

Permit

Environmental Protection Act 1994

Environmental authority EPPR00367413

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

Environmental authority number: EPPR00367413

Environmental authority takes effect on 06 May 2021

Environmental authority holder(s)

Name(s)	Registered address
Hancock Coal Pty Ltd	Level 1 Suite 352 241 Adelaide Street Brisbane QLD 4001

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Resource Activity, Ancillary 63 - Sewage Treatment, 1: Operating sewage treatment works, other than no release works, with a total daily peak design capacity of, (a-i) 21 to 100EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	MDL285
Resource Activity, Ancillary 15 - Fuel burning, Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	MDL285
Resource Activity, Schedule 3, 09: A mining activity involving drilling, costeaning, pitting or carrying out geological surveys causing significant disturbance	MDL285
Resource Activity, Schedule 3, 10: Investigating the potential development of a mineral resource by large bulk sampling or constructing an exploratory shaft, adit or open pit	MDL285



Additional information for applicants

Environmentally relevant activities

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

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

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

Contaminated land

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

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

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

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

Take effect

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

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

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

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

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



Signature

Bianca Voges-Haug
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Date Issued: 06 May 2021

06 May 2021

Date

Enquiries:
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Obligations under the *Environmental Protection Act 1994*

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

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

Other permits required

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

Conditions of environmental authority

The environmentally relevant activity(ies) conducted at the locations as described above must be conducted in accordance with the following site-specific conditions of approval. This environmental authority consists of the following Schedules and Appendices:

Schedule A	General
Schedule B	Air
Schedule C	Water
Schedule D	Noise and vibration
Schedule E	Waste
Schedule F	Land
Schedule G	Dams
Schedule H	Complaint Management

Appendices

Figure 1	MDL 285 release points and water monitoring locations
Figure 2	Bulk sample pit location
Figure 3	Exploration activity location on MDL285
Figure 4	Irrigation areas and effluent discharge points

Conditions of environmental authority

Schedule A: General	
Condition number	Condition
Maintenance of measures, plant and equipment	
A1	The environmental authority holder must ensure: a) that all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed; b) that such measures, plant and equipment are maintained in a proper condition; c) that such measures, plant and equipment are operated in a proper manner; and d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.
Monitoring and records	
A2	Record, compile and keep for a minimum of five years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.
A3	Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.
Notification of emergencies, incidents and exceptions	
A4	The authority holder must notify the administering authority in writing within 24 hours of 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.
A5	The authority holder must notify the administering authority in writing within 24 hours of becoming aware of any emergency, incident or action which is not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.
A6	The notification of emergencies or incidents as required by Conditions A6 and A7 must include but not be limited to the following: a) the holder of the environmental authority; b) the location of the emergency or incident; c) the number of the environmental authority; d) the name and telephone number of the designated contact person; e) the time of the release; f) the time the holder of the environmental authority became aware of the release; g) the suspected cause of the release; h) the environmental harm caused, threatened, or suspected to be caused by the release; and i) actions taken to prevent any further release and mitigate any environmental harm caused by the release.

A7	Not more than fourteen days following the initial notification of an emergency or incident, written advice must be provided of the information supplied in accordance with Conditions A6 and A7 in relation to: a) proposed actions to prevent a recurrence of the emergency or incident; and b) outcomes of actions taken at the time to prevent or minimise environmental harm.
A8	As soon as practicable, but not more than six weeks following the conduct of any environmental monitoring performed in relation to the 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, written advice must be provided of the results of any such monitoring performed to the administering authority.
A9	All reasonable actions are to be taken to minimise environmental harm, or potential environmental harm, resulting from any emergency, incident or circumstances not in accordance with the conditions of this environmental authority.
Risk Management	
A10	The holder of this environmental authority must develop and implement a risk management system for mining activities which mirrors the content requirements of the Standard for Risk Management (ISO31000:2009), or the latest edition of an Australian Standard for risk management, to the extent relevant to the environmental management, prior to the commencement of mining activities.
A11	The environmental authority holder must not implement a risk management system that contravenes or prevents the implementation of any condition of this environmental authority.
A12	An emergency response/contingency plan must be developed and implemented to manage the high risk categories identified in the risk management system.
Activity	
A14	In carrying out the environmentally relevant activities, you must take all reasonable and practicable measures to prevent and / or to minimise the likelihood of environmental harm being caused. Any environmentally relevant activity, that, if carried out incompetently, or negligently, may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this authority.
A15	All land subject to mining activities must be rehabilitated to a non-polluting, safe, stable and self-sustaining landform.
A16	Contaminants must not be released to the receiving environment unless they are in accordance with the contaminant limits authorised by this environmental authority.
A17	This environmental authority does not authorise environmental harm unless a condition contained within the authority explicitly authorises that harm. Where there is no condition or the authority is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.
Definitions	
A18	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 <i>Environmental Protection Act 1994</i> , its regulations and policies must be used.

Schedule B: Air	
Condition number	Condition
Dust nuisance	
B1	Subject to Conditions B2 and B3 the release of dust or particulate matter or both resulting from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.
B2	When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
B3	If the environmental authority holder can provide evidence through monitoring that the following limits are not being exceeded then the holder is not in breach of Condition B1: a) dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with AS 3580.10.1 <i>Methods for sampling and analysis of ambient air - Determination of particulates - Deposited matter - Gravimetric method</i> of 1991 (or more recent editions); or b) a concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM₁₀) suspended in the atmosphere of 50 micrograms per cubic metre over a 24 hour averaging time, at a sensitive or commercial place downwind of the operational land, when monitored in accordance with: i) particulate matter - Determination of suspended particulate PM10 high-volume sampler with size-selective inlet - Gravimetric method, when monitored in accordance with AS 3580.9.6 <i>Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM (sub) 10 high volume sampler with size-selective inlet - Gravimetric method</i> of 1990 (or more recent editions); and ii) any alternative method of sampling PM10, which may be permitted by the <i>Air Quality Sampling Manual</i> as published from time to time by the administering authority.
B4	If monitoring indicates exceedance of the relevant limits in Condition B3, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance.

Odour nuisance	
B5	The release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the mining activity must not cause an environmental nuisance at any nuisance sensitive or commercial place.
B6	When requested by the administering authority odour monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place and the results must be notified within 14 days to the administering authority following completion of monitoring.
B7	If the administering authority determines the odour released to constitute an environmental nuisance the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance.
Schedule C: Water	
Condition number	Condition
Contaminant release	
C1	Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.
C2	The release of contaminants to waters must only occur from the release points specified in Table C1 - Contaminant release points, sources and receiving waters and depicted in Figure 1 attached to this environmental authority.

Table C1 - Contaminant release points, sources and receiving waters

Release point (RP)	Longitude (GCS_GDA94)	Latitude (GCS_GDA94)	Contaminant source and location	Monitoring point	Receiving waters
RP 1	146.47298	-23.231004	Pit Water Storage Dam	Spillway	Unnamed creek and floodplain

C3	The release of contaminants to waters must not exceed the release limits stated in Table C2 - Contaminant release limits when measured at the monitoring points specified in Table C1 - Contaminant release points, sources and receiving waters for each quality characteristic.
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Table C2 - Contaminant release limits

Quality characteristic	Release limit	Monitoring frequency	Sample type
Electrical conductivity (µS/cm)	1,500	Daily during release (the first sample must be taken within 2 hours of commencement of release)	<i>In situ</i> ¹ .
			Samples require laboratory analysis ² .
pH (pH Unit)	6.5 (minimum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	<i>In situ</i> ¹ .
	9.0 (maximum)		Samples require laboratory analysis ² .
Turbidity (NTU)	300	Daily during release (the first sample must be taken within 2 hours of commencement of release)	<i>In situ</i> ¹ .
			Samples require laboratory analysis ² .
Sulfate (SO ₄ ²⁻) (mg/L)	1,000	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis ² .

¹ In situ samples can be taken using electronic sampling equipment.

² Samples are required to be analysed at a NATA accredited facility in accordance with this environmental authority.

C4	The release of contaminants to waters from the release points must be monitored at the locations specified in Table C1 - Contaminant release points, sources and receiving waters for each quality characteristic and at the frequency specified in Table C2- Contaminant release limits and Table C3 - Release contaminant trigger investigation levels .
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Table C3 - Release contaminant trigger investigation levels

Quality characteristic	Trigger levels (µg/L)	Monitoring frequency
Aluminium	100	Commencement of release (within 2 hours) and thereafter weekly during release
Arsenic	13	
Cadmium	0.2	
Chromium	2.0	
Copper	2.0	
Iron	300	
Lead	10	
Mercury	0.2	
Nickel	11	
Zinc	8.0	
Boron	370	
Cobalt	90	
Manganese	1,900	
Molybdenum	34	
Selenium	10	
Silver	1.0	
Uranium	1.0	
Vanadium	10	
Ammonia	900	
Nitrate	1,100	
Petroleum hydrocarbons (C6-C9)	20	
Petroleum hydrocarbons (C10-C36)	100	
Fluoride (total)	2,000	

Note: All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger. The list of quality characteristics required to be monitored as per **Table C3** will be reviewed once the results of the monitoring data is gathered for the interim period until **31 December 2011** or an earlier date if the data is, or becomes, available and if it is determined that there is no need to monitor for certain individual quality characteristics these can be removed from **Table C3**.

C5	If quality characteristics of the release exceed any of the trigger levels specified in Table C3 - 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 C3 - Release contaminant trigger investigation levels and: a) where the trigger values are not exceeded then no action is to be taken; b) where the downstream results exceed the trigger values specified in Table C3 - Release contaminant trigger investigation levels for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and: i) if the result is less than the background monitoring site data, then no action is to be taken; or ii) if the result is greater than the background monitoring site data, complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: 1) details of the investigations carried out; and 2) actions taken to prevent environmental harm.
C6	If an exceedance in accordance with Condition C5 b) ii) is identified, the holder of the authority must notify the administering authority within 24 hours of receiving the result.
Contaminant release events	
C7	The holder must install, operate and maintain a stream flow gauging station to determine and record stream flows at the locations upstream of each release point as specified in Table C1 - Contaminant release points, sources and receiving waters for any receiving water into which a release occurs.
C8	Notwithstanding any other condition of this environmental authority, the release of contaminants to waters must only take place during periods of natural flow events specified as minimum flow in Table C4 - Contaminant release during flow events for the contaminant release point(s) specified in Table C1 - Contaminant release points, sources and receiving waters .

Table C4 - Contaminant release during flow events

Receiving waters	Release point (RP)	Gauging station description	Longitude (GCS_GDA94)	Latitude (GCS_GDA94)	Minimum flow in receiving water required for a release event	Flow recording frequency
Unnamed Creek	RP1	Located upstream of RP1	To be provided upon installation ¹	To be provided upon installation ¹	= > 2m ³ /sec	Continuous (minimum daily)

¹ The location of the gauging station is to be submitted to the administering authority in accordance with **Condition C67**.

C9	Contaminant release flow rate must not exceed 20% of the receiving water flow rate, monitored at the locations and frequencies specified in Table C4 - Contaminant release during flow events for the receiving waters into which a release occurs.
C10	The daily quantity of contaminants released from each release point must be measured and recorded at the monitoring points in Table C1 - Contaminant release points, sources and receiving waters .
C11	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.
Notification of release event	
C12	The authority holder must notify the administering authority within six hours of having commenced releasing mine affected water to the receiving environment. Notification must include the submission of written verification to the administering authority of the following information: a) release commencement date/time; b) expected release cessation date/time; c) release point/s; d) release volume (estimated); e) receiving water/s including the natural flow rate; and f) any 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.
C13	The authority holder must notify the administering authority within 24 hours of the cessation of a release notified under Condition C12 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 Schedule C: 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.

Notification of release event exceedance	
C14	If the release limits defined in Table C2 - Contaminant release limits are exceeded, the holder of the environmental authority must notify the administering authority within 24 hours of receiving the results.
C15	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 for 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	
C16	Water storages stated in Table C5 - Water storage monitoring which are associated with the release points must be monitored for the water quality characteristics specified in Table C6 - Onsite water storage contaminant limits at the monitoring locations and at the monitoring frequency specified in Table C5 - Water storage monitoring .

Table C5 - Water storage monitoring

Water storage description	Longitude (GCS_GDA94)	Latitude (GCS_GDA94)	Monitoring location	Monitoring frequency
Pit Water Storage Dam	146.474775	-23.227008	Spillway	Quarterly
	146.475243	-23.227236		
	146.472640	-23.228013		
	146.472315	-23.230983		
	146.474377	-23.231216		

C17	In the event that water storages defined in Table C5 - Water storage monitoring exceed the contaminant limits defined in Table C6 - Onsite water storage contaminant limits , the holder of the environmental authority must implement measures, where practicable, to prevent access to waters by all livestock.
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Table C6 - Onsite water storage contaminant limits

Quality characteristic	Test value	Contaminant limit
pH (pH unit)	Range	Greater than 4, less than 9
EC (µS/cm)	Maximum	5970
Sulphate (mg/L)	Maximum	1000
Fluoride (mg/L)	Maximum	2.0
Aluminium (µg/L)	Maximum	5000
Arsenic (µg/L)	Maximum	500
Cadmium (µg/L)	Maximum	10
Cobalt (µg/L)	Maximum	1000
Copper (µg/L)	Maximum	1000
Lead (µg/L)	Maximum	100
Nickel (µg/L)	Maximum	1000
Zinc (µg/L)	Maximum	20000

Note: Total measurements (unfiltered) must be sampled and analysed at a NATA accredited facility.

Receiving environment monitoring and contaminant trigger levels	
C18	The quality of the receiving waters must be monitored at the locations specified in Table C8 - Receiving water upstream background sites and downstream monitoring points for each quality characteristic and at the monitoring frequencies stated in Table C7 - Receiving waters contaminant trigger levels .

Table C7 - Receiving waters contaminant trigger levels

Quality characteristic	Trigger level	Monitoring frequency	Sample type
pH	6.5 – 8.0	Daily during release (the first sample must be taken within 2 hours of commencement of release)	<i>In situ</i> ¹ .
			Samples require laboratory analysis ² .
Electrical conductivity (µS/cm)	1000	Daily during release (the first sample must be taken within 2 hours of commencement of release)	<i>In situ</i> ¹ .
			Samples require laboratory analysis ² .
Turbidity (NTU)	612	Daily during release (the first sample must be taken within 2 hours of commencement of release)	<i>In situ</i> ¹ .
			Samples require laboratory analysis ² .
Sulfate (SO ₄ ²⁻) (mg/L)	545	Daily during release (the first sample must be taken within 2 hours of commencement of release)	Samples require laboratory analysis ² .

¹ In situ samples can be taken using electronic sampling equipment.

² Samples are required to be analysed at a NATA accredited facility in accordance with this environmental authority.

Table C8 - Receiving water upstream background sites and downstream monitoring points

Monitoring points	Receiving waters location description	Longitude (GCS_GDA94)	Latitude (GCS_GDA94)
Upstream background monitoring points			
Reference monitoring point 1	Unnamed Creek upstream of project infrastructure	146.431924	-23.245864
Reference monitoring point 2	Lagoon Creek upstream of project infrastructure	146.502144	-23.315981
Downstream monitoring points			
Impact monitoring point 4	Confluence of Lagoon Creek tributaries, directly downstream of project infrastructure	146.498772	-23.231513
Impact monitoring point 5	Confluence of unnamed drainage lines, directly downstream of project infrastructure.	146.4828	-23.216475
Impact monitoring point 6	Lagoon Creek downstream of project infrastructure	146.498972	-23.183232

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

C19	If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Table C7 - Receiving waters contaminant trigger levels during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and: a) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; and b) where the downstream results exceed the upstream results complete an investigation in accordance with the ANZECC & ARMICANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: i) details of the investigations carried out; and ii) actions taken to prevent environmental harm. Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with Condition C19 (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.
Receiving environment monitoring program (REMP)	
C20	A REMP must be developed and implemented to monitor and record the effects of the release of contaminants on the receiving environment periodically and whilst contaminants are being discharged from the site, with the aims of identifying and describing the extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving water. A copy of the REMP must be provided to the administering authority prior to its implementation and due consideration given to any comments made on the REMP by the administering authority

C21	The REMP must address (but not necessarily be limited to) the following: a) description of potentially affected receiving waters including key communities and background water quality characteristics based on accurate and reliable monitoring data that takes into consideration any temporal variation (e.g. seasonality); b) description of applicable environmental values and water quality objectives to be achieved (i.e. as scheduled pursuant to the Environmental Protection (Water and Wetland Biodiversity) Policy 2019); c) any relevant reports prepared by other governmental or professional research organisations that relate to the receiving environment within which the REMP is proposed; d) water quality targets within the receiving environment to be achieved, and clarification of contaminant concentrations or levels indicating adverse environmental impacts during the REMP; e) monitoring for any potential adverse environmental impacts caused by the release; f) monitoring of stream flow and hydrology; g) monitoring of contaminants should consider the indicators specified in Table C3 - Release contaminant trigger investigation levels to assess the extent of the compliance of concentrations with water quality objectives and/or the ANZECC & ARMCANZ 2000 guidelines for slightly to moderately disturbed ecosystems; h) monitoring of physical chemical parameters as a minimum those specified in Table C2 - Contaminant release limits (in addition to dissolved oxygen saturation and temperature); i) monitoring biological indicators (for macroinvertebrates in accordance with the AusRivas methodology) and metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 <i>Guidance on Sampling of Bottom Sediments</i>) for permanent, semi-permanent water holes and water storages; j) the locations of monitoring points (including the locations specified in Table C8 - Receiving water upstream background sites and downstream monitoring points which are background and downstream impacted sites for each release point); k) the frequency or scheduling of sampling and analysis sufficient to determine water quality objectives and to derive site specific reference values within two years (depending on wet season flows) in accordance with the <i>Queensland Water Quality Guidelines</i> 2009. For ephemeral streams, this should include periods of flow irrespective of mine or other discharges; l) specify sampling and analysis methods and quality assurance and control; m) any historical datasets to be relied upon; n) description of the statistical basis on which conclusions are drawn; and o) any spatial and temporal controls to exclude potential confounding factors.
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C22	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with Conditions C20 and C21, must be prepared annually and submitted to the administering authority by 1 December for the previous year. 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. Where no releases are made from the release points in any given year (1 November to 31 October), a summary report of the findings of the REMP must be prepared and submitted to the administering authority using data available for the closest Department Regional Development, Manufacturing and Water's gauging station to MDL285. The summary report must include the following: a) introduction; b) rainfall data; c) water course flow data; and d) water course electrical conductivity.
Surface water general	
C23	All determinations of water quality 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 authority's <i>Water Quality Sampling Manual</i>; c) collected from the monitoring locations identified within this environmental authority, within 5 hours of each other; d) carried out on representative samples; and e) laboratory testing must be undertaken using a laboratory accredited (e.g. NATA) for the method of analysis being used. Note: Condition C23 requires the <i>Water Quality and Sampling Manual</i> to be followed and where it is not followed because of exceptional circumstances this should be explained and reported with the results.
C24	The release of contaminants directly or indirectly to waters: a) must not produce any visible discolouration of receiving waters; and b) must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.

Annual water monitoring reporting	
C25	The following information must be recorded in relation to all water quality monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format with each annual return: a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; d) the measured or estimated daily quantity of the contaminants released from all release points; e) the release flow rate at the time of sampling for each release point; f) the results of all monitoring and details of any exceedance with the conditions of this environmental authority; and g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.
Temporary interference with waterways	
C26	Temporarily destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring necessary for and associated with mining operations must be undertaken in accordance with <i>Riverine protection permit exemptions requirements</i>, Department of Natural Resources, Mines and Energy (WSS/2013/726, Version 2.01, 13/11/2019).
Water management plan	
C27	A Water Management Plan must be developed and implemented that provides for the proper and effective management of the actual and potential environmental impacts resulting from the mining activity and to ensure compliance with the conditions of this environmental authority.
C28	The Water Management Plan must be developed in accordance with the department <i>Guideline for Preparing a Water Management Plan 2009</i> or any updates that become available from time to time and must include at least the following components: a) study of the source on contaminants; b) a water balance model for the site; c) a water management system for the site; d) measures to manage and prevent saline drainage; e) measures to manage and prevent acid rock; f) contingency procedures for incidents and emergencies; and g) a program for monitoring and review of the effectiveness of the Water Management Plan.
C29	A review of the Water Management Plan must be undertaken by 1 August each calendar year. The review report must: a) include a statement that the Water Management Plan has been prepared by an appropriately qualified person; b) assess the plan against the requirements under Condition C28; c) include recommended actions to ensure actual and potential environmental impacts are effectively managed; d) provide details and timelines of the actions to be taken; and e) any amendments made to the Water Management Plan.

C30	A copy of the Water Management Plan and/or a review of the Water Management Plan must be provided to the administering authority on request.
Saline drainage	
C31	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	
C32	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	
C33	An Erosion and Sediment Control (ESC) Plan for commencement of construction activities and mining operations must be developed by an appropriately qualified person and implemented prior to the commencement of mining operations, to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.
C34	The ESC Plan must: a) demonstrate how ESC control measures adequately minimise the release of sediment to receiving waters and must include at least the following: i) assessment of all catchment areas; ii) assessment of soil types, including sodic dispersive soils; iii) specify design criteria for ESC structures; b) detail the locations and descriptions of all ESC measures; and c) provide an audit schedule to ensure ESC controls are being maintained.
C35	A review of the ESC Plan must be undertaken by 1 August for each calendar year. The review must: a) include a statement that the ESC Plan has been prepared by an appropriately qualified person; b) assess the plan against the requirements under Condition C34; c) include recommended actions to ensure actual and potential environmental impacts are effectively managed; d) provide details and timelines of the actions to be taken; and e) identify any amendments made to the ESC Plan.
C36	A copy of the ESC Plan must be provided to the administering authority on request.
C37	Stormwater, other than mine affected water, is permitted to be released to waters from: a) ESC structures that are installed and operated in accordance with the ESC Plan required by Conditions C33 to C36; and b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan, for the purpose of ensuring water does not become mine affected water.
Groundwater	
C38	The holder of this environmental authority must not release contaminants to groundwater.

C39	Groundwater, must be monitored at the locations and frequencies defined in Table C9 - Groundwater monitoring locations and frequencies for the parameters identified in Table C10 - Groundwater investigation trigger levels .
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Table C9 - Groundwater monitoring locations and frequencies

Monitoring Points	Longitude (GCS_GDA94)	Latitude (GCS_GDA94)	Frequency
AMB-01	146.47391	-23.238007	Annual
AMB-02	146.455575	-23.261593	Annual
AMB-03	146.410176	-23.223121	Annual
AMB-04	146.488495	-23.263555	Annual

C40	Subject to requirements of Condition C39 , if the groundwater investigation trigger levels defined in Table 10: Groundwater investigation trigger levels are exceeded then the environmental authority holder must notify the administering authority within 24 hours of receiving the analysis results.
C41	If quality characteristics of the groundwater water at the monitoring points identified in Table C9 - Groundwater monitoring locations and frequencies , exceed any of the trigger levels specified in Table C10 - Groundwater investigation trigger levels the environmental authority holder must complete an investigation into the potential for environmental harm and provide a written report to the administering authority within three months of receiving the analysis results, outlining: a) details of the investigations carried out; and b) actions taken to prevent environmental harm.
C42	If the investigation undertaken as part of Condition C41 indicates the activities are contaminating groundwater, then the environmental authority holder must immediately implement measures to ensure groundwater contamination from the activity does not result in further environmental harm.

Table C10 - Groundwater investigation trigger levels

Parameter	Unit	Trigger Levels			Limit Type
		D-E Sandstone	E-F Sandstone	C-D Sandstone	
pH	pH Units	6.5 - 8.5			Minimum/Maximum
Electrical Conductivity	µS/cm	1673	1888	5224	Maximum
Total Dissolved Solids	mg/L	979	1063	3315	Maximum
Calcium	mg/L	11.6	14.8	51.1	Maximum
Magnesium	mg/L	3.0	6.2	42.0	Maximum
Sodium	mg/L	348.9	388.3	1002.8	Maximum
Potassium	mg/L	4.7	4.0	15.1	Maximum
Chloride	mg/L	497.3	542.8	1532.0	Maximum
Sulfate	mg/L	5.0	13.7	85.2	Maximum
Carbonate	mg/L	1.0	1.0	1.0	Maximum
Bicarbonate	mg/L	107.8	105.0	195.8	Maximum
Iron	µg/L	1741	591	5320	Maximum
Aluminium	µg/L	695	622	4430	Maximum
Silver	µg/L	1.0	1.0	1.0	Maximum
Arsenic	µg/L	1.0	1.0	1.0	Maximum
Mercury	µg/L	0.1	0.1	0.1	Maximum
Antimony	µg/L	1.0	1.0	1.0	Maximum
Molybdenum	µg/L	3.5	1.0	1.0	Maximum
Selenium	µg/L	1.0	1.0	1.0	Maximum
Total Petroleum Hydrocarbons	µg/L	8622	220	290	Maximum
Standing water level	cm	N/A	N/A	N/A	N/A

Groundwater monitoring program	
C43	A groundwater monitoring network must be installed, and a program developed to include bore(s) (in addition to those in Table C9 - Groundwater monitoring locations and frequencies if necessary) in sufficient number that are located appropriate directions and distances from potential sources of impact from mining activities to provide the following: a) representative groundwater samples from the uppermost aquifer and all other aquifers potentially affected by mining activities; b) include bores immediately hydraulically upstream from the area where groundwater quality may be potentially affected by mineral development activities; c) include bores immediately hydraulically downstream from the area where groundwater quality may be potentially affected by mineral development activities to obtain the most timely notification possible of any effect; d) construction of bores and commencement of sampling prior to activities commencing which may impact on groundwater quality; e) at least twelve (12) sampling events (monthly sampling) for the parameters in Table C10 - Groundwater contaminant trigger levels to determine background groundwater quality as far as practicable; f) be developed, installed and maintained by a person(s) possessing appropriate qualifications and experience in the fields of hydrogeology and groundwater monitoring program design to be able to competently make recommendations about these matters; g) consistency with the <i>Australian/New Zealand Standard AS/NZS 5667.11.1998, Water quality-Sampling, Part 11: Guidance on sampling of groundwaters</i>; and h) based on background groundwater monitoring final groundwater contaminant trigger levels and limits required in Condition C39.
C44	The groundwater monitoring data must be reviewed following each sampling and analysis event, and on an annual basis. The review must include the assessment of groundwater levels and quality data, and the suitability of the monitoring network. The annual assessment must be submitted to the administering authority within twenty eight (28) days of receiving the report.
C45	Prior to commencing of activities which may impact on groundwater quality the holder of the environmental authority must submit an amendment application to have additional groundwater monitoring bores added to Table C9 - Groundwater monitoring locations and frequencies. With the submission of contaminant trigger levels an amendment application must be made to amend Table C10 - Groundwater contaminant trigger levels.
Groundwater Monitoring	
C46	The following information must be recorded in relation to all groundwater water sampling: a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; and d) the results of all monitoring.
C47	The method of water sampling required by this environmental authority must comply with that set out in the latest edition of the administering authority's <i>Water Quality Sampling Manual</i>.

Groundwater Dependent Ecosystems	
C48	Activities undertaken under this environmental authority must not result in environmental harm to any groundwater dependent ecosystem. Any impact caused in breach of this environmental authority must be immediately rectified.
C49	Prior to commencement of any dewatering activities an assessment of surface waters in Lagoon Creek, within 4km of the proposed pit, must be undertaken, including a photographic record of sufficient number of photographs, with appropriate references, to clearly show the dimensions of any surface waters present. Information relating to the taking of photographs must be collected and maintained to allow replicate photographs to be taken if requested by the administering authority.
Sewage effluent	
C50	Conditions C51 to C67 apply when the sewage treatment plant is in operation.
C51	The daily operation of the sewage treatment plant and pollution control equipment must be carried out by a person(s) with appropriate experience and/or qualifications to ensure the effective operation of that treatment system and control equipment.
C52	Pipelines and fittings associated with the sewage treatment plant must be clearly identified. Lockable valves or removable handles must be fitted to all release pipelines situated in public access areas.
C53	Treated effluent from the sewage treatment plant must only be discharged from the authorised discharge points, as specified in Figure 4, Table C11 - Effluent discharge locations to the areas shown in Table C13 - Effluent irrigation locations , in compliance with the limits levels stated in Table C12 - Effluent release limits to land and the conditions of this authority.

Table C11 - Effluent discharge locations

Authorised Discharge Points	Location	Longitude (GCS_GDA94)	Latitude (GCS_GDA94)
Effluent Discharge Point 1	Sewage Treatment Plant Holding Tank 1	146.511125	-23.175619
Effluent Discharge Point 2	Sewage Treatment Plant Holding Tank 2	146.511467	-23.175602
Effluent Discharge Point 3	Sewage Treatment Plant Holding Tank 3	146.511893	-23.175383
Effluent Discharge Point 4	Sewage Treatment Plant Holding Tank 4	146.511995	-23.175356

Table C12 - Effluent release limits to land

Quality characteristics	Release Limit			
	Minimum	80th Percentile	Median	Maximum
5 Day BOD	-	-	-	20 mg/L
Faecal Coliform (FC)	-	-	10 cfu/100mL	-
Suspended Solids	-	-	-	30 mg/L
Electrical Conductivity	-	-	1600 µS/ cm	-
pH	6.5	-	-	8.5

Table C13 - Effluent irrigation locations

Authorised Discharge Point	Effluent Irrigation Location	Longitude (GCS_GDA94)	Latitude (GCS_GDA94)
Effluent Discharge Point 1	Effluent Irrigation Area 1	146.510670	-23.174579
		146.510279	-23.174479
		146.510348	-23.174298
		146.510690	-23.174444
Effluent Discharge Point 2	Effluent Irrigation Area 2	146.511324	-23.174744
		146.511031	-23.174671
		146.511051	-23.174499
		146.511354	-23.174608
Effluent Discharge Point 3	Effluent Irrigation Area 3	146.511890	-23.174863
		146.511617	-23.17479
		146.511666	-23.174645
		146.511969	-23.174746
Effluent Discharge Point 4	Effluent Irrigation Area 4	146.512281	-23.174973
		146.511998	-23.174872
		146.512066	-23.174755
		146.512340	-23.174855

C54	Notwithstanding the quality characteristic limits specified in Table C12: Effluent release limits to land , releases of effluent must not have any properties nor contain any organisms or other contaminants in concentrations that are capable of causing environmental harm.
C55	Treated effluent must not be used for dust suppression.
C56	Treated effluent must not be released from the site to any waters or the bed and banks of any waters.
C57	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	
C58	The irrigation of effluent must be carried out in a manner such that: a) vegetation is not damaged; b) soil erosion and soil structure damage is avoided; c) there is no surface ponding of effluent; d) percolation of effluent beyond the plant root zone is minimised; e) the capacity of the land to assimilate nitrogen, phosphorus, salts, organic matter as measured by oxygen demand and water is not exceeded; and f) the quality of groundwater is not adversely affected.
C59	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.
C60	The daily volume of contaminants released to land must be determined or estimated by an appropriate method, for example a flow meter, and records kept of such determinations and estimates.
C61	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/lawfully dispose of effluent (such as wet weather storage or tanking off site to another treatment plant or sewer). A record must be kept of any removal or discharge off site, including destination, transporter, dates and volumes.
C62	Effluent must only be dispersed to the locations in Table C13 - Effluent irrigation locations in a manner which 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.

C63	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.
C64	If the responsibility of the treated effluent is given or transferred to another person: a) the responsibility of such effluent must only be given or transferred in accordance with a written agreement (the third party agreement); b) include in the third party agreement a commitment from the person utilising the effluent to use effluent in such a way as to prevent environmental harm or public health incidences and specifically make the persons aware of the General Environmental Duty (GED) under section 319 of the <i>Environmental Protection Act 1994</i>, environmental sustainability of any effluent disposal and protection of environmental values of waters; and c) upon being notified or otherwise becoming aware that the person's use of effluent is causing or threatens to cause environmental harm or is posing a human health risk, and if the person does not rectify the situation upon written request, the giving and transferring responsibility for such effluent must cease.
C65	Effluent Monitoring Monitoring must be undertaken and records kept of a monitoring program of contaminant releases to the irrigation area at the monitoring points, frequency, and for the parameters specified in Table C14 - Effluent monitoring program during the period in which releases are made.

Table C14 - Effluent monitoring program

Monitoring point	Quality characteristics	Units	Frequency
Prior to discharge from: Effluent Discharge Point 1 Effluent Discharge Point 2 Effluent Discharge Point 3 Effluent Discharge Point 4	5 Day BOD	mg/L	monthly
	Faecal Coliform	cfu/100mL	monthly
	Suspended Solids	mg/L	monthly
	Electrical Conductivity	µS/ cm	monthly
	pH	pH units	monthly

C66	Conduct and keep records of any monitoring programs of contaminant releases from the treatment plant at the monitoring points, frequency, and for the parameters specified in Table C14 - Effluent monitoring program .
C67	The following information must be recorded in relation to all 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.
Gauging Station Locations	
C68	The location of the gauging station as per Table C4 - Contaminant release during flow events must be finalised based and submitted to the administering authority prior to the release of contaminants to waters from the release points specified in Table C1 - Contaminant release points, sources and receiving waters .
Schedule D: Noise and vibration	
Condition number	Condition
Noise nuisance	
D1	Subject to Conditions D2 and D3 noise from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.
D2	When requested by the administering authority, noise monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
D3	If the environmental authority holder can provide evidence through monitoring that the limits defined in Table D1 - Noise limits and Table D2 - Airblast overpressure level , are not being exceeded then the holder is not in breach of Condition D1 . Monitoring must include: a) $L_{A, \max \text{ adj}, T}$; b) relevant background sound level; c) the level and frequency of occurrence of impulsive or tonal noise; d) atmospheric conditions including wind speed and direction; and e) location, date and time of recording.
D4	If monitoring indicates exceedance of the limits in Table D1 - Noise limits and Table D2 - Airblast overpressure level , then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.

D5	The method of measurement and reporting of noise levels must comply with the latest edition of the administering authority's <i>Noise Measurement Manual</i> .
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Table D1 - Noise limits

Noise level dB(A)	Monday to Sunday (including public holidays)		
	7am - 6pm	6pm - 10pm	10pm - 7am
	Noise measured at a 'sensitive or commercial place'		
L _{A10} , adj, 10 mins	Background + 5	Background + 5	Background + 3
L _{A1} , adj, 10 mins	Background + 10	Background + 10	Background + 5

Note: Where "Background" means background sound pressure level measured in accordance with the latest edition of the administering authority's Noise Measurement Manual. **Table D1** does not purport to set operating hours for the mining activities.

Table D2 - Airblast overpressure level*

Parameter	Airblast overpressure measured at a sensitive or commercial place	
	Monday to Sunday 9am - 7pm	Other times and public holidays
Air blast overpressure level (dB [Lin] Peak)	Maximum 115dB for 9 out of 10 consecutive blasts	No blasting to occur
Air blast overpressure level (dB [Lin] Peak)	120dB maximum	No blasting to occur

***Table D2** does not purport to set limits applicable to any particular explosive blast, rather sets design criteria for every explosive blast.

Vibration nuisance	
D7	Subject to Conditions D7 and D9 vibration from the mining activity must not cause an environmental nuisance, at any 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 sensitive or commercial place, and the results must be notified within 14 days to the administering authority following completion of monitoring.
D9	If the environmental authority holder can provide evidence through monitoring that the limits defined in Table D3 - Vibration limits, are not being exceeded then the holder is not in breach of Condition D7. Monitoring must include: a) peak particle velocity (mm/s); b) air blast overpressure level (dB linear peak); c) location of the blast/s within the mining area (including which bench level); d) atmospheric conditions including temperature, relative humidity and wind speed and direction; and e) location, date and time of recording.

Table D3 - Vibration limits

Vibration parameter	Vibration measured at a sensitive place	
	Monday to Sunday 9am - 7pm	Other times and public holidays
Peak particle velocity (mm/s)	Maximum 5mm/s for 9 out of 10 consecutive blasts	No blasting to occur
Peak particle velocity (mm/s)	10mm/s maximum	No blasting to occur

D9	For the purposes of Condition D6 the mining activities will not cause environmental nuisance where noise from the mining activities does not exceed the criteria specified in Table D3 - Vibration limits .
D10	If monitoring indicates exceedance of the limits in Table D3 - Vibration limits, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.
Explosive blasts	
D11	Every explosive blast for the mining activity shall be designed by a competent person to achieve the criteria specified in Table D2 - Airblast overpressure level and Table D3 - Vibration limits .
D12	All relevant information pertaining to the design of every explosive blast for the mining activity in relation to the criteria specified in Table D2 - Airblast overpressure level and Table D3 - Vibration limits shall be kept in written and diagrammatic form
Schedule E: Waste	
Condition number	Condition
E1	For the purpose of Conditions E2 to E16 , effluent, waste rock, spoil, and overburden generated on MDL285 are not defined as 'waste'.
Storage of tyres	
E2	Scrap tyres stored awaiting disposal or transport for take-back and recycling, or waste-to-energy options must be stored in stable stacks and at least 10 metres from any other scrap tyre storage area, or combustible or flammable material, including vegetation.
E3	All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a 10 metre radius of the scrap tyre storage area.

Waste Management	
E4	A Waste Management Plan must be implemented and must include: a) describe how the environmental authority holder recognises and applies the waste management hierarchy; b) identify characterisations of wastes generated from the project and general volume trends over the past 5 years; c) a program for safe recycling or disposal of all wastes - reusing and recycling where possible; d) waste commitments with auditable targets to reduce, reuse and recycle; e) the waste management control strategies must consider: 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; vii) disposal, reused and recycling options; and f) identify the potential adverse and beneficial impacts of the wastes generated; g) detail the hazardous characteristics of the waste generated (if any); h) outline the process to be implemented to allow for continuous improvement of the waste management systems; i) identify responsible staff (positions) for implementing, managing and reporting the Waste Management Plan; and j) cover a staff awareness and induction program that encourages re-use and recycling.
E5	A designated area or storage containers must be set aside for the laydown and segregation of wastes.
E6	An effective fire break must be provided and maintained around all waste laydown areas.
E7	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.
E8	Waste must not be burned or allowed to be burned on the mineral development licence unless by approval of the administering authority.
E9	Waste batteries must be stored: a) in a bunded and roofed area; or b) palletised and plastic wrapped.

E10	A record of all wastes 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. Note: Trackable wastes as listed in Schedule 11 of the Environmental Protection Regulation 2019 are not covered by this condition. Trackable wastes have similar recording requirements to this condition in accordance with Schedule 12 of the Environmental Protection Regulation 2019.
E11	Waste is not permitted to be disposed of within MDL285.
E12	General waste may be temporarily stored on MDL285 before being directed to a facility that can lawfully accept such waste.
E13	Regulated waste may be temporarily stored on MDL285 before being directed to a facility that can lawfully accept such waste.
E14	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 <i>Environmental Protection Act 1994</i> .
E15	Each container of regulated waste must be marked to identify the waste contained therein.
Burning of waste	
E16	Where possible and practical, vegetation waste from clearing shall be spread on rehabilitated areas. Vegetation waste only may be burnt as a last resort and only if there is minimal risk of causing nuisance to the neighbouring sensitive receptors. General waste must not be burnt or allowed to burn on the licensed site unless permitted by the administering authority.
Schedule F: Land	
Condition number	Condition
Topsoil	
F1	Topsoil must be strategically stripped ahead of mining in accordance with a Topsoil Management Plan.
F2	A Topsoil Management Plan topsoil requirements for the Alpha Coal Bulk Sample project and availability of suitable topsoil on site must be developed prior to the commencement of activities.
F3	The Topsoil Management Plan must be updated when changes are made on site to include a current and predicted topsoil inventory which identifies the topsoil requirements for the Alpha Coal Bulk Sample project and availability of suitable topsoil on site.
Preventing contaminant release to land	
F4	Contaminants must not be released to land in a manner which constitutes nuisance, material or serious environmental harm.

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 environmental harm and maintained in accordance with the current edition of Australian Standard AS 1940 – <i>Storage and Handling of Flammable and Combustible Liquids</i> .
F7	Spillage of all flammable and combustible liquids must be controlled in a manner that prevents environmental harm.
F8	All chemicals must be contained within an on-site containment system and controlled in a manner that prevents 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 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 when works are being undertaken on 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.
Infrastructure	
F14	All infrastructure, constructed by or for the environmental authority holder during the licensed activities including water storage structures, must be removed from the site prior to surrender, except where agreed in writing by the post mining landowner / holder. Note: This is not applicable where the landowner / holder is also the environmental authority holder.
Mining Waste	
F15	For the purpose of Conditions F16 to F21 , waste rock, spoil and overburden generated on MDL285 are defined as 'mining waste'.

Mining Waste Management	
F16	A Mining Waste Management Plan must be developed and implemented during the continuation of the environmental authority. The Mining Waste Management Plan must at a minimum include: a) characterisation programs to ensure that all mining waste is progressively characterised during disposal for net acid producing potential, salinity and the following contaminants: 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 availability or leachability of metals from the mining waste; d) quantification of potential acid forming (PAF) from mining waste present; e) review impacts of the PAF mining waste on the rehabilitation; f) management actions for mining waste that has been identified as having a high availability or leachability of metals in accordance with Condition F17; g) management actions for mining waste that has been defined as PAF in accordance with Condition F19; h) identification of environmental impacts and potential environmental impacts; i) control measures for routine operations to minimise likelihood of environmental harm; j) contingency plans and emergency procedures for non-routine situations; and k) periodic review of environmental performance and continual improvement.
F17	The management of mining waste emplacement must be in accordance with the following: a) all mining waste must be progressively characterised prior to emplacement 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) records must be kept of the waste rock, spoil or overburden emplacement to indicate locations and characteristics of mining waste located on MDL285; and c) where the acid producing potential of mining waste material has not been conclusively determined, geochemical kinetic testing must be conducted to indicate oxidation rates, potential reaction products and effectiveness of control strategies.
F18	Subject to the release limits defined in Schedule C: Water, all mining waste, identified by Condition F17, as having a high availability or leachability of metals, must be disposed of in a manner that prevents contaminants being directly or indirectly released or likely to be released to any groundwater or water course.
F19	No PAF mining waste, identified by Condition F17, is authorised to be disposed within the open pit.
F20	All PAF mining waste, identified by Condition F17, must be disposed of in a manner that ensures contaminants are not released to the environment.
F21	Areas that are, or are proposed, to contain PAF mining waste emplacement areas must be identified and submitted with the Annual Return.

Acid rock drainage and leachate management	
F22	Subject to the release limits defined in Schedule C: Water , all reasonable and practicable measures must be implemented to prevent hazardous leachate being directly or indirectly released or likely to be released as a result of the activity to any groundwater or water course.
Rehabilitation landform criteria	
F23	All areas significantly disturbed by mining activities must be rehabilitated to a stable landform with a self-sustaining vegetation cover in accordance with Table F1 - Final land use and rehabilitation approval schedule and Table F2 - Landform design criteria .

Table F1 - Final land use and rehabilitation approval schedule

Details	Disturbance type						
	Residual voids	Waste rock dump(s)	Sediment / Supply dams	Infrastructure	Topsoil Stockpiles	ROM area	Road(s) and tracks
Surface Area (ha)	8.77	18.63	8.75	0.30	17.16	8.79	18.00
Pre-mine land use	Grazing (Class 3)	Grazing (Class 3)	Grazing (Class 3)	Grazing (Class 3)	Grazing (Class 3)	Grazing (Class 3)	Grazing (Class 3)
Post-mine land use	Water storage	Grazing	Grazing or to remain as farm water storage upon agreement with landholder	Grazing	N/A	Grazing	Grazing or to remain as farm access upon agreement with landholder
Post-mine land capability classification	Class 5	Class 3-5	Class 3-5	Class 3	Class 3	Class 3	Class 3-5
Cover range (%)	10.91	23.17	10.88	0.37	21.34	10.93	22.39

Table F2 - Landform design criteria

Disturbance type	Maximum slope range %	Surface area (ha)
Overburden Emplacement – external wall	10%	30.92
Overburden Emplacement – low wall	0-5%	2.36
Site Water Control Pond	25%	9.12
ROM Pad	10%	5.74
Topsoil Stockpiles	0-5%	19.06
Administration Offices and Workshops	0-5%	0.30
Containment Ponds	0-5%	1.27

F24	Progressive rehabilitation must commence within one year when areas become available within the operational land.
F25	Areas which are to be rehabilitated to native ecosystem must achieve a self-sustaining native ecosystem with species composition and distribution similar to an analogue site or another suitable alternative approved by the administering authority.
F26	Where reasonable and practicable, areas of the site where grazing is nominated as the post-mine land use must include native grass species endemic to the area.

F27	Complete a rehabilitation management plan for disturbed areas. The rehabilitation management plan must, at a minimum: a) map existing areas of rehabilitation; b) develop rehabilitation objectives; c) develop design criteria for rehabilitation of disturbed areas; d) detail rehabilitation methods applied to areas; e) identify success factors for areas; f) detail future rehabilitation actions to be completed on areas; g) identify three (3) reference and three (3) rehabilitation sites to be used to develop rehabilitation success criteria; h) description of monitoring of reference sites and rehabilitated areas inclusive of statistical design; i) contain landform design criteria including end of mine design; j) detail how landform design will be consistent with the surrounding topography; k) provide schematic representation of final landform inclusive of: i) drainage design and features; ii) slope designs; iii) cover design; iv) erosion controls proposed on reformed land; l) specify future planned rehabilitation methods for disturbed areas; m) explain planned native vegetation rehabilitation areas and corridors; n) describe rehabilitation monitoring and maintenance requirements to be applied to all areas of disturbance; o) itemise revegetation criteria; p) describe end of mine landform design plan and post mining land uses across the mine; q) specify spoil characteristics, soil analysis, soil separation for use on rehabilitation; r) include a cost benefit analysis / triple bottom line assessment (or an alternative assessment method) of the proposed final landform design criteria and alternatives; and s) identify potential problems and how they will be addressed.
Rehabilitation Monitoring Program	
F28	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 program.
F29	The Rehabilitation Monitoring Program must be developed and implemented by a person possessing appropriate qualifications and experience in the field of rehabilitation management, nominated by the environmental authority holder.

F30	Verification of rehabilitation success, determined by the rehabilitation success criteria developed as per Condition F28 is to be carried out as follows: a) the minimum sampling intensity must be specified for the monitoring of progressive rehabilitation; b) justification of the suitability of the minimum sampling intensity must be provided; c) monitoring must include sufficient replication to enable statistical analysis of results at an acceptable power; and d) undertaken at twelve monthly intervals.
F31	The Rehabilitation Monitoring Program must be included in the Annual Return and updated with each subsequent Annual Return, describing: a) how the rehabilitation objectives as per Condition F28 will be achieved; and b) verification of rehabilitation success as per Condition F31.
Residual void outcome	
F32	Rehabilitation of the void must commence no later than 31 October 2024 .
F33	The rehabilitation of the void must comply with the following outcomes: • Rehabilitation of the voids must comply with Table F1 - Final land use and rehabilitation approval schedule.
F34	Complete an investigation into the void and submit a Rehabilitated Void Management Study report to the administering authority proposing acceptance criteria to meet the outcomes arising from Conditions F23 and F35 and landform design criteria by 31 December 2020. The investigation must at a minimum include the following so as to address and mitigate adverse potential environmental impacts for the foreseeable future: a) a study of options available for rehabilitating the void; b) developed design criteria for rehabilitation of voids; c) a void hydrology study addressing the long-term water balance and conservative estimate of water quality in the voids, connections to groundwater resources and releases (controlled or otherwise) to surface waters, and potential impacts; and d) a study to demonstrate stability and sustainability against the effects of long-term erosion, weathering of the pit wall and drainage structures and the effects of significant hydrological events.

Void Water Quality	
F35	The Rehabilitated Void Management Study must consider water quality in the void for the period between rehabilitation to post mining equilibrium and for the foreseeable future so as to demonstrate the ability of the rehabilitated void to meet the rehabilitation criteria of a safe, stable and non-polluting landform. The matters to be considered, modelled, analysed and estimated must include: a) the catchment area for the rehabilitated void; b) the storage capacity of the rehabilitated void water; c) runoff of rainfall demonstrated to be consistent with pre-existing catchment conditions; d) evaporation demonstrated to be consistent with contaminant concentrations, and seasonal weather conditions including rainfall; e) the void water quality and its physical, chemical and biological nature as potential habitat; f) the ability of the void to deal with flood, seasonal and individual rainfall events; g) likelihood of release to the general environment; h) the quality of any water released to the general environment; i) conservative estimate of dilution and environmental impact; j) practicable management measures to mitigate increasing contamination of void water; and k) a monitoring program throughout to assess the performance of management measures.
General	
F36	Cleared vegetation from the site must be managed in accordance with the following hierarchy: a) reuse, e.g. use of logs and tree stumps as shelter for fauna in rehabilitated areas; b) recycle, e.g. mulching of vegetation and use in rehabilitation on the site; and c) other alternative management options implemented in a way that causes the least amount of environmental harm.
F37	A Weed Management Plan must be developed and implemented during the continuation of this environmental authority, and prior to the commencement of construction activities. The Weed Management Plan must describe how the weeds are to be managed in accordance with the <i>Biosecurity Act 2014</i> and/or local government requirements for weeds not declared under state legislation.
Rehabilitation and reporting	
F38	Rehabilitation of areas disturbed within any Category B Environmentally Sensitive Area or within 500m of any Category B Environmentally Sensitive Area must be completed as soon as practicable but no longer than 3 months after completion of the disturbance activity.
F39	The environmental authority holder must revegetate disturbed areas within any Category B Environmentally Sensitive Area or within 500m of any Category B Environmentally Sensitive Area with native plant species endemic to the area that will promote the same vegetation type and density of cover to that of the surrounding undisturbed areas within the Category B Environmentally Sensitive Area or within 500m of the Category B Environmentally Sensitive Area.

F40	An annual report must be prepared each year and submitted with each annual return. The report must include details of exploration activities undertaken and details of progressive rehabilitation works completed to demonstrate compliance with Conditions F38 and F39 .
Schedule G: Dams	
Condition number	Condition
All dams	
G1	The holder of this environmental authority must ensure that dams are designed, constructed, operated and maintained in accordance with accepted engineering standards.
G2	Except for dams affected by Condition G3 , the hazard category of dams must be assessed by a suitably qualified and experienced person prior to their construction, and then not less frequently than on an annual basis.
G3	The hazard category of dams constructed prior to grant of this environmental authority, must be assessed by a suitably qualified and experienced person within six months of this environmental authority taking effect, and not less frequently than on an annual basis.
G4	Where the hazard category of a dam is assessed as significant or high, the holder of the environmental authority must act immediately to ensure: a) the administering authority is advised of the current location and details of that dam; and b) that dam meets the hydraulic performance required of the assessed hazard category within six months of that assessment.
G5	The condition of dams must be monitored for early signs of loss of structural or hydraulic integrity, based on the advice of a suitably qualified and experienced person. The methods of monitoring and frequency of monitoring shall be as assessed by that suitably qualified and experienced person, based on the hazard category and particular circumstances of each dam.
G6	In the event of early signs of loss of structural or hydraulic integrity, the holder of this environmental authority must immediately take action to prevent or minimise any actual or potential environmental harm and report in writing any findings and actions taken to the administering authority within 20 business days .
G7	The holder of this environmental authority must decommission each dam to avoid environmental harm.
G8	As a minimum, dams must be decommissioned such that they: a) no longer contain flowable substances; b) become stable landforms; and c) comply with the rehabilitation requirements of this environmental authority.
Location and basic specifications	
G9	The following regulated structures are to be located within the control points defined in Table G1 - Location of regulated structures .

Table G1 - Location of regulated structures

Name of regulated dam	Longitude (GDA94)	Latitude (GDA94)
Site Water Control Pond	146.472835	-23.22814
	146.475077	-23.227118
	146.474569	-23.222094
	146.472462	-23.230885
Bulk Sample Test Pit	146.472637	-23.231274
	146.474933	-23.231534
	146.474516	-23.235616
	146.472445	-23.235374
Flood Protection Levee	146.474398	-23.235841
	146.472757	-23.228112
	146.470949	-23.23555
	146.471283	-23.232434
	146.472354	-23.231029
	146.471737	-23.236284
	146.473733	-23.235893
	146.474398	-23.235841
	146.473555	-23.236516
	146.472757	-23.228112
	146.475058	-23.22700
	146.470949	-23.23555

G10	The following regulated structures are to be constructed and used in accordance with Table G2 - Basic specification of regulated structures .
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Table G2 - Basic specification of regulated structures

Regulated dam	Hazard category	Maximum surface area of dam (ha)	Maximum volume of dam (m ³)	Maximum depth of dam (m)	Purpose
Site Water Control Pond	Significant	9.12	250,000	6	Storage of storm/flood water contaminated by the activities
Bulk Sample Test Pit	Significant	*	*	*	*
Flood Protection Levee	Significant	N/A	N/A	N/A	Operational flood protection of pit and pond

* To be provided with all submitted design plans in accordance with **Condition G12**.

G11	The following regulated structures are to be designed, constructed and operated in accordance with Table G3 - Hydraulic performance of regulated structures .
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Table G3 - Hydraulic performance of regulated structures

Regulated dam	Spillway capacity or flood protection probability AEP	Design Storage Allowance AEP	Mandatory Reporting Level AEP
Site Water Control Pond	1:1000 AEP	1:1000 AEP	1:20 AEP 72 hr rainfall
Bulk Sample Test Pit	*	*	*
Flood Protection Levee	1:1000 AEP	N/A	N/A

* To be provided with all submitted design plans in accordance with **Condition G12**.

Certification and operation	
G12	The holder of this environmental authority must not commence construction of a regulated structure unless: a) the holder has submitted to the administering authority two copies of a design plan, together with the certification of a suitably qualified and experienced person that the design of the regulated structure delivers the performance specified in the design plan, and is compliant in all respects with this environmental authority; and b) at least 20 business days has passed since the submission of the design plan.
G13	When construction or modification of any regulated dam is complete, or within 12 months of a dam becoming a regulated structure by virtue of Condition G2 or G3 , the holder of this environmental authority must submit to the administering authority two copies of a set of 'as constructed' drawings, together with the certification by a suitably qualified and experienced person that the dam 'as constructed' is fit for purpose, compliant in all respects with this environmental authority and in accordance with engineering best practice.
G14	The holder of this environmental authority must ensure that there is always a current operational plan for each regulated structure, which may form part of other plans required by legislation.
G15	The holder of this environmental authority must ensure that, where a current operational plan covers decommissioning and rehabilitation, those operations are consistent with the objectives in any design plan for the regulated structure.
G16	The holder of this environmental authority or approval must notify the administering authority when the level in any regulated structure reaches the mandatory reporting level (MRL).
Annual inspection and report	
G17	Each Regulated Structure must be inspected annually by a suitably qualified and experienced person.
G18	At each annual inspection, the condition and adequacy of each regulated dam must be assessed for dam safety and against the necessary structural, geotechnical and hydraulic performance criteria.
G19	At each annual inspection, if a mandatory reporting level is required, it must be determined and marked on each regulated dam.
G20	A final assessment of adequacy of available storage in each regulated dam must be based on a dam level observed within the month of October and result in an estimate of the level in that dam as at 1 November .
G21	For each annual inspection, two copies of a report on the condition and adequacy of each regulated dam, certified by the suitably qualified and experienced person and including any recommended actions to be taken to ensure the integrity of each regulated dam; must be provided to the administering authority by 1 December .
G22	The holder of this environmental authority must, upon receipt of the annual inspection report, consider the report and its recommendations, and take action to ensure that each regulated dam safely performs its intended functions.

Flood Protection Levee	
G23	A design plan for a flood protection levee must include: a) drawings describing the location and dimensions of the levee and the mining excavations in the vicinity of the levee, including confirmation the levee meets the specified design requirements in Condition G24; and b) a documented procedure for surveillance of the levee and any adjacent mining excavation slopes to detect and report to the administering authority any ground movement that compromises or may compromise the integrity of the levee.
G24	Design requirements for the levee and adjacent mining excavation include: a) the design level of the levee crest shall be 0.5m above the estimated AEP 1 in 1,000 flood event for the adjacent watercourses; and b) mining excavation slopes adjacent to the levee must remain stable and are to be designed with a factor of safety of 1.5 or above based on an accepted stability analysis procedure.
G25	The flood protection levee authorised under this environmental authority must be constructed and maintained such that: a) it does not result in increased erosion of the bank of any water course/flood plain; b) it does not significantly impact upon riparian or existing remnant vegetation; and c) the levee itself will not erode, to the extent that the erosion may jeopardise the integrity of the levee, during any flood events up to the AEP 1 in 1,000 event.
Flood Protection Levee - Surveillance and Remedial Works	
G26	The condition of constructed levees including the surface area between the non-creek side of the toe of the levee and the end wall crest of the open-cut mining pit should be monitored for surface cracks and must at a minimum be inspected and assessed by a suitably qualified and experienced person at least once per year between the months of May and October inclusive (i.e. during the 'dry' season and before the onset of the 'wet' season), and at any time if alarming, unusual or otherwise unsatisfactory conditions are observed.
G27	Remedial works identified as being required for the flood protection levee during any inspections and assessments conducted, must be notified in writing to the administering authority within 5 business days of the completion of the inspections, and commenced within 20 business days unless otherwise agreed in writing by the administering authority.
G28	The annual inspection report for this environmental authority shall include a certification that the documented procedure for surveillance of the levee has been applied, that there has been no erosion, cracking or vertical or horizontal deformation that has impacted on the integrity of the levee, and that the levee has been maintained in accordance with the certified design plan.
Schedule H: Complaint Management	
Condition number	Condition
Complaint response	
H1	All complaints received must be recorded including investigations undertaken, conclusions formed and action taken. This information must be made available to the administering authority on request.

H2	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 (if not available; record – not identified); b) time and date of complaint; c) investigations undertaken; d) conclusions formed; e) actions taken to resolve complaint; f) any abatement measures implemented; and g) person responsible for resolving the complaint.
H3	When requested by the administering authority, the environmental authority holder must undertake relevant specified monitoring within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint of environmental harm at any sensitive place or commercial place. The results of the investigation (including an analysis an interpretation of the monitoring results) and abatement measures implemented must be provided to the administering authority within 14 days of completion of the investigation.

Definitions

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

“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.

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

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

“acid rock drainage” means any contaminated discharge emanating from a mining activity formed through a series of chemical and biological reactions, when geological strata is disturbed and exposed to oxygen and moisture as a result of mining activity.

“administering authority” means the Department of Environment and Science or its successor.

“AEP” means the Annual Exceedance Probability, which is the probability that at least one event in excess of a particular magnitude will occur in any given year.

“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 (or total) 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.

“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.

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

"assessed" or **"assess"** 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
- 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
- b) any land used for those operations.

"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
- d) the transfer and use have been approved or authorised under any relevant legislation.

"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.

"borehole" means either an artesian bore or a subartesian bore.

"bunded" means within bunding consistent with Australian Standard 1940.

"campsite" means the area encompassing any dwelling, amenities (e.g. toilet block, power generator), sewage or general waste disposal facility and includes the office area and vehicle parking areas associated with a temporary or permanent mining camp.

"certification" or **"certified"** by a suitably qualified and experienced person in relation to a design plan or an annual report regarding dams, 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 is being certified and the precise nature of that certification;
- b) the relevant legislative, regulatory and technical criteria on which the certification has been based;
- c) the relevant data and facts on which the certification 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 certification has been based using the relevant data and facts, and the relevant criteria.

“chemical” means:

- a) An agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth).
- b) A dangerous good under the dangerous goods code.
- c) A lead hazardous substance within the meaning of the Work Health and Safety Regulation 2011.
- d) A drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth.
- e) any substance used as, or intended for use as:
 - i. a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product.
 - ii. a surface active agent, including, for example, soap or related detergent
 - iii. a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide
 - iv. a fertiliser for agricultural, horticultural or garden use
- f) a substance used for, or intended for use for:
 - i. mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater
 - ii. manufacture of plastic or synthetic rubber.

“commercial place” means a work place used as an office or for business or commercial purposes, which is not part of the mining activity and does not include employees accommodation or public roads.

“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.

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

“construction” includes building a new dam and modifying or lifting an existing dam.

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

“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 is designed to contain, divert or control 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.

“density of cover” In reference to trees and/or shrubs, it means the number of trees or shrubs in a specified area (e.g. 50 trees per square kilometre). With reference to understorey plant species (e.g. grasses and forbs), it means the percentage of surface area covered by a particular species.

“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 all investigation and design reports, plans and specifications sufficient to hand to a contractor for construction, and planned decommissioning and rehabilitation outcomes; so as to address all hazard scenarios that would be identified by a properly conducted hazard assessment for the structure. Documentation must be such that a ‘suitable qualified and experience person’ could conduct an independent review without seeking further information from the designer.

“design storage allowance” or “DSA” means the minimum storage required in a dam at the first of November each year in order to meet the hydraulic performance requirements.

“development approval” means a development approval under the *Integrated Planning Act 1997* or the *Sustainable Planning Act 2009* in relation to a matter that involves an environmentally relevant activity under the *Environmental Protection Act 1994*.

“disturbed” means any area that has had its natural state altered by the action or interference of carrying out an activity associated with the exploration project.

“domestic waste” means waste, other than domestic clean-up waste, green waste, recyclable waste, interceptor waste or waste discharged to a sewer, produced as a result of the ordinary use or occupation of domestic premises.

“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;
- b) a caravan, mobile home or other vehicle or structure on land; or
- c) a water craft in a marina.

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

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

“environmental authority” means an environmental authority granted in relation to an environmentally relevant activity under the *Environmental Protection Act 1994*.

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

“ERE” means an endangered regional ecosystem identified in the database maintained by the department called ‘Regional Ecosystem Description Database’ containing regional ecosystem numbers and descriptions.

“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.

“general waste” means waste other than regulated waste.

“hazardous waste” means a substance, whether liquid, solid or gaseous that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause environmental harm.

“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 *Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995)*.

“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 *Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995)*.

“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.

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

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

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

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

“**land capability**” as defined in the *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland (DME 1995)*.

“**land suitability**” as defined in the *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland (DME 1995)*.

“**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.

“**levee**” (dyke or bund) means a long embankment that is designed only to provide 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.

“**mandatory reporting level**” or “**MRL**” means a warning and reporting level determined in accordance with the criteria in the *Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995)*.

“**mature trees**” means any tree relevant to the tenure that is classified as a *commercial sized tree* by the *Code of Practice for Native Forest Timber Production 2002*

“**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, and
- 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, and

d) water.

“mine water” means process water and contaminated stormwater.

“NAF” means non acid forming.

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

“native vegetation” means vegetation that occurs naturally in a certain area.

“nature” includes:

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

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

“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” 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.

“PAF” means potentially acid forming.

“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}).

“process water” means water used or produced during the mineral development activities.

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

“protected area” means:

- a) a protected area under the *Nature Conservation Act 1992*
- b) a marine park under the *Marine Parks Act 2004*
- c) a World Heritage Area.

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

“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.

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

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

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

“regulated dam” means any dam in the significant or high hazard category as assessed using the *Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland (DME 1995)*.

“regulated waste” means non-domestic waste mentioned in schedule 9 of the Environmental Protection Regulation 2019 (whether or not it has been treated or immobilised), and includes:

- a) for an element – any chemical compound containing the element, and
- b) anything that has contained the waste.

“rehabilitation” means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance 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.

“sensitive place” means:

- a) a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises;
- b) a motel, hotel or hostel;
- c) an educational institution;
- d) a medical centre or hospital;
- e) a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or
- f) a public park or gardens.

“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.

“storm water” means all surface water runoff from rainfall.

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

“suitably qualified and experienced person” in relation to dams means one who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, or at the relevant time holds a ‘deemed registration’ within the meaning of the *Mutual Recognition (Queensland) Act 1992*; and the administering authority for the Act is satisfied that person has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below:

- a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams;
- b) a total of five years of suitable experience and demonstrated expertise in at least four of the following categories, with the ‘geomechanics of dams’ category being compulsory:
 - i. geomechanics of dams with particular emphasis on stability, geology and geochemistry;
 - ii. investigation, design or construction of dams;
 - iii. operation and maintenance of dams;

- iv. hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology;
- v. hydraulics with particular reference to sediment transport and deposition, erosion control, beach processes
- vi. hydrogeology with particular reference to seepage, groundwater;
- vii. solute transport processes and monitoring thereof;
- viii. dam safety.

“trackable waste” means a waste or combination of waste stated in Schedule 11 of the Environmental Protection Regulation 2019.

“trivial harm” means environmental harm which is not material or serious environmental harm and will not cause actual or potential loss or damage to property of an amount of, or amounts totalling more than \$5,000.

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

“void” means any man-made, open excavation in the ground.

“waste” as defined in section 13 of the *Environmental Protection Act 1994*.

“waste and resource management hierarchy” has the meaning given by the *Waste Reduction and Recycling Act 2011*.

“waste and resource management principles” has the meaning given by the *Waste Reduction and Recycling Act 2011*.

“water” means:

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

“waters” includes:

- a) river, creek, stream in which water flows permanently or intermittently either:
 - i. in a natural channel, whether artificially improved or not, or
 - ii. in an artificial channel that has changed the course of the river, creek or stream
- b) lake, lagoon, pond, swamp, wetland, dam,
- c) unconfined surface water,
- d) storm water channel, storm water drain, roadside gutter,
- e) bed and banks and any other element of a river, creek, stream, lake, lagoon, pond, swamp, wetland, storm water channel, storm water drain, roadside gutter or dam confining or containing water,
- f) groundwater,
- g) non-tidal or tidal waters (including the sea), and
- h) any part thereof.

“waste water” means used water from the activity, process water or contaminated storm water.

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

“µg/L” means micrograms per litre.

“µS/cm⁻¹” means microsiemens per centimetre.

Appendices

Figure 1: MDL285 release points and water monitoring locations

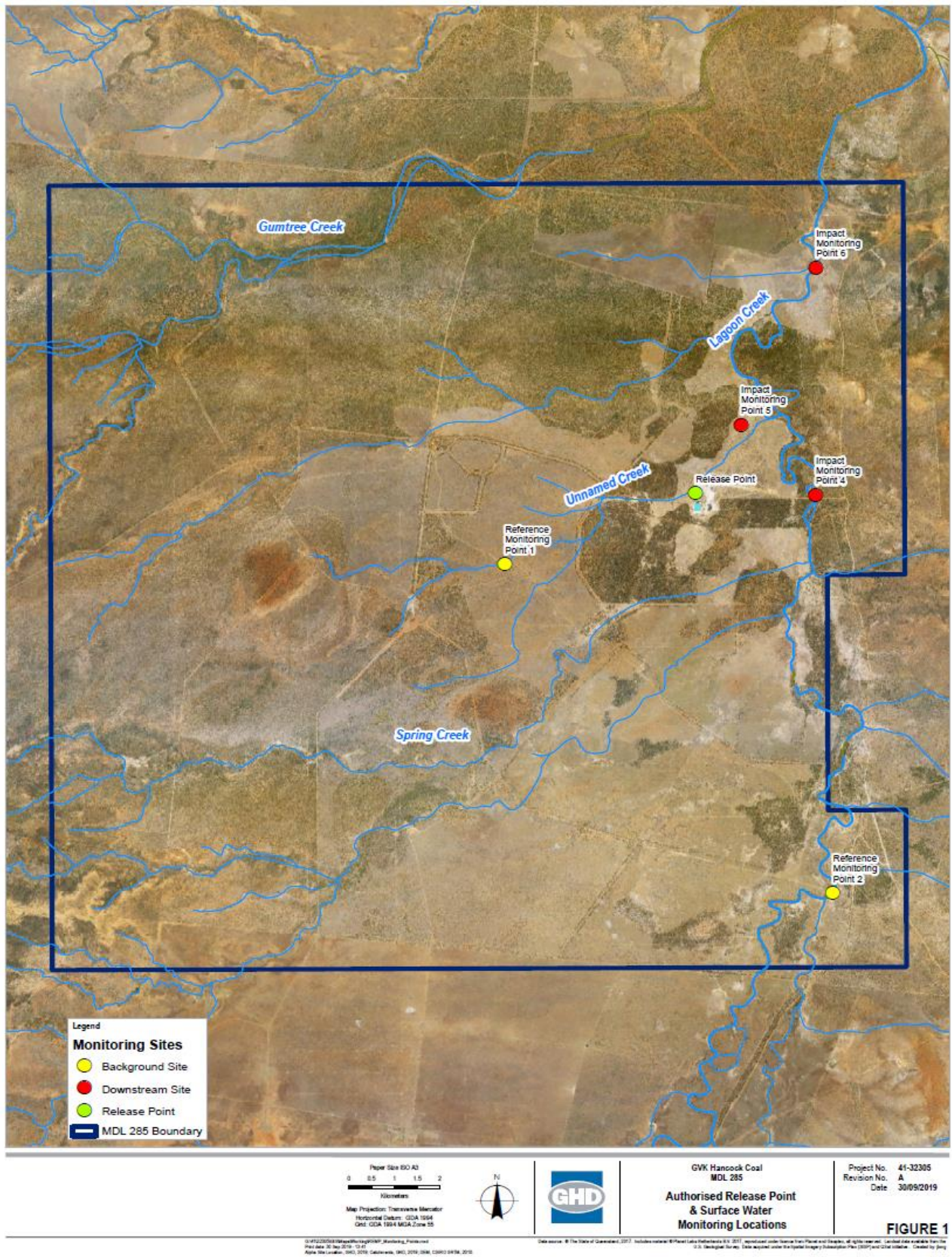


Figure 2: Bulk sample pit location

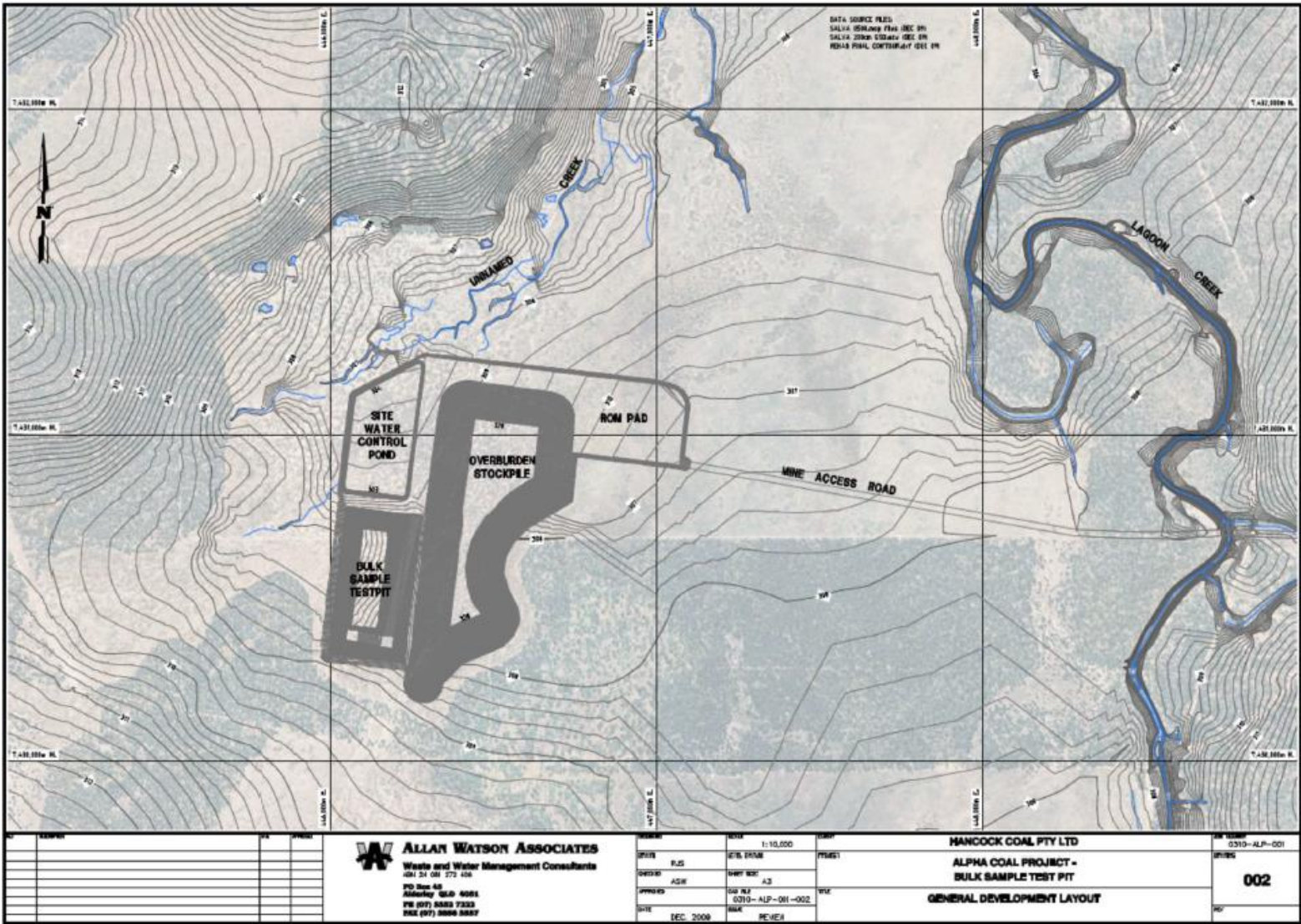


Figure 3: Exploration activity location on MDL285

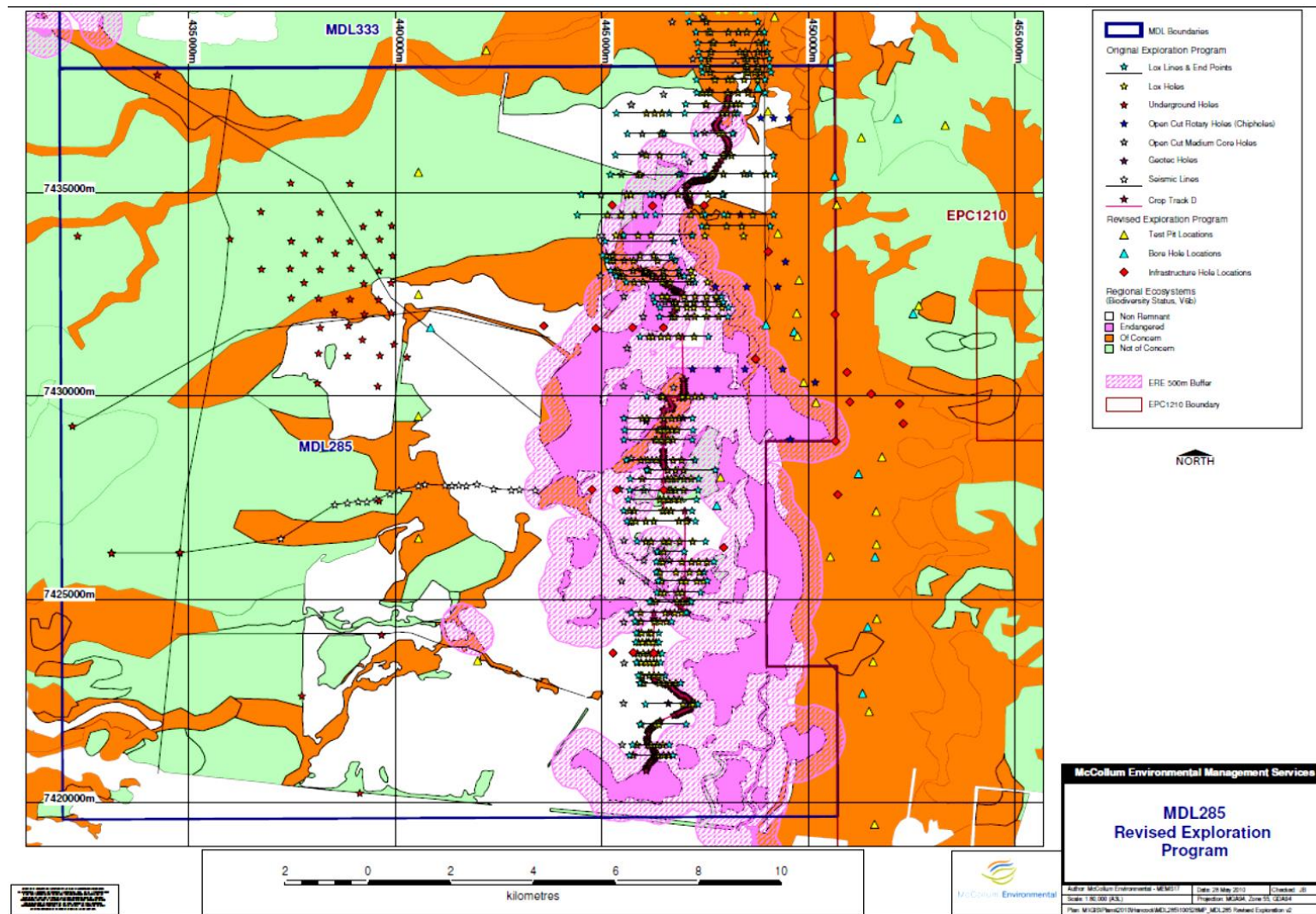


Figure 4: Irrigation areas and effluent discharge points



END OF ENVIRONMENTAL AUTHORITY