other toxic materials	Evidence that monitoring surface water quality for 5 years post closure has complied with specified guideline values
			Results of site contaminated land investigation report	Evidence in rehabilitation report that measures required in site contaminated land investigation report have been implemented
		Polluted water contained on site	Surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> indicate that the quality of water entering the site as monitored at the 'Upstream Background Monitoring Locations' is not impacted by the rehabilitated mining landform and is of similar quality when monitored at the 'Downstream Monitoring Locations'.	Certification by an appropriately qualified person that surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> identify that the surface water quality is not negatively impacted by the rehabilitated landform.
			Final landform water storages are contained on site, with no overflows into external surface water systems.	Certification by an appropriately qualified person that surface water quality is not negatively impacted by the post mining landform.
			All permanent regulated structures will meet approved design criteria.	The regulated structures are certified by an appropriately qualified person to be in compliance with condition G32.
			All non-permanent regulated structures will be decommissioned in accordance with the administering authority requirements.	The regulated structures are certified by an appropriately qualified person to be in compliance with condition G32.
		Rehabilitation or conversion of exploration drill holes and groundwater monitoring bores.	All non-artesian exploration drill holes undertaken under either this environmental authority or the previously approved environmental authority MIN100746508 (superseded tenure Mineral Development Licence 285) have been rehabilitated or converted to a water bore.	Certification by an appropriately qualified person that all non-artesian exploration drill holes not converted to either a water bore or a groundwater monitoring bore have been rehabilitated.
				Certification by an appropriately qualified person, that all sub-artesian aquifers have been isolated where non-artesian exploration drill holes have intersected more than one sub-artesian water bearing strata, in accordance with the ' <i>Minimum Construction Requirements for Water Bores in Australia</i> ' (Australian Government, February 2012) or latest edition.
				Certification by an appropriately qualified person that all non-artesian exploration drill holes converted to a water bore have been converted in accordance with the ' <i>Minimum Construction Requirements for Water Bores in Australia</i> ' (Australian Government, February 2012) or latest edition.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
3. Infrastructure (Includes Roads, Rail, Water Storages, Hardstands and Buildings)	Stable	Rehabilitation or conversion of exploration drill holes and groundwater monitoring bores.	All non-artesian exploration drill holes undertaken under either this environmental authority or the previously approved environmental authority MIN100746508 (superseded tenure Mineral Development Licence 285) have been rehabilitated or converted to a water bore.	Certification by an appropriately qualified person that all non-artesian exploration drill holes converted to a water bore are compliant with the requirements of the <i>Water Act 2000</i> .
			All monitoring bores undertaken under either this environmental authority or the previous environmental authority MIN100746508 (superseded tenure Mineral Development Licence 285) have been rehabilitated.	Certification by an appropriately qualified person that all monitoring bores have been rehabilitated in accordance with the 'Minimum Construction Requirements for Water Bores in Australia' (Australian Government, February 2012) or latest edition.
		Landform design achieves appropriate erosion rates	Slope angle and length	Evidence in the rehabilitation report that the rehabilitated slopes have been designed to the specifications outlined in <i>Table 27: Landform design criteria</i> , the Environmental Management Plan and the Rehabilitation Management Plan required under condition F36.
			Engineered structures to control water flow	Evidence in the rehabilitation report that required contour banks, channel linings, surface armour, engineered drop structures, etc are in place and functioning.
			Rates of "soil" loss	Certification by a suitably qualified person that all land disturbed by the mining activities does not have a rate of soil loss that exceeds that in the reference site, identified in <i>Table 28: Reference Sites</i> for the corresponding locations identified within the Rehabilitation Management Plan. The applicable reference site must have the same chemical and physical characteristics including slope, slope length and fire regime as that of the rehabilitated landform.
				Certification by a suitably qualified person that all land disturbed by the mining activities does not exhibit any signs of continued erosion greater than that exhibited in the reference site, identified in <i>Table 28: Reference Sites</i> for the corresponding locations identified within the Rehabilitation Management Plan required under condition F36. The applicable reference site must have the same chemical and physical characteristics including slope, slope length and fire regime as that of the rehabilitated landform.
		Vegetation cover to minimise erosion	Vegetation type and density	Evidence that the vegetation type and density are of species suited to the spoil composition, slope, aspect, climate and other factors, and that the measured erosion rates meet the goals set in the site Rehabilitation Management Plan required under condition F36.
				Vegetation types and density are comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
3. Infrastructure (Includes Roads, Rail, Water Storages, Hardstands and Buildings)	Stable	Vegetation cover to minimise erosion	Foliage cover	Minimum of 70% vegetation cover is present (or 50% if rocks, logs or other features of cover are present). No bare surfaces >20% m ² in area or >10 m in length down slope. Foliage cover is comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.
			Leaf litter, humus, depth of growing medium	Evidence as recorded in the Rehabilitation Report that nutrient cycling is occurring and the presence of leaf litter is assisting in limiting erosion of the soil/spoil surface. Leaf litter, humus, depth of growing medium comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.
	Sustainable land use	Soil properties support the desired land use	Chemical properties (e.g. pH, salinity, nutrients, trace elements) of topsoil and in soil profiles support the proposed vegetation	Certification by an appropriately qualified person in the Rehabilitation Report that the topsoil chemical properties stipulated in the site Rehabilitation Management Plan are being met in the rehabilitation areas.
			Physical properties (e.g. depth of top soil, plant available water capacity (PAWC))	Certification by an appropriately qualified person in the Rehabilitation Report that the topsoil depths and PAWC stipulated in the site Rehabilitation Management Plan are being met in the rehabilitation areas.
			Biological properties (e.g. nutrient cycling, microbial biomass, invertebrates)	Nutrient accumulation and recycling processes are occurring as evidenced by the presence of a litter layer, mycorrhizae and/or other micro-symbiotes. Adequate macro and micro-nutrients are present.
			The following indicators are comparable with reference sites: Organic matter; Soil nutrients; Invertebrate activity; Topsoil depth; Growth media depth; Physical and chemical property limits; Folia nitrogen; and Phosphorus.	Certification by an appropriately qualified person that the indicators are comparable for each area of rehabilitation identified in the Rehabilitation Management Plan as required under condition F36 with the corresponding reference site identified in <i>Table 28: Reference Sites</i> .
				Certification by an appropriately qualified person that there is a presence of representatives for a broad range of functional invertebrate species indicator groups involved in different ecological processes.
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes. Including: Soil stability; Infiltration capacity; Nutrient cycling; Nutrient capacity; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	Ecosystem Function Analysis monitoring identifies for each area of rehabilitation identified in the Rehabilitation Management Plan as required under condition F36 when compared with the corresponding reference site identified in <i>Table 28: Reference Sites</i> that the rehabilitation is functioning in a manner consistent with the reference sites.
				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 reference sites which are representative of the post mining land use.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
3. Infrastructure (Includes Roads, Rail, Water Storages, Hardstands and Buildings)	Sustainable land use	Establish specified self sustaining natural vegetation or habitat	Presence of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that key species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Density of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that the density of key plant species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Composition of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that the species diversity identified for each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
				Certification by an appropriately qualified person that groundcover, understorey and overstorey structure is similar to that of each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Composition of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that species diversity identified for each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
3. Infrastructure (Includes Roads, Rail, Water Storages, Hardstands and Buildings)	Sustainable land use	Establish specified self sustaining natural vegetation or habitat	Native fauna species, identified within the Alpha Coal Project Environmental Impact Statement and Alpha Coal Project Supplementary Environmental Impact Statement as occurring within the mining lease area have re-populated the rehabilitated areas.	Sightings of native fauna species identified within the Alpha Coal Project Environmental Impact Statement and Alpha Coal Project Supplementary Environmental Impact Statement or indicators of the presence of these species within the rehabilitated areas.
				Certification by an appropriately qualified person that the number of vertebrate species does not decrease by more than 25% in the successive seasons prior to mine relinquishment.
				Certification by an appropriately qualified person that habitat structure for fauna species identified within the Alpha Coal Project Environmental Impact Statement and Alpha Coal Project Supplementary Environmental Impact Statement is available, including typical food, shelter and water sources required by the majority of vertebrate and invertebrate species that in habit that rehabilitation type.
			Plan regeneration.	Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence.
				Evidence of generational succession of trees and shrubs apparent in rehabilitated areas.
			Abundance of declared plants (weeds) identified through surveys.	Certification by an appropriately qualified person that no plants declared under local or State legislation exist on the site.
			Records of the control actions taken to eradicate plants declared under local or State legislation.	Evidence that actions have been undertaken to eradicate plants declared under local or State legislation.
			Abundance of declared animals identified through surveys.	TBA ¹
			Records of the management actions taken to control animals declared under local or State legislation.	Records indicating that the holder has actively been managing animals declared under local or State legislation on site.
			Records that all machinery, plant and equipment used for rehabilitation have been inspected to ensure they are free of declared plant seed by an appropriately qualified person.	Records indicating that all machinery, plant and equipment used for rehabilitation was free of declared plant seed and reproductive material prior to entering the site. Records indicating that all machinery, plant and equipment used for rehabilitation was free of declared plant seed and reproductive material prior to leaving the site.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
3. Infrastructure (Includes Roads, Rail, Water Storages, Hardstands and Buildings)	Sustainable land use	Establish specified self sustaining natural vegetation or habitat	The following indicators are comparable with reference sites: Organic matter; Soil nutrients; Invertebrate activity; Topsoil depth; Growth media depth; Physical and chemical property limits; Folia nitrogen and phosphorus.	As for Rehabilitation Objective: Spoil properties support the desired landuse.
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes, including: Soil Stability; Infiltration capacity; Nutrient capacity; Nutrient cycling; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	As for Rehabilitation Objective: Spoil properties support the desired landuse.
		Agricultural Cattle Grazing	Cattle stocking trials indicate areas nominated for cattle grazing as a post mining land use are sustaining an equal to or better stocking rate than that calculated for each relevant reference site identified in <i>Table 28: Reference Sites</i> .	Certification by an appropriately qualified person in the site Rehabilitation Report that areas nominated for cattle grazing are meeting and maintaining an equal to or better stocking rate than that calculated for each reference site identified in <i>Table 28: Reference Sites</i> .
		Agricultural land suitability class III ² and/or class IV ² .	Presence of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that key species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Density of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that the density of key plant species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
3. Infrastructure (Includes Roads, Rail, Water Storages, Hardstands and Buildings)	Sustainable land use	Agricultural Cattle Grazing Agricultural land suitability class III ² and/or class IV ² .	Composition of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that species diversity identified for each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
				Certification by an appropriately qualified person that groundcover, understorey and overstorey structure is similar to that of each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Landform stability when grazed. Safety of landform for stock and for undertaking management activities associated within stock.	Land maintenance requirements are comparable to designated reference site.
				TBA ¹
			Restricted access of stock to water sources that do not meet stock water requirements under ANZECC	TBA ¹
			The following indicators are comparable with reference sites: Organic matter; Soil nutrients; Invertebrate activity; Topsoil depth; Growth media depth; Physical and chemical property limits; Folia nitrogen and phosphorus.	As for Rehabilitation Objective: Spoil properties support the desired landuse.
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes, including: Soil Stability; Infiltration capacity; Nutrient capacity; Nutrient cycling; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	As for Rehabilitation Objective: Spoil properties support the desired landuse.
Further Rehabilitation Objectives, Indicators and Completion Criteria to be developed as part of the Rehabilitation Management Plan, under condition F36 and submitted to the administering authority in accordance with condition F43.				

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
4. Remainder of Mining Lease Area	Long-term Safety	Site is safe for humans and animals now and in the foreseeable future	Appropriate decommissioning of infrastructure	Certification in the site Rehabilitation Report that the infrastructure has been decommissioned and rehabilitated.
			Safety assessment of landform stability.	Risks assessment has been completed and risk mitigation measures have been implemented. Where risk mitigation measures include bunds, safety fences and warning signs, these have been erected generally in accordance with relevant guidelines and Australian Standards.
			Geotechnical studies	Landform design meets the design requirements of <i>Table 27: Landform design criteria</i> .
	Non-Polluting	Removal of potential pollution sources	Results of site contaminated land investigation report	Evidence in rehabilitation report that measures required in site contaminated land investigation report have been implemented
		Coal seam water will not cause serious environmental harm.	Surface water monitoring at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> indicate that the quality of water entering the site as monitored at the 'Upstream Background Monitoring Locations' is not impacted by the rehabilitated landform and is of similar quality when monitored at the 'Downstream Monitoring Locations'.	Certification by an appropriately qualified person that surface water monitored at the locations identified in <i>Table 10: Receiving Water Upstream Background and Downstream Monitoring Locations</i> identify that the surface water quality is not negatively impacted by the rehabilitated landform.
			Groundwater monitoring undertaken at locations impacted or potentially impacted by the mining activities indicate that groundwater quality has not been degraded by the mining activities when compared to groundwater monitoring undertaken at background reference sites. The geological units to be monitored include alluvium, Bandanna Formation, Colinlea Sandstone, Clematis Sandstone, Rewan Formation and Joe Joe Formation.	Certification by an appropriately qualified person that groundwater monitoring identifies that the groundwater quality is not negatively impacted by the rehabilitated landforms.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
4. Remainder of Mining Lease Area	Non-Polluting	Groundwater aquifers are not cross contaminating	Groundwater monitoring undertaken at locations impacted or potentially impacted by the mining activities indicate that cross contamination of aquifers has not occurred when compared to groundwater monitoring undertaken at background reference sites. The geological units to be monitored include alluvium, Bandanna Formation, Colinlea Sandstone, Clematis Sandstone, Rewan Formation and Joe Joe Formation	Certification by an appropriately qualified person that groundwater monitoring identifies that cross contamination of aquifers has not occurred.
				Certification by an appropriately qualified person, that all sub-artesian aquifers have been isolated where non-artesian exploration drill holes have intersected more than one sub-artesian water bearing strata, in accordance with the ' <i>Minimum Construction Requirements for Water Bores in Australia</i> ' (Australian Government, February 2012) or latest edition.
		Rehabilitation or conversion of exploration drill holes and groundwater monitoring bores.	All non-artesian exploration drill holes undertaken under either this environmental authority or the previously approved environmental authority MIN100746508 (superseded tenure Mineral Development Licence 285) have been rehabilitated or converted to a water bore.	Certification by an appropriately qualified person that all non-artesian exploration drill holes not converted to either a water bore or a groundwater monitoring bore have been rehabilitated.
				Certification by an appropriately qualified person, that all sub-artesian aquifers have been isolated where non-artesian exploration drill holes have intersected more than one sub-artesian water bearing strata, in accordance with the ' <i>Minimum Construction Requirements for Water Bores in Australia</i> ' (Australian Government, February 2012) or latest edition.
				Certification by an appropriately qualified person that all non-artesian exploration drill holes converted to a water bore have been converted in accordance with the ' <i>Minimum Construction Requirements for Water Bores in Australia</i> ' (Australian Government, February 2012) or latest edition.
				Certification by an appropriately qualified person that all non-artesian exploration drill holes converted to a water bore are compliant with the requirements of the <i>Water Act 2000</i> .
	Stable	Landform design achieves appropriate erosion rates	Slope angle and length	Evidence in the rehabilitation report that the rehabilitated slopes have been designed to the specifications outlined in <i>Table 27: Landform design criteria</i> , the Environmental Management Plan and the Rehabilitation Management Plan required under condition F36.
			Engineered structures to control water flow	Evidence in the rehabilitation report that required contour banks, channel linings, surface armour, engineered drop structures, etc are in place and functioning.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
4. Remainder of Mining Lease Area	Stable	Landform design achieves appropriate erosion rates	Rates of "soil" loss	Certification by a suitably qualified person that all land disturbed by the mining activities does not have a rate of soil loss that exceeds that in the reference site, identified in <i>Table 28: Reference Sites</i> for the corresponding locations identified within the Rehabilitation Management Plan. The applicable reference site must have the same chemical and physical characteristics including slope, slope length and fire regime as that of the rehabilitated landform.
				Certification by a suitably qualified person that all land disturbed by the mining activities does not exhibit any signs of continued erosion greater than that exhibited in the reference site, identified in <i>Table 28: Reference Sites</i> for the corresponding locations identified within the Rehabilitation Management Plan required under condition F36. The applicable reference site must have the same chemical and physical characteristics including slope, slope length and fire regime as that of the rehabilitated landform.
			Dimensions and frequency of occurrence of erosion rills and gullies are no greater than that in the corresponding reference sites.	Evidence that dimensions and frequency of occurrence of erosion rills and gullies are no greater than that in the corresponding reference sites identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.
		Vegetation cover to minimise erosion	Vegetation type and density	Evidence that the vegetation type and density are of species suited to the spoil composition, slope, aspect, climate and other factors, and that the measured erosion rates meet the goals set in the site Rehabilitation Management Plan required under condition F36.
				Vegetation types and density are comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.
			Foliage cover	Minimum of 70% vegetation cover is present (or 50% if rocks, logs or other features of cover are present). No bare surfaces >20% m ² in area or >10 m in length down slope.
				Foliage cover is comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.
			Leaf litter, humus, depth of growing medium	Evidence as recorded in the Rehabilitation Report that nutrient cycling is occurring and the presence of leaf litter is assisting in limiting erosion of the soil/spoil surface.
				Leaf litter, humus, depth of growing medium comparable with the relevant reference site identified in <i>Table 28: Reference Sites</i> for locations identified within the Rehabilitation Management Plan required under condition F36.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
4. Remainder of Mining Lease Area	Sustainable land use	Soil properties support the desired landuse	Chemical properties (e.g. pH, salinity, nutrients, trace elements) of topsoil and in soil profiles support the proposed vegetation	Certification in the Rehabilitation Report that the topsoil chemical properties stipulated in the site Rehabilitation Management Plan are being met in the rehabilitation areas.
			Physical properties (e.g. depth of top soil, plant available water capacity (PAWC))	Certification in the Rehabilitation Report that the topsoil depths and PAWC stipulated in the site Rehabilitation Management Plan are being met in the rehabilitation areas.
			Biological properties (e.g. nutrient cycling, microbial biomass, invertebrates)	Nutrient accumulation and recycling processes are occurring as evidenced by the presence of a litter layer, mycorrhizae and/or other microsymbiots. Adequate macro and micro-nutrients are present.
			The following indicators are comparable with reference sites: Organic matter; Soil nutrients; Invertebrate activity; Topsoil depth; Growth media depth; Physical and chemical property limits; Folia nitrogen and phosphorus.	Certification by an appropriately qualified person that the indicators are comparable for each area of rehabilitation identified in the Rehabilitation Management Plan as required under condition F36 with the corresponding reference site identified in <i>Table 28: Reference Sites</i> .
				Certification by an appropriately qualified person that there is a presence of representatives for a broad range of functional invertebrate species indicator groups involved in different ecological processes.
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes, including: Soil stability; Infiltration capacity; Nutrient cycling; Nutrient capacity; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	Ecosystem Function Analysis monitoring identifies for each area of rehabilitation identified in the Rehabilitation Management Plan as required under condition F36 when compared with the corresponding reference site identified in <i>Table 28: Reference Sites</i> that the rehabilitation is functioning in a manner consistent with the reference site.
				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 reference sites which are representative of the post mining land use.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
4. Remainder of Mining Lease Area	Sustainable land use	Establish specified self sustaining natural vegetation or habitat	Presence of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that key species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Density of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that the density of key plant species identified for each reference site identified in <i>Table 23: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Composition of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that species diversity identified for each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Native fauna species, identified within the <i>Alpha Coal Project Environmental Impact Statement</i> and <i>Alpha Coal Project Supplementary Environmental Impact Statement</i> as occurring within the mining lease area have re-populated the rehabilitated areas.	Certification by an appropriately qualified person that groundcover, understorey and overstorey structure is similar to that of each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
				Sightings of native fauna species identified within the <i>Alpha Coal Project Environmental Impact Statement</i> and <i>Alpha Coal Project Supplementary Environmental Impact Statement</i> or indicators of the presence of these species within the rehabilitated areas.
				Certification by an appropriately qualified person that the number of vertebrate species does not decrease by more than 25% in the successive seasons prior to mine relinquishment.
				Certification by an appropriately qualified person that habitat structure for fauna species identified within the <i>Alpha Coal Project Environmental Impact Statement</i> and <i>Alpha Coal Project Supplementary Environmental Impact Statement</i> is available, including typical food, shelter and water sources required by the majority of vertebrate and invertebrate species that inhabit that rehabilitation type.
			Plant regeneration	Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence.
				Evidence of generational succession of trees and shrubs apparent in rehabilitated areas.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
4. Remainder of Mining Lease Area	Sustainable land use	Establish specified self sustaining natural vegetation or habitat	Abundance of declared plants (weeds) identified through surveys.	Certification by an appropriately qualified person that no plants declared under local or State legislation exist on the site.
			Records of the control actions taken to eradicate plants declared under local or State legislation.	Records indicating that the holder has actively been managing animals declared under local or State legislation on the site.
			Abundance of declared animals identified through surveys.	TBA ¹
			Records of the management actions taken to control animals declared under local or State legislation.	Records indicating that the holder has actively been managing animals declared under local or State legislation on the site.
			Records that all machinery, plant and equipment used for rehabilitation have been inspected to ensure they are free of declared plant seed by an appropriately qualified person.	Records indicating that all machinery, plant and equipment used for rehabilitation was free of declared plant seed and reproductive material prior to entering the site.
				Records indicating that all machinery, plant and equipment used for rehabilitation was free of declared plant seed and reproductive material prior to leaving the site.
			The following indicators are comparable with reference sites: Organic matter; Soil nutrients; Invertebrate activity; Topsoil depth; Growth media depth; Physical and chemical property limits; Folia nitrogen and phosphorus	As for Rehabilitation Objective: Soil properties support the desired landuse.
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes, including: Soil stability; Infiltration capacity; Nutrient capacity; Nutrient cycling; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	As for Rehabilitation Objective: Soil properties support the desired landuse.

Environmental Authority (Mining Lease) Non Code Compliant Level 1 Mining Project

Permit¹ Number:

Environmental Authority: MIN101017310

Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
4. Remainder of Mining Lease Area	Sustainable land use	Agricultural Cattle Grazing Agricultural land suitability class III ² and/or class IV ² .	Cattle stocking trials indicate areas nominated for cattle grazing as a post mining land use are sustaining an equal to or better stocking rate than that calculated for each relevant reference site identified in <i>Table 28: Reference Sites</i> .	Certification by an appropriately qualified person in the site Rehabilitation Report that areas nominated for cattle grazing are meeting and maintaining an equal to or better stocking rate than that calculated for each reference site identified in <i>Table 28: Reference Sites</i> .
			Presence of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that key species identified for each reference site identified in <i>Table 28: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Density of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that the density of key plant species identified for each reference site identified in <i>Table 29: Reference Sites</i> are established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Composition of key plant species as required by the corresponding reference site identified in <i>Table 28: Reference Sites</i> and the Rehabilitation Management Plan required under condition F36.	Certification by an appropriately qualified person that species diversity identified for each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
				Certification by an appropriately qualified person that groundcover, understorey and overstorey structure is similar to that of each reference site identified in <i>Table 28: Reference Sites</i> have been established in the locations identified in the Rehabilitation Management Plan as required under condition F36.
			Landform stability when grazed. Safety of landform for stock and for undertaking management activities associated with stock.	Land maintenance requirements are comparable to designated reference sites.
				TBA ¹
			Restricted access of stock to water sources that do not meet stock water requirements under ANZECC.	TBA ¹
			Plant regeneration	Species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence. Evidence of generational succession of trees, shrubs and grasses apparent in rehabilitated areas.

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Mine Domain	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
4. Remainder of Mining Lease Area	Sustainable land use	Agricultural Cattle Grazing Agricultural land suitability class III ² and/or class IV ² .	The following indicators are comparable with reference sites: Organic matter; Soil nutrients; Invertebrate activity; Topsoil depth; Growth media depth; Physical and chemical property limits; and Folia nitrogen and phosphorus.	As for Rehabilitation Objective: Soil properties support the desired landuse.
			Ecosystem Function Analysis monitoring to establish positive trends for the rehabilitation of the site compared with reference landscapes, including: Soil stability; Infiltration capacity; Nutrient capacity; Nutrient cycling; Species recruitment; Habitat complexity; Vegetation dynamics; and Seasonal change.	As for Rehabilitation Objective: Soil properties support the desired landuse.
			Further Rehabilitation Objectives, Indicators and Completion Criteria to be developed as part of the Rehabilitation Management Plan, under condition F36 and submitted to the administering authority in accordance with condition F43.	

¹ condition F43 of the Environmental Authority requires rehabilitation objectives, indicators and success criteria developed as per condition F37(b)(i) to be finalised based on the Rehabilitation Management Plan required under condition F36 be submitted to the administering authority. These rehabilitation objectives, indicators and success criteria will be included within Appendix 1: Rehabilitation Requirements when completed and agreed to with the administering authority.

² as per *A Land Capability Classification for Agricultural Purposes* (J. Rosser, G.L. Swartz, N.M. Dawson and H.S. Briggs, 1974)

³ condition F50 of the Environmental Authority requires rehabilitation objectives, indicators and success criteria specific to the reinstatement of the wildlife corridor(s) to be submitted to the administering authority. These rehabilitation objectives, indicators and success criteria will be included within *Appendix 1: Rehabilitation Requirements* when completed and agreed to with the administering authority.

⁴ the wildlife corridor must be connect to either existing stands of remnant regional ecosystems or to a post mining landform that is rehabilitated to 'self sustaining natural vegetation/habitat' that is consistent with the required reference site identified in *Table 28: Reference Sites* in the locations identified in the Rehabilitation Management Plan as required under condition F37.