

Permit

Environmental Protection Act 1994

Environmental authority

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

Environmental authority number: EPML00693413

Environmental authority takes effect on 21 November 2025

The anniversary date of this environmental authority is 21 February each year.

Environmental authority holder(s)

Name(s)	Registered address
Kestrel Coal Resources Pty Ltd	Level 22 10 Eagle Street BRISBANE CITY QLD 4000 Australia
Mitsui Kestrel Coal Investment Pty Limited	Level 24 480 Queen Street BRISBANE CITY QLD 4000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 13: Mining Black Coal	ML1978, ML70330, ML70301, ML70302 and ML70481
Ancillary 8 – Chemical Storage 3: Storing more than 500m ³ of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c).	ML1978, ML70330, ML70301, ML70302 and ML70481
Ancillary 14 – Electricity Generation 1: Generating electricity by using gas at a rated capacity of 10MW electrical or more.	ML70301
Ancillary 31 – Mineral Processing, 2: Processing, in a year, the following quantities of mineral products other than coke, (b) more than 100,000t.	ML1978, ML70330, ML70301, ML70302 and ML70481
Ancillary 60 - Waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a)— (d) more than 200,000t.	ML1978, ML70330, ML70301, ML70302 and ML70481
Ancillary 63 – Sewage Treatment, 1: operating sewage treatment works, other than no-release works, with a total daily peak design capacity of— (b) more than 100 but not more than 1,500EP— (ii) otherwise.	ML1978, ML70330, ML70301, ML70302 and ML70481

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).

Mobile and temporary activities

If you operate a mobile and temporary environmentally relevant activity (ERA), other than regulated waste transport, you are required to maintain a work diary. You must:

- use the approved form for a work diary (ESR/2015/1696);
- keep the work diary records for 2 years after the last entry;
- inform the administering authority within 7 days of the work diary being lost or stolen;
- record the information required in the work diary for each location within 1 day of leaving the location.

Contaminated land

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

- the presence of, or happening of an event involving, a hazardous contaminant on the land that is causing, or is reasonably likely to cause, serious or material environmental harm (notice must be given within 24 hours); or
- if the land is contaminated land – a change in the condition of the land that is causing, or is reasonably likely to cause, serious or material environmental harm (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 land (notice must be given within 20 business days).

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

Take effect

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

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

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

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

The anniversary day of this environmental authority is the same day each year. The payment of the annual fee will be due each year on this day. An annual return will be due each year on 01 April.

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



Signature

21 November 2025

Date

Juliana McCosker
Department of the Environment, Tourism, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

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Obligations under the *Environmental Protection Act 1994*

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

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

Other permits required

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department, and other State and Federal 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 and Mines, Manufacturing, and Regional and Rural Development (to clear vegetation), and the Department of Primary Industries (to clear marine plants or to obtain a quarry material allocation).

Obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

Matters of national environmental significance (MNES) are regulated under the Commonwealth EPBC Act rather than under state legislation. You may need to submit a referral if your project potentially impacts any matters protected under the EPBC Act. For more information on self-assessments, and referral and assessment processes please visit the Department of Climate Change, Energy, the Environment and Water webpage, <https://www.dcceew.gov.au/environment/epbc/advice>.

Development Approval

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

Obligations under the *Aboriginal Cultural Heritage Act 2003* and *Torres Strait Islander Cultural Heritage Act 2003* (the Cultural Heritage Acts)

The Cultural Heritage Acts require anyone who carries out a land-use activity to exercise a duty of care. This 'duty of care' means land users must take all reasonable and practicable measures to ensure their activity does not harm Aboriginal or Torres Strait Islander cultural heritage, and applies to any activity where Aboriginal or Torres Strait Islander cultural heritage is located. For more information on your obligations under this legislation, please visit the Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism webpage at, <https://www.dwatsipm.qld.gov.au/>.

Conditions of environmental authority

Schedule A: General	
Condition number	Condition
A1	The conditions of this environmental authority are in force until a surrender of the authority is accepted pursuant to the <i>Environmental Protection Act 1994</i> .
A2	Maintenance and operation of plant and equipment The holder of this environmental authority must: a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; b) maintain such measures, plant and equipment in a proper and efficient condition; c) operate such measures, plant and equipment in a proper and efficient manner; and d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.
A3	Monitoring Record, compile and keep for a minimum of five (5) years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.
A4	Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.
A5	Monitoring results for rehabilitation will need to be kept until final surrender is accepted.
A6	Storage and handling of flammable and combustible liquids Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with section 5.8 of AS 1940 - <i>Storage and Handling of Flammable and Combustible Liquids</i> of 2004, or later versions thereof.
A7	Definitions Words and phrases used throughout this environmental authority are defined in Definitions. 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 Environmental Protection Policies must be used.
A8	Notification of emergencies, incidents and exceptions The environmental authority holder must notify the administering authority in writing as soon as reasonably practicable, but within twenty-four (24) hours, after becoming aware of any emergency or incident resulting in, or having the potential to cause, environmental harm.

A9	The notification of emergencies or incidents as required by condition A8 must include but not be limited to the following: a) the environmental authority number and name of holder; b) the name and telephone number of the designated contact person; c) the location of the emergency or incident; d) the date and time of the incident; e) the time the holder of the environmental authority became aware of the release; f) the estimated quantity and type of any substances involved in the incident; g) the likely cause of the incident; h) a description of the effects of the incident including environmental harm caused, threatened, or suspected to be caused by the incident; i) any sampling conducted or proposed, relevant to the emergency or incident; and j) immediate actions taken to prevent or mitigate any further environmental harm caused by the emergency or incident.
A10	Within fourteen (14) days following the initial notification of an emergency or incident further written advice must be provided to the administering authority, including the following: a) results and interpretation of any samples taken and analysed; b) outcomes of actions taken at the time to prevent or minimise environmental harm; and c) proposed actions to prevent a recurrence of the emergency or incident.
A11	Complaints The holder of this environmental authority must record all environmental complaints received about the mining activities including the following details: a) name, address and contact number for/of the complainant; b) time and date of complaint; c) reasons for the complaint; d) investigations undertaken; e) conclusions formed; f) actions taken to resolve the complaint; g) any abatement measures implemented; and h) person responsible for resolving the complaint.
A12	In carrying out the mining activities authorised by this environmental authority, the holder of this environmental authority must comply with Figure 2: Approved Kestrel Mine Disturbance Areas.
A13	Construction of a 1.38ha Coal Mine Waste Gas Power Station is authorised within the area defined in Figure 3: Kestrel Coal Mine Waste Gas Power Station Investigation Area.

Schedule B: Air	
Condition number	Condition
B1	Dust nuisance Subject to conditions B2 and B3 the release of dust or particulate matter or both resulting from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.
B2	When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.
B3	Monitoring will be undertaken at the source of the complaint.
B4	If in response to a breach under condition B1 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 B1: a) Dust deposition of 120 milligrams per square metre per day, averaged over one (1) 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 of 1991</i>; and b) A concentration of particulate matter with an aerodynamic diameter of less than ten (10) micrometre (µm) (PM₁₀) suspended in the atmosphere of 50 micrograms per cubic metre over a twenty (24) hour averaging time, at a sensitive or commercial place downwind of the operational land, when monitored in accordance with the most recent version of either: i. Australian Standard AS3580.9.6 <i>Methods for sampling and analysis of ambient air—Determination of suspended particulate matter--PM₁₀ high-volume sampler with size-selective inlet - Gravimetric method</i>; ii. Australian Standard AS 3580.9.9 <i>Methods for sampling and analysis of ambient air - Determination of suspended particulate matter--PM₁₀ high volume sampler with size-selective inlet - Gravimetric method of 1990</i>; or iii. 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.
B5	If monitoring indicates exceedance of the relevant limits in condition B4, 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.
B6	The method of monitoring and assessment must be consistent with the nature of the complaint and agreed in writing with the administering authority.

B7	Noxious or Offensive Odour Odours or airborne contaminants which are noxious or offensive or otherwise unreasonably disruptive to public amenity or safety resulting from the mining activity must not cause nuisance to any sensitive place or commercial place .
B8	Contaminants from the power station stacks must only be released to air in accordance with Table B1: Point source air release limits , Figure 3: Approved Kestrel Mine Disturbance Areas and Figure 5: Kestrel Coal Mine Waste Gas Power Station Infrastructure .

Table B1: Point source air release limits

Release point	Minimum release height above ground (metres)	Minimum velocity (m/sec)	Contaminant release	Maximum release limit (see Note 1)	Monitoring Frequency
Power Generator Stacks PS1 to PS9 (serving nine stationary reciprocating internal combustion engines)	12.7	29.5	Oxides of Nitrogen (as NO ₂ equivalent)	450 mg/Nm ³ (dry) @ 7% O ₂	All stacks must be monitored for the contaminants within three months of commissioning of the facility and three stacks must be monitored annually thereafter on rotational basis (see Note 2).
			Volatile Organic Compounds (VOC) (as n-propane equivalent)	40 mg/Nm ³ (dry) @ 7% O ₂	

Note 1: The NO_x and VOC release limits are applicable during all timings except start-up and shut-down. The start-up duration is allowed up to 30 minutes.

Note 2: Monitoring of three stacks annual on rotational basis means that three stacks out of total nine stacks must be selected for monitoring purpose in such a way that all nine stacks will be monitored over a three year period.

Associated requirements

- 1) The release of contaminants from a point source must be directed vertically upwards without any impedance or hindrance.
- 2) Monitoring must be undertaken during a release and at the authorised release points, frequency and for the contaminants specified in Table B1.
- 3) Monitoring must be undertaken when emissions are expected to be representative of actual operating conditions for the sample period.
- 4) All monitoring devices must be effectively calibrated and maintained in accordance with the manufacturer's instructions and Australian and international standards.
- 5) Air Monitoring must be in accordance with the current edition of the administering authority's Air Quality Sampling Manual. If monitoring requirements are not described in the department's Air Quality Sampling Manual, monitoring protocols must be in accordance with a method as approved by New South Wales EPA, or United States EPA.
- 6) Monitoring for the release points (stack) listed in Table B1 must comply with the Australian Standard AS 4323.1 - 1995 "Stationary source emissions Method 1: Selection of sampling positions".
- 7) All air emission stack monitoring must be conducted by a competent person or body which holds current National Association of Testing Authorities (NATA) accreditation.
- 8) The following tests must be performed for each required determination specified in Table B1:
 - (i) gas velocity and volume flow rate;
 - (ii) temperature and oxygen content; and
 - (iii) water vapour concentration.
- 9) During the sampling period the following additional information must be gathered:
 - (i) power generation rate at the time of sampling;
 - (ii) any typical factors that may influence air pollutant emissions;
 - (iii) reference to the actual test methods and accuracy's.

B9	All release points referred to in Table B1: Point source air release limits must be clearly visible with the corresponding release point number.
B10	The only type of fuel to be burnt in the coal mine waste gas power station is coal mine waste gas produced at the Kestrel Coal Mine.
B11	Venting and flaring of coal mine waste gas must only occur: a) prior to the operation of the CMWG power station; or b) during periods of excess gas that exceeds the CMWG power station's capacity including periods where the CMWG power station is undergoing maintenance; or c) during periods where the CMWG power station is not operational; or d) during periods where coal mine waste gas must be drained for the safe operation of the mine.
B12	When requested by the administering authority, odour monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.
B13	If monitoring indicates condition B7 is not being met, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement odour and/or airborne contaminant abatement measures so that emissions of odour or airborne contaminants from the mining activity do not result in further environmental nuisance.
B14	Lighting and aesthetic amenity Lighting and aesthetic amenity resulting from mining activities must not cause environmental nuisance at any sensitive or commercial place.
B15	When requested by the administering authority, light monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days of the administering authority following completion of monitoring.
B16	If monitoring indicates condition B14 is not being met, then the environmental authority holder must: a) address the complaint using dispute resolution if required; and b) immediately implement lighting abatement measures so that emissions of light from the activity do not result in further environmental nuisance.

Schedule C: Water	
Condition number	Condition
C1	Contaminant release Contaminants that will or have the potential to cause environmental harm must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.
C2	Unless otherwise permitted under the conditions of this environmental authority, the release of mine affected water to waters must only occur from the release points specified in Table C1: Mine affected water release points, sources and receiving waters and depicted in Figure 1: Surface water release and monitoring points attached to this environmental authority.
C3	The release of mine affected water to internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with conditions C31 to C34 inclusive is permitted.
C4	The release of mine affected water to waters in accordance with condition C2 must not exceed the release limits stated in Table C2: Mine affected water release limits when measured at the relevant monitoring point/s specified for Table C1: Mine affected water release points, sources and receiving waters for each quality characteristic.
C5	The release of mine affected water to waters from the release points must be monitored at the locations specified in Table C1: Mine affected water release points, sources and receiving waters for each quality characteristics and at the frequency specified in Table C2: Mine affected water release limits and Table C3: Release contaminant trigger investigation levels (potential contaminants) .

Table C1: Mine affected water release points, sources and receiving waters					
Release point (RP)	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)	Mine affected water source and location	Monitoring point	Receiving waters description
RP 1	-23.23838	148.35296	Environmental Dam release point	End of pipe	Crinum Creek
RP 2	-23.26459	148.29234	Holding Dam release point	End of pipe	Woolshed Creek
RP 3	-23.2373	148.3662	Rejects Return Water Dam	End of pipe	Crinum Creek
RP 4	-23.2419	148.3655	Rejects Return Water Dam	Dam spillway	Crinum Creek
<i>Note: RP3 and RP4 release/monitoring points are both located on Reject Return Water Dam and represent the same source of water.</i>					

Table C2: Mine affected water release limits			
Quality characteristic	Release Limits	Monitoring Frequency	Comment
Electrical conductivity (EC) (µS/cm)	Release limits specified in Table C4a, C4b, C4c and C4d for variable flow criteria	Continuous (minimum hourly) during discharge; or daily grab samples when telemetry is not available. The first sample must be taken within 2 hours of commencement of release.	
pH (pH Unit)	6.5 (minimum) 9.5 (maximum)	Daily during release* (the first sample must be taken within 2 hours of commencement of release)	
Turbidity (NTU)	N/A		Turbidity is required to assess ecosystem impacts and can provide instantaneous results.
Suspended Solids (mg/L)	480		Suspended solids are required to measure the performance of sediment and erosion control measures.
Sulfate (mg/L)	Release limits specified in Table C4a, C4b, C4c and C4d for variable flow criteria		Drinking water environmental values from NMHRC 2006 guidelines or ANZECC

C6	If quality characteristics of the release exceed any of the trigger levels specified in Table C3: Release contaminant trigger investigation levels (potential contaminants) during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in Table C3: Release contaminant trigger investigation levels (potential contaminants) and: 1) where trigger values are not exceeded in the receiving waters then no action is to be taken; or 2) where the downstream results exceed the trigger values specified in Table C3: Release contaminant trigger investigation levels (potential contaminants) for any quality characteristic, compare the results of the downstream site to the data from the background monitoring sites and; a) if the result is less than the background monitoring site data, then no action is to be taken; or b) if the result is greater than the background monitoring site data, complete an investigation into the potential for environmental harm and provide a written report to the administering authority within 45 days of receiving the result, outlining: i. details of the investigations carried out; and ii. actions taken to prevent environmental harm. <i>Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with condition C6 2(b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristics.</i>
C7	If an exceedance in accordance with condition C6 2(b) is identified, the holder of the authority must notify the administering authority via WaTERS within 7 days of receiving the result.

Table C3: Release contaminant trigger investigation levels (potential contaminants)

Quality characteristic	Trigger levels (µg/L)	Comment on trigger level	Monitoring frequency
Aluminium	55	80th percentile of background water quality data	Commencement of release and thereafter weekly during release
Cadmium	0.2	For aquatic ecosystem protection, based on SMD guideline	
Chromium	1	For aquatic ecosystem protection, based on SMD guideline	
Copper	6	80th percentile of background water quality data	
Nickel	11	For aquatic ecosystem protection, based on SMD guideline	
Zinc	11	80th percentile of background water quality data	
Boron	370	For aquatic ecosystem protection, based on SMD guideline	
Manganese	1,900	For aquatic ecosystem protection, based on SMD guideline	
Molybdenum	34	For aquatic ecosystem protection, based on low reliability guideline	
Uranium	1	For aquatic ecosystem protection, based on LOR for ICPMS	
Vanadium	10	For aquatic ecosystem protection, based on LOR for ICPMS	
Nitrate	1,100	For aquatic ecosystem protection, based on ambient Qld QR Guidelines (2006) for TN	
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2,000	Protection of livestock and short term irrigation guideline	

Note:

1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.
2. The quality characteristics required to be monitored as per Table C3: Release contaminant trigger investigation levels (potential contaminants) can be reviewed once the results of two (2) years monitoring data is available, or sufficient data is available to adequately demonstrate negligible environmental risk, and it may be determined that a reduced monitoring frequency is appropriate or that certain quality characteristics can be removed from Table C3: Release contaminant trigger investigation levels (potential contaminants) by amendment.
3. SMD - slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).
4. LOR - typical reporting for method stated. ICPMS/CV FIMS - analytical method required to achieve LOR.

C8	Mine Affected Water Release Events The holder must ensure stream flow gauging infrastructure is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in Table C4a, C4b, C4c and C4d.
C9	Notwithstanding any other condition of this environmental authority, the release of mine affected waters in accordance with condition C2 must only take place during periods of flow in accordance with the receiving water flow criteria for discharge specified in Table C4a, C4b, C4c and C4d for the release point(s) specified in Table C1: Mine affected water release points, sources and receiving waters.
C10	If natural flow is not recorded in any of the upstream receiving waters as required by condition C9, and the stored volume of the total mine water inventory exceeds 1557ML, then the EA holder may utilise artificial upstream flows as specified in Table C4d.

Table C4a: Mine Affected Water Release During Natural Flow Events

Receiving waters	Release Point (RP)	Gauging Infrastructure	Gauging. Station Latitude (decimal degree, GDA94)	Gauging. Station Longitude (decimal degree, GDA94)	Receiving Water Flow Recording Frequency	Receiving Water Flow Recording Frequency	Maximum release rate (for all combined RP flows)	Electrical Conductivity (µS/cm and Sulfate (mg/L) Release Limits	
Crinum Creek	RP1, RP2, RP3, RP4	Lilyvale waterhole (Lily01) - upstream	-23.207489	148.338369	Continuous (minimum hourly) during discharge	Minimum upstream flow for mine water releases to commence must be >0.1m³/s.		When the minimum upstream flow in Crinum Creek is >0.1m³/s, the maximum release rate, and the EC (µS/cm) and Sulfate (mg/L) release limits for Crinum Creek (C4) apply.	
Crinum Creek	RP1, RP2, RP3, RP4	Crinum Creek (B1) - upstream	-23.232588	148.324979					
Crinum Creek	RP2	Woolshed Creek (W2a) - upstream	-23.240751	148.286450	Daily			When the minimum upstream flow in Woolshed Creek is >0.1m³/s, the maximum release rate, and the EC (µS/cm) and Sulfate (mg/L) release limits for Crinum Creek (C4) apply.	
Crinum Creek	RP1, RP2, RP3, RP4	Crinum Creek (C4) - downstream	-23.357543	148.320622	Continuous (minimum hourly) during discharge	Low flow <0.1m³/s for a period of 28 days after natural flow events that exceed 1.5m³/s	0.5m³/s	EC <1,500µS/cm	Sulfate (SO₄²⁻) <250mg/L
						Medium Flow >0.1m³/s of natural flow	0.63m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							0.42m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							0.28m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							0.20m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.15m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Medium Flow >2.0m³/s of natural flow	1.25m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							0.83m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							0.55m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							0.40m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.30m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Medium Flow >3m³/s of natural flow	1.85m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							1.25m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							0.85m³/s	EC <6,500µS/cm	SO₄²⁻ <2,850mg/L
							0.65m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.45m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Medium Flow >5m³/s of natural flow	3.10m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							2.05m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							1.40m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							1.05m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.75m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >7.5m³/s of natural flow	4.70m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							3.10m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							2.05m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							1.55m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							1.10m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >10m³/s of natural flow	6.25m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							4.15m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							2.75m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							2.10m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							1.45m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >15m³/s of natural flow	6.25m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							4.15m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							3.15m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							2.20m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >20m³/s of natural flow	5.55m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							4.20m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							2.95m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Very High Flow >35m³/s of natural flow	7.30m³/s	EC 7,500µS/cm	SO₄²⁻ <3,350mg/L
							5.15m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Very High Flow >50m³/s of natural flow	7.35m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L

Table C4b: Mine Affected Water Release During Natural Flow Events in Junction Creek

Receiving waters	Release Point (RP)	Gauging Infrastructure	Gauging Station Latitude (decimal degree, GDA94)	Gauging Station Longitude (decimal degree, GDA94)	Receiving Water Flow Recording Frequency	Receiving Water Flow Recording Frequency	Maximum release rate (for all combined RP flows)	Electrical Conductivity (µS/cm and Sulfate (mg/L) Release Limits	
Junction Creek	RP1, RP3, RP4	Junction Creek (J1) - upstream	-23.207489	148.338369	Continuous (minimum hourly) during discharge	Minimum upstream flow for mine water releases to commence must be >0.1m³/s.		When the minimum upstream flow in Junction Creek (J1) is >0.1m³/s, the maximum release rate, and the EC (µS/cm) and Sulfate (mg/L) release limits for Junction Creek (J2) apply.	
Crinum Creek	RP1, RP3, RP4	Junction Creek (J2) - downstream	-23.23878	148.35462	Continuous (minimum hourly) during discharge	Low flow <0.1m³/s for a period of 28 days after natural flow events that exceed 1.5m³/s	0.5m³/s	EC <1,500µS/cm	Sulfate (SO₄²⁻) <250mg/L
						Medium Flow >0.1m³/s of natural flow	0.63m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							0.42m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							0.28m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							0.20m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.15m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Medium Flow >2.0m³/s of natural flow	1.25m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							0.83m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							0.55m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							0.40m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.30m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Medium Flow >3m³/s of natural flow	1.85m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							1.25m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							0.85m³/s	EC <6,500µS/cm	SO₄²⁻ <2,850mg/L
							0.65m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.45m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Medium Flow >5m³/s of natural flow	3.10m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							2.05m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							1.40m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							1.05m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.75m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >7.5m³/s of natural flow	4.70m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							3.10m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							2.05m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							1.55m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							1.10m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >10m³/s of natural flow	6.25m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							4.15m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							2.75m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							2.10m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							1.45m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >15m³/s of natural flow	6.25m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							4.15m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							3.15m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							2.20m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >20m³/s of natural flow	5.55m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							4.20m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							2.95m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Very High Flow >35m³/s of natural flow	7.30m³/s	EC 7,500µS/cm	SO₄²⁻ <3,350mg/L
							5.15m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Very High Flow >50m³/s of natural flow	7.35m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L

Table C4c: Mine Affected Water Release During Natural Flow Events in Crinum Creek (B1)

Receiving waters	Release Point (RP)	Gauging Infrastructure	Gauging. Station Latitude (decimal degree, GDA94)	Gauging. Station Longitude (decimal degree, GDA94)	Receiving Water Flow Recording Frequency	Receiving Water Flow Recording Frequency	Maximum release rate (for all combined RP flows)	Electrical Conductivity (µS/cm and Sulfate (mg/L) Release Limits
Crinum Creek	RP1, RP3, RP4	Crinum Creek (B1) – upstream	-23.232588	148.324979	Continuous (minimum hourly) during discharge	Minimum upstream flow for mine water releases to commence must be >0.1m³/s.	When the minimum upstream flow in Crinum Creek (B1) is >0.1m³/s, the maximum release rate, and the EC (µS/cm) and Sulfate (mg/L) release limits for Junction Crinum Creek (B1) apply.	
Crinum Creek	RP1, RP3, RP4	Crinum Creek (B1) – upstream	-23.232588	148.324979	Continuous (minimum hourly) during discharge	Low flow <0.1m³/s for a period of 28 days after natural flow events that exceed 1.5m³/s	0.5m³/s	EC <1,500µS/cm Sulfate (SO₄²⁻) <250mg/L
						Medium Flow >0.1m³/s of natural flow	0.63m³/s 0.42m³/s 0.28m³/s 0.20m³/s 0.15m³/s	EC <3,500µS/cm EC <4,500µS/cm EC <6,500µS/cm EC <7,500µS/cm EC <10,000µS/cm
						Medium Flow >2.0m³/s of natural flow	1.25m³/s 0.83m³/s 0.55m³/s 0.40m³/s 0.30m³/s	EC <3,500µS/cm EC <4,500µS/cm EC <6,500µS/cm EC <7,500µS/cm EC <10,000µS/cm
						Medium Flow >3m³/s of natural flow	1.85m³/s 1.25m³/s 0.85m³/s 0.65m³/s 0.45m³/s	EC <3,500µS/cm EC <4,500µS/cm EC <6,500µS/cm EC <7,500µS/cm EC <10,000µS/cm
						Medium Flow >5m³/s of natural flow	3.10m³/s 2.05m³/s 1.40m³/s 1.05m³/s 0.75m³/s	EC <3,500µS/cm EC <4,500µS/cm EC <6,500µS/cm EC <7,500µS/cm EC <10,000µS/cm
						High Flow >7.5m³/s of natural flow	4.70m³/s 3.10m³/s 2.05m³/s 1.55m³/s 1.10m³/s	EC <3,500µS/cm EC <4,500µS/cm EC <6,500µS/cm EC <7,500µS/cm EC <10,000µS/cm
						High Flow >10m³/s of natural flow	6.25m³/s 4.15m³/s 2.75m³/s 2.10m³/s 1.45m³/s	EC <3,500µS/cm EC <4,500µS/cm EC <6,500µS/cm EC <7,500µS/cm EC <10,000µS/cm
						High Flow >15m³/s of natural flow	6.25m³/s 4.15m³/s 3.15m³/s 2.20m³/s	EC <4,500µS/cm EC <6,500µS/cm EC <7,500µS/cm EC <10,000µS/cm
						High Flow >20m³/s of natural flow	5.55m³/s 4.20m³/s 2.95m³/s	EC <6,500µS/cm EC <7,500µS/cm EC <10,000µS/cm
						Very High Flow >35m³/s of natural flow	7.30m³/s 5.15m³/s	EC 7,500µS/cm EC <10,000µS/cm
						Very High Flow >50m³/s of natural flow	7.35m³/s	EC <10,000µS/cm

Note: Flows in Crinum Creek at monitoring location (B1) provide both the upstream and downstream flow criteria. This has been designed to allow for mine water releases at RP1, RP3 and RP4 to commence, providing greater dilution from upstream flows at B1, without the requirement for flow at downstream (C4) as per Table C4a

Table C4d: Mine Affected Water Release During Upstream Artificial Flow

Receiving waters	Release Point (RP)	Gauging Infrastructure	Gauging Station Latitude (decimal degree, GDA94)	Gauging Station Longitude (decimal degree, GDA94)	Receiving Water Flow Recording Frequency	Receiving Water Flow Recording Frequency	Maximum release rate (for all combined RP flows)	Electrical Conductivity (µS/cm and Sulfate (mg/L) Release Limits	
Crinum Creek	RP1, RP3, RP4	RAW1 - upstream	-23.23357	148.36788	Daily	Minimum upstream flow for mine water releases to commence must be >0.1m³/s.		When the minimum upstream flow is >0.1m³/s, the maximum release rate, and the EC (µS/cm) and Sulfate (mg/L) release limits for Crinum Creek (C4) apply.	
Crinum Creek	RP2	RAW2 - upstream	-23.26459	148.29234					
Crinum Creek	RP1, RP2, RP3, RP4	Crinum Creek (C4) - downstream	-23.357543	148.320622	Continuous (minimum hourly) during discharge	Low flow <0.1m³/s for a period of 28 days after natural flow events that exceed 1.5m³/s	0.5m³/s	EC <1,500µS/cm	Sulfate (SO₄²⁻) <250mg/L
						Medium Flow >0.1m³/s of natural flow	0.63m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							0.42m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							0.28m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							0.20m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.15m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Medium Flow >2.0m³/s of natural flow	1.25m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							0.83m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							0.55m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							0.40m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.30m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Medium Flow >3m³/s of natural flow	1.85m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							1.25m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							0.85m³/s	EC <6,500µS/cm	SO₄²⁻ <2,850mg/L
							0.65m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.45m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Medium Flow >5m³/s of natural flow	3.10m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							2.05m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							1.40m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							1.05m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							0.75m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >7.5m³/s of natural flow	4.70m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							3.10m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							2.05m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							1.55m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							1.10m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >10m³/s of natural flow	6.25m³/s	EC <3,500µS/cm	SO₄²⁻ <2,750mg/L
							4.15m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							2.75m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							2.10m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							1.45m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >15m³/s of natural flow	6.25m³/s	EC <4,500µS/cm	SO₄²⁻ <2,750mg/L
							4.15m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							3.15m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							2.20m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						High Flow >20m³/s of natural flow	5.55m³/s	EC <6,500µS/cm	SO₄²⁻ <2,750mg/L
							4.20m³/s	EC <7,500µS/cm	SO₄²⁻ <3,350mg/L
							2.95m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Very High Flow >35m³/s of natural flow	7.30m³/s	EC 7,500µS/cm	SO₄²⁻ <3,350mg/L
							5.15m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L
						Very High Flow >50m³/s of natural flow	7.35m³/s	EC <10,000µS/cm	SO₄²⁻ <3,350mg/L

Note: Upstream flow must remain >0.1m³/s for a period of 24 hours following cessation of mine water releases, per EA condition C18.

C11	The release of mine affected water to waters in accordance with condition C2 must not exceed the Electrical Conductivity and Sulfate release limits or the Maximum Release rate (for all combined release point flows) for each receiving water flow criteria for discharge specified in Tables C4a, C4b, C4c, and C4d when measured at the monitoring points specified in Table C1: Mine affected water release points, sources and receiving waters .
C12	The daily quantity of mine affected water released from each release point must be measured and recorded for the monitoring points in Table C1: Mine affected water release points, sources and receiving waters .
C13	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.
C14	Notification of Release Event The environmental authority holder must notify the administering authority via either the WaTERS online reporting system as soon as practicable and no later than twenty-four (24) 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).
C15	The environmental authority holder must: a) notify the administering authority via WaTERS within twenty-four (24) hours after cessation of a release event notified under condition C14, including the following information: (i) release cessation date/time. (ii) natural flow volume in receiving water. (iii) volume of water released. (iv) details regarding the compliance of the release with the conditions of this environmental authority (i.e., released contaminant quality, receiving waters flow, discharge volume). (v) any other matters pertinent to the water release event (i.e., release duration). b) within twenty-eight (28) days after cessation of a release event provide a detailed report via WaTERS and submit all water quality monitoring results (including in-situ and laboratory analyses). <i>Note: Successive or intermittent releases occurring within twenty-four (24) hours of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purpose of compliance with conditions C14 and condition C15, provided the relevant details of the release are included with the notification provided in accordance with condition C14 and condition C15.</i>

C16	Notification of Release Event Exceedance If the release limits defined in Table C2: Mine affected water release limits are exceeded, the holder of the environmental authority must notify the administering authority within twenty-four (24) hours of receiving the results.
C17	Post-release flow If, during the twenty-four (24) hours after the cessation of a release event the flow in the upstream receiving waters is $\leq 0.1 \text{ m}^3/\text{s}$, the holder of the environmental authority must ensure a post-release flow of $>0.1 \text{ m}^3/\text{s}$ occurs for the remainder of the twenty-four (24) hour period via the release of raw (river) water or equivalent.
C18	Monitoring of Water Storage Quality Water storages stated in Table C5: Water storage monitoring must be monitored for the water quality characteristics specified in Table C5: Onsite water storage contaminants at the monitoring locations and at the monitoring frequency specified in Table C5: Water storage monitoring .

Table C5: Water storage monitoring				
Water storage description	Latitude (decimal, degree, GDA94)	Longitude (decimal, degree, GDA94)	Monitoring location	Frequency of monitoring
Holding Dam	-23.26336	148.29567	Holding Dam Pontoon	Quarterly
Environmental Dam	-23.23605	148.35681	Environmental Dam Pontoon	Quarterly
Reject Return Water Dam	-23.23812	148.36687	Rejects Return Dam Pontoon	Quarterly
Onsite water storage contaminant limits				Quarterly
Quality characteristic		Units		
pH		pH units		
EC		µS/cm		
Sulfate		mg/L		
Fluoride		mg/L		
Aluminium		mg/L		
Arsenic		mg/L		
Cadmium		mg/L		
Cobalt		mg/L		
Copper		mg/L		
Lead		mg/L		
Nickel		mg/L		
Zinc		mg/L		
Suspended Solids		mg/L		

C19	Receiving Environment Monitoring and Contaminant Trigger Levels The quality of the receiving waters must be monitored at the locations specified in Table C7: Receiving water upstream background sites and downstream monitoring points for each quality characteristics and at the monitoring frequency stated in Table C6: Receiving waters contaminants trigger levels.
C20	If quality characteristics of the receiving water at the downstream monitoring point C4 specified in Table C7: Receiving water upstream background sites and downstream monitoring points exceed any of the trigger levels specified in Table C6: Receiving waters contaminant trigger levels during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and: a) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; or b) where the downstream results exceed the upstream results complete an investigation in accordance with the ANZECC and ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority via WaTERS within 45 days of receiving the result, outlining: i. details of the investigations carried out; and ii. actions taken to prevent environmental harm. <i>Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with C21(b)(ii) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.</i>

Table C6: Receiving waters contaminant trigger levels		
Quality characteristic	Trigger level	Monitoring frequency
pH	6.5 - 8.5	Commencement of release and thereafter daily during the release
Electrical Conductivity (µS/cm)	1500	Continuous (minimum hourly) during discharge; or daily grab samples when telemetry is not available (the first sample must be taken within 4 hours of commencement of release)
Suspended solids (mg/L)	1022	Commencement of release and thereafter daily during the release
Sulfate (mg/L)	1000	

Table C7: Receiving water upstream background sites and downstream monitoring points

Monitoring points	Receiving waters location description	Latitude decimal degree, GDA94)	Longitude (decimal degree, GDA94)
Upstream background monitoring points			
Monitoring Point W2a	Woolshed Creek 2km upstream of RP2	-23.240751	148.286450
Monitoring Point B1	Approx. 700m upstream of the confluence of Junction and Crinum creeks and approx. 100m downstream of the lease boundary.	-23.232588	148.324979
Monitoring Point J1	Junction Creek diversion upstream. Approx 620m upstream of the confluence of the southern and northern Junction Creek diversions. <i>Note – Junction Creek monitoring only required for releases from RP3 and RP4, as authorised in Table C4b.</i>	-23.24261	148.36422
RAW1	Clean water drain, adjacent to 40meg dam, approximately 450m upstream of RP3 <i>Note – monitoring only required if a release of raw water occurs from this location.</i>	-23.23357	148.36788
RAW2	Woolshed Creek. RP2 dissipation basin. <i>Note – monitoring only required if a release of raw water occurs from this location.</i>	-23.26459	148.29234
Downstream monitoring points			
Monitoring Point C4	Approximately 1.5km upstream of the intersection of Crinum Creek and Wyuna Road.	-23.357543	148.320622
	Approximately 12km downstream of RP2 and 17km downstream of RP1		
Monitoring Point (J2)	Approximately 1.3km downstream of RP3	-23.23878	148.35462
Monitoring Point SW2	<6km downstream of the confluence of Junction and Crinum Creek	-23.279950	148.329074
Notes: a) The data from background monitoring points must not be used where they are affected by releases from other mines. b) Some monitoring points are subject to accessibility and samples may not be taken if access is deemed unsafe. c) B1 may only be used as a downstream monitoring point for releases conducted under Table C4c.			

C21	Receiving Environment Monitoring Program (REMP) The environmental authority holder must implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while mine affected water is being discharged from the site. For the purpose of the REMP, the receiving environment is the waters of Crinum and Woolshed Creeks and connected or surrounding waterways within 10km downstream of the releases. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.
C22	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with condition C21 must be prepared annually and made available on request to the administering authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.
C23	Water Reuse Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party for the purpose of: a) supplying stock water subject to compliance with the quality release limits specified in Table C8: Stock Water Release Limits; b) supplying irrigation water subject to compliance with quality release limits in Table C9: Irrigation Water Release Limits; or c) supplying water for construction and/or road maintenance in accordance with the conditions of this environmental authority.

Table C8: Stock Water Release Limits			
Quality characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical Conductivity	µS/cm	N/A	5000

Table C9: Irrigation Water Release Limits			
Quality characteristic	Units	Minimum	Maximum
pH	pH units	6.5	9.0
Electrical Conductivity	µS/cm	N/A	Site specific value to be determined in accordance with ANZECC & ARMCANZ (2000) Irrigation Guidelines

C24	Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as dams or tanks, for the purpose of supplying water to Gregory Crinum Coal Mine. The volume, pH and electrical conductivity of water transferred to Gregory Crinum Coal Mine must be monitored and recorded.
C25	If the responsibility for mine affected water is given or transferred to another person in accordance with conditions C23 or C24: a) the responsibility for the mine affected water must only be given or transferred in accordance with a written agreement (the third party agreement); b) the third party agreement must include a commitment from the person utilising the mine affected water to use it in such a way as to prevent environmental harm or public health incidents and 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 the water disposal and protection of environmental values of waters; and c) the third party agreement must be signed by both parties to the agreement.
C26	Water General All determinations of water quality must be: a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements; b) made in accordance with the prescribed sampling methods and holding and testing times specified in the latest edition of the administering authority's <i>Monitoring and Sampling Manual</i>; c) carried out on representative samples; and d) laboratory testing must be undertaken using a laboratory accredited (e.g. NATA) for the method of analysis being used. <i>Note: Condition C26 requires the administering authority's Monitoring and Sampling Manual to be followed and where it is not followed because of exceptional circumstances this should be explained and reported with the results.</i>
C27	The release of any contaminants as permitted by this environmental authority, directly or indirectly to waters, other than internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with conditions C30 to C33 inclusive: a) must not produce any visible discolouration of receiving waters; and b) must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.

C28	Annual Water Monitoring Reporting The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format by 1 October each calendar year: 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 exceedances with the conditions of this environmental authority; and g) water quality monitoring data must be provided to the administering authority via WaTERS.
C29	Temporary Interference with Waterways 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 the Department of Regional Development Manufacturing and Water's (or its successor) <i>Riverine protection permit exemption requirements (WSS/2013/726)</i>.
C30	Water Management Plan A Water Management Plan must be developed by an appropriately qualified person and implemented.
C31	The Water Management Plan must: a) provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining activity carried out under this environmental authority; and b) include: i. a study of the source of contaminants; ii. a water balance model for the site; iii. a water management system for the site; iv. measures to avoid or otherwise minimise the generation and/or release of saline drainage; v. measures to avoid or otherwise minimise the generation and/or release of acid rock drainage; vi. contingency procedures for incidents and emergencies; and vii. a program for monitoring and review of the effectiveness of the Water Management Plan.
C32	The Water Management Plan must be reviewed each calendar year and a report prepared by an appropriately qualified person. The report must: a) assess the plan against the requirements under condition C31; b) include recommended actions to ensure actual and potential environmental impacts are effectively managed for the coming year; c) identify any amendments made to the water management plan following the review; and d) made available to the administering authority upon request.

C33	The holder of this environmental authority must attach to the review report required by condition C32, a written response to the report and recommended actions, detailing the actions taken or to be taken by the environmental authority holder on stated dates: a) to ensure compliance with this environmental authority; and b) to prevent a recurrence of any non-compliance issues identified.
C34	Stormwater and water sediment controls An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of storm water.
C35	Stormwater, other than mine affected water, is permitted to be released to waters from: a) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by condition C34; and b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with conditions C31 to C34 inclusive, for the purpose of ensuring water does not become mine affected water.
C36	The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any receiving waters.
C37	Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters.

Schedule D: Sewage Treatment	
Condition number	Condition
D1	The 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.
D2	Treated effluent must not be released from the site to any waters or the bed and banks of any waters.
D3	Water or storm water contaminated by sewage treatment activities must not be released to any waters or the bed and banks of any waters.
D4	Treated effluent must not be released to land.
D5	All ponds used for the storage or treatment of sewage effluent at or on the authorised place must be constructed, installed and maintained: a) so as to minimise the likelihood of any release of effluent through the bed or banks of the pond to any waters (including ground water); b) so that a freeboard of not less than 0.5 metres is maintained at all times, except in emergencies; and c) so as to ensure the stability of the ponds' construction.
D6	Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from entering any ponds or other structures used for the storage or treatment of contaminants or wastes.
D7	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> (Qld), 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.

Schedule E: Acoustic	
Condition number	Condition
E1	Subject to conditions E2 and E3 noise from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.
E2	When requested by the administering authority, noise monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.
E3	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> .
E4	If the environmental authority holder can provide evidence through monitoring that the limits defined in Table E1: Noise limits attributable to mining activities, are not being exceeded then the holder is not in breach of condition E1 . Monitoring must include: a) the level and frequency of occurrence of impulsive or tonal noise; b) atmospheric conditions including wind speed and direction; and c) location, date and time of recording.
E5	If monitoring indicates exceedance of the limits in Table E1: Noise limits , then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.
E6	Vibration nuisance Subject to conditions E7 and E8 vibration from the mining activity must not cause environmental harm at any sensitive or commercial place.
E7	When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.
E8	If the environmental authority holder can provide evidence through monitoring that the limits defined in Table E2: Vibration limits are not being exceeded then the holder is not in breach of condition E6 . Monitoring must include: a) location of the blast(s) within the mining area (including which bench level); b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and c) location, date and time of recording.

E9	If vibration monitoring indicates exceedance of the relevant limits in Table E2: Vibration limits, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution, if required; and b) immediately implement vibration abatement measures so that vibration from the mining activity does not result in further environmental nuisance.
E10	Airblast overpressure nuisance The airblast overpressure level from blasting operations on the premises must not exceed the limits defined in Table E3: Airblast overpressure level at any nuisance sensitive or commercial place.
E11	When requested by the administering authority, airblast overpressure monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.
E12	Airblast overpressure monitoring must include the following descriptors, characteristics and conditions: a) location of the blast(s) within the mining area (including which bench level); b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and c) location, date and time of recording.
E13	If monitoring indicates exceedance of the relevant limits in Table E3: Airblast overpressure level, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement airblast overpressure abatement measures so that airblast overpressure from the activity does not result in further environmental nuisance.

Table E1: Noise limits

Period of day	Noise limit Gordon Downs Homestead $L_{Aeq,15}$ dB(A)	Noise limit sensitive places non mining lease $L_{Aeq,15}$ dB(A)
Day (6am to 6pm)	37 dB(A)	33 dB(A)
Evening (6pm to 10pm)	33 dB(A)	30 dB(A)
Night (10pm to 6am)	28 dB(A)	28 dB(A)

Table E2: Vibration limits

Location	Vibration measured	
	Monday to Friday 6am - 6pm	Saturdays, Sundays and Public Holidays 9.00am - 5.00pm
Sensitive or commercial place	5mm/s peak particle velocity for nine (9) out of ten (10) consecutive blasts and not greater than 10 millimetres per second peak particle velocity at any time	5mm/s peak velocity for nine (9) out of ten (10) consecutive blasts and not greater than 10 millimetres per second peak particle velocity at any time
<i>Note: The method of measurement and reporting of vibration levels must comply with the latest edition of the administering authority's vibration and airblast overpressure monitoring guideline.</i>		

Table E3: Airblast overpressure level

Location	Airblast overpressure measured
Sensitive or commercial place	Air blast overpressure level of 115dB (Linear peak) for nine (9) out of ten (10) consecutive blasts initiated and not greater than 120dB (Linear peak) at any time.
<i>Note: The method of measurement and reporting of airblast overpressure levels must comply with the latest edition of the administering authority's Noise Measurement Manual.</i>	

Schedule F: Waste	
Condition number	Condition
F1	Storage of tyres 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 ten (10) metre from any other scrap tyre storage area, or combustible or flammable material, including vegetation.
F2	All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a ten (10) metre radius of the scrap tyre storage area.
F3	Disposal of tyres Where take-back, recycling or waste-to-energy is impracticable and all other stages (options) in the waste hierarchy have been considered, scrap tyres resulting from the mining activities may be disposed of on the mine site in accordance with conditions F4 to F6 .
F4	Disposal in underground goafs is acceptable, provided this practice does not cause an unacceptable fire risk or compromise mine safety.
F5	Disposing of scrap tyres resulting from the mining activities in co-disposal area is acceptable, provided tyres are placed as deep in the rejects as reasonably practicable.
F6	Scrap tyres resulting from the mining activities disposed within the operational land must not impede saturated aquifers or compromise the stability of the consolidated landform.
F7	Waste management A register of all chemicals stored on site must be maintained.
F8	Waste must not be burned or allowed to be burned on the licensed site unless by approval of the administering authority.
F9	A designated area must be set aside for the segregation of economically viable, recyclable solid and liquid waste.
F10	The holder of this environmental authority must use reasonable and practical measures to prevent the release of regulated wastes to the environment. This includes the underground environment.
F11	Reverse Osmosis Water Treatment Plant The holder of this environmental authority is authorised to operate a reverse osmosis water treatment plant (ROWTP) operating at, but not exceeding 4ML/day of treated product water.
F12	Waste products resulting from the operation of the ROWTP must be managed in accordance with the Water Management Plan required by condition C31 .

F13	The Water Management Plan required by condition C31 must include the following in relation to the management of waste generated by the ROWTP: a) a description of the ROWTP activities that may generate waste; b) Waste management and control strategies, including: i. The types and amounts of wastes generated by the ROWTP activity; ii. Segregation of the wastes; iii. Storage of the wastes; iv. Transport of the waste; v. Monitoring and reporting matters concerning the wastes; c) How the waste will be dealt with regarding the waste management hierarchy (that is avoid, reuse, recycle, energy recovery, disposal); d) The hazardous characteristics of the wastes generated including disposal procedures for hazardous wastes; e) Procedures for dealing with accidents, spills and other incidents as per Hazmat Management Plan for the site; f) The indicators or other criteria on which the performance of the waste management program will be assessed; g) Staff training; h) Management of potential seepage of brine from evaporation ponds during all phases of mining and closure; and i) A program for monitoring and review of the effectiveness of the waste management strategies exercised to manage waste generated by the ROWTP.
F14	Brine generated from the ROWTP may only be released within the catchment of the co-disposal facility identified in Figure 3: Approved Kestrel Mine Disturbance Areas.
F15	Microfiltration backwash is the only by-product waste water of the ROWTP permitted to be re-used for dust suppression outside of the catchment of the co-disposal facility identified in Figure 3: Approved Kestrel Mine Disturbance Areas.
F16	All evaporation ponds used for the storage or treatment of contaminants or wastes at or on the authorised place must be constructed, installed and maintained: a) so as to minimise the likelihood of any release of contaminants through the bed or banks of the pond to any waters (including ground water); and b) so as to ensure the stability of the ponds' construction.

Schedule G: Land	
Condition number	Condition
G1	Cover and material handling Topsoil must be stripped ahead of any areas where the topsoil resource will be lost or permanently destroyed and stored if not able to be immediately used.
G2	A topsoil inventory that identifies the topsoil requirements for the project and the availability of topsoil on site must be maintained.
G3	Topsoil that is stockpiled for greater than six (6) months must be managed to minimise erosion.
G4	Subsidence A Subsidence Management Plan must be developed by an appropriately qualified and experienced person to deal with actual or potential impacts of subsidence and submitted to the administering authority at least three (3) months prior to the commencement of extension no. 4 (500 series) mining activities.
G5	The Subsidence Management Plan must: a) provide for the proper and effective management of the actual and potential environmental impacts, including not limited to land, surface and groundwaters resulting from the mining activity and to ensure compliance with the conditions of this environmental authority; b) describe the proposed impacts of subsidence on any land, watercourse and floodplain including but not limited to: i. physical condition of surface drainage; ii. overland flow; iii. water quality; iv. land condition: current land condition to be impacted by subsidence; v. infrastructure: detail of existing infrastructure (pipelines, railway, power lines and haul roads) should be identified where there is a potential impact from effects of land subsidence; and c) propose options for mitigating any impacts associated with subsidence and how these mitigation methods will be implemented.
G6	Annual inspection of subsidence The holder of this environmental authority must arrange for each subsided longwall panel, which occurs as a result of the extension no. 4 (500 series) mining activities, to be inspected annually by a suitably qualified and experienced person, in accordance with conditions G7 to G9.
G7	The annual inspection must be conducted between 1 April and 1 November each year.
G8	At each annual inspection, the condition of each subsided longwall panel must be assessed, including the structural, geotechnical and hydraulic adequacy of the subsided longwall panel and the adequacy of the works with respect to the Subsidence Management Plan.

G9	For each inspection, copies of a report certified by the suitably qualified and experienced person, including any recommendations to ensure the integrity of each subsided longwall panel must be provided to the administering authority upon request.
G10	Overland flow The subsided longwall panels, which result from extension no. 4 (500 series) mining activities must not result in the capture of significant overland flow and must allow water to drain from the panel. Ponding greater than 200 square metres is not to occur over subsided longwall panels after the adjacent panel has been completed or after a period of twelve (12) months if there is no adjacent panel to be developed.
G11	Clearing of vegetation should be minimised and must be kept to within the nominated areas of disturbance in accordance the application for ERC decision.
G12	PRCP Schedule Progressive rehabilitation of the disturbed land must be carried out in accordance with the approved Progressive Rehabilitation and Closure Plan (PRCP) schedule P-PRCP-100875920 for this environmental authority.
G13	Surrender The holder must meet the conditions and the rehabilitation milestones under the PRCP schedule prior to the surrender of the environmental authority
G14	Infrastructure The environmental authority holder must detail in the application for ERC decision the measures to be implemented to reduce or remediate the impact of supporting infrastructure including access tracks, gas drainage boreholes or dewatering holes within the Bluegrass 'Of concern' Regional Ecosystem 11.8.11.
G15	Rehabilitation of supporting surface activities, carried out in areas identified in Figure 3: Approved Kestrel Mine Disturbance Areas, must: a) commence as soon as practical and at least within six months of the completion of works relevant to that aspect of the surface disturbance, and b) achieve a stable condition similar to that of surrounding undisturbed areas. Note – the requirements of this condition, and G18 below, are underpinned by the <i>Eligibility criteria and standard conditions for exploration and mineral development projects</i>. Note - Supporting surface activities must be limited to the extent reasonable and necessary in relation to the works, and can take place at any location within the mining tenement

G16	In areas mapped as supporting surface activities, illustrated in Figure 3: Approved Kestrel Mine Disturbance Areas, the holder of the environmental authority must decommission all non-artesian drill holes, apart from those still required for monitoring purposes as soon as practical, but no later than 6 months after the hole is no longer required, by undertaking the following actions: a) where practical dispose of all unused drill chips to the hole or to a sump pit and; b) cap the hole at a depth that is appropriate for the previous land use of the area (unless the land owner stipulates a future use which requires the cap to be placed deeper); and c) backfill the hole above the cap with soil or material similar to the surrounding soil or material. Note - The following depths are considered as appropriate for capping: • surface level in rock outcrops; and • at least 1m below the surface on land used for cropping; and • at least 300 mm below the surface on other land.
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Schedule H: Dams	
Condition number	Condition
H1	Assessment of consequence category The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933) at the following times: a) prior to the design and construction of the structure, if it is not an existing structure; or b) prior to any change in its purpose or the nature of its stored contents.
H2	A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
H3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).
H4	Design and construction of a regulated structure Conditions H5 to H9 inclusive do not apply to existing structures.
H5	All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).
H6	Construction of a regulated structure is prohibited unless: a) the holder has submitted a consequence category assessment report and certification to the administering authority; and b) certification for the design, design plan and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.
H7	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933), and must be recorded in the Register of Regulated Structures.

H8	Regulated structures must: a) be designed and constructed in compliance with the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933); b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: i. floodwaters from entering the regulated dam from any watercourse or drainage line; and ii. wall failure due to erosion by floodwaters arising from any watercourse or drainage line. c) All new facilities constructed after 1 July 2018 must have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.
H9	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure b) construction of the regulated structure is in accordance with the design plan.
H10	Notification of affected persons All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure: a) for existing structures that are regulated structures, within ten (10) business days of this condition taking effect; b) prior to the operation of the new regulated structure; and c) if the emergency action plan is amended, within five (5) business days of it being amended.
H11	Operation of a regulated structure Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following: a) one paper copy and one electronic copy of the design plan and certification of the 'Design Plan' accordance with condition H6; b) A set of 'as constructed' drawings and specifications; c) certification of the 'as constructed drawings and specifications' in accordance with condition H9; d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan; e) the requirements of this authority relating to the construction of the regulated structure have been met; f) the holder has entered the details required under this authority, into a Register of Regulated Structures; and g) there is a current operational plan for the regulated structure.

H12	For existing structures that are regulated structures: a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within twelve (12) months of the commencement of this condition a copy of the certified system design plan including that structure; and b) there must be a current operational plan for the existing structures.
H13	Each regulated structure must be maintained and operated, for the duration of its operational life until, decommissioned and rehabilitated, in compliance with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.
H14	Mandatory reporting level Conditions H15 to H22 inclusive only apply to Regulated Structures which have not been certified as low consequence for 'failure to contain- overtopping'.
H15	The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.
H16	The environmental authority holder must, as soon as practicable but within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
H17	The environmental authority holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
H18	The environmental authority holder must record any changes to the MRL in the Register of Regulated Structures.
H19	Design storage allowance The environmental authority holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.
H20	By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).
H21	The environmental authority holder must, as soon as practicable but within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.
H22	The environmental authority holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.

H23	Annual inspection report Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
H24	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include a recommendations section, with any recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.
H25	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).
H26	The environmental authority holder must within twenty (20) business days of receipt of the annual inspection report, provide to the administering authority: a) The recommendations section of the annual inspection report; b) If applicable, any actions being taken in response to those recommendations; and c) If, following receipt of the recommendations and (if applicable) recommended actions, the administering authority requests a copy of the annual inspection report from the holder, provide this to the administering authority within ten (10) business days of receipt of the request.
H27	The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.
H28	Register of Regulated Structures A Register of Regulated Structures must be established and maintained by the environmental authority holder for each regulated structure.
H29	The environmental authority holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.
H30	The environmental authority holder must make a final entry of the required information in the Register of Regulated Structures once compliance with conditions H11 and H12 has been achieved.
H31	The environmental authority holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
H32	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
H33	The environmental authority holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.

Schedule J: Groundwater	
Condition number	Condition
J1	The holder of this environmental authority must undertake all reasonable and practical measures to prevent the release of contaminants to groundwater.
J2	All determinations of groundwater quality monitoring must be performed by an appropriately qualified person.
J3	The holder of the environmental authority must implement a groundwater monitoring program (GMP) which has been developed by an appropriately qualified person. The program must be able to detect a significant change to groundwater quality values and standing water levels (consistent with the current suitability of the groundwater for domestic and agricultural use) due to activities that are part of this mining project. Upon request from the administering authority this GMP must be provided to the administering authority.
J4	Groundwater affected by mining activities must be monitored at compliance bores within the nominated aquifers and minimum frequencies defined in Table J1: Groundwater monitoring locations and frequency .
J5	The holder of the environmental authority must report groundwater monitoring results as required by condition J4 to the administering authority upon request.
J6	If the groundwater contaminant trigger levels defined in Table J2: Groundwater contaminant trigger levels are exceeded then the environmental authority holder must complete an investigation into the potential for environmental harm. As a result of the exceedance an investigation report must be prepared and upon request from the administering authority provided to the administering authority. An action plan to mitigate potential harm must be developed by a suitably qualified person.
J7	Bore construction and maintenance and decommissioning The construction, maintenance and management of groundwater bores (including background and compliance groundwater monitoring bores) must be undertaken in a manner that prevents or minimises impacts to the environment and ensures the integrity of the bores to obtain accurate monitoring. For all bores constructed after March 2016 the construction and decommissioning must be in accordance with the <i>Manual for Minimum Construction Standard for Water Bores in Australia</i>.

Table J1: Groundwater monitoring locations and frequency

Aquifer [1]	Minimum number of monitoring locations [1]	Minimum monitoring frequency [1]
Basalt	6	SWL [2] - monthly
		EC, pH, sulphate, major ions [3] - 6 monthly
		Standard metals - 12 monthly
Basal Sand	6	SWL [2] - monthly
		EC, pH, sulphate, major ions [3] - 6 monthly
		Standard metals - 12 monthly

Notes:

[1] Relevant aquifer/s, number of bores and monitoring frequencies to be determined by an appropriately qualified person.

[2] SWL means standing water level.

[3] Major ions are defined as calcium, magnesium, sodium, potassium, chloride, carbonate, bicarbonate and sulfate.

Table J2: Groundwater contaminant trigger levels

Parameter	Unit	Trigger levels				Limit type
		Basalt (west)	Basalt (east)	Basal sand (west)	Basal sand (east)	
Standing water level	RL	>2m drawdown from background level	>2m drawdown from background level	>2m drawdown from background level	>2m drawdown from background level	Maximum
pH	pH units	6.5 – 9.5				Minimum/ Maximum
Electrical conductivity	µS/cm	4,950	1,500	3,720	1,790	Maximum [1]
Total dissolved solids	mg/L	3,000	940	2,060	970	Maximum [1]
Sulfate	mg/L	-	-	-	-	Interpretative purposes only [3]
Calcium	mg/L	-	-	-	-	Interpretative purposes only [3]
Magnesium	mg/L	-	-	-	-	Interpretative purposes only [3]
Sodium	mg/L	-	-	-	-	Interpretative purposes only [3]
Potassium	mg/L	-	-	-	-	Interpretative purposes only [3]
Chloride	mg/L	-	-	-	-	Interpretative purposes only [3]
Carbonate	mg/L	-	-	-	-	Interpretative purposes only [3]
Bicarbonate	mg/L	-	-	-	-	Interpretative purposes only [3]
Iron	mg/L	0.3				Maximum [4]
Aluminium	mg/L	0.055				Maximum [2]
Arsenic [5]	mg/L	0.013				Maximum [2]
Cadmium	mg/L	0.0002				Maximum [2]
Copper	mg/L	0.001				Maximum [2]
Lead	mg/L	0.0034				Maximum [2]

Notes:

[1] Trigger level is based on 80th percentile of representative reference site monitoring data

[2] Trigger level is based on the protection of aquatic ecosystems; dissolved metal concentrations to be used for comparison.

[3] The measurement of cations and anions are used to interpret the groundwater chemistry and identify the groundwater source.

[4] Based on the Canadian Council of Resource and Environment Ministers (1987), Canadian water quality guidelines.

[5] Analysis is based on total/combined species of the element.

END OF CONDITIONS

Definitions

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

"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 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" is the agency or department that administers the environmental authority provisions under the *Environmental Protection Act 1994*.

"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. In the current context, this refers to rainfall events. An AEP together with a contributing catchment (area) and duration will determine a rainfall depth.

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

"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.

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

"assessed" or **"assess"** by a suitably qualified and experienced person 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.

"authority" means environmental authority (mining activity) under the Environmental Protection Act 1994.

"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* (Old)
- (c) sustainable by virtue of written undertakings given by that owner to maintain that dam
- (d) the transfer and use have been approved or authorized under any relevant legislation.

"blasting" means the use of explosive materials to fracture

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

"brine" means saline water with a total dissolved solid concentration greater than 40 000 mg/l.

"certification" or **"certified"** by a suitably qualified and experienced person 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
- (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), or
- (b) a dangerous good under the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council, or
- (c) a lead hazardous substance within the meaning of the Workplace Health and Safety Regulation 1997, or
- (d) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth, or
- (e) any substance used as, or intended for use as:

- (i) a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product, or
- (ii) a surface active agent, including, for example, soap or related detergent, or
- (iii) a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide, or
- (iv) a fertiliser for agricultural, horticultural or garden use, or
- (v) a substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater, or
- (vi) manufacture of plastic or synthetic rubber.

"commercial place" means a workplace used as an office or business or commercial purpose, 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.

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

"control measures" means actions that can be taken in order to minimise environmental impacts or environmental harm. Control measures can be, but are not limited to, planning, procedural or engineering controls. Control measures have the same intent as 'risk treatment' in AS 4360 (Risk Management).

"dam" means a containment or proposed containment whether permanent or temporary, which is designed to contain, divert or control flowable substances. However, this does not include a fabricated or manufactured tank or container designed to a recognised standard.

"design plan" in the context of a dam design is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, the procedures and criteria to be used for operating the dam and the decommissioning and rehabilitation objectives in terms procedures, works and outcomes at the end of dam life. The documents can include design and investigation reports, drawings, specifications and certifications.

"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.

"disturbance" of land includes:

- (a) compacting, removing, covering, exposing or stockpiling of earth
- (b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion
- (c) carrying out mining within a watercourse, waterway, wetland or lake
- (d) the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls
- (e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after the mining activity has ceased
- (f) releasing of contaminants into the soil or underlying geological strata.

However, the following areas are not included when calculating areas of 'disturbance':

- (a) areas off lease (e.g. roads or tracks which provide access to the mining lease)
- (b) areas previously disturbed which have achieved the rehabilitation outcomes

(c) by agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions)

(d) areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner

(e) disturbance that pre-existed the grant of the tenure.

"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; and
- (c) a water craft in a marina.

"effluent" means treated waste water released from sewage treatment plants.

"environmental authority" means an environmental authority under Chapter 5 of the *Environmental Protection Act 1994*.

"environmental authority holder" means the holder of this environmental authority.

"environmental management system" means the part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy and achieving compliance with the environmental authority and the general environmental duty.

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

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

- (a) if a PRCP schedule applies for the activity—the period of between 1 and 5 years stated in the application for an ERC decision under section 298(2)(b); or
- (b) if the activity is a petroleum activity that is an ineligible ERA, other than a petroleum activity to which a plan of operations applies, or the activity relates to a 1923 Act petroleum tenure granted under the *Petroleum Act 1923* — the period of between 1 and 5 years stated in the ERC decision about the estimated rehabilitation cost; or
- (c) if a plan of operations applies for the activities—the plan period for the plan of operations; or
- (d) otherwise — the total period during which the resource activity is likely to be carried out under the environmental authority for the activity.

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

"flowable substance" means matter or mixture of materials which can be forced to or otherwise flow under any conditions possible in a situation. It includes water, other liquids or a mixture that includes water or any other liquid or suspended solids.

"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).

"hazardous dams" are dams which contain or could contain hazardous substances and,

- (a) on failure of containment;
- (b) on collapse of structures;
- (c) on uncontrolled release of contained substances including dust and gas emissions; or
- (d) on access to contained substances by fauna;
- (e) would or could adversely impact on the environment and environmental values, including ecological health, public amenity and safety.

"hazardous substance" means any substance, whether liquid, solid or gaseous that could or would destroy life or impair or endanger health and includes hazardous waste.

"hazardous waste" means any waste substance, whether liquid, solid or gaseous, that tends to destroy life or impair or endanger health.

"hydraulic performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on the annual exceedance 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 facilities required for the long term management of mining impacts or the protection of potential resources. Such facilities include dams containing hazardous waste, waste rock dumps, voids, or ore stockpiles and buildings or other structures whose ownership can be transferred and which have a residual beneficial use for the next owner of the operational land or the background land owner.

"LAeq,1 hour" means the equivalent continuous A-weighted sound pressure level of a continuous steady sound that within a specified time interval, 1 hour, has the same mean-square sound pressure as a sound under consideration whose level varies with time.

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

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

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

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

"µS/cm" means micro siemens per centimetre.

"mine affected water" means the following types of water:

- (a) pit water, tailings dam water, processing plant water;
- (b) water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the Environmental Protection Regulation 2008 if it had not formed part of the mining activity;
- (c) rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage runoff containing sediment only, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water;

(d) groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;

(e) groundwater from the mine's dewatering activities;

(f) a mix of mine affected water (under any of paragraphs i)-v)) and other water.

"mineral" 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 there from;

(d) limestone if mined for use for its chemical properties;

(e) marble;

(f) mineral oil or gas extracted or produced from shale or coal by in situ processes;

(g) peat;

(h) salt including brine;

(i) shale from which mineral oil may be extracted or produced;

(j) silica, including silica sand, if mined for use for its chemical properties;

(k) rock mined in block or slab form for building or monumental purposes;

(l) but does not include-

(m) living matter;

(n) petroleum within the meaning of the *Petroleum Act 1923*;

(o) 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;

(p) water.

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

"Normal cubic metre (Nm³)" means the volume of dry gaseous contaminant which occupies 1 cubic metre at a temperature of zero degrees Celsius and at an absolute pressure of 101.3 kilopascals.

"noxious" means harmful or injurious to health or physical well-being.

"non-standard" means a mining operation that if in the opinion of the administering authority does not have a low risk of serious environmental harm and the activities can not comply with the criteria for standard mining activities prescribed in schedule 1A of the Environmental Protection Regulation 1998. The standard mining activity trigger criteria are as follows;

(a) the mining activities do not or will not cause more than 10 ha of land to be significantly disturbed at any one time;

(b) the mining activities do not or will not cause more than 5 ha of land to be significantly disturbed at any one time;

(i) in a riverine area;

(ii) because of mine workings;

(c) the mining activities are not or will not be carried out in, or within 2 km of a category A Environmentally Sensitive Area;

(d) the mining activities are not or will not be carried out in, or within 1 km of a category B environmentally sensitive area;

(e) the mining activities do not include a level 1 environmentally relevant activity;

(f) no more than 20 persons are carrying out or will, at any one time, carry out the mining activities;

"offensive" means causing offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive.

"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.

"protected area" means -

(a) a protected area under the *Nature Conservation Act 1992*; or

(b) a marine park under the *Marine Parks Act 1992*; or

(c) a World Heritage Area.

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

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

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

"reference site" (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).

"rehabilitation" 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.

"Scheme fund" means the scheme fund established under the *Mineral and Energy Resources (Financial Provisioning) Act 2018*, section 24.

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

"sensitive place" means;

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

"specific noise level" is the level of the component of the ambient (or total) noise that can be specifically identified by acoustical means and is associated with a specific noise.

"significant disturbance" - includes land

- (a) if it is contaminated land; or
- (b) it has been disturbed and human intervention is needed to rehabilitate it.
 - (i) to a state required under the relevant environmental authority; or
 - (ii) if the environmental authority does not require the land to be rehabilitated to a particular state — to its state immediately before the disturbance.

Some examples of disturbed land include:

- areas where soil has been compacted, removed, covered, exposed or stockpiled;
- areas where vegetation has been removed or destroyed to an extent where the land has been made susceptible to erosion; (vegetation and topsoil)
- areas where land use suitability or capability has been diminished;
- areas within a watercourse, waterway, wetland or lake where mining activities occur;
- areas submerged by tailings or hazardous contaminant storage and dam walls in all cases;
- areas under temporary infrastructure. Temporary infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after mining activities have ceased; or
- areas where land has been contaminated and a suitability statement has not been issued.

However, the following areas are not included:

- areas off lease (e.g. roads or tracks which provide access to the mining lease);
- areas previously significantly disturbed which have achieved the rehabilitation outcomes;
- by agreement with the EPA, areas previously significantly disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);
- areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner. The agreement to leave permanent infrastructure must be recorded in the Landowner Agreement and lodged with the EPA;
- disturbances that pre-existed the grant of the tenure unless those areas are disturbed during the term of the tenure.

"site" means the place to which this environmental authority relates or the premises to which this development approval relates.

"spillway" means passage or outlet from the dam through which surplus water flows.

"stable" 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 (traffic ability), erosion resistance and geochemical stability with respect to seepage and contaminant generation.

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

"stream flow gauging infrastructure" means infrastructure including gauge boards, automated telemetered gauging stations and pump infrastructure.

"suitably qualified and experienced engineer" means one who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 1988* (Qld), OR registered as a National Professional Engineer (NPER) with the Institution of Engineers Australia, OR holds equivalent professional qualifications to the satisfaction of the administering authority for the Act; 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; and
- (b) at least a total of five years of suitable experience and demonstrated expertise in at least four of the following areas:
 - (i) investigation, design or construction of dams
 - (ii) operation and maintenance of dams
 - (iii) geomechanics with particular emphasis stability, geology and geochemistry
 - (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.

"supporting surface activities" include works carried out on the surface of the land to support the underground mining operation, and are limited to the following:

- (a) single drill sites not exceeding 1 hectare of disturbance and multi-drill sites not exceeding 1.5 hectares of disturbance, including associated sumps and equipment;
- (b) geophysical, geotechnical, geological, topographic and cadastral surveys (including seismic, sample/test/geotechnical pits, core holes);
- (c) ventilation and/or cooling infrastructure;
- (d) gas drainage infrastructure;
- (e) linear infrastructure, such as powerlines, pipelines, and access tracks/roads;
- (f) laydown areas; and

(g) supporting infrastructure/activities to maintain compliance with the conditions of the environmental authority, such as erosion and sediment control measures.

"tolerable limits" means that a range of values could be accepted to achieve an overall environmental management objective (e.g. a range of settlement of a tailing capping could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation).

"Volatile organic compounds (VOC)" means any chemical compound based on carbon chains or rings with a vapor pressure greater than 2mm of mercury (0.27 kPa) at 25°C), that participate in atmospheric photochemical reactions. The substances that are specifically excluded are: methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonate salts. This is according to the definition of VOC outlined in the Australian Government National's Pollutant Inventory.

"watercourse" means a river, creek or stream in which water flows permanently or intermittently in a visibly defined channel (natural, artificial or artificially improved) with:

- (a) continuous bed and banks;
- (b) an extended period of flow for some months after rain ceases, and
- (c) an adequacy of flow that sustains basic ecological processes and maintains biodiversity.

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

Appendices

Figure 1: Surface water release and monitoring points

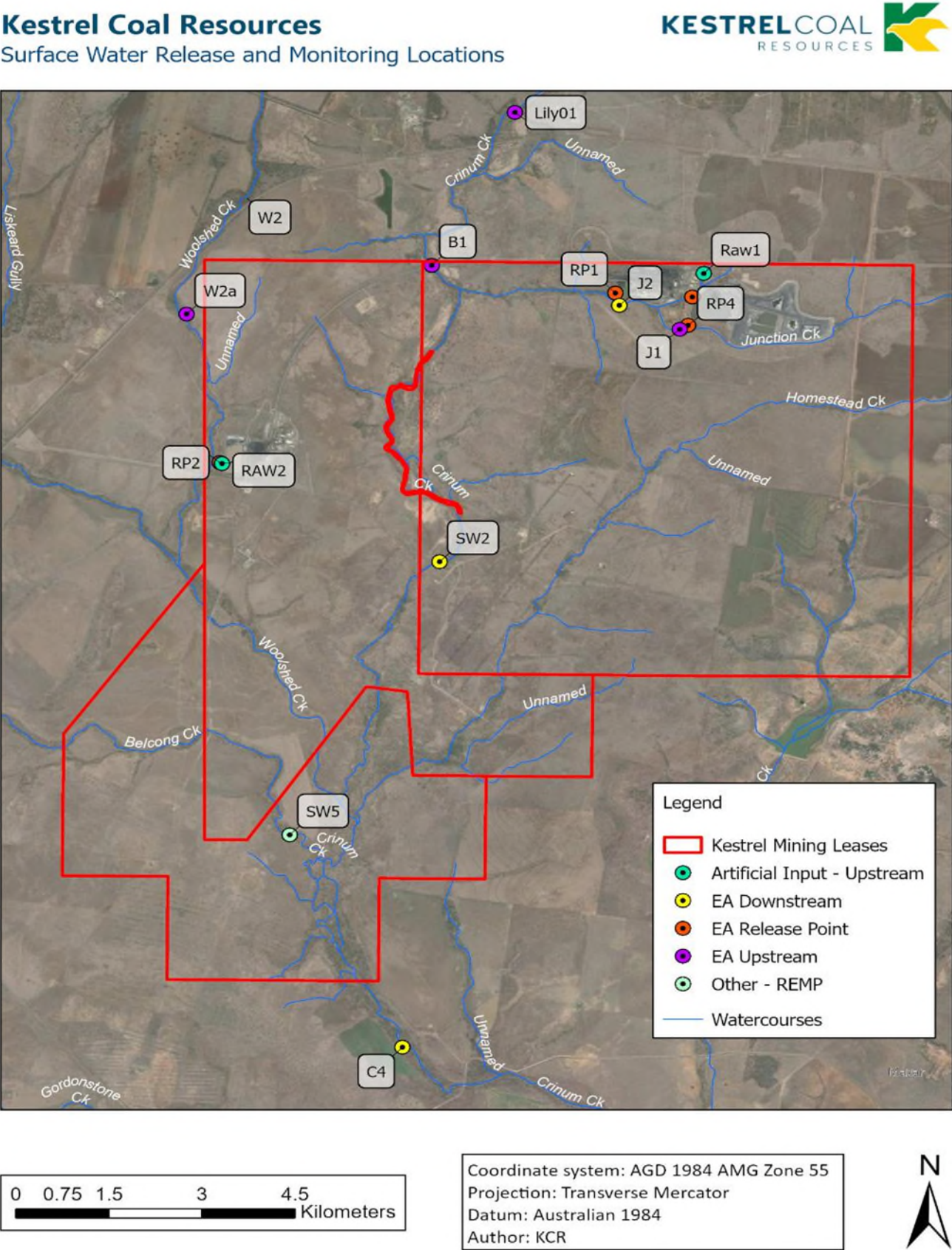
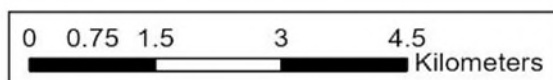
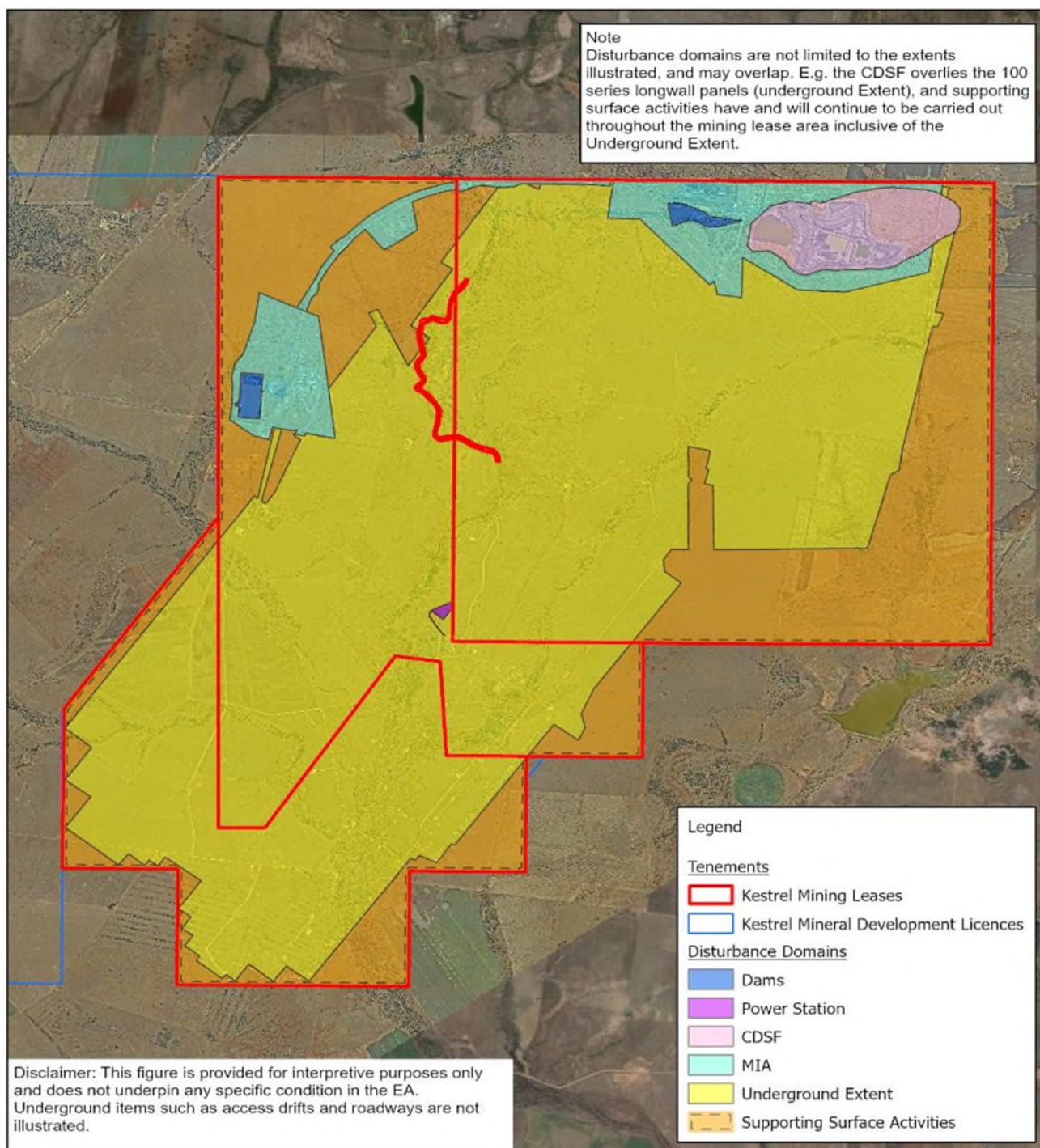


Figure 2: Approved Kestrel Mine Disturbance Areas

Kestrel Coal Resources

Kestrel Coal Mine - Disturbance Domains



Coordinate system: AGD 1984 AMG Zone 55
Projection: Transverse Mercator
Datum: Australian 1984
Author: KCR



Figure 3: Kestrel Coal Mine Waste Gas Power Station Investigation Area

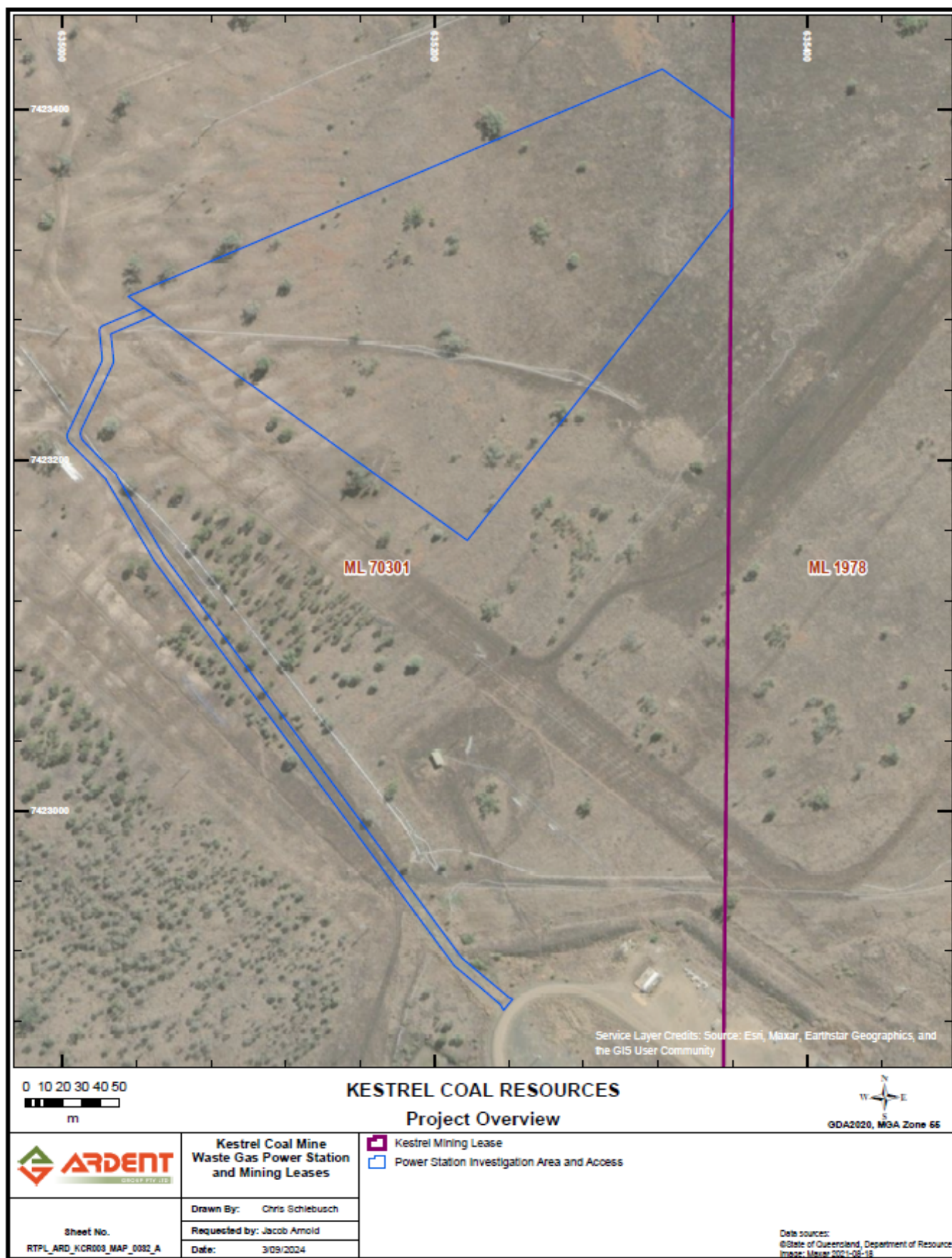
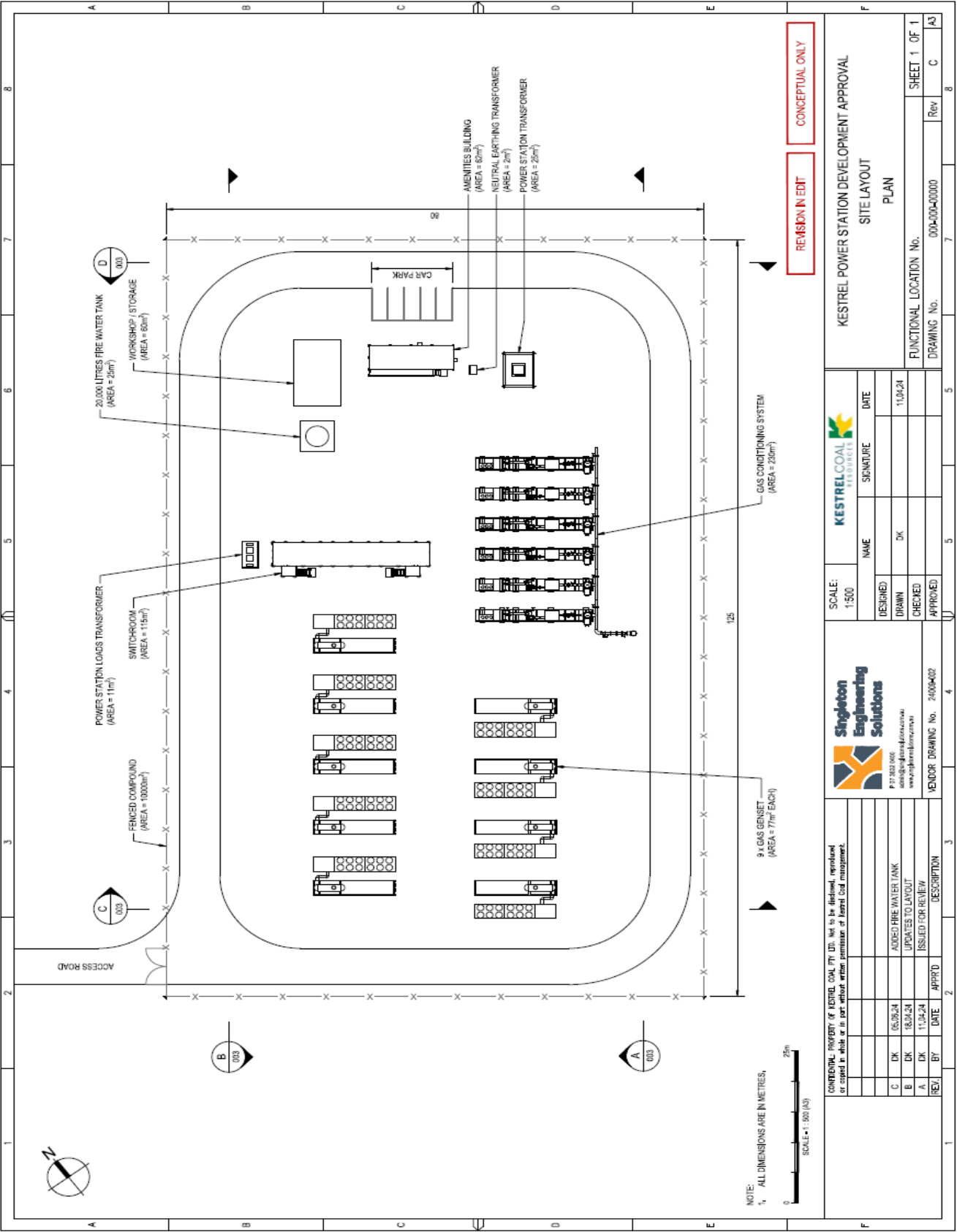


Figure 4: Kestrel Coal Mine Waste Gas Power Station Infrastructure



END OF ENVIRONMENTAL AUTHORITY