

South Walker Creek Mulgrave Resource Access: Stage 2C (MRA2C)

EPBC 2017-7957

Appendix B: Environmental Authority

Permit Environmental Protection Act 1994

Environmental authority EPML00712313

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

Environmental authority number: EPML00712313

Environmental authority takes effect on 21 September 2018

Environmental authority holder(s)

Name(s)	Registered address
BHP BILLITON MITSUI COAL PTY LTD	Level 14, 480 Queen Street BRISBANE CITY QLD 4000 Australia

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Resource Activity, Ancillary 63 - Sewage Treatment, 1: Operating sewage treatment works, other than no- release works, with a total daily peak design capacity of, (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ML70131
Resource Activity, Ancillary 56 - Regulated Waste Storage, Receiving and storing regulated waste	ML70131
Resource Activity, Schedule 2A, 13: Mining black coal	ML4750
Resource Activity, Ancillary 63 - Sewage Treatment, 1: Operating sewage treatment works, other than no- release works, with a total daily peak design capacity of, (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ML4750
Resource Activity, Ancillary 31 - Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000t	ML4750





Environmental authority

Environmentally relevant activity/activities	Location(s)
Resource Activity, Ancillary 56 - Regulated Waste Storage, Receiving and storing regulated waste	ML4750
Resource Activity, Ancillary 08 - Chemical Storage, 3: Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)	ML70131
Resource Activity, Ancillary 31 - Mineral processing, 2: Processing, in a year, the following quantities of mineral products, other than coke, (b) more than 100,000t	ML70131
Resource Activity, Schedule 2A, 13: Mining black coal	ML70131
Resource Activity, Ancillary 08 - Chemical Storage, 3: Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)	ML4750

Additional information for applicants

Environmentally relevant activities

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

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

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

Contaminated land

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

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

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



For further information, including the form for giving written notice, refer to the Queensland Government website <u>www.qld.gov.au</u>, 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 Sustainable Planning Act 2009 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.

Rebecca Munro Department of Environment and Science Delegate of the administering authority Environmental Protection Act 1994

Date issued: 21 September 2018

Enquiries:

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Obligations under the Environmental Protection Act 1994

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

- general environmental duty (section 319)
- duty to notify environmental harm (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)



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 *Environmental Protection Act 1994*, and the regulations made under the *Environmental Protection Act 1994*. For example, the holder must comply with the following provisions of the *Environmental Protection Act 1994*:

- 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)

Conditions of environmental authority

Department Interest: 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	Surface disturbance by mining activities is authorised within areas marked as "surface disturbance" in Figure 1 (Authorised Disturbance Areas) .	
A3	Subsurface disturbance by mining activities is authorised within areas marked as "subsurface disturbance (pit)" in Figure 1 (Authorised Disturbance Areas) .	
A4	 Any disturbance outside of the areas marked as "surface disturbance" in Figure 1 (Authorised Disturbance Areas) is only authorised to the extent reasonably necessary for: a) powerlines and associated maintenance tracks; or b) fences (and fences lines) for livestock management and associated maintenance tracks; or c) firebreaks; or d) pipes (and pipelines) for agistment water points and associated maintenance tracks; or e) access tracks to observation points and monitoring sites. 	
A5	Coal extraction rate The environmental authority holder is approved for a coal extraction rate of up to eight point four (8.4) million tonnes per annum (mtpa) of run-of-mine (ROM) ore in accordance with this environmental authority. The measurement basis is specified as 1 July to 30 June in the following year and must be reported in the annual return.	
A6	Financial assurance The activity must not be carried out until the environmental authority holder has given financial assurance to the administering authority as security for compliance with this environmental authority and any costs or expenses, or likely costs or expenses, mentioned in section 298 of the <i>Environmental Protection Act 1994</i> .	

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A7	The amount of financial assurance must be reviewed by the holder of this environmental authority when a plan of operations is amended or replaced, or the authority is amended.
A8	Prevent and/or minimise likelihood of environmental harm In carrying out the environmentally relevant activities, you must take all reasonable and practicable measures to prevent and/or to minimise the likelihood of environmental harm being caused. Any environmentally relevant activity, that, if carried out incompetently, or negligently, may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this authority.
A9	 Maintenance of measures, plant and equipment The environmental authority holder must ensure: a) that all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed; b) that such measures, plant and equipment are maintained in a proper condition; and c) that such measures, plant and equipment are operated in a proper manner.
A10	Monitoring and records 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.
A11	Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.
A12	Notification of emergencies, incidents and exceptions All reasonable actions are to be taken to minimise environmental harm, or potential environmental harm, resulting from any emergency, incident or circumstances not in accordance with the conditions of this environmental authority.
A13	As soon as practicable after becoming aware of any emergency, incident or information about circumstances which results or may result in environmental harm not in accordance with the conditions of this environmental authority, the administering authority must be notified in writing.
A14	 Not more than ten (10) business days following the initial notification of an emergency, incident or information about circumstances which result or may result in environmental harm, written advice must be provided to the administering authority in relation to: a) proposed actions to prevent a recurrence of the emergency or incident; b) the outcomes of actions taken at the time to prevent or minimise environmental harm; and c) proposed actions to respond to the information about circumstances which result or may result in environmental harm.
A15	As soon as practicable, but not more than six (6) weeks following the initial notification of an emergency, incident or information about circumstances which result or may result in environmental harm, environmental monitoring must be performed and written advice must be provided of the results of any such monitoring performed to the administering authority.
A16	Definitions Words and phrases used throughout this environmental authority are defined in the Definitions section of this authority. Where a definition for a term used in this environmental authority is sought and the term is not defined within this environmental authority, the definitions in the <i>Environmental Protection Act 1994</i> , its regulations and policies must be used.

Department Interest: Air		
Condition number	Conditions	
B1	Dust nuisance The release of dust or particulate matter or both resulting from the mining activity must not cause an environmental nuisance, at any nuisance sensitive or commercial place.	
B2	 When requested by the administering authority or as a result of a complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer), dust and particulate monitoring must be undertaken, and the results thereof notified to the administering authority within fourteen (14) days following completion of monitoring. Monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place. Dust and particulate matter must not exceed the following levels when measured at any nuisance sensitive or commercial place: a) Dust deposition of 120 milligrams per square metre per day, when monitored in accordance with <i>Australian Standard AS 3580.10.1 of 2003</i> (or more recent editions); and b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM₁₀) suspended in the atmosphere of 50 micrograms per cubic metre over a 24 hour averaging time, at a nuisance sensitive or commercial place downwind of the site, when monitored in accordance with: i. Australian Standard AS 3580.9.6 of 2003 (or more recent editions) Ambient air - Particulate matter - Determination of suspended particulate PM₁₀ high-volume sampler with size-selective inlet -Gravimetric method; or ii. any alternative method of monitoring PM₁₀ which may be permitted by the <i>Air Quality Sampling Manual</i> as published from time to time by the administering authority. 	
В3	 If monitoring indicates exceedance of the relevant limits in Condition B2, 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. 	
B4	Odour nuisance The release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the mining activity must not cause an environmental nuisance at any nuisance sensitive or commercial place.	
B5	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.	
B6	 If the administering authority determines the odour released to constitute an environmental nuisance, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance. 	

Departmen	Department Interest: Water	
Condition number	Condition	
W1	Contaminant Release Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities, except as permitted under the conditions of this environmental authority.	
W2	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 1 (Mine Affected Water Release Points, Sources and Receiving Waters) and depicted in Figure 2 (South Walker Creek Mine Monitoring and Release Points) attached to this environmental authority.	
W3	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 W30 to W35 inclusive is permitted.	

Release Point (RP)	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)	Mine Affected Water Source and Location	Monitoring Point	Receiving waters description
RP1	7594807 (-21.744107)	648486 (148.4358555)	Ramp F Dam	Dam spillway or sampling point on discharge pipe	Bee Creek (via Walker Creek)
RP2	7591840 (-21.77060)	652610 (148.47600)	Ramp C Dam	Dam spillway or sampling point on discharge pipe	Bee Creek (via Walker Creek)
RP3	7589096 (-21.7951814)	654400 (148.4935631)	Eastern Sediment Dam	Dam spillway or sampling point on discharge pipe	Bee Creek (via Sandy Creek)
RP4	7588528 (-21.8003038)	654487 (148.4944577)	Cleanside Bidgerly Tailings Dam	Dam spillway or sampling point on discharge pipe	Bee Creek (via Sandy Creek)
RP5	7589305 (-21.7935753)	651145 (148.4620651)	Mine affected waters mixed in pipe with Down Dip Dam waters ¹	End of pipe only when being mixed with mine water	Bee Creek (via Sandy Creek)
RP6	7597462 (-21.7205536)	643262 (148.3851249)	Kemmis Dam Pipe Line	Sampling point on discharge pipe	Bee Creek (via Walker Creek)

 Table 1 (Mine Affected Water Release Points, Sources and Receiving Waters)

¹ Down Dip Dam is typically a non-mine affected water dam. Its entire catchment has not been disturbed by mining activity and thus contains natural runoff water that should be allowed to spill from the dam without the need for compliance or monitoring. The overflow channel of Down Dip Dam may be used to release a pre-mixed blend of mine water with Down Dip Dam water to achieve required water quality characteristics and in which case this site becomes a compliance release point.

W4 The release of mine affected water to waters in accordance with condition W2 must not exceed the release limits stated in Table 2 (Mine Affected Water Release Limits) when measured at the monitoring points specified in Table 1 (Mine Affected Water Release Points, Sources and Receiving Waters) for each quality characteristic.

Quality Characteristic	Release Limits	Monitoring Frequency ¹	Comment
Electrical conductivity (µS/cm)	Release limits specified in Table 4 for variable flow criteria.	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
pH (pH Unit)	Release limits specified in Table 4 for variable flow criteria.	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
Turbidity (NTU) ¹	500	Daily during release* (first sample within 2 hours of commencement of release)	Turbidity is required to assess ecosystems impacts and can provide instantaneous results.
Suspended Solids (mg/L)	N/A	At commencement and prior to cessation of release (at a minimum) and weekly during a release ²	Suspended solids are required to measure the performance of sediment and erosion control measures.
Sulphate (SO₄²-) (mg/L)	Release limits specified in Table 4 for variable flow criteria.	At commencement and prior to cessation of release (at a minimum) and weekly during a release ²	Drinking water environmental values from NHMRC 2006 guidelines OR ANZECC.

Table 2 (Mine Affected Water Release Limits)

Note:

 While all endeavours are taken to collect the necessary data, manual sampling work will not be conducted in the event of unsafe access to locations or infrastructure. Should such access limitations arise, the administering authority will be notified as soon as practicable.

2. The determination of suitability for release of water should be informed by monitoring undertaken prior to release.

W5	The release of mine affected water to waters from the release points must be monitored at the locations specified in Table 1 (Mine Affected Water Release Points, Sources and Receiving Waters) for each quality characteristic and at the frequency specified in Table 2 (Mine Affected Water Release Limits) and Table 3 (Release Contaminant Trigger Investigation Levels).
	Note: the administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition W5 is contravened due to a temporary lack of safe or practical access. The administering authority expects the environmental authority holder to take all reasonable and practicable measures to maintain safe and practical access to designated monitoring locations.

Quality Characteristic	Trigger Levels (μg/L)	Comment on Trigger Level	Monitoring Frequency
Aluminium	55	For aquatic ecosystem protection, based on SMD guideline	
Arsenic	13	For aquatic ecosystem protection, based on SMD guideline	
Cadmium	0.2	For aquatic ecosystem protection, based on SMD guideline	
Chromium	1	For aquatic ecosystem protection, based on SMD guideline	
Copper	2	For aquatic ecosystem protection, based on LOR for ICPMS	
Iron	300	For aquatic ecosystem protection, based on low reliability guideline	
Lead	4	For aquatic ecosystem protection, based on SMD guideline	
Mercury	0.2	For aquatic ecosystem protection, based on LOR for CV FIMS	
Nickel	11	For aquatic ecosystem protection, based on SMD guideline	
Zinc	8	For aquatic ecosystem protection, based on SMD guideline	
Boron	370	For aquatic ecosystem protection, based on SMD guideline	
Cobalt	90	For aquatic ecosystem protection, based on low reliability guideline	Commencement of release and thereafter
Manganese	1900	For aquatic ecosystem protection, based on SMD guideline	weekly during release
Molybdenum	34	For aquatic ecosystem protection, based on low reliability guideline	
Selenium	10	For aquatic ecosystem protection, based on LOR for ICPMS	
Silver	1	For aquatic ecosystem protection, based on LOR for ICPMS	
Uranium	1	For aquatic ecosystem protection, based on LOR for ICPMS	
Vanadium	10	For aquatic ecosystem protection, based on LOR for ICPMS	
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		1
Fluoride (total)	2000	Protection of livestock and short term irrigation guideline	
Sodium	ТВА		1

Table 3 (Release Contaminant Trigger Investigation Levels) Potential Contaminants

Notes: 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 3** can be reviewed once the results of 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 3** 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.

5. While all endeavours are taken to collect the necessary data, manual sampling work will not be conducted in the event of unsafe access to locations or infrastructure. Should such access limitations arise, the administering authority will be notified as soon as practicable.

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W6	 If quality characteristics of the release exceed any of the trigger levels specified in Table 3 (Release Contaminant Trigger Investigation Levels) during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in Table 3 (Release Contaminant Trigger Investigation Levels) and: (1) where the trigger values are not exceeded then no action is to be taken; or (2) where the downstream results exceed the trigger values specified Table 3 (Release Contaminant Trigger Investigation Levels) for any quality characteristic, compare the results of the downstream site to the data from 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 in the next annual return, outlining: (i) details of the investigations carried out; and (ii) actions taken to prevent environmental harm.
W7	If an exceedance in accordance with condition W6(2)(b) is identified, the holder of the authority must notify the administering authority within fourteen (14) days of receiving the result.
W8	Mine affected water release events The holder must ensure a stream flow gauging station/s is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in Table 4 (Mine Affected Water Release during Flow Events).
W9	Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with condition W2 must only take place during periods of natural flow events in accordance with the receiving water flow criteria for discharge specified in Table 4 (Mine Affected Water Release during Flow Events) for the release point(s) specified in Table 1 (Mine Affected Water Release Points, Sources and Receiving Waters) .
W10	The release of mine affected water to waters in accordance with condition W2 must not exceed the Electrical Conductivity and Sulphate release limits or the Maximum Release Rate (for all combined release point flows) for each receiving water flow criteria for discharge specified in Table 4 (Mine Affected Water Release during Flow Events) when measured at the monitoring points specified in Table 1 (Mine Affected Water Release Points, Sources and Receiving Waters) .

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 (m³/s)	Maximum release rate (for all combined RP flows)	Electrical Conductivity and Sulphate Release Limits
Bee Creek via Walker Creek	All release	Bee Creek	7594860	657810	Daily as a minimum	Low Flow	<1.5 m³/s	Electrical conductivity 700 (µS/cm)
and Sandy Creek	(RP1 to RP6)	Monitoring Point (MP4)	(-21.7428218)	(148.5259897)	monitoring, where possible)	< 3.5 m ^o /s for a period of 28 days after natural flow events that exceed 3.5 m ³ /s		pH (pH unit): 6.5 (minimum) - 9.2 (maximum) Sulphate (SO_4^{2-}) 250 mg/L
						Medium Flow (Low) > 3.5m³/s	< 1.3 m³/s	Electrical conductivity 1500 μ S/cm pH (pH unit) 6.5 (minimum) - 9.2 (maximum) Sulphate (SO ₄ ²⁻) 500 mg/L
							< 0.6 m ³ /s	Electrical conductivity 2500 µS/cm pH (pH unit) 6.5 (minimum) - 9.2 (maximum) Sulphate (SO4 ²⁻) 500 mg/L
							< 0.4 m ³ /s	Electrical conductivity 3500 µS/cm pH (pH unit) 6.5 (minimum) - 9.2 (maximum) Sulphate (SO ₄ ²⁻) 500 mg/L
						Medium Flow (High) > 10.0 m³/s	< 3.6 m³/s	Electrical conductivity 1500 μ S/cm pH (pH unit) 6.5 (minimum) - 9.2 (maximum) Sulphate (SO ₄ ²⁻) 750 mg/L
							< 1.7 m³/s	Electrical conductivity 2500 μ S/cm pH (pH unit) 6.5 (minimum) - 9.2 (maximum) Sulphate (SO ₄ ²⁻) 750 mg/L
							< 1.1 m³/s	Electrical conductivity 3500 µS/cm pH (pH unit) 6.5 (minimum) - 9.2 (maximum) Sulphate (SO4 ²⁻) 750 mg/L

Table 4 (Mine Affected Water Release during Flow Events)

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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 (m³/s)	Maximum release rate (for all combined RP flows)	Electrical Conductivity and Sulphate Release Limits
Bee Creek via Walker Creek and Sandy Creek	All release points (RP1 to RP6)	Bee Creek Upstream Monitoring Point (MP4)	7594860 (-21.7428218)	657810 (148.5259897)	Daily as a minimum (Continuous monitoring, where possible)	High Flow > 24.2 m ³ /s	< 8.8 m³/s	Electrical conductivity 1500 μ S/cm pH (pH unit) 6.5 (minimum) - 9.6 (maximum) Sulphate (SO ₄ ²⁻) 750 mg/L
							< 4.2 m³/s	Electrical conductivity 2500 μ S/cm pH (pH unit) 6.5 (minimum) - 9.6 (maximum) Sulphate (SO ₄ ²⁻) 750 mg/L
							< 2.0 m³/s	Electrical conductivity 4500 μ S/cm pH (pH unit) 6.5 (minimum) - 9.6 (maximum) Sulphate (SO ₄ ²⁻) 750 mg/L
							< 1.2 m³/s	Electrical conductivity 7500 μ S/cm pH (pH unit) 6.5 (minimum) - 9.6 (maximum) Sulphate (SO ₄ ²⁻) 750 mg/L
						Very High Flow > 121 m³/s	< 8.2 m ³ /s	Electrical conductivity 5500 μ S/cm pH (pH unit) 6.5 (minimum) - 9.6 (maximum) Sulphate (SO ₄ ²⁻) 750 mg/L

W11	The daily quantity of mine affected water released from each release point must be measured and recorded at the monitoring points in Table 1 (Mine Affected Water Release Points, Sources and Receiving Waters) .
W12	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.
W13	 Notification of release event The environmental authority holder must notify the administering authority as soon as practicable and no later than 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/time; b) expected release cessation date/time; c) release point/s; d) release volume (estimated); e) receiving water/s including the natural flow rate; and f) any details (including available data) regarding likely impacts on the receiving water(s). Note: Notification to the administering authority must be addressed to the Manager and Project Manager of the local Administering Authority via email or facsimile.
W14	 The environmental authority holder must notify the administering authority as soon as practicable (nominally within twenty-four (24) hours after cessation of a release event) of the cessation of a release notified under Condition W13 and within twenty-eight (28) days provide the following information in writing: a) release cessation date/time; b) natural flow volume in receiving water; c) volume of water released; d) details regarding the compliance of the release with the conditions of Department Interest: Water of this environmental authority (i.e. contamination limits, natural flow, discharge volume); e) all in-situ water quality monitoring results; and f) any other matters pertinent to the water release event. Note: Successive or intermittent releases occurring within 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 W13 and W14, provided the relevant details of the release are included within the notification provided in accordance with conditions W13 and W14.
W15	Notification of release event exceedance If the release limits defined in Table 2 (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.
W16	 The authority holder must, within twenty-eight (28) days of a release that exceeds the conditions of this authority, provide a report to the administering authority detailing: a) the reason for the release; b) the location of the release; c) all water quality monitoring results; d) any general observations; e) all calculations; and f) any other matters pertinent to the water release event.

W17	 Water storage access by livestock Where practicable, the holder of this environmental authority must implement measures to prevent access by livestock to water storages which are associated with the release points listed in Table 1 (Mine Affected Water Release Points, Sources and Receiving Waters).
W18	Receiving environment monitoring and contaminant trigger levelsThe quality of the receiving waters must be monitored at the locations specified in Table 6(Receiving Upstream Background Sites and Down Stream Monitoring Points) for eachquality characteristic and at the monitoring frequency stated in Table 5 (Receiving WatersContaminant Trigger Levels).

Quality Characteristic	Trigger Level	Monitoring Frequency
рН	6.5 – 8.5	Daily during the release
Electrical Conductivity (µS/cm)	1000	
Turbidity (NTU)	750	
Suspended solids (mg/L)	To Be Determined ¹	At commencement and prior to cessation of release (at a
Sulphate (SO42-) (mg/L)	250	release
Sodium (mg/L)	To Be Determined ²	

Notes:

1. Insufficient historical analysis of suspended solid concentration prevents the establishment of a site specific trigger. Future monitoring of suspended solid concentrations will enable a trigger level to be determined. Turbidity is proposed to be used as a surrogate in the interim.

2. Insufficient analysis of sodium concentration prevents the establishment of a site specific trigger. Future monitoring of sodium concentrations will enable a trigger level to be determined.

3. While all endeavours are taken to collect the necessary data, manual sampling work will not be conducted in the event of unsafe access to locations or infrastructure. Should such access limitations arise, the administering authority will be notified as soon as practicable.

Monitoring Points	Receiving Waters Location Description	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)		
Upstream Background M	Upstream Background Monitoring Points				
Walker Creek Upstream Monitoring Point (MP1) ¹	Walker Creek 4,280m upstream of confluence with Carborough Creek	7597278 (-21.722412)	640954 (148.361860)		
Bee Creek Upstream Monitoring Point (MP4)	Bee Creek 1500 metres upstream of confluence with Walker Creek	7594860 (-21.7428218)	657810 (148.5259897)		
Downstream Monitoring	Points				
Walker Creek Downstream Monitoring Point (MP7) ¹	Walker Creek 130m upstream from Hail Creek Mine railway spur	7592323 (-22.307996)	653571 (148.490911)		
Sandy Creek Downstream Monitoring Point (MP8) ¹	Sandy Creek 900m upstream from confluence with Bee Creek	7587185 (-21.812349)	655445 (148.503849)		
Bee Creek Downstream Monitoring Point (MP9)	Bee Creek 3600 metres downstream of confluence with Sandy Creek	7584875 (-21.8330107)	657714 (148.5260161)		

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Notes:

¹ Requires only in situ samples taken using electronic sampling equipment. Data obtained from Monitoring Points 1, 7 and 8 is for information purposes only, and is not subject to condition W19.

a) The upstream monitoring point should be within 2km the release point (Walker Creek confluence with Bee Creek).

b) The downstream point should not be greater than 4km from the release point (Sandy Creek confluence with Bee Creek).

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

While all endeavours are taken to collect the necessary data, manual sampling work will not be conducted in the event of unsafe d) access to locations or infrastructure. Should such access limitations arise, the administering authority will be notified as soon as practicable.

W19	If quality of any of the during a re to the ups	haracteristics of the receiving water at the downstream monitoring point MP9 exceed trigger levels specified in Table 5 (Receiving Waters Contaminant Trigger Levels) elease event the environmental authority holder must compare the downstream results tream results in the receiving waters and:
	(1)	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
	(2)	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:
		(i) details of the investigations carried out; and
		(ii) actions taken to prevent environmental harm.
	Note: Where	an exceedance of a trigger level has occurred and is being investigated in accordance with W19(2) of this
	condition, no	o further reporting is required for subsequent trigger events for that quality characteristic.

W20	Receiving Environment Monitoring Program (REMP) The environmental authority holder must develop and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while mine affected water is being discharged from the site. For the purposes of the REMP, the receiving environment is the waters of Bee Creek and connected or surrounding waterways within 15km downstream of the release. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.
W21	 The REMP must: a) Assess the condition or state of receiving waters, including upstream conditions, spatially within the REMP area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality); and b) Be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; and c) Include monitoring from background reference sites (e.g. upstream or background) and downstream sites from the release (as a minimum, the locations specified in Table 6 (Receiving Water Upstream Background Sites and Down Stream Monitoring Points)); and d) Specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the <i>Queensland Water Quality Guidelines</i> 2006. This should include monitoring during periods of natural flow irrespective of mine or other discharges; and e) Include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in Table 2 (Mine Affected Water Release Limits) and Table 3 (Release Contaminant Trigger Investigation Levels); and f) Include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology, and h) Apply procedures and/or guidelines from ANZECC & ARMCANZ 2000 and other relevant guideline documents; and i) Describe sampling and analysis methods and quality assurance and control; and j) Incorporate stream flow and hydrological information in the interpretations of water quality and biological data.
W22	A REMP Design Document that addresses each criterion presented in Conditions W20 and W21 must be maintained and submitted to the administering authority on request. Due consideration must be given to any comments made by the administering authority on the REMP Design Document and subsequent implementation of the program.

W23	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions W20 and W21 must be prepared annually and made available on request to the administrating authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.
W24	 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: supplying stock water subject to compliance with the quality release limits specified in Table 7 (Stock Water Release Limits); or supplying irrigation water subject to compliance with quality release limits in Table 8 (Irrigation Water Release Limits); or supplying water for construction and/or road maintenance in accordance with the conditions of this environmental authority.

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

Table 7 (Stock Water Release Limits)

Quality characteristic	Units	Minimum	Maximum
рН	pH units	6.5	8.5
Electrical Conductivity	μS/cm	N/A	Site specific value to be determined in accordance with ANZECC & ARMCANZ (2000) Irrigation Guidelines

Table 8 (Irrigation Water Release Limits)

W25	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 Coppabella Mine or neighbouring pastoral properties. The volume, pH and electrical conductivity of water transferred to Coppabella Mine or neighbouring pastoral properties must be monitored and recorded.		
W26	 If the responsibility for mine affected water is given or transferred to another person in accordance with conditions W24 or W25: a) the responsibility for the mine affected water must only be given or transferred in accordance with a written agreement (the third party agreement); and b) the third party agreement must include a commitment from the person utilising the mine affected water to use it in such a way as to prevent environmental harm or public health incidents and 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. 		

W27	 Water general All determinations of water quality and biological monitoring must be: a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements;
	 b) made in accordance with methods prescribed in the latest edition of the Department of Environment and Heritage Protection's Monitoring and Sampling Manual;
	Note: Condition W27 requires the 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.
	 collected from the monitoring locations identified within this environmental authority, within ten hours of each other where possible;
	d) carried out on representative samples; ande) analysed at a laboratory accredited (e.g. NATA) for the method of analysis being used.
W28	 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 W31 to W36 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.
W29	 Annual water monitoring reporting The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format with each annual return: a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; d) the measured or estimated daily quantity of mine affected water 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 of 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.
W30	Water management plan A Water Management Plan must be developed by an appropriately qualified person and implemented for all mining activities.

W31	 The Water Management Plan must: a) provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining activity carried out under this environmental authority; and b) be developed in accordance with Department of Environment and Resource Management guideline <i>Preparation of water management plans for mining activities</i> and include: i. a study of the source of contaminants; ii. a water balance model for the site; iii. a water management system for the site; iv. measures to manage and prevent saline drainage; v. measures to manage and prevent acid rock drainage; vi. contingency procedures for emergencies; and vii. a program for monitoring and review of the effectiveness of the water management plan.
W32	 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 W31; b) include recommended actions to ensure actual and potential environmental impacts are effectively managed for the coming year; and c) identify any amendments made to the water management plan following the review.
W33	The holder of this environmental authority must attach to the review report required by condition W32 , 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.
W34	The review report required by condition W32 and the written response to the review report required by condition W33 must be submitted to the administering authority with the subsequent annual return under the signature of the appointed signatory for the annual return.
W35	A copy of the Water Management Plan must be provided to the administering authority on request.
W36	Saline drainage The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage.
W37	Acid rock drainage The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage.
W38	Stormwater and water sediment controls An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.

W39	 Stormwater, other than mine affected water, is permitted to be released to waters from: i) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by condition W38; and ii) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with conditions W30 to W35 inclusive, for the purpose of ensuring water does not become mine affected water.
W40	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.
W41	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.
W42	Sewage effluent All effluent released from the sewage treatment facilities must be monitored at the frequency and for the parameters specified in Table 9 (Sewage Effluent Quality Targets).

Quality characteristics	Release limit	Units	Limit type	Monitoring frequency
5 day Biochemical Oxygen Demand	50	mg/l	max	Monthly
рН	6.0 to 9.0	pH Units	range	Monthly
Free Chlorine Residual	1	mg/l	max	Monthly
Thermo tolerant coliforms	<100	Cfu/100mL ²	max	Monthly

Table 9 (Sewage Effluent Quality Targets)

W43	Sewage effluent used directly from the sewage treatment facilities for dust suppression or irrigation must not exceed sewage effluent release limits defined in Table 9 (Sewage Effluent Quality Targets) .
W44	Sewage effluent used for dust suppression or irrigation must not cause spray drift or over spray to any sensitive or commercial place.
W45	Sewage effluent from sewage treatment facilities not used for dust suppression or irrigation must be reused or evaporated.
W46	Groundwater The holder of this environmental authority must not release contaminants to groundwater.
W47	All determinations of groundwater quality and biological monitoring must be performed by a suitably qualified person.
W48	The holder of the environmental authority must implement a groundwater monitoring program which has been developed by a suitably qualified person. The program must be able to detect a significant change to ground water 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.
W49	The holder of the environmental authority must report the results and analysis of groundwater monitoring to the administering authority on request.

W50

Groundwater affected by the mining activities must be monitored at compliance bores within the nominated geologies and minimum frequencies defined in **Table 10 (Groundwater Monitoring Locations and Frequency)**.

Table 10 (Groundwater Monitoring Locations and Frequency)				
Geology Units ^{1 and 2}	Minimum number of	Minimum Monitoring Frequency ^{1 and 2}		
	monitoring locations ^{1 and 2}			
	2 compliance boros	Monthly until trigger levels are set for all		
Alluvium and upper tertiary	2 compliance bores	parameters in Table 11, then quarterly.		

Note:

2

To be completed within **three (3) months** from 13 September 2016 (the granting of the previous environmental authority). Relevant geology units, number of bores and monitoring frequencies to be determined by a suitably qualified person.

Relevant geology units, number of bores and monitoring requencies to be determined by a suitably qualmed person.

W51	If the groundwater contaminant trigger levels defined in Table 11 (Groundwater Contaminant
	Trigger Levels) are exceeded then the environmental authority holder must complete an
	investigation into the potential for environmental harm and notify the administering authority within
	twenty-eight (28) days of receiving the analysis results. An action plan to mitigate potential harm
	must be developed by a suitably qualified person.

Table 11 (Groundwater Contaminant Trigger Levels)					
Demonster	11	Trigger	Limit Type		
Parameter	Unit	Walker Creek Alluvial/Tertiary Zone	Bee Creek Alluvial/Tertiary Zone		
Groundwater Level	RL	Greater than 2 metre drawdown from the background level.	Greater than 2 metre drawdown from the background level.	Maximum	
рН	pH Units	TBA as per condition W52	TBA as per condition W52		
Electrical Conductivity	µS/cm	TBA as per condition W52	TBA as per condition W52		
Total Dissolved Solids	mg/L	TBA as per condition W52	TBA as per condition W52		
Calcium	mg/L	TBA as per condition W52	TBA as per condition W52		
Magnesium	mg/L	TBA as per condition W52	TBA as per condition W52		
Sodium	mg/L	TBA as per condition W52	TBA as per condition W52		
Potassium	mg/L	TBA as per condition W52	TBA as per condition W52		
Chloride	mg/L	TBA as per condition W52	TBA as per condition W52		
SO4	mg/L	TBA as per condition W52	TBA as per condition W52		
CO3	mg/L	TBA as per condition W52	TBA as per condition W52		
HCO3	mg/L	TBA as per condition W52	TBA as per condition W52		
PO ₄	mg/L	TBA as per condition W52	TBA as per condition W52		
NO ₃	mg/L	TBA as per condition W52	TBA as per condition W52		
Iron	mg/L	TBA as per condition W52	TBA as per condition W52		
Aluminium	mg/L	TBA as per condition W52	TBA as per condition W52		
Arsenic mg/L		TBA as per condition W52	TBA as per condition W52		
Mercury	mg/L	TBA as per condition W52	TBA as per condition W52		
Antimony	mg/L	TBA as per condition W52	TBA as per condition W52		
Total Petroleum Hydrocarbons	mg/L	TBA as per condition W52	TBA as per condition W52		

W52	Determining contaminant trigger level and limit type The background groundwater quality for each geology must be determined from hydraulically isolated background bore(s) that have not been affected by any mining activities. The groundwater contaminant trigger levels and limit type as per Table 11 (Groundwater Contaminant Trigger Levels) must be determined and submitted to the administering authority by 1 March 2016 .
W53	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. Construction and decommissioning must be in accordance with the "Minimum Construction Standard for Water Bores in Australia".

Departmen	Department Interest: Noise and vibration			
Condition number	Condition			
D1	Noise nuisance Noise from activities must not cause an environmental nuisance at any noise sensitive or commercial place.			
D2	All noise from activities must not exceed the levels specified in Table 12 (Noise Limits) at any noise affected place.			
D3	 Noise monitoring When requested by the administering authority, noise monitoring must be undertaken to investigate any complaint of noise nuisance, and the results notified within fourteen (14) days to the administering authority. Monitoring must include: a) LA 10, adj, 15 mins b) LA 1, adj, 15 mins c) the level and frequency of occurrence of impulsive or tonal noise; d) atmospheric conditions including wind speed and direction; e) effects due to extraneous factors such as traffic noise; and f) location date and time of recording. 			
D4	Noise is not considered to be a nuisance under condition D1 if monitoring shows that noise does not exceed the following levels in the time periods specified in Table 12 (Noise Limits) .			

Table 12 (Noise Limits)						
	Monday to Saturday			Sundays and public holidays		
Noise level dB(A) measured	7am - 6pm	6pm - 10pm	10pm - 7am	9am - 6pm	6pm - 10pm	10pm - 9am
Sensitive Place						
LAeq, adj, 15 mins	CV = 50 AV = 5	CV = 45 AV = 5	CV = 40 AV = 0	CV = 45 AV = 5	CV = 40 AV = 5	CV = 35 AV = 0
LA1, adj, 15 mins	CV = 50 AV = 5	CV = 45 AV = 5	CV = 40 AV = 0	CV = 45 AV = 5	CV = 40 AV = 5	CV = 35 AV = 0
Commercial Place						
LAeq, adj, 15 mins	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5

Noise limits notes:

1. CV = Critical Value

2. AV = Adjustment Value

3. To calculate noise limits in Table 12:

If $bg \le (CV - AV)$: Noise limit = bg + AVIf $(CV - AV) < bg \le CV$: Noise limit = CVIf bg > CV: Noise limit = bg + 0

4. In the event that measured bg ($L_{A90, adj, 15 mins}$) is less than 30 dB(A), then 30 dB(A) can be substituted for the measured background level

5. bg = background noise level ($L_{A90, adj, 15 mins}$) measured over 3-5 days at the nearest sensitive receptor 6. If the project is unable to meet the noise limits as calculated above alternative limits may be calculated using the processes outlined in the "Planning for Noise Control" guideline.

D5	The method of measurement and reporting of noise levels must comply with the latest edition of the administering authority's Noise Measurement Manual.
D6	 If monitoring indicates exceedance of the relevant limits in condition D4, 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.
D7	Vibration nuisance Vibration from the licensed activities must not cause an environmental nuisance, at any sensitive or commercial place.
D8	When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.
D9	Airblast overpressure nuisance The airblast overpressure level from blasting operations on the premises must not exceed the limits defined in Table 13 (Airblast Overpressure Level) at any nuisance sensitive or commercial place.

Location	Airblast Overpressure Measured
Sensitive or commercial place	Air blast overpressure level of 115 dB (Linear peak) for nine (9) out of ten (10) consecutive blasts initiated and not greater than 120 dB (Linear peak) at any time.

Table 13 (Airblast Overpressure Level)

D10	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.
D11	 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.
D12	 If monitoring indicates exceedance of the relevant limits in Table 13 (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.
D13	The method of measurement and reporting of airblast overpressure levels must comply with the latest edition of the administering authority's <i>Noise Measurement Manual</i> .

Department Interest: Waste	
Condition number	Condition
E1	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) metres from any other scrap tyre storage area, or combustible or flammable material, including vegetation.
E2	All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a ten (10) metres radius of the scrap tyre storage area.
E3	Disposing of scrap tyres resulting from the authorised activities in spoil emplacements is acceptable, provided tyres are placed as deep in the spoil as reasonably practicable.
E4	Scrap tyres resulting from the mining activities disposed within the operational land must not impede saturated aquifers or compromise the stability of the consolidated landform.
E5	 Waste management A Waste Management Plan, in accordance with the waste and resource management hierarchy in the Waste Reduction and Recycling Act 2011, must be implemented and must cover: a) a program for safe recycling or disposal of all wastes - re-using and recycling where possible; b) a disposal procedure for hazardous wastes; and c) a staff awareness and induction program that encourages re-use and recycling.
E6	Waste must not be burned or allowed to be burned on the licensed site unless by approval of the administering authority.
E7	A designated area must be set aside for the segregation of economically viable, recyclable solid and liquid waste.

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 Records must be kept for five years, and must include the following information: date of pickup of waste; description of waste; cross reference to relevant waste transport documentation; quantity of waste; origin of the waste; origin of the waste; destination of the waste; and intended fate of the waste, for example, type of waste treatment, reprocessing or disposal. NOTE: Records of documents maintained in compliance with a waste tracking system established under the Environmental Protection Act 1994 or any other law for regulated waste will be deemed to satisfy this condition.
Records of trade and regulated wastes or material leaving the mining lease for recycling or disposal, including the final destination and method of treatment, must be in accordance with the <i>Waste Reduction and Recycling Act 2011</i> .
All regulated waste received at and removed from the site must be transported by a person who holds a current authority to transport such waste under the provisions of the <i>Environmental Protection Act 1994</i> .
Except as otherwise provided by the conditions of this authority, all waste removed from the site must be taken to a facility that is lawfully allowed to accept such waste under the provisions of the <i>Environmental Protection Act 1994</i> .
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Department Interest: Land and rehabilitation	
Condition number	Condition
F1	Topsoil Topsoil must be strategically stripped ahead of mining in accordance with a topsoil management plan.
F2	A topsoil inventory which identifies the topsoil requirements for the South Walker Creek Mine project and availability of suitable topsoil on site must be detailed in the Plan of Operations
F3	Rehabilitation landform criteria All areas significantly disturbed by mining activities must be rehabilitated to a stable landform with a self-sustaining vegetation cover.
F4	Progressive rehabilitation must commence within three (3) years when areas become available within the operational land.

F5	 Complete an investigation into rehabilitation of disturbed areas and submit a report to the administering authority proposing acceptance criteria by 30 June 2008. The rehabilitation management plan must, at a minimum: a) map existing areas of rehabilitation; b) detail rehabilitation methods applied to areas; c) identify success factors for areas; d) detail future rehabilitation actions to be completed on areas; e) identify three (3) reference and three (3) rehabilitation sites to be used to develop rehabilitation success criteria; f) contain landform design criteria including end of mine design; g) detail how landform design will be consistent with the surrounding topography; h) specify future planned rehabilitation methods for disturbed areas; i) explain planned native vegetation rehabilitation areas and corridors; j) describe rehabilitation monitoring and maintenance requirements to be applied to all areas of disturbance; k) itemise revegetation criteria; l) describe end of mine landform design plan and post mining land uses across the mine; m) specify spoil characteristics, soil analysis, soil separation for use on rehabilitation; n) include a cost benefit analysis / triple bottom line assessment (or an alternative assessment method) of the proposed final landform design criteria and alternatives; and o) identify potential problems and how they will be addressed.
50	
F6	Residual void outcomes Residual voids must not cause any serious environmental harm to land, surface waters or any recognised groundwater aquifer, other than the environmental harm constituted by the existence of the residual void itself and subject to any other condition within this environmental authority.
F7	 Complete an investigation into residual voids and submit a report to the administering authority proposing acceptance criteria to meet the outcomes in F6 and landform design criteria by 30 June 2008. The investigation must at a minimum include the following: a) a study of options available for minimising final void area and volume; b) a void hydrology study, addressing the long-term water balance in the voids, connections to groundwater resources and water quality parameters in the long term; c) a pit wall stability study, considering the effects of long-term erosion and weathering of the pit wall and the effects of significant hydrological events; d) a study of void capability to support native flora and fauna; and e) a proposal/s for end of mine void rehabilitation success criteria and final void areas and volumes.
F8	Preventing contaminant release to land Contaminants must not be released to land.
F9	Storage and handling of flammable and combustible liquids All flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and maintained in accordance with the current version of <i>AS 1940 – Storage and Handling of Flammable and Combustible Liquids</i> .
F10	Spillage of all flammable and combustible liquids must be controlled in a manner that prevents environmental harm.

F11	Storage and handling of chemicals All chemicals must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and maintained in accordance with the current version of the relevant Australian Standard.
F12	Spillage of all chemicals must be controlled in a manner that prevents environmental harm.
F13	Infrastructure All infrastructure, constructed by or for the environmental authority holder during the licensed activities including water storage structures, must be removed from the site prior to surrender, except where agreed in writing by the post mining land owner / holder. NOTE: This is not applicable where the landowner / holder is also the environmental authority holder.
F14	Exploration Disturbance due to exploration activities in areas not authorised to be disturbed, in accordance with Condition A2 , must be rehabilitated in accordance with the <i>Eligibility criteria and standard conditions for exploration and mineral development projects</i> — <i>ESR</i> /2016/1985.
F15	Impacts to Prescribed Environmental Matters Significant residual impacts to prescribed environmental matters other than if the impacts were authorised by an existing authority issued before the commencement of the <i>Environmental Offsets</i> <i>Act 2014</i> , are not authorised under this environmental authority or the <i>Environmental Offsets Act</i> <i>2014</i> unless the impact(s) is specified in Table F1 – Significant residual impacts to prescribed environmental matters and Figure 3 (Ground-truthed Regulated Vegetation and Regional Ecosystems).

Table F1 – Significant residual impacts to prescribed environmental matters

Prescribed environmental matter	Maximum extent of impact	Environmental offset required
REGULATED VEGETATION		
Endangered regional ecosystem – 11.9.5	18.5ha	Yes
Of Concern regional ecosystem – 11.9.7	46.7ha	Yes
Regional ecosystem within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map – 11.9.2	13.4ha	Yes

F16	An environmental offset made in accordance with the <i>Environmental Offsets Act 2014</i> , must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in Table F1 – Significant residual impacts to prescribed environmental matters .
F17	A notice of election must be provided to the administering authority no less than three months before the proposed commencement of the significant residual impacts for which the environmental offset is required.

Department Interest: Structures	
Condition number	Condition
G1	 Assessment of consequence category The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)</i> at the following times: a) prior to the design and construction of the structure, if it is not an existing structure; or b) if it is an existing structure, prior to the adoption of this schedule; or c) prior to any change in its purpose or the nature of its stored contents.
G2	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.
G3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)</i> .
G4	Design and construction of a regulated structure Conditions G5 to G9 inclusive do not apply to existing structures.
G5	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 <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635).</i> Note: Construction of a dam includes modification of an existing dam – see definitions. <i>Certification of design and construction may be undertaken by different persons.</i>
G6	Construction of a regulated structure is prohibited unless the holder has submitted a consequence category assessment report and certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.
G7	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 <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)</i> , and must be recorded in the Regulated Dams/Levees register.

G8 G9	 Regulated structures must: a) be designed and constructed in accordance with and conform to the requirements of the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635);</i> 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. 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.
G10	 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: i) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition G7, and ii) a set of 'as constructed' drawings and specifications, and iii) certification of those 'as constructed drawings and specifications' in accordance with condition G9, and iv) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan. v) the requirements of this authority relating to the construction of the regulated structure have been met; vi) the holder has entered the details required under this authority, into a Register of Regulated Dams; and
G11	 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 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.
G12	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.
G13	Mandatory reporting level and design storage allowance Conditions G14 to G21 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
G14	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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G15	The holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
G16	The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
G17	The holder must record any changes to the MRL in the Register of Regulated Structures.
G18	The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.
G19	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).
G20	The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.
G21	The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.
G22	Annual inspection report Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
G23	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.
G24	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the <i>Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)</i> .
G25	 The holder must: a) Within twenty (20) business days of receipt of the annual inspection report, provide to the administering authority: i. The recommendations section of the annual inspection report; and ii. If applicable, any actions being taken in response to those recommendations; and b) If, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within ten (10) business days of receipt of the request.
G26	Transfer arrangements The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.

G27	 Decommissioning and rehabilitation Dams must not be abandoned but be either: a) decommissioned and rehabilitated to achieve compliance with condition G28; or b) be left in-situ for a beneficial use(s) provided that: i. it no longer contains contaminants that will migrate into the environment; and ii. it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and iii. the administering authority, the holder of the environmental authority and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies).
G28	 After decommissioning, all significantly disturbed land caused by the carrying out of the environmentally relevant activity(ies) must be rehabilitated to meet the following final acceptance criteria: a) the landform is safe for humans and fauna; b) the landform is stable with no subsidence or erosion gullies for at least three (3) years; c) any contaminated land (e.g. contaminated soils) is remediated and rehabilitated d) not allowing for acid mine drainage; or e) there is no ongoing contamination to waters (including groundwater); f) rehabilitation is undertaken in a manner such that any actual or potential acid sulfate soils on the area of significant disturbance are treated to prevent or minimise environmental harm in accordance with the Instructions for the treatment and management of acid sulfate soils (2001) g) all significantly disturbed land is reinstated to the pre-disturbed soil suitability class; h) for land that is not being cultivated by the landholder: a. groundcover, that is not a declared pest species is established and self-sustaining b. vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining, and c. the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the mining activity(ies). i) for land that is to be cultivated by the landholder, cover crop is revegetated, unless the landholder will be preparing the site for cropping within 3 months of mining activities being completed.
G29	Register of regulated dams A Register of Regulated Dams must be established and maintained by the holder for each regulated dam.
G30	The holder must provisionally enter the required information in the Register of Regulated Dams when a design plan for a regulated dam is submitted to the administering authority.
G31	The holder must make a final entry of the required information in the Register of Regulated Dams once compliance with condition G10 and G11 has been achieved.
G32	The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.
G33	All entries in the Register of Regulated Dams must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
G34	The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Dams, in the electronic format required by the administering authority.

Department Interest: Community		
Condition number	Condition	
H1	Complaint response All complaints received must be recorded including investigations undertaken, conclusions formed and action taken. This information must be made available to the administering authority on request.	
H2	 The holder of this environmental authority must record the following details for all complaints received and provide this information to the administering authority on request: a) time, date, name and contact details of the complainant; b) reasons for the complaint; c) conclusions formed; and d) any actions taken. 	
НЗ	In consultation with the administering authority, cooperate with and participate in any community environmental liaison committee established in respect of either the licensed place specifically or the industrial estate where the licensed place is located.	

END OF CONDITIONS

Definitions

Words and phrases used throughout this licence are defined below except where identified in the *Environmental Protection Act 1994* (*EP 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.

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;
- effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;
- g) resilience of vegetation to disease, insect attack, drought and fire; and
- h) vegetation water use and effects on ground water levels and catchment yields.

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

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

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

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

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 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 and **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.

authority means an environmental authority or a development approval.

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.

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

certification means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams* or this environmental authority, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Boart 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 (Comm*onwealth); or
- b) a dangerous good under the dangerous goods code; 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
- f) a substance used for, or intended for use for
 - i. mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or
 - ii. manufacture of plastic or synthetic rubber.

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

competent person means a person with the demonstrated skill and knowledge required to carry out the task to a standard necessary for the reliance upon collected data or protection of the environment.

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 (EM635)*.

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

contaminate means to render impure by contact or mixture.

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

contaminant a contaminant can be -

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

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

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 Hazard Categories and Hydraulic Performance of Dams* published by the administering authority, that must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that manual.

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

Disturbance to land includes:

- a) compacting, removing, covering, exposing or stockpiling of earth; or
- b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion; or
- c) the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls; or
- temporary infrastructure, including any infrastructure, which is to be removed after the mining activity has ceased; or releasing of contaminants into the soil, or underlying geological strata.

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

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

- a) a house, unit, motel, nursing homer 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 means treated waste water discharged from sewage treatment plants.

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

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

environmental authority 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.

environmentally relevant activity means an environmentally relevant activity as defined under Section 18 of the *Environmental Protection Act 1994*.

existing structure means a structure that was in existence prior to the adoption of this schedule of conditions under the 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 (EM635)* published by the administering authority

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

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

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

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

general waste means waste other than regulated waste.

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

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.

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 (EM635)*.

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

LA 10, adj, 15 mins means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 15-minute measurement period, using Fast response.

LA 1, adj, 15 mins means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 15-minute measurement period, using Fast response

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

lake includes -

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

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

land use describes 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 (EM635)*.

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 (EM635)* published by the administering authority.

manual means the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

maximum extent of impact means the total, cumulative, residual extent and duration of impact to a prescribed environmental matter that will occur over a project's life after all reasonable avoidance and reasonable on-site mitigation measures have been, or will be, undertaken.

mg/L means milligrams per litre.

mine affected water means the following types of water:

- i) pit water, tailings dam water, processing plant water;
- ii) water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the *Environmental Protection Regulation 2008* if it had not formed part of the mining activity;
- iii) rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage runoff containing sediment only, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water;
- iv) groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;
- v) groundwater from the mine's dewatering activities;
- vi) a mix of mine affected water (under any of paragraphs i)-v)) and other water.

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;
- But does not include-
- I) living matter;
- m) petroleum within the meaning of the Petroleum Act 1923;
- n) 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;
- o) water.

mining activity means

- a) an activity that is an authorised activity for a mining tenement under the Mineral Resources Act 1989; or
- b) another activity that is authorised under an approval under the *Mineral Resources Act 1989* that grants rights over the land

modification or modifying - see definition of "construction".

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

nature includes:

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

notice of election has the meaning in section 18(2) Environmental Offsets Act 2014.

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

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 allowance);

(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.

prescribed environmental matters has the meaning in section 10 of the *Environmental Offsets Act 2014*, limited to the matters of State environmental significant listed in schedule 2 of the Environmental Offsets Regulation 2014.

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.

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

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

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

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

Register of Regulated Dams includes:

- (a) Date of entry in the register;
- (b) Name of the dam, its purpose and intended/actual contents;
- (c) The consequence category of the dam as assessed using the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635);
- (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;
- (I) 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 (EM635)* published by the administering authority.

regulated waste means non-domestic waste mentioned in schedule 7 of the *Environmental Protection Regulation 1998* (whether or not it has been treated or immobilised), and includes –

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

regulated structure includes land-based containment structures, levees, bunds and voids, but not a tank or container designed and constructed to an Australian Standard that deals with strength and structural integrity.

rehabilitation is 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 is the movement of waters, contaminated with salt(s), as a result of the mining activity.

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

sensitive place means:

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

significant residual impact has the meaning in section 8 of the Environmental Offsets Act 2014.

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:

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

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

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

trackable waste means a waste or combination of waste stated in Schedule 1 of the *Environmental Protection (Waste Management) Regulation 2000.*

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

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

void means any constructed, open excavation in the ground.

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

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

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

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

water means -

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

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

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

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

(a) in a natural channel, whether artificially improved or not; or

(b) in 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.

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

μ**g/L** means micrograms per litre.

 μ S/cm⁻¹ means microsiemens per centimetre.

END OF DEFINITIONS



Figure 1 – Authorised Disturbance Areas

Department of Environment and Science





