# Permit

***Environmental Protection Act 1994***

## Environmental authority EPML00561913

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

### Environmental authority number: EPML00561913

**Environmental authority takes effect on 30 June 2022**

### Environmental authority holder(s)

| Name(s) | Registered address |
|---|---|
| QCT MINING PTY. LTD. | Level 16, 480 Queen Street BRISBANE CITY QLD 4000 |
| Mitsubishi Development Pty Ltd | Level 16, 480 Queen Street BRISBANE CITY QLD 4000 |
| BHP COAL PTY LTD | Level 14, 480 Queen Street BRISBANE CITY QLD 4000 |
| QCT Resources Pty Limited | Level 16, 480 Queen Street BRISBANE CITY QLD 4000 |
| QCT INVESTMENT PTY. LTD. | Level 16, 480 Queen Street BRISBANE CITY QLD 4000 |
| Umal Consolidated Pty Ltd | Level 14, 480 Queen Street BRISBANE CITY QLD 4000 |
| BHP Queensland Coal Investments Pty Ltd | Level 14, 480 Queen Street BRISBANE CITY QLD 4000 |

### Environmentally relevant activity and location details

| Environmentally relevant activity/activities | Location(s) |
|---|---|
| Schedule 3 13: Mining black coal | ML1781 ML70115 ML70116 |
| Ancillary 08 - Chemical Storage 1: Storing a total of 50t or more of chemicals of dangerous goods class 1 or class 2, division 2.3 under subsection (1)(a) | ML1781 ML70115 ML70116 |
| Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t | ML1781 ML70115 ML70116 |
| Ancillary 62 - Resource recovery and transfer facility operation 1: Operating a facility for receiving and sorting, dismantling, baling or temporarily storing- (c) category 2 regulated waste | ML1781 ML70115 ML70116 |
| 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 | ML1781 ML70115 ML70116 |


ABN 46 640 294 485
Queensland Government

**Additional information for applicants**

Environmentally relevant activities

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

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

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

Contaminated land

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

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

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

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

Take effect

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

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or

b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or

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

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *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.

Alison Cummings
Department of Environment and Science
Delegate of the administering authority
*Environmental Protection Act 1994*

**Date issued: 30 June 2022**

**Enquiries:**
Coal & Gemstone Mining
Department of Environment and Science

Phone: 07 4987 9320
Email: crmining@des.qld.gov.au

**Obligations under the *Environmental Protection Act 1994***

In addition to the requirements found in the conditions of this environmental authority, the 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)

**Conditions of environmental authority**

| **Schedule A: General** | |
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| **Condition number** | **Condition** |
| A1 | This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm. |
| A2 | **Prevent and /or minimise likelihood of environmental harm**<br>In carrying out the environmentally relevant activities, the environmental authority holder must take all reasonable and practicable measures to prevent and/or to minimise the likelihood of environmental harm being caused. Any environmentally relevant activity, that, if carried out incompetently, or negligently, may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this environmental authority. |
| A3 | **Maintenance of measures, plant and equipment**<br>The environmental authority holder must ensure:<br>a) that all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed;<br>b) that such measures, plant and equipment are maintained in a proper condition;<br>c) that such measures, plant and equipment are operated in a proper manner; and<br>d) that all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated. |
| A4 | **Monitoring and records**<br>Except where specified otherwise in another condition of this environmental authority, all monitoring records and reports required by this environmental authority must be kept for a period of not less than **five (5) years**. |
| A5 | Monitoring and determinations required under any condition of this environmental authority must be conducted by an appropriately qualified person(s). |
| A6 | Upon request from the administering authority, copies of monitoring results, records, registers, management plans and reports required by the conditions of this environmental authority must be made available and provided to the administering authority within **ten (10) business days** or an alternative timeframe agreed between the administering authority and the environmental authority holder. |
| A7 | **Notification of emergencies, incidents and exceptions**<br>The environmental authority holder must notify the administering authority by written notification within **twenty-four (24) hours** after becoming aware of any emergency or incident that results in the release of contaminants not in accordance, or reasonably expected to be not in accordance, with the conditions of this environmental authority. |

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| A8 | Within **ten (10) business days** following the initial notification under condition **A7**, or the receipt of monitoring results associated with the notification made under condition **A7**, whichever is the latter, the environmental authority holder must provide further written advice to the administering authority, including the following:<br>a) results and interpretation of any samples taken and analysed;<br>b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and<br>c) proposed actions to prevent a recurrence of the emergency or incident. |
| A9 | **Complaints**<br>The environmental authority holder must record all environmental complaints received about the mining activities, including:<br>a) name, address and contact number for of the complainant;<br>b) time and date of complaint;<br>c) reasons for the complaint;<br>d) investigations undertaken;<br>e) conclusions formed;<br>f) actions taken to resolve the complaint, including the use of appropriate dispute resolution if required;<br>g) any abatement measures implemented; and<br>h) person responsible for resolving the complaint. |
| A10 | A register of alternative arrangements must be established and maintained by the environmental authority holder. The register must include:<br>a) the location to which the alternative arrangement applies;<br>b) the period of the alternative arrangement;<br>c) details about the particular environmental nuisance impact or impacts the arrangement is for; and<br>d) details about the mitigation measures, where relevant. |
| A11 | **Monitoring on request**<br>When requested by the administering authority, the environmental authority holder must investigate any nuisance, or contaminant release, or environmental harm, or complaint that is neither frivolous nor vexatious in the opinion of the authorised person, by:<br>a) undertaking the monitoring specified by the administering authority;<br>b) undertaking the monitoring in the timeframe nominated or agreed to by the administering authority;<br>c) completing an analysis and interpretation of the monitoring results; and<br>d) implementing abatement measures, where required. |

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| A12 | The results of the investigation undertaken in accordance with condition **A11** must be provided to the administering authority within **twenty (20) business days** of completion of the monitoring timeframe in accordance with condition **A11(b)**, or a longer timeframe agreed to by the administering authority. |

| **Schedule B: Air** | |
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| **Condition number** | **Condition** |
| B1 | **Odour nuisance**<br>The release of noxious or offensive odour or any other noxious or offensive airborne contaminant resulting from the mining activities must not cause an environmental nuisance, at any sensitive place or commercial place. |
| B2 | If the administering authority determines odour released from the mining activities to constitute an environmental nuisance, the environmental authority holder must immediately implement abatement measures so that emissions from the mining activities do not result in further environmental nuisance. |
| B3 | **Dust nuisance**<br>The release of dust or particulate matter or both resulting from the mining activities must not cause an environmental nuisance, at any sensitive place or commercial place. |
| B4 | Monitoring of dust and particulate matter resulting from the mining activities, undertaken in accordance with condition **A11**, must be carried out at a place relevant to the potentially affected sensitive place or commercial place and must not exceed the following levels when measured at any sensitive place or commercial place:<br>a) dust deposition, measured as total insoluble matter, of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of Australian Standard *AS3580.10.1 Methods for sampling and analysis of ambient air – Determination of particulate matter – Deposited matter – Gravimetric method*.<br>b) a concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version of either:<br>i) Australian Standard *AS3580.9.6 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM10 high volume sampler with size selective inlet – Gravimetric method*; or<br>ii) Australian Standard *AS3580.9.8 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM10 continuous direct mass method using a tapered element oscillating microbalance analyser*; or<br>iii) Australian Standard *AS3580.9.9 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM10 low volume sampler – Gravimetric method*; or<br>iv) Australian Standard *AS3580.9.11 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM10 beta attenuation monitors*.<br>*NOTE: Exceedances due to events that cannot be managed by the environmental authority holder, such as bushfires, fuel reduction burning for fire management purposes or dust storms, would not be considered to be in breach of condition **B4** if the environmental authority holder can demonstrate that the exceedance was caused by such events.* |

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| B5 | If monitoring, undertaken in accordance with condition **A11**, indicates exceedance of the relevant limits in condition **B4**, the environmental authority holder must immediately implement abatement measures so that emissions from the mining activities do not result in further environmental nuisance. |
| B6 | **Monitoring of ambient weather conditions**<br>A weather station for continuous representative monitoring and recording of wind direction and wind speed must be installed and operated on the mining leases. |
| B7 | **Background dust and particulate matter monitoring**<br>The environmental authority holder must develop and implement a background dust and particulate matter monitoring program. The program must be able to detect a significant change to dust levels to sensitive receptors due to the activities that are part of this mining project. |
| B8 | The program must include, but not be limited to, the details as specified in **Table B1 (Background Dust and Particulate Matter Monitoring)**.<br>*NOTE: Monitoring must be carried out in accordance with Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air – Determination of particulate matter – Deposited matter – Gravimetric method.* |

**Table B1 (Dust Deposition Monitoring)**

| Air Quality Determination | Easting (GDA94) | Northing (GDA94) | Monitoring Point Description |
|---|---|---|---|
| Particulate matter deposition rate in milligrams per square metre per day (averaged over one month) | 633898 | 7552925 | Olive Downs Residence |
| | 639553 | 7558511 | Daunia Station Residence |

| **Schedule C: Noise and Vibration** | |
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| **Condition number** | **Condition** |
| C1 | **Noise nuisance**<br>Noise from the mining activities must not cause an environmental nuisance, at any sensitive place or commercial place. |
| C2 | Noise is not considered an environmental nuisance under condition **C1** if monitoring shows that noise does not exceed the limits in **Table C1 (Noise Limits)**, at any sensitive place or commercial place. |
| C3 | **Noise monitoring**<br>Noise monitoring, undertaken in accordance with condition **A11**, must comply with the most recent version of the administering authority's *Noise Measurement Manual*, and must include the following descriptors, characteristics and conditions:<br>a) $L_{A\ eq,\ adj,\ 10\ mins}$;<br>b) $L_{A\ MAX,\ adj,\ 10\ mins}$;<br>c) the level and frequency of occurrence of impulsive or tonal noise;<br>d) atmospheric conditions including wind speed and direction;<br>e) effects due to extraneous factors such as traffic noise; and<br>f) location, date and time of recording. |
| C4 | If monitoring, undertaken in accordance with condition **A11**, indicates exceedance of the relevant limits in **Table C1 (Noise Limits)**, the environmental authority holder must immediately implement abatement measures so that emissions from the mining activities do not result in further environmental nuisance. |

**Table C1 (Noise Limits)**

| **Noise Level dB(A)** | **Monday to Sunday (including public holidays)** | | |
|---|---|---|---|
| | **Day (7am to 6pm)** | **Evening (6pm to 10pm)** | **Night (10pm to 7am)** |
| **Sensitive Place** | | | |
| $L_{Aeq,\ adj,\ 10\ mins}$ | B/g + 5 | B/g + 5 | B/g + 3 |
| $L_{A\ MAX,\ adj,\ 10\ mins}$ | B/g + 10 | B/g + 10 | B/g + 8 |
| **Commercial Place** | | | |
| $L_{Aeq,\ adj,\ 10\ mins}$ | B/g + 10 | B/g + 10 | B/g + 5 |
| $L_{A\ MAX,\ adj,\ 10\ mins}$ | B/g + 15 | B/g + 15 | B/g + 10 |

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| C5 | **Vibration nuisance**<br>Vibration from the mining activities must not cause an environmental nuisance, at any sensitive place or commercial place. |
| C6 | Vibration is not considered an environmental nuisance under condition **C5** if monitoring shows that vibration does not exceed the limits specified in **Table C2 (Vibration Limits)**. |
| C7 | **Airblast overpressure nuisance**<br>The airblast overpressure level from blasting operations on the mining leases must not cause an environmental nuisance, at any sensitive place or commercial place. |
| C8 | Airblast overpressure is not considered an environmental nuisance under condition **C7** if monitoring shows that airblast overpressure does not exceed the levels specified in **Table C3 (Airblast Overpressure Level)**. |
| C9 | **Vibration and/or airblast overpressure monitoring**<br>Vibration and/or airblast overpressure monitoring, undertaken in accordance with condition **A11**, must comply with the most recent version of the administering authority's *Noise Measurement Manual*, and must include the following descriptors, characteristics and conditions:<br>a) location of the blast(s) within the mining area (including which bench level);<br>b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and<br>c) location, date and time of recording. |
| C10 | If monitoring, undertaken in accordance with condition **A11**, indicates exceedance of the relevant limits in **Table C2 (Vibration Limits)** or **Table C3 (Airblast Overpressure Level)**, the environmental authority holder must immediately implement abatement measures so that emissions from the mining activities do not result in further environmental nuisance. |

**Table C2 (Vibration Limits)**

| Location | Vibration Measured |
|---|---|
| Sensitive place or commercial place | 5 mm/s peak particle velocity for nine (9) out of ten (10) consecutive blasts and not greater than 10 mm/s peak particle velocity at any time. |

**Table C3 (Airblast Overpressure Level)**

| Location | Airblast Overpressure Measured |
|---|---|
| Sensitive place or commercial place | 115 dB (Linear peak) for nine (9) out of ten (10) consecutive blasts and not greater than 120 dB (Linear peak) at any time.<br>Blasting is only to occur between the hours of 7am and 5pm. |

| **Schedule D: Waste** | |
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| **Condition number** | **Condition** |
| D1 | **Waste management**<br>A Waste Management Plan must be developed by an appropriately qualified person and implemented. The Waste Management Plan must include, but is not limited to:<br>a) a description of the mining activities that may generate waste;<br>b) a description of all waste activities being carried out;<br>c) the location/s (including GPS coordinates) of where all waste activities are, or have been, carried out, including:<br>i) the type of waste disposed of, treated, or reprocessed; and<br>ii) the volume of waste disposed of, treated, or reprocessed;<br>d) identification of the potential risks to the environment from all waste activities carried out;<br>e) control measures to be implemented to minimise the potential for environmental harm associated with carrying out of the waste activities, including but not limited to:<br>i) segregation of the wastes;<br>ii) storage of the wastes;<br>iii) transport of the wastes; and<br>iv) monitoring and reporting matters concerning the wastes;<br>f) how the waste will be managed in accordance with the waste management hierarchy (that is, avoid, reuse, recycling, energy recovery, disposal);<br>g) the hazardous characteristics of the wastes generated including disposal procedures for hazardous wastes;<br>h) procedures for reprocessing waste in accordance with condition **D4**;<br>i) procedures for managing accidents, spills and other incidents;<br>j) the indicators or other criteria on which the performance of the waste management program will be assessed; and<br>k) staff training. |
| D2 | The environmental authority holder must submit the Waste Management Plan required by condition D1 to the administering authority prior to commencing a new process, or varying an existing process, for reprocessing any waste. |
| D3 | **Waste receipt**<br>The only waste permitted to be received is:<br>a) the types of waste specified in conditions **D5** to **D7** (inclusive); and<br>b) sewage and sludge for treatment in accordance with **Schedule H: Sewage Treatment**; and<br>c) from a BHP Billiton Mitsui Coal (BMC) or BHP Mitsubishi Alliance (BMA) site in Queensland. |

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| D4 | **Waste reprocessing**<br>The only waste permitted to be reprocessed is:<br>a) spoil or overburden;<br>b) vegetation;<br>c) water or sediment containing hydrocarbons;<br>d) fuels, oils, lubricants and coolants;<br>e) bulk rubber;<br>f) inert waste;<br>g) poly-pipe and other plastic;<br>h) fibreglass;<br>i) treated and untreated timber; and<br>j) asphalt. |
| D5 | **Waste disposal**<br>Unless otherwise specified in conditions **D6** and **D7**, waste, other than spoil or overburden or vegetation removed as part of the mining activity, must not be disposed of within the mining leases listed on this environmental authority and must be taken to a facility that is lawfully allowed to accept such waste under the provisions of the *Environmental Protection Act 1994*. |
| D6 | The following types of waste are permitted to be disposed of within the specified features for the waste type:<br>a) rejects:<br>i) in spoil emplacements. |
| D7 | The following types of waste are permitted to be disposed of within the mining leases listed on this environmental authority:<br>a) bulk rubber;<br>b) inert waste;<br>c) poly-pipe and other plastic;<br>d) fibreglass;<br>e) treated and untreated timber;<br>f) asphalt; and<br>g) asbestos.<br>These types of waste may be disposed of:<br>a) in pits or voids;<br>b) in spoil emplacements; and<br>c) left in situ below ground level. |

| **Schedule E: Land** | |
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| **Condition number** | **Condition** |
| E1 | **Topsoil**<br>Topsoil must be strategically stripped ahead of mining in accordance with a Topsoil Management Plan. |
| E2 | A topsoil inventory, which identifies the topsoil requirements for rehabilitation and availability of suitable topsoil on site, must be provided with any Estimated Rehabilitation Cost application. |
| E3 | **Rehabilitation landform criteria**<br>Unless otherwise permitted under the conditions of this environmental authority, all areas significantly disturbed by mining activities must be rehabilitated in accordance with **Table E1 (Rehabilitation Requirements)**. |

**Table E1 (Rehabilitation Requirements)**

| Post Mining Land Use | Goal | Objective | Indicator | Acceptance Criteria |
|---|---|---|---|---|
| Cattle grazing | Safe to humans and wildlife | Safety hazards in rehabilitation are not significantly different to surrounding unmined landscapes subject to the same land use | Hazard assessment | No significant difference |
| | Stable | Rehabilitation is geotechnically stable | Factor of safety | ≥1.5 |
| | | Rehabilitation is erosionally stable | Extent, slope gradient and groundcover | 1. Groundcover >50%<br>2. 70% of slopes ≤20% |
| | Non-polluting | Rainfall runoff from rehabilitation achieves relevant water quality objectives for receiving waters | pH<br>EC<br>Turbidity | Not significantly different to upstream values |
| | | Deep drainage from rehabilitation achieves relevant water quality objectives for groundwater | EC | Not significantly different to:<br>(a) the EPP (Water) schedule documents water quality objectives for relevant groundwater chemistry zones; or,<br>(b) local water quality objectives developed in accordance with the Queensland Water Quality Guidelines. |
| | Able to sustain the agreed post-mining land use | Rehabilitation is suitable for sustainable cattle grazing | Land suitability assessment for cattle grazing | Land suitability class ≤3 or not different from pre-mining class if ≥4. Assessment completed in accordance with *LSA Framework for Open-Cut Coal Mine Rehabilitation 2018 (A rule-set for land suitability assessment of sustainable beef cattle grazing on land rehabilitated after open-cut coal mining in the Bowen Basin Queensland)* unless otherwise agreed in writing between the administering authority and the environmental authority holder. |
| | | | Leucaena stem density | <250 stems >2m height per ha (1 per 40m$^2$), mean total area |

| Post Mining Land Use | Goal | Objective | Indicator | Acceptance Criteria |
|---|---|---|---|---|
| Dryland cropping | Safe to humans and wildlife | Safety hazards in rehabilitation are not significantly different to surrounding unmined landscapes subject to the same land use | Hazard assessment | No significant difference |
| | Stable | Rehabilitation is geotechnically stable | Factor of safety | ≥1.5 |
| | | Rehabilitation is erosionally stable | Percentage of cultivation at >1% slope gradient with functional contour banks | 100% of rehabilitated areas |
| | Non-polluting | Rainfall runoff from rehabilitation achieves relevant water quality objectives for receiving waters | pH<br>EC<br>Turbidity | Not significantly different to upstream values |
| | | Deep drainage from rehabilitation achieves relevant water quality objectives for groundwater | EC | Not significantly different to:<br>(a) the EPP (Water) schedule documents water quality objectives for relevant groundwater chemistry zones; or,<br>(b) local water quality objectives developed in accordance with the Queensland Water Quality Guidelines. |
| | Able to sustain the agreed post-mining land use | Rehabilitation is suitable for sustainable dryland cropping | Land suitability assessment for dryland cropping | Land suitability class ≤3 or not different from pre-mining class if ≥4. Assessment completed in accordance with the *Regional Land Suitability Frameworks for Queensland 2013* unless otherwise agreed in writing between the administering authority and the environmental authority holder. |
| Woodland habitat | Safe to humans and wildlife | Safety hazards in rehabilitation are not significantly different to surrounding unmined landscapes subject to the same land use | Hazard assessment | No significant difference |
| | Stable | Rehabilitation is geotechnically stable | Factor of safety | ≥1.5 unless an alternative is justified by an appropriately qualified person |
| | | Rehabilitation is erosionally stable | Groundcover (steep slopes, >15%) | 80% |
| | | | Groundcover (lesser slopes, ≤15%) | 50% |
| | Non-polluting | Rainfall runoff from rehabilitation achieves relevant water quality objectives for receiving waters | pH<br>EC<br>Turbidity | Not significantly different to upstream values |
| | | Deep drainage from rehabilitation achieves relevant water quality objectives for groundwater | EC | Not significantly different to:<br>(a) the EPP (Water) schedule documents water quality objectives for relevant groundwater chemistry zones; or,<br>(b) local water quality objectives developed in accordance with the Queensland Water Quality Guidelines. |
| | Able to sustain the agreed post-mining land use | Native bushland characteristics | Species richness<br>Trees<br>Shrubs<br>Grasses | <br>≥2<br>≥3<br>≥4 |
| | | | Tree canopy cover | ≥16% |

| Post Mining Land Use | Goal | Objective | Indicator | Acceptance Criteria |
|---|---|---|---|---|
| Water Storage | Safe to humans and wildlife | Safety hazards in rehabilitation are not significantly different to surrounding unmined landscapes subject to the same land use | Hazard assessment | No significant difference |
| | Stable | Rehabilitation is geotechnically stable | Factor of Safety | ≥1.5 |
| | | Rehabilitation is erosionally stable (banks and immediate surrounds) | Groundcover | >50% |
| | Non-polluting | Rainfall runoff from rehabilitation achieves relevant water quality objectives for receiving waters | pH<br>EC<br>Turbidity | Not significantly different to upstream values |
| | | Deep drainage from rehabilitation achieves relevant water quality objectives for groundwater | EC | Not significantly different to:<br>(a) the EPP (Water) schedule documents water quality objectives for relevant groundwater chemistry zones; or,<br>(b) local water quality objectives developed in accordance with the Queensland Water Quality Guidelines. |
| | Able to sustain the agreed post-mining land use | Rehabilitation retains water that is a potential resource for cattle grazing, with quality according to ANZECC guidelines version October 2000 | TDS<br>Calcium<br>Magnesium<br>Nitrate<br>Nitrite<br>Sulphate | ≤5,000mg/L<br>≤1,000mg/L<br>≤2,000mg/L<br>≤400mg/L<br>≤30mg/L<br>≤1,000mg/L |

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| E4 | Progressive rehabilitation for all areas except for Skoll Pit must commence within **two (2) years** of when areas become available within the mining leases. |
| E5 | Rehabilitation of Skoll Pit must be carried out in accordance with **Table E2 (Rehabilitation of Skoll Pit)**. |

**Table E2 (Rehabilitation of Skoll Pit)**

| Reporting Period | Total Cumulative Established Rehabilitation Area (ha) |
|---|---|
| Years 1 to 7 (inclusive)[1] | 7 |
| Years 8 to 11 (inclusive) | 30 |
| Years 12 to 15 (inclusive) | 75 |
| Years 16 to 25 (inclusive) | 75 + Void[2] |

*NOTES:*
*1 Year 1 occurs upon commencement of overburden excavation in Skoll Pit*
*2 Rehabilitation of the final void includes reshaping of the high wall and low wall which must be consistent with the findings of the Void Investigation Report required by condition **E9**.*

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| E6 | By **31 May** of the year following each Reporting Period (as set out in **Table E2 (Rehabilitation of Skoll Pit)**), the environmental authority holder must provide to the administering authority a rehabilitation progress report for the Skoll Pit. The report must include an analysis of the following:<br>a) for the relevant Reporting Period – the actual amount of rehabilitation completed in the Skoll Pit for that period; and<br>b) for the immediately preceding Reporting Period, if applicable – the estimated amount of rehabilitation to be completed in the Skoll Pit in that period. |
| E7 | If the Total Cumulative Established Rehabilitation Area completed in a Reporting Period is:<br>a) less than the area specified in **Table E2 (Rehabilitation of Skoll Pit)**, the shortfall of progressive rehabilitation for Skoll Pit must be completed in the next Reporting Period; or<br>b) more than the Total Cumulative Rehabilitation Area required for that Reporting Period, the environmental authority holder is not required to complete additional progressive rehabilitation in Skoll Pit in the next Reporting Period, above that stipulated in **Table E2 (Rehabilitation of Skoll Pit)**. |
| E8 | Where a shortfall of rehabilitation has occurred as referenced in condition **E7**, the following information must be provided to the administering authority:<br>a) a justification of why the Total Cumulative Established Rehabilitation Area was not achieved; and<br>b) an action program that describes how the Total Cumulative Established Rehabilitation Area shortfall will be met in the subsequent Reporting Period. |

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| E9 | **Residual void outcome**<br>Complete an investigation into residual voids and submit a report to the administering authority proposing acceptance criteria and landform design criteria for departmental review and comment. On acceptance of the criteria proposed in the Residual Void Management Plan, the criteria must be specified in the environmental authority.<br>The investigation must at a minimum include the following:<br>a) a study of options available for minimising final void area and volume;<br>b) develop design criteria for rehabilitation of final voids;<br>c) 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;<br>d) 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;<br>e) a study of void capability to support native flora and fauna; and<br>f) a proposal/s for end of mine void rehabilitation success criteria and final void areas and volumes.<br>These studies will be undertaken during the life of the mine, and will include detailed research and modelling. |
| E10 | **Rehabilitation Monitoring Program**<br>Once rehabilitation has commenced, the environmental authority holder must conduct a Rehabilitation Monitoring Program at an interval no greater than **twenty-four (24) months**, which must include sufficient spatial and temporal replication to enable statistically valid conclusions as established under the rehabilitation program. |
| E11 | The Rehabilitation Monitoring Program must be developed and implemented by a person possessing appropriate qualifications and experience in the field of rehabilitation management, nominated by the environmental authority holder. |
| E12 | The Rehabilitation Monitoring Program must be included in the annual return and updated with each subsequent annual return, describing:<br>a) how the rehabilitation objectives will be achieved; and<br>b) verification of rehabilitation success. |
| E13 | **Post Closure Management Plan**<br>A Post Closure Management Plan for the site must be prepared at least **eighteen (18) months** prior to the final coal processing on site and implemented for a nominal period of at least **thirty (30) years** following final coal processing on site. |

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| E14 | The Post Closure Management Plan must include the following elements:<br>a) operation and maintenance of:<br>i) wastewater collection and reticulation systems;<br>ii) wastewater treatment systems;<br>iii) the groundwater monitoring network;<br>iv) final cover systems; and<br>v) vegetative cover.<br>b) monitoring of:<br>i) surface water quality;<br>ii) groundwater quality;<br>iii) seepage rates;<br>iv) erosion rates;<br>v) the integrity and effectiveness of final cover systems; and<br>vi) the health and resilience of native vegetation cover. |
| E15 | **Mining waste management**<br>For the purpose of condition **E16**, 'mining waste' is defined as waste rock, spoil and overburden. |
| E16 | A Mining Waste Management Plan together with the certification by an appropriately qualified person must be developed and implemented during the continuation of the environmental authority. The Mining Waste Management Plan must at a minimum include:<br>a) characterisation programs to ensure that all mining waste is progressively characterised during disposal for net acid producing potential, salinity and the following contaminants: pH, electrical conductivity (EC), acid neutralising capacity (ANC), net acid generation (NAG) (reporting NAG capacity and NAG pH after oxidation), net acid producing potential (NAPP), total sulfur (S), chromium reducible sulfur (Scr), boron (B) cadmium (Cd), iron (Fe), aluminium (Al), copper (Cu), magnesium (Mg), manganese (Mn), calcium (Ca), sodium (Na), zinc (Zn) and sulfate (SO4);<br>b) characterisation programs to ensure that the physical properties of the mining waste is progressively characterised during disposal;<br>c) the availability or leachability of metals from the mining waste;<br>d) quantity of PAF mining waste;<br>e) review potential impacts of PAF mining waste on the success of proposed rehabilitation methods;<br>f) management actions for mining waste that has been identified as having a high availability or leachability of metals;<br>g) management actions for mining waste that has been defined as PAF;<br>h) identification of environmental impacts and potential environmental impacts;<br>i) control measures for routine operations to minimise likelihood of environmental harm;<br>j) contingency plans and emergency procedures for non-routine situations; and<br>k) periodic review of environmental performance and continual improvement. |

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| E17 | **Preventing contaminant release to land**<br>Contaminants must not be released to land in manner that constitutes a nuisance, material harm or serious environmental harm. |
| E18 | **Storage and handling of chemicals and flammable or combustible liquids**<br>All chemicals and flammable or combustible liquids must be stored and handled in accordance with the most recent version of an Australian Standard where such is applicable. Where no relevant Australian Standard exists, store such materials within an effective on-site containment system. |
| E19 | **Infrastructure**<br>All infrastructure, constructed by or for the environmental authority holder during the mining activities including water storage structures, must be removed from the site prior to surrender, except where agreed in writing by the post mining landowner/ landholder.<br>*NOTE: This is not applicable where the landowner/ landholder is also the environmental authority holder.* |
| E20 | **Exploration**<br>The environmental authority holder must rehabilitate in accordance with this environmental authority, any disturbance from mining activities which were undertaken under:<br>a) this environmental authority; or<br>b) any other environmental authority that applied to the land that is the subject of this environmental authority. |
| E21 | **Impacts to Prescribed Environmental Matters**<br>Significant residual impacts to prescribed environmental matters except for the impacts that were authorised by an existing authority issued before the commencement of the *Environmental Offsets Act 2014* are not authorised under this environmental authority or the *Environmental Offsets Act 2014* unless the impact(s) is specified in **Table E3 (Significant Residual Impacts to Prescribed Environmental Matters)** and **Figure 1 (Significant Residual Impacts to Prescribed Environmental Matters)** attached to this environmental authority. |
| E22 | An environmental offset made in accordance with the *Environmental Offsets Act 2014* and *Queensland Environmental Offsets Policy*, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in **Table E3 (Significant Residual Impacts to Prescribed Environmental Matters)** and **Figure 1 (Significant Residual Impacts to Prescribed Environmental Matters)** attached to this environmental authority. |
| E23 | The notice of election for the environmental offset required by condition **E22** 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. |
| E24 | Records demonstrating that each impact to a prescribed environmental matter not listed in **Table E3 (Significant Residual Impacts to Prescribed Environmental Matters)** did not, or is not likely to, result in a significant residual impact to that matter must be:<br>a) completed by an appropriately qualified person; and<br>b) kept for the life of the environmental authority. |

**Table E3 (Significant Residual Impacts to Prescribed Environmental Matters)**

| Prescribed Environmental Matter | Location of Impact | Maximum Extent of Impact | Environmental Offset Required |
|---|---|---|---|
| Endangered Regional Ecosystem – RE 11.4.9 and RE 11.9.5 | ML1781 | 40.9 ha | Yes |
| Protected wildlife habitat – vulnerable species Ornamental Snake<br>Regulated vegetation – essential habitat Ornamental Snake | ML1781 | 44.34 ha | Yes |
| Protected wildlife habitat – species least concern Echidna | ML1781 | 36.1 ha | No |
| Connectivity | ML1781 | 40.9 ha | Yes |

| **Schedule F: Water** | |
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| **Condition number** | **Condition** |
| F1 | **Contaminant Release**<br>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 mining activities, except as permitted under the conditions of this environmental authority. |
| F2 | 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 F1 (Mine Affected Water Release Points)**. |
| F3 | 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 **F29** to **F30** inclusive is permitted. |

**Table F1 (Mine Affected Water Release Points)**

| Release Point (RP) | Easting (GDA94) | Northing (GDA94) | Mine Affected Water Source and Location | Monitoring Point | Receiving Waters Description |
|---|---|---|---|---|---|
| RP1 | 631319 | 7561566 | DAM 2 and integrated water system | End of outlet pipe or spillway | Isaac River via New Chum Creek |

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| F4 | The release of mine affected water to waters in accordance with condition **F2** must not exceed the release limits stated in **Table F2 (Mine Affected Water Release Limits)** when measured at the monitoring points specified in **Table F1 (Mine Affected Water Release Points)** for each quality characteristic. |

**Table F2 (Mine Affected Water Release Limits)**

| Quality Characteristic | Release Limit | Monitoring Frequency |
|---|---|---|
| Electrical Conductivity (µS/cm) | 5,000 | Real time telemetry for EC and pH with grab samples at commencement and weekly thereafter when safe to do so and access permits.<br>Daily grab samples if telemetry not available (the first sample must be taken as soon as practicable) |
| pH (pH units) | 6.5 (minimum)<br>9.0 (maximum) | |
| Sulphate ($SO_4^{2-}$) (mg/L) | 1,000 | Commencement of release and weekly thereafter during release when safe to do so and access permits |

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| F5 | The release of mine affected water to waters from the release points must be monitored at the locations specified in **Table F1 (Mine Affected Water Release Points)** for each quality characteristic and at the frequency specified in **Table F2 (Mine Affected Water Release Limits)** and **Table F3 (Release Contaminant Trigger Investigation Levels)**.<br>*NOTE: the administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition **F5** 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.* |

**Table F3 (Release Contaminant Trigger Investigation Levels)**

| Quality Characteristic | Trigger Level (µg/L) | Comment of Trigger Level | Monitoring Frequency |
|---|---|---|---|
| Aluminium | 55 | For aquatic ecosystem protection, based on SMD guideline | Commencement of release and thereafter weekly during release |
| 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 80$^{th}$ percentile of background data | |
| Lead | 4 | For aquatic ecosystem protection, based on low reliability guideline | |
| Mercury (inorganic) | 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 | 1.4 | For aquatic ecosystem protection, based on low reliability guideline | |
| Manganese | 1900 | For aquatic ecosystem protection, based on low reliability guideline | |
| Molybdenum | 34 | For aquatic ecosystem protection, based on low reliability guideline | |
| Selenium | 10 | For aquatic ecosystem protection, based on LOR for ICPMS | |
| Silver | 1 | 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 | | |
| Fluoride | 2000 | Protection of livestock and short term irrigation guideline | |
| Sodium | TBA | | |

*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 list of quality characteristics required to be monitored as per **Table F3** will be reviewed once the results of the monitoring data is gathered for the interim period until **31 December 2011** or an earlier date if the data is, or becomes, available and if it is determined that there is no need to monitor for certain individual quality characteristics these can be removed from **Table F3**.*
*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.*

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| F6 | If quality characteristics of the release exceed any of the trigger levels specified in **Table F3 (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 F3 (Release Contaminant Trigger Investigation Levels)** and:<br>(1) where the trigger values are not exceeded then no action is to be taken; or<br>(2) where the downstream results exceed the trigger values specified in **Table F3 (Release Contaminant Trigger Investigation Levels)** for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and;<br>(a) if the result is less than the background monitoring site data, then no action is to be taken; or<br>(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:<br>i. details of the investigations carried out; and<br>ii. actions taken to prevent environmental harm.<br>*NOTE: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with condition **F6(2)(b)**, no further reporting is required for subsequent trigger events for that quality characteristic.* |
| F7 | If an exceedance in accordance with condition **F6(2)(b)** is identified, the environmental authority holder must notify the administering authority within **twenty-four (24) hours** of receiving the result. |
| F8 | **Mine Affected Water Release Events**<br>The environmental authority 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 F4 (Mine Affected Water Release During Flow Events)**. |
| F9 | Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with condition **F2** must only take place during periods of natural flow events in accordance with the receiving water flow criteria for discharge specified in **Table F4 (Mine Affected Water Release During Flow Events)** for the release point(s) specified in **Table F1 (Mine Affected Water Release Points)**. |
| F10 | The 80$^{th}$ percentile of electrical conductivity (EC) values recorded in the Isaac River at the downstream monitoring points listed in **Table F6 (Receiving Waters Upstream Background and Downstream Monitoring Points)** must not exceed 720µS/cm over the duration of the release influence period and have a maximum value of no greater than 864µS/cm. The 80$^{th}$ percentile must be calculated using all EC values recorded by the monitoring station during the release influence period.<br>*NOTE: Release influence period is the period during which the downstream monitoring points are influenced by mine affected water releases and includes both the duration of release and any lag time between the release point/s and downstream monitoring point/s.* |
| F11 | The daily quantity of mine affected water released from each release point must be measured and recorded at the monitoring points in **Table F1 (Mine Affected Water Release Points)**. |
| F12 | 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. |

**Table F4 (Mine Affected Water Release During Flow Events)**

| Receiving waters | Release Point (RP) | Gauging Station | Gauging Station Easting (GDA94) | Gauging Station Northing (GDA94) | Receiving Water Flow Criteria for Discharge# ($m^3/s$) | Receiving Water Flow Recording Frequency^ |
|---|---|---|---|---|---|---|
| Isaac River via New Chum Creek | RP1 | Isaac River Upstream (MP3) | 627831 | 7556405 | ≥3 $m^3/s$ | Daily |

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| F13 | **Notification of release event**<br>The environmental authority holder must notify the administering authority via WaTERS as soon as practicable and no later than **twenty-four (24) hours** after commencing to release mine affected water to the receiving environment. The release commencement notification must include the submission of written advice to the administering authority of the following information:<br>a) release commencement date and time;<br>b) expected release cessation date and time;<br>c) release point(s);<br>d) release rate;<br>e) receiving water(s) including the natural flow rate; and<br>f) any details (including available data) regarding likely impacts on the receiving water(s). |
| F14 | The environmental authority holder must notify the administering authority via WaTERS as soon as practicable and no later than **twenty-four (24) hours** after cessation of a release event notified under condition **F13**. The release cessation notification must include the submission of written advice to the administering authority of the following information:<br>a) release cessation date and time;<br>b) receiving water(s) including the natural flow rate; and<br>c) volume of water released.<br>*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 **F13** and **F14** and **F15**, provided the relevant details of the release are included within the notification provided in accordance with conditions **F13** and **F14** and **F15**.* |

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| F15 | Within **twenty-eight (28) days** of notification under condition **F14**, the environmental authority holder must provide the administrating authority via WaTERS the following information in writing:<br>a) confirmation of:<br>i) the release commencement date and time;<br>ii) the release cessation date and time;<br>iii) receiving water(s) including the natural flow rate;<br>iv) volume of water released;<br>b) all in-situ and laboratory water quality monitoring results;<br>c) details regarding the compliance of the release with the conditions of **Schedule F: Water** of this environmental authority (i.e. contamination limits, natural flow, discharge volume);<br>d) whether the release of water resulted in any impacts to the receiving environment; and<br>e) any other matter(s) pertinent to the water release event. |
| F16 | **Notification of release event exceedance**<br>If the release limits defined in **Table F2 (Mine Affected Water Release Limits)** are exceeded, the environmental authority holder must notify the administering authority within **twenty-four (24) hours** of receiving the results. |
| F17 | The environmental authority holder must, within **twenty-eight (28) days** of the notification provided in accordance with condition **F16**, provide a report to the administering authority via WaTERS detailing:<br>a) the reason for the release;<br>b) the location of the release;<br>c) the total volume of the release and which (if any) part of this volume was non-compliant;<br>d) the total duration of the release and which (if any) part of this period was non-compliant;<br>e) all water quality monitoring results;<br>f) any general observations;<br>g) all calculations; and<br>h) any other matters pertinent to the water release event. |
| F18 | **Receiving Environment Monitoring and Contaminant Trigger Levels**<br>The quality of the receiving waters must be monitored at the locations specified in **Table F6 (Receiving Water Upstream Background and Downstream Monitoring Points)** for each quality characteristic and at the monitoring frequency stated in **Table F5 (Receiving Waters Contaminant Trigger Levels)** and **Table F3 (Release Contaminant Trigger Investigation Levels)**. |

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| F19 | If quality characteristic(s) of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in **Table F5 (Receiving Waters Contaminant Trigger Levels)** during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and:<br>(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<br>(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:<br>(a) details of the investigations carried out; and<br>(b) actions taken to prevent environmental harm.<br>*NOTE: Where an exceedance of a trigger level has occurred and is being investigated in accordance with **F19(2)** of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.* |

**Table F5 (Receiving Waters Contaminant Trigger Levels)**

| Quality Characteristic | Trigger Level | Monitoring Frequency |
|---|---|---|
| pH<br>(pH units) | 6.5 to 8.5 | Real time telemetry for EC and pH (excluding alternate MP3) with grab samples at commencement and weekly thereafter when safe to do so and access permits.<br>Limits only apply at MP4 |
| Electrical Conductivity<br>(µS/cm) | 864 – cease release | |
| Sulphate ($SO_4^{2-}$)<br>(mg/L) | 1000 | |

**Table F6 (Receiving Waters Upstream Background and Downstream Monitoring Points)**

| Monitoring Point (MP) | Receiving Waters Location Description | Easting (GDA94) | Northing (GDA94) |
|---|---|---|---|
| **Upstream Background Monitoring Points [a]** | | | |
| MP1 | New Chum Creek – on the lease boundary with Millennium Mine | 631895 | 7562009 |
| MP3 | Isaac River – upstream of the confluence of New Chum Creek and Isaac River | 627831 | 7556405 |
| **Downstream Monitoring Points** | | | |
| MP4 | Isaac River – downstream of the confluence of New Chum Creek and the Isaac River | 631808 | 7553672 |

*NOTES:*
*(a) The data from background monitoring points must not be used where they are affected by releases from other mines.*

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| F20 | **Receiving Environment Monitoring Program (REMP)**<br>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.<br>For the purposes of the REMP, the receiving environment is the waters of the Isaac River and connected or surrounding waterways within **fifteen (15) kilometres** 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. |
| F21 | The REMP must:<br>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);<br>b) be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected;<br>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 F6 (Receiving Water Upstream Background and Downstream Monitoring Points)**);<br>d) specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the *Queensland Water Quality Guidelines 2009*. This should include monitoring during periods of natural flow irrespective of mine or other discharges;<br>e) include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in **Table F2 (Mine Affected Water Release Limits)** and **Table F3 (Release Contaminant Trigger Investigation Levels)**);<br>f) include, where appropriate, monitoring of metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 Guidance on Sampling of Bottom Sediments);<br>g) include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology,<br>h) apply procedures and/or guidelines from ANZECC & ARMCANZ 2000 and other relevant guideline documents;<br>i) describe sampling and analysis methods and quality assurance and control; and<br>j) incorporate stream flow and hydrological information in the interpretations of water quality and biological data. |
| F22 | A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions **F20** and **F21** must be prepared annually. This report must include the following:<br>a) an assessment of background reference water quality;<br>b) the condition of downstream water quality compared against water quality objectives; and<br>c) the suitability of current discharge limits to protect downstream environmental values. |

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| F23 | **Water reuse**<br>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:<br>a) supplying stock water subject to compliance with the quality release limits specified in **Table F7 (Stock Water Release Limits)**; or<br>b) supplying irrigation water subject to compliance with quality release limits in **Table F8 (Irrigation Water Release Limits)**; or<br>c) supplying water for construction and/or road maintenance in accordance with the conditions of this environmental authority. |

**Table F7 (Stock Water Release Limits)**

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

**Table F8 (Irrigation Water Release Limits)**

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

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| F24 | Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as dams or tanks, for the purpose of supplying water to any operation licensed for either ERA13 (mining black coal) or ERA31 (mineral processing). The volume, pH and electrical conductivity of water transferred must be monitored and recorded. |
| F25 | If the responsibility for mine affected water is given or transferred to another person in accordance with conditions **F23** or **F24**:<br>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<br>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 *Environmental Protection Act 1994*, environmental sustainability of the water disposal and protection of environmental values of waters; and<br>c) the third party agreement must be signed by both parties to the agreement. |

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| F26 | **Water general**<br>All determinations of water quality and biological monitoring must be:<br>a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements;<br>b) made in accordance with methods prescribed in the latest edition of the administering authority's *Monitoring and Sampling Manual*;<br>c) collected from the monitoring locations identified within this environmental authority, within ten hours of each other where possible;<br>d) carried out on representative samples; and<br>e) analysed at a laboratory accredited (e.g. NATA) for the method of analysis being used.<br>*Note: Condition **F26** 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.* |
| F27 | 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 **F29** to **F30** inclusive:<br>a) must not produce any visible discolouration of receiving waters; and<br>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. |
| F28 | **Annual water monitoring reporting**<br>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:<br>a) the date on which the sample was taken;<br>b) the time at which the sample was taken;<br>c) the monitoring point at which the sample was taken;<br>d) the measured or estimated daily quantity of mine affected water released from all release points;<br>e) the release flow rate at the time of sampling for each release point;<br>f) the results of all monitoring and details of any exceedances of the conditions of this environmental authority; and<br>g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request. |

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| F29 | **Water Management Plan**<br>A Water Management Plan must be developed by an appropriately qualified person(s) and implemented for all mining activities. The Water Management Plan must address, as a minimum, the following:<br>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<br>b) be developed in accordance with administering authority's guideline *Preparation of water management plans for mining activities* and include:<br>i) a study of the source of contaminants;<br>ii) a water balance model for the site;<br>iii) a water management system for the site;<br>iv) measures to manage and prevent saline drainage;<br>v) measures to manage and prevent acid rock drainage;<br>vi) contingency procedures for emergencies; and<br>vii) a program for monitoring and review of the effectiveness of the Water Management Plan. |
| F30 | The Water Management Plan must be reviewed each calendar year by an appropriately qualified person(s). |
| F31 | **Saline drainage**<br>The environmental authority holder must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage. |
| F32 | **Acid rock drainage**<br>The environmental authority holder must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage. |
| F33 | **Stormwater and water sediment controls**<br>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. |
| F34 | Stormwater, other than mine affected water, is permitted to be released to waters from:<br>a) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by condition **F33**; and<br>b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with conditions **F29** to **F30** inclusive, for the purpose of ensuring water does not become mine affected water. |
| F35 | 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. |

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| F36 | Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters. |

| **Schedule G: Structures** | |
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| **Condition number** | **Condition** |
| G1 | **Assessment of consequence category**<br>The consequence category of any structure must be assessed by a suitably qualified and experienced person, in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*, at the following times:<br>a) prior to the design and construction of the structure, if it is not an existing structure; or<br>b) 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 *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*. |
| G4 | **Design and construction of a regulated structure**<br>Conditions **G5** to **G9** inclusive do not apply to existing structures.<br>*NOTE: Construction of a dam includes modification of an existing dam – see definitions.* |
| 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 *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*.<br>*NOTE: Certification of design and construction may be undertaken by different persons.* |
| G6 | Construction of a regulated structure is prohibited unless the environmental authority 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 environmental 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 *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*, and must be recorded in the Register of Regulated Structures. |

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| G8 | Regulated structures must:<br>a) be designed and constructed in accordance with and conform to the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*;<br>b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:<br>a) floodwaters from entering the regulated dam from any watercourse or drainage line; and<br>wall failure due to erosion by floodwaters arising from any watercourse or drainage line.<br>c) for regulated dams associated with a failure to contain – seepage, have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam. |
| G9 | 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:<br>a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and<br>b) construction of the regulated structure is in accordance with the design plan. |
| G10 | **Operation of a regulated structure**<br>Operation of a regulated structure, except for an existing structure, is prohibited unless the environmental authority holder has submitted to the administering authority:<br>a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition **G6**;<br>b) a set of 'as constructed' drawings and specifications;<br>c) certification of those 'as constructed drawings and specifications' in accordance with condition **G9**;<br>d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan;<br>e) the requirements of this environmental authority relating to the construction of the regulated structure have been met;<br>f) the environmental authority holder has entered the details, required under this environmental authority, into the Register of Regulated Structures; and<br>g) there is a current operational plan for the regulated structures. |
| G11 | For existing structures that are regulated structures:<br>a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the environmental authority holder must submit to the administering authority within **twelve (12) months** of the commencement of this condition a copy of the certified system design plan including that structure; and<br>b) there must be a current operational plan for the existing structures. |

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| 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**<br>Conditions **G14** to **G17** 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. |
| G15 | The environmental authority 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 environmental authority holder must immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam. |
| G17 | The environmental authority holder must record any changes to the MRL in the Register of Regulated Structures. |
| G18 | **Design Storage Allowance**<br>The environmental authority holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to **1 July** of each year. |
| 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 environmental authority holder must notify the administering authority 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. |
| G21 | The environmental authority holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on **1 November** of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems. |
| G22 | **Annual inspection report**<br>Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person. |

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| 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 *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*. |
| G25 | The environmental authority holder must:<br>a) within **twenty (20) business days** of receipt of the annual inspection report, provide to the administering authority:<br>a) the recommendations section of the annual inspection report; and<br>if applicable, any actions being taken in response to those recommendations; and<br>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 environmental authority holder, provide this to the administering authority within **ten (10) business days** of receipt of the request. |
| G26 | **Transfer arrangements**<br>The environmental authority holder must provide a copy of any reports, documentation and certifications prepared under this environmental 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**<br>Dams must not be abandoned but be either:<br>a) decommissioned and rehabilitated to achieve compliance with condition **G28**; or<br>b) be left in-situ for a beneficial use(s) provided that:<br>i) it no longer contains contaminants that will migrate into the environment; and<br>ii) it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and<br>iii) the administering authority, the environmental authority holder and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies). |

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| 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:<br>a) the landform is safe for humans and fauna;<br>b) the landform is stable with no subsidence or erosion gullies for at least three (3) years;<br>c) any contaminated land (e.g. contaminated soils) is remediated and rehabilitated<br>d) not allowing for acid mine drainage; or<br>e) there is no ongoing contamination to waters (including groundwater);<br>f) rehabilitation is undertaken in a manner such that any actual or potential acid sulphate 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)*;<br>g) all significantly disturbed land is reinstated to the pre-disturbed soil suitability class;<br>h) for land that is not being cultivated by the landholder:<br>i) groundcover, that is not a declared pest species is established and self-sustaining<br>vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining, and<br>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).<br>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 Structures**<br>A Register of Regulated Structures must be established and maintained by the environmental authority holder for each regulated structure. |
| G30 | The environmental authority holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated structure is submitted to the administering authority. |
| G31 | The environmental authority holder must make a final entry of the required information in the Register of Regulated Structures once compliance with condition **G10** and **G11** has been achieved. |
| G32 | The environmental authority holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day. |
| G33 | All entries in the Register of Regulated Structures must be approved by the chief executive officer for the environmental authority holder, or their delegate, as being accurate and correct. |
| G34 | The environmental authority holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority. |

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| G35 | **Transitional arrangements**<br>All existing structures that have not been assessed in accordance with either, the Manual or the former *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, must be assessed and certified in accordance with the Manual within **six (6) months** of amendment of the environmental authority adopting this schedule. |
| G36 | All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in **Table G1 (Transitional Requirements for Existing Structures)**, depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure. |
| G37 | **Table G1 (Transitional Requirements for Existing Structures)** ceases to apply for a structure once any of the following events has occurred:<br>a) it has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or<br>b) it has been decommissioned; or<br>c) it has been certified as no longer being assessed as a regulated structure. |
| G38 | Certification of the transitional assessment required by **G35** and **G36** (as applicable) must be provided to the administering authority within **six (6) months** of amendment of the environmental authority adopting this schedule. |

**Table G1 (Transitional Requirements for Existing Structures)**

| **Transition period required for existing structures to achieve the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*** | | | |
|---|---|---|---|
| **Compliance with Criteria** | **High** | **Significant** | **Low** |
| >90% and a history of good compliance performance in last 5 years | No transition required | No transition required | No transitional conditions apply. Review consequence assessment every 7 years. |
| >70% to ≤90% | Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases. | Within 10 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases. | No transitional conditions apply. Review consequence assessment every 7 years. |
| >50 to ≤70% | Within 5 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases. | Within 7 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases. | Review consequence assessment every 7 years. |
| ≤50% | Within 5 years or as per compliance requirements (e.g. TEP timing) | Within 5 years or as per compliance requirements (e.g. TEP timing) | Review consequence assessment every 5 years. |

| **Schedule H: Sewage Treatment** | |
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| **Condition number** | **Condition** |
| H1 | **Treated sewage effluent**<br>The cumulative total daily peak design capacity of the sewage treatment plant/s must not exceed 1500 equivalent persons (EP). Small package plants and/or septic systems, each with a daily peak design capacity less than 21EP, are not included in the cumulative total daily peak design capacity. |
| H2 | Treated sewage effluent must not be directly released from the sewage treatment plant/s to any waters.<br>*Note: 'waters' does not include structures associated with the mine affected water management system.* |
| H3 | Treated sewage effluent may be:<br>a) released to the mine affected water management system for mixing with other mine affected water;<br>b) released to land via a sub-surface infiltration trench;<br>c) irrigated or sprayed for dust suppression or firefighting or evaporation; or<br>d) removed as waste. |
| H4 | Treated sewage effluent that is released in accordance with condition **H3(a)** and has mixed with other mine affected water must be managed as mine affected water in accordance with the conditions of this environmental authority. |
| H5 | Treated sewage effluent that is released in accordance with condition **H3(b)** or **H3(c)** must be carried out in a manner such that:<br>a) vegetation is not damaged;<br>b) there is no surface ponding of effluent; and<br>c) there is no run-off of treated sewage effluent to waters. |
| H6 | Treated sewage effluent released in accordance with condition **H3(a)** or **H3(b)** or **H3(c)** from any sewage treatment plant that has a daily peak design capacity of greater than 21EP must be monitored:<br>a) at the point where the treated sewage effluent is released from the sewage treatment plant/s;<br>b) for the quality characteristics specified in **Table H1 (Treated Sewage Effluent Monitoring Requirements)**; and<br>c) at the frequency specified in **Table H1 (Treated Sewage Effluent Monitoring Requirements)**. |

**Table H1 (Treated Sewage Effluent Monitoring Requirements)**

| Quality Characteristic | Units | Monitoring Frequency |
|---|---|---|
| 5-day Biochemical Oxygen Demand (uninhibited) | mg/L | Monthly |
| pH | pH units | Monthly |
| Thermotolerant coliforms | Colonies per 100mL | Monthly |
| Total nitrogen | mg/L | Monthly |
| Total phosphorus | mg/L | Monthly |

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| H7 | If treated sewage effluent is being released in accordance with condition **H3(c)**:<br>a) the results of monitoring in accordance with condition **H6** must not exceed the release limits specified in **Table H2 (Treated Sewage Effluent Contaminant Release Limits)**; and<br>b) the release must not cause spray drift or over spray to any sensitive place or commercial place. |
| H8 | If the release limits specified in **Table H2 (Treated Sewage Effluent Contaminant Release Limits)** are exceeded in accordance with condition **H7(a)**, the environmental authority holder must notify the administering authority in accordance with conditions **A7** and **A8**. |

**Table H2 (Treated Sewage Effluent Contaminant Release Limits)**

| Quality Characteristic | Release Limit | Units | Limit Type |
|---|---|---|---|
| 5-day Biochemical Oxygen Demand (uninhibited) | 50 | mg/L | Maximum |
| pH | 6.0 to 9.0 | pH units | Range |
| Thermotolerant coliforms, based on the average of a minimum of five samples collected | 1000 | Colonies per 100mL | Maximum |

| **Schedule I: Groundwater** | |
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| **Condition number** | **Condition** |
| I1 | **Groundwater**<br>The holder of this environmental authority must not release contaminants to groundwater. |
| I2 | **Groundwater Monitoring and Management Program**<br>A Groundwater Monitoring and Management Program must be:<br>a) developed by an appropriately qualified person; and<br>b) implemented by the environmental authority holder for all stages of mining activities. |
| I3 | The Groundwater Monitoring and Management Program required by condition **I2** must:<br>a) identify potential groundwater impacts due to the mining activities;<br>b) include a site conceptual groundwater model;<br>c) describe the sampling and monitoring methodology;<br>d) detail an appropriate quality assurance and quality control program; and<br>e) provide the process for notifying the administering authority and investigating exceedances in accordance with conditions **I4-I5**. |
| I4 | **Groundwater monitoring**<br>Groundwater quality and standing water levels must be monitored:<br>a) at the locations and at the frequencies specified in **Table I1 (Groundwater Monitoring Program)**; and<br>b) for the quality characteristics specified in **Table I2 (Groundwater Trigger Levels)**. |
| I5 | If the groundwater trigger levels defined in **Table I2 (Groundwater Trigger Levels)** are exceeded on three (3) consecutive monitoring occasions, the environmental authority holder must complete an investigation into the potential for environmental harm and notify the administering authority within **twenty (20) business days** of receiving the analysis results. |
| I6 | The Groundwater Monitoring and Management Program must be reviewed by **31 November 2023** and thereafter every **two (2) years** by an appropriately qualified person. The review report must:<br>a) analyse the results of groundwater monitoring to:<br>i. describe any impacts to groundwater levels and groundwater quality due to the mining activity;<br>ii. determine trends in groundwater levels and groundwater quality;<br>b) assess the adequacy of the Groundwater Monitoring and Management Program; and<br>c) provide recommendations to the environmental authority holder to address the findings of parts (a) and (b) of the review. |

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| I7 | Within twenty (20) business days of receiving the review report, the environmental authority holder must provide to the administering authority:<br>a) the review report;<br>b) if applicable, any actions being taken by the environmental authority holder to address the recommendations of the review report; and<br>c) if action is not being taken to address a recommendation, the environmental authority holder must provide justification for not taking action. |
| I8 | Annual groundwater monitoring data must be submitted to the administering authority **via WaTERS by 30 September each calendar year.** |
| I9 | **Bore construction**<br>The construction, management, maintenance, and decommissioning of groundwater monitoring bores must be undertaken in a manner that:<br>a) prevents contaminants entering the groundwater;<br>b) ensures the integrity of the bores to obtain representative groundwater samples from the target aquifer; and<br>c) maintains the hydrogeological environment within the aquifer. |

**Table I1 (Groundwater Monitoring Program)**

| Monitoring Location | Easting (GDA94) | Northing (GDA94) | Monitoring Frequency |
|---|---|---|---|
| **Interpretation Bores** | | | |
| BMB | 639591 | 7560458.38 | Quarterly |
| **Compliance Bores** | | | |
| PZ02 | 635302.01 | 7560233.39 | Quarterly |
| PZ04 | 635530.01 | 7554547.41 | Quarterly |
| PZ05 | 632574.02 | 7561916.38 | Quarterly |
| PZ06 | 631774.02 | 7561217.39 | Quarterly |
| PZ07 | 631741.02 | 7559719.39 | Quarterly |

**Table I2 (Groundwater Trigger Levels)**

| Quality Characteristics | Units | Trigger Levels | | | | | |
|---|---|---|---|---|---|---|---|
| | | **BMB** | **PZ02** | **PZ04** | **PZ05** | **PZ06** | **PZ07** |
| Water Level | RL | Monitored for interpretative reasons only – no triggers apply | Fluctuations in excess of 2m per year excluding changes from pumping of licenced bores | | | | |
| pH | pH units | | 6.5 - 8.5 | 6.5 - 8.5 | 6.5 - 8.5 | 6.5 - 8.5 | 6.5 - 8.5[1] |
| Electrical Conductivity | µS/cm | | 16,000 | 20,100 | 16,000 | 18,800 | 16,000[1] |
| Sulphate | mg/L | | 398 | 490 | 398 | 398 | 398[1] |
| Dissolved Iron | mg/L | | 2.4 | 4.2 | 1.5 | 3.5 | 0.7[1] |
| Dissolved Aluminium | mg/L | | 0.126 | 0.2 | 0.055 | 0.055 | 0.055[1] |
| Dissolved Antimony | mg/L | | 0.009 | 0.009 | 0.009 | 0.009 | 0.009[1] |
| Dissolved Arsenic | mg/L | | 0.013 | 0.013 | 0.082 | 0.013 | 0.013[1] |
| Dissolved Mercury | mg/L | | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0006[1] |
| Dissolved Molybdenum | mg/L | | 0.034 | 0.057 | 0.034 | 0.034 | 0.034[1] |
| Dissolved Selenium | mg/L | | 0.011 | 0.011 | 0.011 | 0.011 | 0.011[1] |
| Dissolved Silver | mg/L | | 0.001 | 0.001 | 0.001 | 0.001 | 0.001[1] |
| Total recoverable hydrocarbons C6-C10 | µg/L | | 20 | 20 | 20 | 20 | 20 |
| Total recoverable hydrocarbons >C10-C40 | µg/L | | 100 | 100 | 100 | 100 | 100 |

Notes:

*1. Fewer than the recommended 18 data points have been used to derive these trigger levels, therefore the adopted trigger levels are considered as interim and may require subsequent revision.*

**END OF CONDITIONS**

## Definitions

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

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

a) vegetation establishment, survival and succession;

b) vegetation productivity, sustained growth and structure development;

c) fauna colonisation and habitat development;

d) ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes;

e) microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;

f) effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;

g) resilience of vegetation to disease, insect attack, drought and fire; and

h) vegetation water use and effects on ground water levels and catchment yields.

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

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

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

**Alternative arrangement** in relation to a sensitive place or a commercial place, means:

a) A written agreement:
   i. between the environmental authority holder and a third party;
   ii. that identifies a particular type(s) of environmental nuisance;
   iii. about the way in which the particular environmental nuisance impact(s) will be dealt with;
   iv. at a particular location; and
   v. for a defined period of time.

b) An alternative arrangement must make clear to the third party that by entering in to the agreement that:
   i. their place will be excluded as a sensitive place or commercial place; and
   ii. the consequences of exclusion as a sensitive place or commercial place.

Note: An alternative arrangement may include, but is not limited to, details of the nuisance abatement measures to be implemented, provision of alternative accommodation, or agreement between the parties that the location will not be considered a sensitive place or commercial place for the purposes of the Environmental Authority, for the duration of the alternative arrangement. The written agreement may be in any form, with some examples being a lease, or an agistment, or a conduct and compensation agreement under the *Mineral Resources Act 1989*.

**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); and

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

a) exactly what has been assessed and the precise nature of that determination;

b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;

c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and

d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

**Associated works** in relation to a dam, means:

a) operations of any kind and all things constructed, erected or installed for that dam; and

b) any land used for those operations.

**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.

**Biosolids** means the treated and stabilised solids from sewage.

**Blasting** means the use of explosive materials to fracture:

a) rock, coal and other minerals for later recovery; or

b) structural components or other items to facilitate removal from a site or for reuse.

**Bulk rubber** means tyres, conveyor belt, and other similar rubber waste.

**Certification** in relation to regulated structures, 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 Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)* 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 Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A).

**Certifying, certify or certified** have a corresponding meaning as 'certification' in relation to regulated structures.

**Chemical** means:

a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994 (Commonwealth)*; or

b) a dangerous good under the 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, nematicide, 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) A work place that is used as:

   i. an office; or

   ii. a place of business; or

   iii. a place used for commercial purposes.

b) Despite paragraph (a), the following places are not commercial places:

   i. subject to paragraph (c), a place that is the subject of an alternative arrangement; or

   ii. places that are part of the mining activity; or

   iii. employees accommodation or public roads; or

   iv. a property owned or leased by one or more of the environmental authority holders, or a related company, whether or not it is subject to an alternative arrangement.

c) A place that is the subject of a current alternative arrangement in relation to a particular type(s) of environmental nuisance, is not a commercial place for the purposes of that type(s) of environmental nuisance, however, remains a commercial place for the purpose of other types of environmental nuisances.

**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 (Version 4, 10 April 2014) (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** can be

a) a gas, liquid or solid; or

b) an odour; or

c) an organism (whether alive or dead), including a virus; or

d) energy, including noise, heat, radioactivity and electromagnetic radiation; or

e) a combination of contaminants.

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

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

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

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

**Design storage allowance or DSA** means an available volume, estimated in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)* published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual.

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

**Disturbance** of land includes:

a) compacting, removing, covering, exposing or stockpiling of earth;

b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion;

c) carrying out mining within a watercourse, waterway, wetland or lake;

d) the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls;

e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc.) which is to be removed after the mining activity has ceased; or

f) releasing of contaminants into the soil, or underlying geological strata.

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

a) areas off lease (e.g. roads or tracks which provide access to the mining lease);

b) areas previously disturbed which have achieved the rehabilitation outcomes;

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

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

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

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

a) a house, unit, motel, nursing home or other building or part of a building; 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 released 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.

**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*.

**EPBC** means the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

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

**ERC period** for the estimated rehabilitation cost for a resource activity, means:

a) if a PRCP schedule applies for the activity, the period of between 1 and 5 years stated in the application for an ERC decision under section 298(2)(b); or

b) if the activity is a petroleum activity that is an ineligible ERA, other than a petroleum activity to which a plan of operations applies, or the activity relates to a 1923 Act petroleum tenure granted under the *Petroleum Act 1923*, the period of between 1 and 5 years stated in the ERC decision about the estimated rehabilitation cost; or

c) if a plan of operations applies for the activities, the plan period for the plan of operations; or

d) otherwise, the total period during which the resource activity is likely to be carried out under the environmental authority for the activity.

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

**Existing authority** has the meaning in section 94 of the *Environmental Offsets Act 2014*.

**Existing structure** means a structure that was in existence prior to 24 October 2014.

**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 (Version 4, 10 April 2014) (EM635)* published by the administering 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 that 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**, for a mining tenement, means a holder of the tenement under the *Mineral Resources Act 1989*, and the holder of the associated environmental authority under the *Environmental Protection Act 1994*.

**Hydraulic performance** means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)*.

**Inert waste** means bricks, pavers, ceramics, concrete, glass, steel, or similar waste that does not biodegrade or decompose.

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

**$L_{Aeq, adj, 10\ mins}$** means the A-weighted sound pressure level of a continuous steady sound (adjusted for tonal character) that within a 10 minute period has the same mean square sound pressure of a sound that varies with time.

**$L_{Amax, adj, 10 mins}$** means the average maximum A-weighted sound pressure level (adjusted for noise character) measured over any 10 minute period.

**Lake** includes:

a) lagoon, swamp or other natural collection of water, whether permanent or intermittent; and

b) the bed and banks and any other element confining or containing the water.

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

**Land use** 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 (Version 4, 10 April 2014) (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 (Version 4, 10 April 2014) (EM635)* published by the administering authority.

**Manual** means the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 4, 10 April 2014) (EM635)* published by the administering authority.

**Matters of state environmental significance or MSES** has the meaning in schedule 2 of the *Environmental Offsets Regulation 2014*.

**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.

**mbgl** means metres below ground level.

**mg/L** means milligrams per litre.

**Mechanically reprocessing waste** includes mechanically crushing, milling, grinding, shredding or sorting waste, whether or not for the purpose of recycling the waste.

**Mine affected water** means the following types of water:

a) pit water, tailings dam water, processing plant water;

b) water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the *Environmental Protection Regulation 2008* if it had not formed part of the mining activity;

c) rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage runoff containing sediment only, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water;

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

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

f) a mix of mine affected water (under any of paragraphs (a) to (e)) 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; or

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

But does not include:

a) living matter;

b) petroleum within the meaning of the *Petroleum Act 1923*;

c) soil, sand, gravel or rock (other than rock mined in block or slab form for building or monumental purposes) to be used or to be supplied for use as such, whether intact or in broken form; or

d) water.

**Mining activities** means the activities:

a) authorised as per the definition in section 110 of the *Environmental Protection Act 1994*; and

b) all environmentally relevant activities authorised under this environmental authority;

c) waste activities.

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

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

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

**Noxious** means harmful or injurious to health or physical wellbeing.

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

**Operational plan** includes:

a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance); and

b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

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

**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.

**Receiving environment**, in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. The receiving environment includes (but is not limited to):

a) a watercourse;

b) groundwater;

c) land; and

d) sediments.

**Receiving waters** means the waters into which this environmental authority authorises releases of mine affected water.

**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 Structures** 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 (Version 4, 10 April 2014) (EM635)*;

d) dates, names, and reference for the design plan plus dates, names, and reference numbers of all documents(s) lodged as part of a design plan for the dam;

e) name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;

f) for the regulated dam, other than in relation to any levees –

i. the dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;

ii. coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area

iii. dam crest volume (megalitres);

iv. spillway crest level (metres AHD).

v. maximum operating level (metres AHD);

vi. storage rating table of stored volume versus level (metres AHD);

vii. design storage allowance (megalitres) and associated level of the dam (metres AHD);

viii. mandatory reporting level (metres AHD);

g) the design plan title and reference relevant to the dam;

h) the date construction was certified as compliant with the design plan;

i) the name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;

j) details of the composition and construction of any liner;

k) the system for the detection of any leakage through the floor and sides of the dam;

l) dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;

m) dates when recommendations and actions arising from the annual inspection were provided to the administering authority; and

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 (Version 4, 10 April 2014) (EM635)* published by the administering authority.

**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.

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

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

**Rejects** means:

a) breaker rejects; or

b) coarse rejects; or

c) mid/fine size rejects; or

d) tailings that have been dewatered; or

e) any combination of rejects (under any of paragraphs a to d).

**Representative** means a sample set that covers the variance in monitoring or other data due to either natural changes or operational phases of the mining activities.

**Reprocessing** includes:

a) recycling; or

b) mechanical treatment; or

c) thermal treatment; or

d) biological treatment; or

e) chemical treatment.

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

**Resource activity** is an activity that involves

a) a geothermal activity; or

b) a GHG storage activity; or

c) a mining activity; or

d) a petroleum activity.

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

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

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

**Sensitive place** means:

a) Any of the following:

i. a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or

ii. a motel, hotel or hostel; or

iii. an educational institution; or

iv. a medical centre or hospital; or

v. a protected area; or

vi. a public park or gardens.

b) Despite paragraph (a), the following places are not sensitive places:

i. subject to paragraph (c), a place that is the subject of an alternative arrangement; or

ii. a mining camp (i.e. accommodation and ancillary facilities for mine employees or contractors or both, associated with the mine the subject of the environmental authority), whether or not the mining camp is located within a mining tenement that is part of the mining project the subject of the environmental authority. For example, the mining camp might be located on neighbouring land owned or leased by the same company as one of the environmental authority holders for the mining project, or a related company; or

iii. a property owned or leased by one or more of the environmental authority holders, or a related company, whether or not it is subject to an alternative arrangement.

c) A place that is the subject of a current alternative arrangement in relation to a particular type(s) of environmental nuisance, is not a sensitive place for the purposes of that type(s) of environmental nuisance, however, remains a sensitive place for the purpose of other types of environmental nuisances.

**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.

**Stormwater** means all surface water runoff from rainfall.

**Structure** means dam or levee.

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

a) for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.

b) for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

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

**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.

**Tailings** means fines from mineral processing that have not been dewatered.

**The Act** means the *Environmental Protection Act 1994*.

**Void** means any constructed, open excavation in the ground.

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

**Waste activities** means receiving, storing, disposing, treating, or reprocessing wastes, and does not include composting.

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

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

**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.

**WaTERS** means the Water Tracking and Electronic Reporting System.

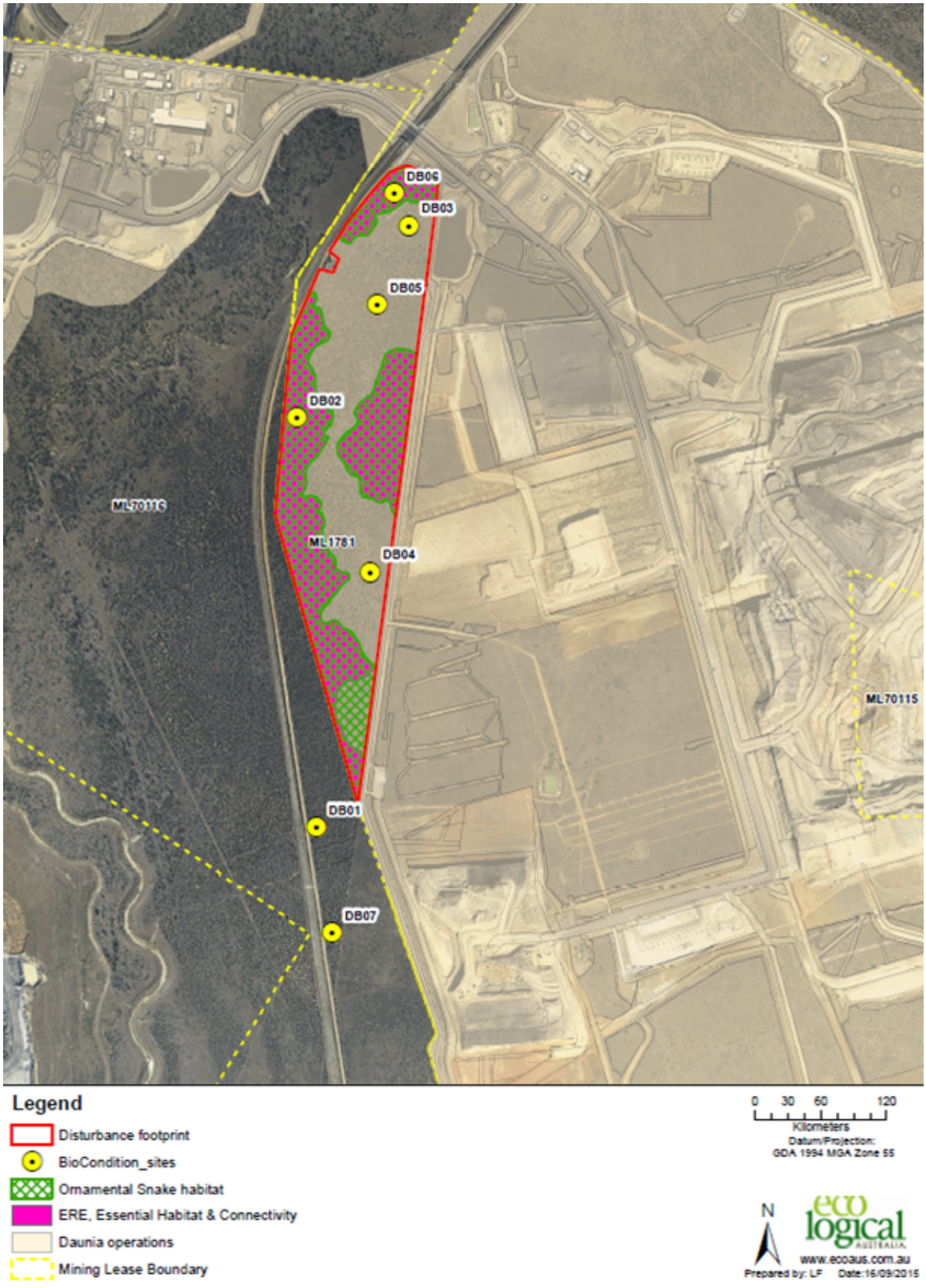
**Wet season** means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination, this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

**µg/L** means micrograms per litre.

**µS/cm** means microsiemens per centimetre.

**END OF DEFINITIONS**

**Figure 1 (Significant Residual Impacts to Prescribed Environmental Matters)**




**END OF ENVIRONMENTAL AUTHORITY**