

Permit

Environmental Protection Act 1994

Environmental authority EPML00634113

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

Environmental authority number: EPML00634113

Environmental authority takes effect on 2 June 2022

Environmental authority holder(s)

Name(s)	Registered address
GS Coal Pty Ltd	Level 44, Gateway Building 1 Macquarie Place SYDNEY NSW 2000 Australia
J-Power Australia Pty Ltd	Level 30, Riverside Center 123 Eagle Street BRISBANE CITY QLD 4000
J.C.D. Australia Pty Ltd	Level 8, 141 Queen Street BRISBANE CITY QLD 4000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Ancillary Activity, Schedule 2 – 8, Chemical storage, (3): storing more than 500m ³ of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous good class 3 under subsection (1)(c).	ML1787, ML1788, ML1881, ML1884, ML1995, ML2355, ML70334, ML70343 and ML700020
Ancillary Activity, Schedule 2 – 31, Mineral processing, (2): processing, in a year, the following quantities of mineral products, other than coke—, (b): more than 100,000t.	ML1787, ML1788, ML1881, ML1884, ML1995, ML2355, ML70334, ML70343 and ML700020
Ancillary Activity, Schedule 2 – 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.	ML1787, ML1788, ML1881, ML1884, ML1995, ML2355, ML70334, ML70343 and ML700020

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Environmentally relevant activity/activities	Location(s)
Ancillary Activity, Schedule 2 – 63, Sewage treatment, (1): operating a 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—, (i): if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme.	ML1787, ML1788, ML1881, ML1884, ML1995, ML2355, ML70334, ML70343 and ML700020
Resource Activity, Schedule 3 – 13: Mining black coal	ML1787, ML1788, ML1881, ML1884, ML1995, ML2355, ML70334, ML70343 and ML700020

Additional information for applicantsEnvironmentally relevant activities

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

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

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

Contaminated land

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

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

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

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

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c) otherwise- one the day the authority is issued.

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

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

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



Signature

2 June 2022

Date

Ben Byrd
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Business Centre Coal
Department of Environment and Science
PO Box 3028
EMERALD QLD 4720
Phone: (07) 4987 9320
Email: CRMining@des.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the environmental authority holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the environmental authority 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); and
- offence to place contaminant where environmental harm or nuisance may be caused (section 443).

Other permits required

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

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Conditions of environmental authority

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

Schedule A – General

Schedule B – Air

Schedule C – Waste management

Schedule D – Noise

Schedule E – Groundwater

Schedule F – Water

Schedule G – Sewage treatment

Schedule H – Land and rehabilitation

Schedule J – Regulated structures

Figure F1 – Water Monitoring and Release Points

Schedule A – General	
Condition number	Condition
A1	This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.
A2	Prevent and/or minimise likelihood of environmental harm In carrying out the environmentally relevant activities, the environmental authority holder must take all reasonable and practicable measures to prevent and/or to minimise the likelihood of environmental harm being caused. Any environmentally relevant activity, that, if carried out incompetently, or negligently, may cause environmental harm, in a manner that could have been prevented, must be carried out in a proper manner in accordance with the conditions of this environmental authority.
A3	Monitoring Except where specified otherwise in another condition of this environmental authority, all monitoring records or reports required by this environmental authority must be kept for a period of not less than five (5) years.
A4	Monitoring, or determinations, or both, required under any condition of this environmental authority must be conducted by an appropriately qualified person.

Schedule A – General	
Condition number	Condition
A5	Upon request from the administering authority, copies of monitoring results, records, registers, management plans and reports required by the conditions of this environmental authority must be made available and provided to the administering authority within— (a) ten (10) business days; or (b) an alternative timeframe agreed between the administering authority and the environmental authority holder.
A6	Risk management The environmental authority holder must implement a risk management system for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000:2009), or the latest edition of an Australian standard for risk management, or an equivalent, to the extent relevant to environmental management.
A7	Storages for all flammable and combustible liquids must be constructed as to contain any spillages within an on-site containment system and controlled in a manner that prevents environmental harm.
A8	Notification of emergencies, incidents and exceptions The environmental authority holder must notify the administering authority, within twenty-four (24) hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority.
A9	Within ten (10) business days following the notification under condition A8, or receipt of monitoring results, whichever is the latter, 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 unlawful environmental harm; and (c) proposed actions to prevent a recurrence of the emergency or incident.

Schedule A – General	
Condition number	Condition
A10	Complaints The environmental authority holder must record all environmental complaints received about the mining activities including: (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.
A11	When requested by the administering authority, the environmental authority holder must investigate any nuisance, or contaminant release, or environmental harm, or complaint that is neither frivolous nor vexatious in the opinion of the authorised person, by: (a) undertaking the monitoring specified by the administering authority; (b) undertaking the monitoring in the timeframe nominated or agreed to by the administering authority; (c) completing an analysis and interpretation of the monitoring results; and (d) implementing abatement measures, where required.
A12	The results of the investigation undertaken in accordance with condition A11 must be provided to the administering authority within twenty (20) business days of completion of the investigation.
A13	The environmental authority holder must: (a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; (b) maintain such measures, plant and equipment in a proper and efficient condition; (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.

Schedule B – Air	
Condition number	Condition
B1	The release of dust or particulate matter or both from the mining activities must not cause an environmental nuisance, at any sensitive or commercial place or both.
B2	Dust and particulate matter monitoring The environmental authority holder must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that dust deposition or particulate matter emissions, or both, generated by the mining activities do not cause exceedances of the air quality limits stated in Table B1 – Air quality limits when measured at any sensitive or commercial place, or both.

Table B1 – Air quality limits

Quality characteristic	Air quality limit	Averaging period	Monitoring standard
Particulate matter less than 10µm in aerodynamic diameter (PM ₁₀)	50 µg/m ³	24-hour	1. Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air — Determination of suspended particulate matter— PM₁₀ high volume sampler with size selective inlet – Gravimetric method; 2. Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air — Determination of suspended particulate matter— PM₁₀ low volume sampler — Gravimetric method; or 3. Australian Standard AS3580.9.11 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM₁₀ beta attenuation monitors
Dust deposition	120 mg/m ² /day	Monthly	Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter — Deposited matter – Gravimetric method
B3	Dust Management Plan A Dust Management Plan must be: (a) developed by an appropriately qualified person; and (b) implemented for the duration of the mining activities.		

Schedule B – Air	
Condition number	Condition
B4	The Dust Management Plan required by condition B3 must include: (a) the identification of sensitive and commercial places that may be impacted on by air emissions from the mining activities; (b) the identification of all sources of air emissions that may occur as result of the mining activities; (c) a continuous monitoring program for PM₁₀, dust deposition and meteorological conditions to monitor compliance with condition B2; (d) a description of the procedures and control strategies in a Trigger Action Response Plan for PM₁₀ and Dust deposition; (e) mitigation and control measures to prevent environmental nuisance at any sensitive place or commercial place; (f) training and awareness programs for personnel of the mining activities; and (g) be reviewed at intervals no greater than twenty-four (24) months.
B5	Odour nuisance Odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the mining activity must not cause environmental nuisance at any sensitive or commercial place.
B6	Odour Monitoring Program An Odour Monitoring Program must be: (a) developed by an appropriately qualified person; and (b) implemented for the duration of the mining activities.
B7	The Odour Monitoring Program required by condition B6 must include: (a) the identification of sensitive and commercial places; (b) the proposed monitoring locations to monitor impacts to sensitive and commercial places; (c) the parameters that are to be monitored to determine odour nuisance; (d) the Limits for the parameters identified in determining odour nuisance; and (e) a description of how the program will demonstrate compliance with condition B5.

Schedule B – Air	
Condition number	Condition
B8	Spontaneous Combustion Management Plan A Spontaneous Combustion Management Plan must be: (a) developed by an appropriately qualified person; and (b) implemented for the duration of the mining activities.
B9	The Spontaneous Combustion Management Plan required by condition B8 must: (a) identify potential and actual spontaneous combustion heating areas; (b) involve inspections of spontaneous combustion heating areas; (c) include a risk assessment that will guide and prioritise management actions; (d) include remedial actions where a high risk has been identified; and (e) describe a program for the review of the effectiveness of the Spontaneous Combustion Management Plan.

Schedule C – Waste management	
Condition number	Condition
C1	The environmental authority holder must not cause environmental harm at any sensitive place or commercial place, or both as a result of burning vegetation.
C2	Storage and disposal of tyres Storage and disposing of scrap tyres and conveyor belt resulting from the mining activities in spoil emplacements is acceptable, provided the material is placed as deep in the spoil as reasonably practicable.
C3	General waste A Waste Management Plan must be: (a) developed by an appropriately qualified person; and (b) implemented for the duration of the mining activities.
C4	The Waste Management Plan required by condition C3 must include: (a) a description of the mining activities that may generate waste; (b) waste management control strategies, including: (i) the types and amounts of wastes generated by the mining activities; (ii) segregation of the wastes; (iii) storage of the wastes; (iv) transport of the wastes; and (v) monitoring and reporting matters concerning the wastes; (c) how the waste will be dealt with in accordance with the waste management hierarchy (that is, avoid, reuse, recycling, 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; (f) the indicators or other criteria on which the performance of the waste management program will be assessed; and (g) staff training.

Schedule C – Waste management	
Condition number	Condition
C5	Mineral Waste Management Plan A Mineral Waste Management Plan must be: (a) developed by an appropriately qualified person; (b) implemented for the duration of the mining activities; and (c) reviewed at intervals no greater than twenty-four (24) months.
C6	The Mineral Waste Management Plan required by condition C5 must include: (a) a map showing the locations for waste rock and spoil placement; (b) effective characterisation of the waste rock and spoil to predict under the proposed placement and disposal strategy the quality of runoff and seepage generated concerning potentially environmentally significant effects including salinity, acidity, alkalinity and dissolved metals, metalloids and non-metallic inorganic substances; (c) a program of progressive sampling and characterisation to identify dispersive and non-dispersive spoil and the salinity, acid and alkali producing potential and metal concentrations of waste rock; (d) a materials balance and disposal plan demonstrating how potentially acid forming and acid forming waste rock will be selectively placed and/or encapsulated to minimise the potential generation of acid mine drainage; (e) where relevant, a sampling program to verify encapsulation and/or placement of potentially acid-forming and acid-forming waste rock; (f) a description of the methods of tailings containment within decant cells, in-pit and within the Mega Cell; (g) details as to how seepage and leachates from tailings containment will be managed both during operation and the foreseeable future; (h) details as to controls in place to prevent fugitive emissions from tailings to air; (i) a program of progressive sampling and characterisation to identify acid producing potential and metal concentrations of tailings; and (j) a maintained record of the relative locations of any other waste stored in-pit.
C7	The environmental authority holder must not dispose of waste on-site with the following exceptions: (a) the inert waste portion of the In-Pit Conveyor Crusher (IPCC) hopper infrastructure; (b) mineral waste; and (c) scrap tyres and conveyor belt.

Schedule C – Waste management	
Condition number	Condition
C8	The environmental authority holder must not accept waste from off-site.

Schedule D – Noise	
Condition number	Condition
D1	Noise limits The environmental authority holder must ensure that noise generated by the mining activities does not cause any environmental nuisance that exceeds the criteria in Table D1 – Noise limits at a sensitive or commercial place, or both.
D2	Airblast overpressure nuisance The environmental authority holder must ensure that blasting does not cause the limits for peak particle velocity, or airblast overpressure, or both in Table D2 – Blasting noise limits to be exceeded at a sensitive or commercial place, or both.
D3	Monitoring and reporting Noise monitoring and recording must include the following descriptor characteristics and matters: (a) $L_{AN,T}$ (where N equals the statistical levels of 1, 10 and 90 and T = 15 mins); (b) background noise L_{A90}; (c) the level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to statistical levels; (d) atmospheric conditions including temperature, relative humidity and wind speed and directions; (e) effects due to any extraneous factors such as traffic noise; (f) location, date and time of monitoring; and (g) if the complaint concerns low frequency noise, Max $L_{pLIN,T}$ and one third octave band measurements in dB(LIN) for centre frequencies in the 10 – 200 Hz range.
D4	The environmental authority holder must develop and implement a blast monitoring program to monitor compliance with Table D2 – Blasting noise limits for: (a) at least 80% of all blasts undertaken in each calendar year at the nearest sensitive place or commercial place. (b) all blasts conducted during any time period specified by the administering authority at the nearest sensitive place or commercial place.

Table D1 – Noise limits

Noise level dB(A) measured as:	Monday to Saturday			Sundays and Public Holidays		
	7am to 6pm	6pm to 10pm	10pm to 7am	9am to 6pm	6pm to 10pm	10pm to 9am
Sensitive Place						
L _{Ar} , 1 hour	38	38	37	38	38	37
Commercial place						
L _{Ar} , 1 hour	43	43	42	43	43	42

Table D2 – Blasting noise limits

Blasting noise limits	Sensitive or commercial blasting noise limits place limits	
	7am to 6pm	6pm to 7am
Airblast overpressure	115 dB (Linear Peak) for 4 out of 5 consecutive blasts initiated and not greater than 120 dB (Linear Peak) at any time.	No blasting
Ground vibration peak particle velocity	5 mm/second peak particle velocity for 4 out of 5 consecutive blasts and not greater than 10mm/s peak particle velocity at any time.	No blasting

Schedule E – Groundwater	
Condition number	Condition
E1	Contaminant release The environmental authority holder must not release contaminants to groundwater.
E2	Groundwater Monitoring Program The environmental authority holder must develop and implement a Groundwater Monitoring Program. The Groundwater Monitoring Program must be able to detect any significant changes to ground water quality values that may be caused as a result of mining activities.
E3	Groundwater Management Plan A Groundwater Management Plan must be: (a) developed by an appropriately qualified person; (b) implemented for the duration of the mining activities; and (c) able to detect a significant change to ground water quality values and standing water levels due to activities that are part of this mining project.
E4	Bore construction and maintenance and decommissioning All groundwater bores (including groundwater monitoring bores) constructed on or after 13 January 2021 must be constructed in accordance with the 'Minimum Construction Requirements for Water Bores in Australia' (National Uniform Drillers Licensing Committee, 2011).

Schedule F – Water	
Condition number	Condition
F1	Contaminant release Contaminants must not be released to waters except as permitted under the conditions of this environmental authority.
F2	The release of mine affected water to waters must only occur from the release points specified in Table F1 – Mine affected water release points, sources and receiving waters and depicted in Figure 1 – Water Monitoring and Release Points attached to this environmental authority.
F3	The release of mine affected water to waters in accordance with condition F2 must not exceed the release limits stated in Table F2 – Mine affected water release limits when measured at the monitoring points specified in Table F1 – Mine affected water release points, sources and receiving waters for each quality characteristic.
F4	The release of mine affected water to waters from the release points must be monitored at the locations specified in Table F1 – Mine affected water release points, sources and receiving waters for each quality characteristic and at the frequency specified in Table F2 – Mine affected water release limits and Table F3 – Release contaminant trigger investigation levels, potential contaminants.
F5	If quality characteristics of the release exceed any of the trigger levels specified in Table F3 – 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 F3 – Release contaminant trigger investigation levels, potential contaminants and: (a) where the trigger values are not exceeded then no action is to be taken, or (b) where the downstream results exceed the trigger values specified in Table F3 – Release contaminant trigger investigation levels, potential contaminants for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites; and (1) if the result is less than the background monitoring site data, then no action is to be taken; or (2) if the result is greater than the background monitoring site data, complete an investigation into the potential for environmental harm and provide a written report to the administering authority within 90 days of receiving the result, outlining: (i) details of the investigations carried out; and (ii) actions taken to prevent environmental harm.

Schedule F – Water	
Condition number	Condition
F6	If an exceedance in accordance with condition F5(b)(2) is identified, the environmental authority holder must notify the administering authority in writing within twenty-four (24) hours of receiving the result.
F7	Mine affected water release events The environmental authority holder must ensure an automatic stream flow gauging station/s is installed, operated and maintained to determine and record stream flows at the and flow reporting frequency specified in Table F4 – Mine affected water release during flow events.
F8	The release of mine affected waters to waters in accordance with condition F2 must only take place during periods of natural flow in accordance with the receiving water flow criteria for discharge specified in Table F4 – Mine affected water release during flow events for the release point(s) specified in Table F1 – Mine affected water release points, sources and receiving waters .
F9	The release of mine affected water to waters in accordance with condition F2 must not exceed the Maximum Release Rate (for all combined release point flows) for each receiving water flow criterion for discharge specified in Table F4 – Mine affected water release during flow events when measured at the monitoring points specified in Table F1 – Mine affected water release points, sources and receiving waters .
F10	The daily quantity of mine affected water released from each release point must be measured, recorded and provided to the administering authority on request.
F11	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.

Schedule F – Water	
Condition number	Condition
F12	Notification of release event commencement The environmental authority holder must notify the administering authority via WaTERS and within twenty-four (24) hours after commencing to release mine affected water to the receiving environment. Notification must include the submission of written advice to the administering authority of the following information: (a) release commencement date and time; (b) release volume (estimated); (c) release point/s; (d) release rate; (e) release salinity; and (f) receiving water/s including the natural flow rate.
F13	Notification of release event cessation The environmental authority holder must notify the administering authority within twenty-four (24) hours after cessation of a release notified under Condition F12 and include: (a) release cessation date and time; (b) natural flow rate of receiving water(s); and (c) volume of water released. <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 F12, F13, and F14, provided the relevant details of the release are included within the notification provided in accordance with conditions F12, F13, and F14.</i>

Schedule F – Water	
Condition number	Condition
F14	Within twenty-eight (28) days of notification under condition F13, the environmental authority holder must provide the administering authority via WaTERS the following information: (a) confirmation of: (i) the release commencement date and time; (ii) the release cessation date and time; (iii) natural flow rate of the receiving water(s); (iv) total volume of water released; and (b) all in-situ and laboratory water quality monitoring results; (c) details regarding the compliance of the release with the conditions of Schedule F: Water of this environmental authority (i.e. contamination limits, natural flow, discharge rates); (d) whether the release of water resulted in any impacts to the receiving environment; and (e) any other matter(s) pertinent to the water release event.
F15	Notification of release event exceedance If the release limits defined in Table F2 – Mine affected water release limits are exceeded, the environmental authority holder must notify the administering authority via WaTERS within twenty-four (24) hours of receiving the results.
F16	Within twenty-eight (28) days of a release that is not compliant with the conditions of this environmental authority, provide a report to the administering authority detailing: (a) the reason for the release; (b) the location of the release; (c) the total volume of the release and which (if any) parts of this volume was non-compliant; (d) the total duration of the release and which (if any) part of this period was non-compliant; (e) all in situ and any water quality monitoring results (including all laboratory analyses); (f) identification of any environmental harm as a result of the non-compliance; (g) all calculations; and (h) any other matters pertinent to the water release event.

Schedule F – Water	
Condition number	Condition
F17	Receiving environment monitoring and contaminant trigger levels The quality of the receiving waters must be monitored at the locations specified in Table F6 – Receiving water upstream background sites and downstream monitoring points for each quality characteristic and at the monitoring frequency stated in Table F5 – Receiving waters contaminant trigger levels.
F18	If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Table F5 – Receiving waters contaminant trigger levels during a release event, the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and: (a) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; or (b) where the downstream results exceed the upstream results, complete an investigation into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: (1) details of the investigations carried out; and (2) actions taken to prevent environmental harm. <i>Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with F18(b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.</i>
F20	Receiving environment monitoring program (REMP) The environmental authority holder must design and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activities. 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 site. For the purposes of the REMP, the receiving environment is the waters of the Wolfgang Creek, Bath Creek and connected waterways within fifteen (15) kilometres downstream of the release.
F21	A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared annually. 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.

Schedule F – Water	
Condition number	Condition
F22	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 F7 – Stock water release limits; or (b) supplying irrigation water subject to compliance with quality release limits in Table F8 – Irrigation water release limits; or (c) dust suppression, construction and/or road maintenance in accordance with the conditions of this environmental authority.
F23	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 any operation licensed for either ERA13 (mining black coal) or ERA31 (mineral processing). The volume, pH and electrical conductivity of water transferred must be recorded.
F24	If the responsibility for mine affected water is given or transferred to another person in accordance with conditions F22 or F23: (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.

Schedule F – Water	
Condition number	Condition
F25	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: (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 in the specified electronic format upon request.
F26	Temporary interference with waterways 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 Department of Natural Resources and Mines (or its successor) 'Guideline - Activities in a Watercourse, Lake or Spring associated with Resource Activity or Mining Operation'.
F27	Water Management Plan A Water Management Plan must: (a) be developed by an appropriately qualified person; (b) be implemented for the duration of the mining activities; (c) be reviewed at intervals no greater than twenty-four (24) months; and (d) include monitoring of water quality and quantity in water storage areas.
F28	Saline drainage The environmental authority holder must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage.
F29	Acid rock drainage The environmental authority holder must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage.

Schedule F – Water	
Condition number	Condition
F30	Erosion and Sediment Control Plan An Erosion and Sediment Control Plan must: (a) be developed by an appropriately qualified person; and (b) be implemented for all stages of mining activities to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.
F31	Stormwater 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 F30; and (b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with condition F27, for the purpose of ensuring water does not become mine affected water.

Table F1 – Mine affected water release points, sources and receiving waters

Release point (RP)	Latitude (GDA94)	Longitude (GDA94)	Contaminant source and location	Monitoring point	Receiving waters description
RP1	-22.75	147.6383	Mine water Dam Release Point MWD	Outlet pipe	Wolfgang Creek
RP2	-22.69	147.5153	Stockpile Dam	Dam spillway	Bath Creek

Table F2 – Mine affected water release limits

Quality characteristic	Release limits for RP1	Release limits for RP2	Monitoring frequency
Electrical conductivity ($\mu\text{S}/\text{cm}$)	3000	1500	Daily during release (the first sample must be taken within 2 hours of commencement of release)
pH (pH unit)	6.5 (minimum) 9.0 (maximum)	6.5 (minimum) 9.0 (maximum)	
Turbidity (NTU)	315 [^]	315 [^]	

Note:

* Local release limits have been developed based on receiving water reference data, represents 80th percentile of baseline plus standard error, with rounding too allow for more practical application.

[^] Note that the site will delay the sampling of turbidity until the first flush of water is complete, and a stable reading is obtained.

Table F3 – Release contaminant trigger investigation levels, potential contaminants

Quality characteristics	Trigger levels (µg/L)	Comment on trigger level	Monitoring frequency
Aluminium	100	For aquatic ecosystem protection, based on LOR for ICPMS	Commencement of release and thereafter weekly during release
Arsenic	13	For aquatic ecosystem protection, based on SMD guideline	
Cadmium	0.2		
Chromium	1		
Copper	2		
Iron	300	For aquatic ecosystem protection, based on low reliability guideline	
Lead	10	For aquatic ecosystem protection, based on LOR for ICPMS	
Mercury (inorganic)	0.2	For aquatic ecosystem protection, based on CV FIMS	
Nickel	11	For aquatic ecosystem protection, based on SMD guideline	
Zinc	8		
Boron	370		
Cobalt	90		
Manganese	1900	For aquatic ecosystem protection, based on SMD guideline	
Molybdenum	34	For aquatic ecosystem protection, based on low reliability guideline	
Selenium	10	For aquatic ecosystem protection, based on LOR for ICPMS	
Silver	1		
Uranium	1		
Vanadium	10		
Ammonia	900	For aquatic ecosystem protection, based on SMD guideline	
Nitrate	1100	For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN	
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Fluoride (total)	2000	Protection of livestock and short term irrigation guideline	
Suspended Solids (mg/L)	700		
Sulfate (SO ₄ ²⁻) (mg/L)	1000		

* Local trigger investigation levels have been developed based on receiving water reference data, represents 80th percentile of baseline. These figures are based on small sample sizes, and will be reviewed when further information is available.

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 F3 – Release contaminant trigger investigation levels, potential contaminants** can be reviewed once the results of the two years monitoring data is available, or if 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 F3 – Release contaminant trigger investigation levels, potential contaminants** by amendment.
3. SMR – 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.

Table F4 – Mine affected water release during flow events

Receiving waters/ stream	Release point (RP)	Gauging station	Gauging station latitude (decimal degree, GDA94)	Gauging station longitude (decimal degree, GDA94)	Receiving water flow recording frequency	Receiving water flow criteria for discharge (m ³ /s)	Maximum release rate (for all combined flows for each RP)	Electrical conductivity release limits
Wolfgang Creek	RP1	WCK20	-22.7518	147.638	Continuous (minimum daily)	2.0	20% of upstream flow	As per Table F2 – Mine affected water release limits for each RP
Bath Creek	RP2	Gauging Station 1	-22.69	147.515		3.6		

Table F5 – Receiving waters contaminant trigger levels

Quality characteristics	RP1 Trigger level	RP2 Trigger level	Monitoring frequency
pH	6.5 – 8.0	6.5 – 8.0	Daily during the release
Electrical conductivity (µS/cm)	1000	1000	
Suspended solids (mg/L)	700	1000	
Sulfate (SO ₄ ²⁻) (mg/L)	1000	500	

Table F6 – Receiving water upstream background sites and downstream monitoring points

RP	Monitoring Points	Receiving Waters Location Description	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)
Upstream Background Monitoring Points				
RP1	WCK20	Wolfgang Creek 2km upstream of the confluence with Gowrie Creek	-22.7547	147.6459
	WCK50	Wolfgang Creek at the Wolfgang access road 15km upstream of the confluence with Gowrie Creek	-22.6641	147.7276
RP2	Monitoring Point 1	Washpool Creek, 10,700m upstream of GS1	-22.6673	147.5313
	Monitoring Point 2	Bath Creek, 6,600m upstream of GS1	-22.6882	147.5544
	Monitoring Point 3	Breaker Creek, 300m upstream of RP2	-22.6861	147.5113
Downstream Monitoring Points				
RP1	WCK40	Wolfgang Creek 200m upstream of the Gregory Highway Bridge and 2km downstream of the confluence with Gowrie Creek	-22.7814	147.6334
	WCK30	Wolfgang Creek at the Gregory Highway Bridge	-22.7829	147.6312
RP2	Monitoring Point 4	Breaker Creek Diversion	-22.7147	147.5214
	Monitoring Point 5	Bath Creek East	-22.7242	147.5481
	Monitoring Point 6	Bath Creek Down Stream	-22.7497	147.5369

Note: WCK50 is an approximate monitoring point location and will only be monitored when safe access to WCK20 is unavailable.
WCK30 is an approximate monitoring point location and will only be monitored when safe access to WCK40 is unavailable.

Table F7 – Stock Water Release Limits

Quality Characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical conductivity	µS/cm	N/A	5000

Table F8 – Irrigation Water Release Limits

Quality Characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical conductivity	$\mu\text{S/cm}$	N/A	Site specific value determined in accordance with ANZECC & ARMCANZ (2000) Irrigation Guidelines

Schedule G – Sewage treatment	
Condition number	Condition
G1	Sewage effluent All treated sewage effluent released from the sewage treatment plant must be evaporated in an impervious pond or reused for process water, or for the purpose of dust suppression and/or fire-fighting.
G2	Treated effluent and/or water or storm water contaminated by sewage treatment activities must not be released from the site to any waters or the bed and banks of any waters.
G3	All ponds used for the storage or treatment of contaminants, sewage or wastes from the mining activities 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 zero point five (0.5) metres is maintained at all times, except in emergencies; and (c) so as to ensure the stability of the ponds' construction.

Schedule H – Land and rehabilitation	
Condition number	Condition
H1	A Rehabilitation Management Plan must be (a) developed by an appropriately qualified person; (b) implemented for the duration of the mining activities; and (c) reviewed at intervals no greater than twenty-four (24) months.

Schedule H – Land and rehabilitation	
Condition number	Condition
H2	The Rehabilitation Management Plan must include: (a) detail how all land disturbed by the mining activities will be rehabilitated to ensure that it is: (i) safe for humans and wildlife; (ii) non-polluting; (iii) stable; and (iv) able to sustain an agreed post mining land use (other than the residual void); (b) develop final land use and landform design criteria and objectives for rehabilitation of all areas disturbed by mining activities for sustainable mine closure; (c) specify mining material characteristics for specific rehabilitation strategies; (d) identify a minimum of 3 reference and 3 rehabilitation sites to be used to develop rehabilitation acceptance criteria to allow valid comparison of self-sustaining rehabilitation vegetation communities to local reference sites; (e) provide a schematic representation of final landform inclusive: (i) drainage design and features; (ii) slope designs; (iii) cover design; and (iv) erosion controls proposed on reshaped land; (f) investigate and describe integration of native vegetation rehabilitation area with buffer zones and wildlife corridors where required; (g) map and table the rehabilitation requirements applied to all mine domains with respect to rehabilitation goals, rehabilitation objectives, indicators and completion criteria; (h) a progressive rehabilitation schedule which stipulates annual program for rehabilitation milestones; (i) identification of specific rehabilitation completion criteria for each domain; (j) describe a program for monitoring and review of the effectiveness of the Rehabilitation Management Plan; and (k) a table that directs any reader of the plan to the relevant section(s) which address all the relevant rehabilitation requirements of this environmental authority.
H3	Progressive rehabilitation must be carried out as per the progressive rehabilitation schedule, and to achieve the completion criteria, in the approved Rehabilitation Management Plan.

Schedule H – Land and rehabilitation	
Condition number	Condition
H4	Land disturbed by mining must be rehabilitated in accordance with the Rehabilitation Requirements as detailed in the Rehabilitation Management Plan.
H5	A topsoil inventory that identifies the topsoil requirements for the project and the availability of suitable topsoil on site must be detailed in the application for a decision on the Estimated Rehabilitation Cost.
H6	Topsoil must be stripped ahead of mining and stockpiled if not able to be used immediately.
H7	Five (5) years prior to the cessation of mining within a final void on the mining lease the environmental authority holder must submit a Final Void Geotechnical Report to the administering authority that includes: (a) proposed slope criteria for pit walls with competent and incompetent rock; and (b) proposed final surface area of the void.
H8	Minimise the potential for contamination of land by hazardous contaminants.
H9	Rehabilitation of any land disturbed by mining activities on tenure mining lease (ML) 1904 since the date that tenure was granted, 31 March 1983, remains the responsibility of this environmental authority holder and all rehabilitation must be conducted in accordance with the conditions of this environmental authority insofar as they apply to ML700020. <i>Note: The administering authority acknowledges that ML1904 has been conditionally surrendered in favour of ML700020 under the provisions of the Mineral Resources Act 1989.</i>

Schedule J – Regulated structures	
Condition number	Condition
J1	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.
J2	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.
J3	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).
J4	Design and construction of a regulated structure Conditions J5 to J9 inclusive do not apply to existing structures.
J5	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).
J6	Construction of a regulated structure is prohibited unless: (a) the environmental authority 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.
J7	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.

Schedule J – Regulated structures	
Condition number	Condition
J8	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) for regulated dams that are dams associated with a failure to contain – seepage: 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.
J9	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.

Schedule J – Regulated structures	
Condition number	Condition
J10	Operation of a regulated structure Operation of a regulated structure, except for an existing structure, is prohibited unless the environmental authority 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' in accordance with condition J6; (b) a set of 'as constructed' drawings and specifications; (c) certification of the 'as constructed drawings and specifications' in accordance with condition J9; (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 environmental authority 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.
J11	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 environmental authority 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.
J12	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.
J13	Mandatory reporting level Conditions J14 to J15 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
J14	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.

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Schedule J – Regulated structures	
Condition number	Condition
J15	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.
J16	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.
J17	The environmental authority holder must record any changes to the MRL in the Register of Regulated Structures.
J18	Design storage allowance (DSA) 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.
J19	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).
J20	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.
J21	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.
J22	Annual inspection report Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
J23	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.

Schedule J – Regulated structures	
Condition number	Condition
J24	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).
J25	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; and (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.
J26	Transfer arrangements The environmental authority 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 environmental authority holder on transfer of this authority.
J27	Decommissioning and rehabilitation Regulated structures must not be abandoned but be either: (a) decommissioned and rehabilitated to achieve compliance with condition J26; or (b) be left in-situ for a use by the landholder provided that the structure: (i) no longer contains contaminants that will migrate into the environment; and (ii) it contains water of a quality that is demonstrated to be suitable for its intended use(s); and (c) the environmental authority holder and the landholder agree in writing that the: (i) dam will be used by the landholder following the cessation of the environmentally relevant activity; and (ii) the landholder is responsible for the dam, on and from an agreed date.
J28	Register of Regulated Structures A Register of Regulated Structures must be established and maintained by the environmental authority holder for each regulated structure:

Schedule J – Regulated structures	
Condition number	Condition
J29	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.
J30	The environmental authority holder must make a final entry of the required information in the Register of Regulated Structures once compliance with condition J11 and J12 has been achieved.
J31	The environmental authority holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
J32	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the environmental authority holder, or their delegate, as being accurate and correct.
J33	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.

END OF CONDITIONS

Definitions

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

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

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

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

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

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

Ambient (or total) noise at a place, means the level of noise at the place from all sources (near and far), measured as the L_{eq} for an appropriate time interval.

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

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

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

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

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

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

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

Associated works in relation to a dam, means:

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

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

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

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

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.

Certification means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by this Manual, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

Certifying, certify or certified have a corresponding meaning as 'certification'.

Chemical means:

- (a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth);
- (b) a dangerous good under the 'Australian Code for the Transport of Dangerous Goods by Road and Rail' approved by the Australian Transport Council;
- (c) a lead hazardous substance within the meaning of the 'Workplace Health and Safety Regulation 1997';
- (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;
 - (ii) a surface active agent, including, for example, soap or related detergent;
 - (iii) a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide;
 - (iv) a fertiliser for agricultural, horticultural or garden use;
 - (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 work place used as an office or for business or commercial purposes, which is not part of the mining activity and does not include employees accommodation or public roads.

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

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

Consequence category means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the 'Manual for assessing consequence categories and hydraulic performance of structures' (ESR/2016/1933).

Contaminated means the substance has come into contact with a contaminant.

Contaminant A contaminant can be –

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

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

Dam means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and **associated works**.

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

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

Design storage allowance or **DSA** means an available volume, estimated in accordance with the 'Manual for assessing consequence categories and hydraulic performance of structures' (ESR/2016/1933) published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual.

Designer for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

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

Dwelling means any of the following structures or vehicles that is principally used as a residence:

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

Effluent treated waste water discharged from sewage treatment plants.

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

Environmental authority holder means the holder of this environmental authority.

Extreme storm storage means a storm storage allowance determined in accordance with the criteria in the 'Manual for assessing consequence categories and hydraulic performance of structures' (ESR/2016/1933).

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

Flowable substance means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

General waste means waste other than regulated waste.

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

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

Holder means:

- (a) where this document is an environmental authority, any person who is the holder of, or is acting under, that environmental authority; or
- (b) where this document is a development approval, any person who is the registered operator for that development approval.

Holder, for a mining tenement, means a holder of the tenement under the *Mineral Resources Act 1989*, and the holder of the associated environmental authority under the *Environmental Protection Act 1994*.

Hydraulic performance means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the 'Manual for assessing consequence categories and hydraulic performance of structures' (ESR/2016/1933).

Inert waste for the purposes of disposal of the IPCC hopper infrastructure means the steel and concrete contained within the IPCC hopper infrastructure.

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

L_{Ar, 1 hour} means the specified noise level plus an adjustment for the character of the noise (tonal and/or impulsive) determined over a period of 1 hour. L_{Ar, 1 hour} is expressed in terms of L_{Aeq, 1 hour}.

Lake includes –

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

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

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

Levee means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of **water** or **flowable substances** at any other times.

Low consequence dam means any dam that is not a high or significant consequence category as assessed using the 'Manual for assessing consequence categories and hydraulic performance of structures' (ESR/2016/1933).

Mandatory reporting level or **MRL** means a warning and reporting level determined in accordance with the criteria in the 'Manual for assessing consequence categories and hydraulic performance of structures' (ESR/2016/1933) published by the administering authority.

Manual means the 'Manual for assessing consequence categories and hydraulic performance of structures' (ESR/2016/1933) published by the administering authority, as amended from time to time.

Mega Cell means the co-disposal cell for containment of tailings and rejects.

mg/L means milligrams per litre.

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 and other water.

Mineral waste means waste materials resulting from the extraction of coal including overburden, inter-burden, waste rock, tailings and rejects.

Mining activities means the activities:

- (a) authorised as per the definition in section 110 of the *Environmental Protection Act 1994*; and
- (b) all environmentally relevant activities authorised under this environmental authority.

Modification or **modifying** (see definition of 'construction').

Natural flow means the flow of water through waters caused by nature.

Noxious means harmful or injurious to health or physical wellbeing.

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

Operational land means the land associated with the project for which this environmental authority has been issued.

Operational plan includes:

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

Peak particle velocity (ppv) means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mm/s).

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

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

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

Register of Regulated Structures includes:

- (a) Date of entry in the register;
- (b) Name of the structure, its purpose and intended/actual contents;
- (c) The consequence category of the dam as assessed using the 'Manual for assessing consequence categories and hydraulic performance of structures' (ESR/2016/1933);
- (d) Dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;
- (e) Name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;
- (f) For the regulated dam, other than in relation to any levees –
 - (i) The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;
 - (ii) Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area
 - (iii) Dam crest volume (megalitres);
 - (iv) Spillway crest level (metres AHD).
 - (v) Maximum operating level (metres AHD);
 - (vi) Storage rating table of stored volume versus level (metres AHD);

- (vii) Design storage allowance (megalitres) and associated level of the dam (metres AHD);
- (viii) Mandatory reporting level (metres AHD);
- (g) The design plan title and reference relevant to the dam;
- (h) The date construction was certified as compliant with the design plan;
- (i) The name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;
- (j) Details of the composition and construction of any liner;
- (k) The system for the detection of any leakage through the floor and sides of the dam;
- (l) Dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;
- (m) Dates when recommendations and actions arising from the annual inspection were provided to the administering authority;
- (n) Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

Regulated dam means any dam in the significant or high consequence category as assessed using the 'Manual for assessing consequence categories and hydraulic performance of structures' (ESR/2016/1933) published by the administering authority.

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 structure means any structure in the significant or high consequence category as assessed using the 'Manual for assessing consequence categories and hydraulic performance of structures' (ESR/2016/1933) published by the administering authority. A regulated structure does not include:

- (a) a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container; or
- (b) a sump or earthen pit used to store residual drilling material and drilling fluid only for the duration of drilling and well completion activities; or
- (c) a flare pit.

Regulated waste is defined in the 'Environmental Protection Regulation 2008'.

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.

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.

Resource activity is an activity that involves

- (a) a geothermal activity; or
- (b) a GHG storage activity; or

- (c) a mining activity; or
- (d) a petroleum activity.

Saline drainage is the passive movement, flow or seepage of waters, contaminated with salt(s), as a result of the mining activity.

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

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.

Sewage means the used water of persons to be treated at a sewage treatment plant.

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

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

Storm water means all surface water runoff from rainfall.

Structure means dam or levee.

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

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

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

Tailings means the residue produced from coal processing that comprises of sand, silt and clay particles in the form of a slurry.

The Act means the *Environmental Protection Act 1994*.

System design plan means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.

Void means any man-made, open excavation in the ground.

Waste as defined in section 13 of the *Environmental Protection Act 1994*.

Waste and resource management hierarchy has the meaning given by section 9 of the *Waste Reduction and Recycling Act 2011*.

Watercourse has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means a river, creek or stream in which water flows permanently or intermittently in the following:

- (a) a natural channel, whether artificially improved or not; or
- (b) an artificial channel that has changed the course of the watercourse.

Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

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

WaTERS means the Water Tracking and Electronic Reporting System.

Waste water means used water from the activity, process water or contaminated storm water.

Watercourse has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means:

- (a) a river, creek or stream in which water flows permanently or intermittently—
 - (i) in a natural channel, whether artificially improved or not; or
 - (ii) in an artificial channel that has changed the course of the watercourse.
- (b) Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

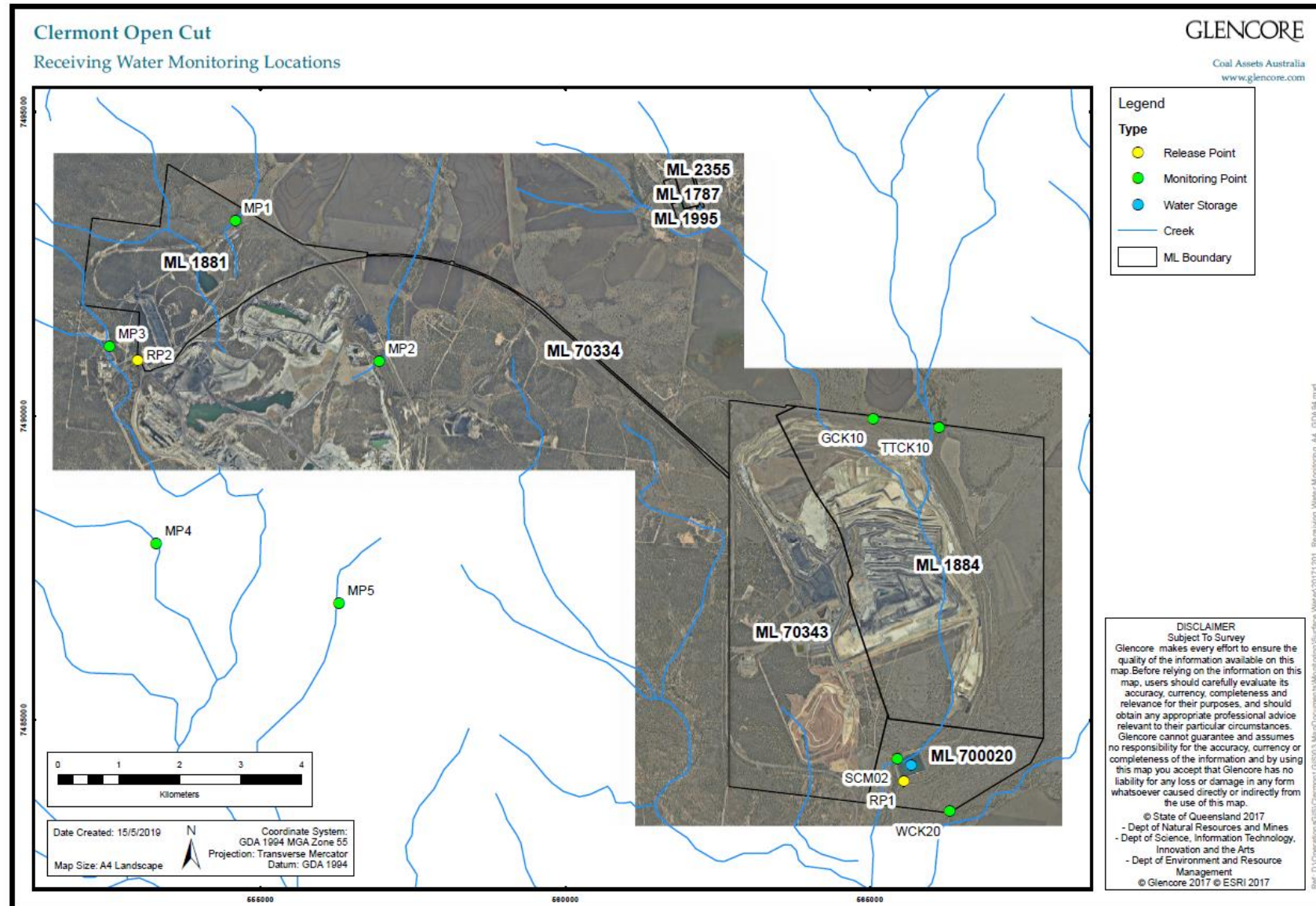
Water quality means the chemical, physical and biological condition of water.

µg/L means micrograms per litre.

µS/cm means microsiemens per centimetre.

END OF DEFINITIONS

Figure F1 – Water Monitoring and Release Points



END OF ENVIRONMENTAL AUTHORITY