Permit

Environmental Protection Act 1994

Environmental authority P-EA-100316883

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

Environmental authority number: P-EA-100316883

Environmental authority takes effect upon grant of tenure.

The first annual fee is payable within 20 business days of the take effect date.

The anniversary date of this environmental authority is the same day each year as the take effect date. The payment of the annual fee will be due each year on this day.

An annual return will be due each year on 01 April.

Environmental authority holder(s)

Name(s)	Registered address
Constellation Mining Pty Ltd	Level 15, 40 Creek Street, BRISBANE QLD 4000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 - 09 - A mining activity involving drilling, costeaning, pitting or carrying out geological surveys causing significant disturbance	MDL3052
Schedule 3 - 10 - investigating the potential development of a mineral resource by large bulk sampling or constructing an exploratory shaft, adit or open pit	
Ancillary 8 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)	
Ancillary 15 - Fuel burning - Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	
Ancillary 33 - Crushing, milling, grinding or screening - Crushing, grinding, milling or screening more than 5000t of material in a year	
Ancillary 60 - Waste disposal - 1(a) - Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) – less than 50,000t	
Ancillary 63 - Sewage Treatment - 1(b-ii) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of more than 100 but not more than 1500EP - otherwise	

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:

a) the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or

b) a change in the condition of the contaminated land (notice must be given within 24 hours); or

c) a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days)

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

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

Take effect

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

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

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

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

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

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

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

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

	3 April 2023
Signature	Date

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

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Obligations under the *Environmental Protection Act 1994*

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

(a) general environmental duty (section 319)

(b) duty to notify environmental harm (section 320-320G)

(c) offence of causing serious or material environmental harm (sections 437-439)

(d) offence of causing environmental nuisance (section 440)

(e) offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)

(f) offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Other permits required

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

Schedule A: General	
Condition number	**Condition**
A1	**Coal extraction** The environmental authority holder is approved for a maximum coal extraction total of **1.54 million tonnes** of run of mine (ROM) coal in accordance with the conditions of this environmental authority.
A2	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.
A3	**Authorised activities** In carrying out the mining activities authorised by this environmental authority, the holder of this environmental authority must not exceed a total disturbance footprint of 209.5 ha[1] and must be located in the authorised disturbance area depicted in **Figure 1 – Authorised Disturbance Area[2].** [1]The total disturbance footprint does not include exploration activities. [2]Exploration activities can be undertaken outside of the Authorised Disturbance Area within the tenure boundaries, excluding areas of Matters of State Environmental Significance (MSES) and Matters of National Environmental Significance (MNES).
A4	**Commencement of activities** The environmental authority holder must: (a) provide a written statement advising the administering authority of the date for when activities will commence (the commencement date) under this environmental authority; and (b) provide the written statement no later than **fourteen (14) days** after the commencement of activities.
A5	**Maintenance of measures, plant and equipment** The holder of the environmental authority must: (a) Install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; (b) Maintain such measures plant and equipment in a proper and efficient condition; (c) Operate such measures, plant and equipment in a proper and efficient manner; and (d) Ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.

A6	**Documentation and record keeping** Except where specified otherwise in another condition of this environmental authority, monitoring data and/or reports required by this environmental authority must be kept for a period of not less than **six (6) years**.
A7	**Monitoring** Monitoring, or determinations, or both, required under any condition of this environmental authority must be conducted by an appropriately qualified person.
A8	Upon request from the administering authority, copies of monitoring results, records, registers, management plans and reports required by the conditions of this environmental authority must be made available and provided to the administering authority within: (a) **ten (10) business days**; or (b) an alternative timeframe agreed between the administering authority and the environmental authority holder.
A9	**Risk Management** The holder of this environmental authority must implement a risk management system for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000:2009), or the latest edition of an Australian standard for risk management, to the extent relevant to environmental management.
A10	**Notification of emergencies, incidents and exceptions** The holder of this environmental authority must notify the administering authority, within **twenty-four (24) hours**, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority.

A11	The notification provided to the administering authorised as required by **Condition A10** must include but not be limited to the following information: (a) the holder of the environmental authority; (b) the location of the emergency or incident; (c) the number of the environmental authority; (d) the name and telephone number of the designated contact person; (e) the time of the release; (f) the time the holder of the environmental authority became aware of the release; (g) the suspected cause of the release; (h) the environmental harm caused, threatened, or suspected to be caused by the release; and (i) actions taken to prevent any further release and mitigate any environmental harm caused by the release.
A12	Within **ten (10) business days** following the initial notification of an emergency or incident in accordance with **Condition A10**, or receipt of monitoring results, whichever is the latter, the environmental authority holder must provide further written advice to the administering authority, including the following: (a) results and interpretation of any samples taken and analysed; (b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and (c) proposed measures to prevent a recurrence of the emergency or incident.
A13	Measures identified under **Condition A12** must be implemented within **twenty-eight (28) days** of the investigation required by **Condition A12** being finalised; or a longer period agreed to in writing by the administering authority.
A14	**Complaints** An investigation must be undertaken within **twenty-eight (28) days** (or a longer period agreed to in writing by the administering authority) into all complaints received to determine: (a) the potential circumstances and actions on site that may have contributed to the complaint; and (b) reasonable measures that will be implemented to address the complaint.

A15	The following details must be recorded for all environmental complaints received: (a) date and time the complaint was received; (b) if authorised by the person making the complaint, their name and contact details; (c) nature and details of the complaint; (d) investigations carried out in response to the complaint as required by **Condition A14**; (e) the results of investigations; and (f) measures taken under **Condition A14**.
A16	Measures identified under **Condition A14** must be implemented within: (a) **twenty-eight (28) business days** of the investigation required by **Condition A14** being finalised; or (b) a longer period agreed to in writing by the administering authority.
A17	**Third Party Reporting** The holder of this environmental authority must: (a) within **one (1) year** of commencement as notified under **Condition A4** of this environmental authority, obtain from a third party to report on compliance with the conditions of this environmental authority; (b) obtain further such reports at regular intervals not exceeding **three (3) years** from the completion of the report referred to above; and (c) provide each report to the administering authority within **thirty (30) days** of its completion.
A18	Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority, the holder of this environmental authority must: (a) comply with the amended or changed standard, policy or guideline within **two (2) years** of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation, or where the amendment or change relates specifically to regulated structures referred to in **Schedule I: Regulated Structures** the time specified in that condition; and (b) until compliance with the amended or changed standard, policy or guideline is achieved; continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.

Schedule B: Air	
Condition number	**Condition**
B1	**Dust nuisance** Unless authorised by this environmental authority, the release of contaminants to air must not cause environmental harm or an exceedance of the limits in **Table B1 – Ambient air quality limits** at a sensitive or commercial place.
B2	When requested by the administering authority or as a result of a complaint (which in the opinion of the authorised officer is neither frivolous nor vexatious nor based on mistaken belief), dust or particulate monitoring must be undertaken: a) at a place or places relevant to the potentially affected sensitive or commercial place as agreed upon with the administering authority; and b) for a monitoring period as agreed upon with the administering authority; and c) for the relevant contaminant limits, averaging periods and in accordance with the methods specified in **Table B1 —Ambient air quality limits** agreed upon with the administering authority; and d) The results of the monitoring undertaken are to be notified to the administering authority within **fourteen (14)** days following completion of monitoring.
B3	Dust Management Plan A Dust Management Plan must be developed and implemented for all stages of the mining activities.

Table B1 —Ambient air quality limits

Quality Characteristic	Air Quality Limit	Averaging Period	Monitoring Standard
Particulate Matter less than 10µm in aerodynamic diameter (PM10)	50µg/m^3	24-hour	(a) 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 (b) 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 (c) Any alternative method of monitoring PM10 which may be permitted by the 'Air Quality Sampling Manual' as published from time to time by the administering authority.
Particulate matter with an aerodynamic diameter of less than 2.5 micrometres (PM2.5)	25µg/m^3	24-hour	The most recent version of *AS/NZS3580.9.10 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM (sub)2.5(/sub) low volume sampler—Gravimetric method.*
Total particulate matter suspended in the atmosphere (TSP)	90µg/m^3	One (1) year averaging time	The most recent version of *AS/NZ3580.9.3:2003 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method*;
Dust deposition	120mg/m^2/day	Monthly	the most recent version of Australian Standard *AS3580.0.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter – Gravimetric method*

B4	The Dust Management Plan required by **Condition B3** must include: (a) a preventative management system for dust control; (b) Trigger Action Response Plan; (c) site background (contextual information); (d) proposed works and potential impacts & impact analysis; (e) site risk assessment; (f) design of an internal operational monitoring program including objectives, separate from any compliance monitoring or limits/levels required by **Condition B2**; (g) performance criteria and monitoring methods; (h) number and location of monitoring sites; (i) quality assurance/quality control (QA/QC) requirements; (j) stakeholder consultation; (k) roles and responsibilities; and (l) reports.
B5	The Dust Management Plan required by **Condition B3** must be reviewed annually by **1 August** each calendar year and submitted to the administering authority on request. The review must be documented and: (a) include a statement that the review has been undertaken by an appropriately qualified person; and (b) assess the plan against the requirements of **Condition B3** and **Condition B4:** (i) include recommended actions to ensure actual or potential environmental impacts are actively managed; and (ii) provide details and timelines of the actions to be taken; and (c) identify any amendments made to the Dust Management Plan.
B6	**Odour** The release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the mining activity must not cause an environmental nuisance at any sensitive place or commercial place, or both.

Schedule C: Waste Management	
Condition number	**Condition**
C1	**Burning Waste** Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burned.
C2	The holder of this environmental authority may burn vegetation cleared in the course of carrying out extraction activities provided that the activity does not cause environmental nuisance at any sensitive place or commercial place.
C3	**Storage and Disposal of Tyres** Tyres must be stored and disposed of in accordance with the Operational policy - *Disposal and storage of scrap tyres at mine sites* ESR/2016/2380 Version 2.02, or the most recent revision available.

C4	**Waste Management** A Waste Management Plan, in accordance with the *Waste Reduction and Recycling Act 2011*, must be developed and implemented, and must at a minimum: (a) describe how the resource activity recognises and applies the waste and resource management hierarchy; (b) identify the waste streams from the project; (c) include a program for safe recycling or disposal of all wastes- reusing and recycling where possible; (d) the waste management control strategies must consider: (i) the type and amounts of wastes generated by the activities; (ii) segregation of the wastes; (iii) storage of the wastes; (iv) transport of the wastes; (v) monitoring and reporting matters concerning the waste; (vi) emergency response planning; (vii) disposal, reuse and recycling options; (e) detail the hazardous characteristics of the waste generated (if any); (f) cover a disposal procedure for hazardous wastes; (g) outline the process to be implemented to allow for continuous improvement of the waste management systems; (h) identify responsible staff (positions) for implementing, managing and reporting the Waste Management Plan; and (i) cover a staff awareness and induction program that encourages reuse and recycling.

C5	Regulated waste records must be kept for **five (5) years**, and must include the following information: (a) date of pickup of waste; (b) description of waste; (c) cross reference to relevant waste transport documentation; (d) quantify of waste; (e) origin of the waste; (f) destination of the waste; and (g) intended fate of the waste, for example, type of waste treatment, reprocessing or disposal. **Note:** *Records of documents maintained in compliance with a waste tracking system established under the* Environmental Protection Act 1994 *or any other law for regulated waste will be deemed to satisfy this condition.*
C6	Records of trade and regulated wastes or material leaving MDL3052 for recycling or disposal, including the final destination and method of treatment, must be in accordance with the *Waste Reduction and Recycling Act 2011*.

Schedule D: Acoustic	
Condition number	**Condition**
D1	**Noise** Unless authorised by this environmental authority, noise resulting from the mining activities must not cause an environmental nuisance or an exceedance of the limits identified in **Table D1 – Noise limits** at any sensitive or commercial place.
D2	All monitoring of noise emissions from the activity must be undertaken when the activity is in operation.
D3	When requested by the administering authority or as a result of a complaint (which in the opinion of the authorised officer is neither frivolous nor vexatious nor based on mistaken belief), noise monitoring must be undertaken: (a) at a place or places relevant to the potentially affected sensitive or commercial place as agreed upon with the administering authority; and (b) for a monitoring period as agreed upon with the administering authority; and (c) for the relevant noise limits and in accordance with the methods specified in **Table D1 — Noise limits** agreed upon with the administering authority; and (d) the results of the monitoring undertaken are to be notified to the administering authority within **fourteen (14)** days following completion of monitoring.
D4	All noise monitoring conducted as per **Condition D3** must be completed in accordance with the following noise monitoring requirements: (a) all noise monitoring must be conducted in accordance with the administering authority's most recent version of the Noise Measurement Manual; (b) source noise levels must be expressed as component noise level for the purposes of comparison with noise limits; (c) taken using a class 1 sound level meter as classified under AS IEC 61672 and must be calibrated in accordance with the most recent version of the Australian Standard; (d) record all equipment in operation and the mode of operation at the time of the noise measurement; and (e) monitoring locations must be relevant to the matter(s) under investigation.

D5	If the administering authority's request for noise monitoring is in relation to a complaint and results exceed the limits in **Table D1 – Noise limits**, then the environmental authority holder must: (a) address the complaint including the use of appropriate dispute resolution if required; and (b) implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.
D6	**Low Frequency Noise** Noise emissions from mining activities, when including substantial low frequency noise, must not cause an overall sound pressure level at a noise sensitive place exceeding 50dB(Z). **Note:** *"Substantial low frequency noise" means a noise emission that has an unbalanced frequency spectrum shown in one-third octave band measurements, with a predominant component located within the frequency range 10 to 200 Hz.*
D7	**Blasting** Vibration and/or air blast overpressure resulting from blasting must not cause an environmental nuisance at any sensitive or commercial place.
D8	The holder of this environmental authority must develop and implement a blast monitoring program to monitor compliance with **Table D2 – Blasting Vibration and Overpressure Limits** for: (a) at least 50% of all blasts undertaken on this site in each month at the nearest and most affected sensitive place(s) or commercial place(s); and (b) all blasts conducted during any time period specified by the administering authority at the nearest and most affected sensitive place(s) or commercial place(s) or another such place to investigate an allegation of environmental nuisance caused by blasting.
D9	If the results of blast monitoring undertaken as per **Condition D8** exceed the limits in **Table D2 – Blasting noise limits**, then the environmental authority holder must investigate and report to the administering authority within **fourteen (14) days** following completion of monitoring.
D10	The investigation of blast monitoring undertaken in accordance with **Condition D9** must include: (a) location of blast(s) within the mining area (including bench level); (b) atmospheric conditions including temperature, relative humidity, wind speed and wind direction; (c) location, date and time exceedance was recorded; and (d) abatement measures to ensure so that airblast overpressure does not result in further environmental nuisance.

Table D1 – Noise Limits

Noise level measured in dB(A)	Monday to Saturday			Sundays and Public Holidays		
	7am - 6pm	6pm – 10pm	10pm – 7am	7am - 6pm	6pm – 10pm	10pm – 7am
	Noise measured at a **nuisance sensitive** or **commercial place**					
$LA_{eq\ adj\ 1hr}$	35	35	30	35	35	30
$LA_{1\ adj\ 1hr}$	40	40	35	40	40	35

Note:
$LA_{eq\ adj\ 1hr}$ means the equivalent continuous A-weighted sound pressure level, adjusted for noise character, measured in the presence of the noise under investigation over a period of 1 hour using Fast response.
$LA_{01\ adj\ 1hr}$ means the A-weighted sound pressure level, adjusted for noise character, measured in the presence of the noise under investigation and exceeded for one (1) percent of the time period of 1 hour using Fast response.

Table D2 – Blasting Vibration and Overpressure Limits

Blasting noise limits	**Sensitive or commercial place blasting noise limits**		
	Monday to Saturday		**Sundays and Public Holidays**
	7am – 6pm	**6pm – 7am**	
Airblast overpressure	115 dB (Linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time.	No blasting to occur during these times	No blasting to occur without notification to sensitive receptors. If blasting occurs refer to 'Monday to Saturday' limits.
Blasting vibration peak particle velocity	5 mm/s peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/s peak particle velocity at any time.	No blasting to occur during these times	No blasting to occur without notification to sensitive receptors. If blasting occurs refer to 'Monday to Saturday' limits.

Schedule E: Groundwater	
Condition number	**Condition**
E1	The holder of this environmental authority must not release contaminants, directly or indirectly, to groundwater.
E2	**Groundwater quality and standing water level** Groundwater must be monitored: (a) at the locations and frequencies described in **Figure 2 – Groundwater Monitoring Locations** and **Table E1 – Groundwater monitoring locations and frequency**; and (b) for relevant standing water level triggers identified in **Table E1 – Groundwater monitoring locations and frequency;** and (c) for quality characteristics identified in **Table E2 – Groundwater quality triggers**.
E3	**Groundwater Quality Trigger Limits** Groundwater contaminant trigger limits as per **Table E2 - Groundwater quality triggers** must be reviewed and a report submitted to the administering authority within **two (2) years** of notification of the 'commencement of activities' as required under **Condition A4**, including: (a) an assessment determining if the groundwater monitoring network is fit for purpose including frequency of monitoring; (b) monitoring results of the baseline site-specific groundwater, containing a minimum of 12 samples collected in accordance with the *Groundwater Sampling and Analysis – A Field Guide*; (c) evaluate whether the replacement of interim trigger values for site specific values are appropriate for all parameters and provide site-specific trigger values to replace 'TBA' value specified in **Table E2 - Groundwater quality triggers;** and (d) identify and interpret any trends in the groundwater network monitoring data.
E4	**Standing Water Level** SWL triggers as per **Table E1 - Groundwater monitoring locations and frequency** must be reviewed, and a report submitted to the administering authority within **two (2) years** of notification of the 'commencement of activities' as required under **Condition A4**, including: (a) an assessment determining if the groundwater monitoring network is fit for purpose including frequency of monitoring; (b) monitoring results of the baseline site-specific groundwater, containing a minimum of 12 samples; and (c) identify and interpret any trends in the groundwater network monitoring data.

E5	**Exceedance Investigation** If quality characteristics of groundwater from monitoring bores identified in **Table E1 – Groundwater monitoring locations and frequency** exceed any of the trigger levels stated in **Table E2 – Groundwater quality triggers** for three consecutive monitoring events, the holder of this environmental authority must undertake an investigation to determine whether the result is directly associated with mining activities within **twenty-eight (28) days** of receiving the final result, and: (a) if the investigation determines the result is not caused by mining activities, then no action is to be taken other than a review of the relevant trigger limit(s). (b) If the investigation determines the result is caused by mining activities, then within **three (3) months**: (i) determine whether environmental harm has occurred. (ii) detail any actions required to mitigate the environmental harm. (iii) submit the results and investigation to the administering authority via WaTERs.
E6	**Groundwater standing water level** In the event that groundwater fluctuations exceed the SWL trigger levels detailed in **Table E1 - Groundwater monitoring locations and frequency**, the holder of this environmental authority must undertake an investigation to determine whether the result is directly associated with mining activities within **twenty-eight (28) days** of receiving the result, and: (a) if the investigation determines the result is not caused by mining activities, then no action is to be taken other than a review of the relevant trigger limit(s). (b) If the investigation determines the result is caused by mining activities, then within **three (3) months**: (i) determine whether environmental harm has occurred. (ii) detail any actions required to mitigate the environmental harm. (iii) submit the results and investigation to the administering authority via WaTERs.
E7	**Groundwater Monitoring and Management Plan** Prior to 'commencement of mining activities' as notified under **Condition A4** of this environmental authority, a Groundwater Monitoring and Management Plan (GMMP) must be developed and implemented.

E8	The GMMP required by **Condition E7** must: (a) provide a hydrogeological conceptual groundwater model; and (b) identify all potential sources of contamination to groundwater from the activities; and (c) identify all environmental values that may be impacted; and (d) detail groundwater levels in all identified hydrogeological units present across and adjacent to the site to confirm existing groundwater flow paths; and (e) identify all potential groundwater impacts due to the activities authorised under this environmental authority and propose monitoring and mitigation where required; and (f) outline groundwater monitoring and data analysis and confirm it achieves the following objectives: (i) detect any impacts to groundwater quality due to the activities authorised under this environmental authority; and (ii) detect any changes to groundwater level due to the activities authorised under this environmental authority; and (iii) determine compliance with **Condition E8**; (iv) determine trends in groundwater quality; and (v) determine any interaction or impact from groundwater on surface water; and (g) document groundwater management and monitoring methodologies undertaken for the duration of all the activities authorised under this environmental authority; and (h) document a process of how a contaminant trigger investigation will be conducted, where triggers are used in **Table E2 – Groundwater quality triggers**; and (i) provide an appropriate quality assurance and quality control program; and (j) include a review process to identify improvements to the program that includes addressing any comments provided by the administering authority; and (k) include stygofauna monitoring requirements to identify the presence of stygofauna communities and, if identified, detect any potential impacts due to mining and rehabilitation activities.
E9	**Annual Groundwater Monitoring Review** The groundwater monitoring data must be reviewed on an annual basis. The review must include the assessment of groundwater levels and quality data, long term trends of the data and the suitability of the monitoring network. The review report must be submitted to the administering authority and all groundwater data must be submitted in electronic form via WaTERS within **twenty-eight (28) days** of the environmental authority holder receiving the report.

E10	**Bore construction and maintenance and decommissioning** The construction, maintenance and management, and decommissioning of groundwater bores (including groundwater monitoring bores) must be undertaken in a manner that prevents or minimises impacts to the environment and ensures the integrity of the bores to obtain accurate monitoring.

Table E1 – Groundwater monitoring locations and frequency

Monitoring Location	Location (GDA 2020, Zone 55)		Aquifer	Screen depth (m)	Surface RL (m)	SWL Investigation Trigger Level (mAHD)	Monitoring Frequency
	Easting	Northing					
BF838W	710107	7397309	Fresh sandstone – Rewan Formation	44-50	186	146.04	Quarterly
BF839W	710128	7396064	Fresh sandstone/ siltstone – Rewan Formation	21-27	210	154.27	
BF840W	710136	7396065	Fresh siltstone – Rangal Coal Measures	44-50	171	145.89	
BF844W	708892	7392603	Fresh siltstone – Rangal Coal Measures	44-50	189	163.18	
BF845W	707962	7394354	Aries Coal Seam – Rangal Coal Measures	59-68	187	138.21	
BF846W	703909	7391949	Fresh sandstone/ siltstone – Rewan Formation	36-45	203	185.27	
BF848W	704106	7394606	Fresh sandstone – Rewan Formation	72-78	194	168.42	
BF849W	703844	7396496	Fresh siltstone – Rewan Formation	74-80	202	166.37	
BF850W	706931	7397733	Pollux Coal Seam – Rangal Coal Measures	58-67	169	124.37	
BR851W	707394	7396125	Pollux Coal Seam – Rangal Coal Measures	50-68	187	135.10	

Table E2 – Groundwater quality triggers

Quality Parameter	Unit	Investigation Trigger Level	
		Shallow Aquifer	**Deep Aquifer**
pH	pH Units	6.5 – 8.5	
Electrical Conductivity	µS/cm	8910^	16000^
Total Dissolved Solids	mg/L	TBA	TBA
Bicarbonate	mg/L	878^	650^
Chloride	mg/L	3185^	5905^
Sulfate	mg/L	318^	398^
Calcium	mg/L	215^	442^
Magnesium	mg/L	389^	491^
Sodium	mg/L	1500^	2565^
Potassium	mg/L	TBA	TBA
Dissolved Metals			
Aluminium	µg/L	TBA	TBA
Arsenic	µg/L	TBA	TBA
Boron	µg/L	TBA	TBA
Beryllium	µg/L	TBA	TBA
Cadmium	µg/L	TBA	TBA
Copper	µg/L	0.030^	0.030^
Iron	µg/L	0.140^	0.246^
Mercury	µg/L	TBA	TBA
Molybdenum	µg/L	TBA	TBA
Nickel	µg/L	TBA	TBA
Lead	µg/L	TBA	TBA
Selenium	µg/L	TBA	TBA
Silver	µg/L	TBA	TBA
Zinc	µg/L	0.060^	0.317^
Hydrocarbons			
*TPH C6-C9	µg/L	20	
*TPH C10-C36	µg/L	100	

*- Total Petroleum Hydrocarbons (TPH).
^ - Interim groundwater quality parameters derived from EPP (water) policy 2009 *Fitzroy River Sub-basin Environmental Values and Water Quality Objectives Basin No.130 (part), including all waters of the Mackenzie River Sub-basin* Zone 34. These values are to be replaced with site-specific levels once adequate data is available in accordance with **Condition E3**.

Schedule F: Surface Water	
Condition number	**Condition**
F1	Contaminants must not be released to any waters unless permitted under the conditions of this environmental authority.
F2	The release of mine affected water is not permitted under this environmental authority.
F3	Water monitoring and sampling must address and comply with the latest version of the Queensland Government's 'Monitoring and Sampling Manual 2018 – Environmental Protection (Water) Policy 2009' unless otherwise approved by the administering authority.
F4	The following information must be recorded for all surface water, sediment, and biological monitoring: (a) the date on which the sample or in-situ record was taken; and (b) the time at which the sample or in-situ record was taken; and (c) the location co-ordinates and description of the monitoring point at which the sample was taken; and (d) the flow rate in the receiving environment at the time of sampling; and (e) the results of all monitoring; and (f) details of any exceedances of the conditions of this environmental authority.
F5	**Receiving Environment Monitoring Program** On or before the notification of the 'commencement of mining activities' as required under **Condition A4**; a Receiving Environment Monitoring Program (REMP) Design Document must be: (a) prepared in accordance with **Condition F8;** and (b) submitted to the administering authority. For the purposes of the REMP, the receiving environment refers to the waters of the Wildhorse Creek and connected or surrounding waterways within **15km** downstream of the mining activity.
F6	Any comments made by the administering authority on the REMP Design Document must be addressed to the reasonable satisfaction and within an agreed timeframe with the administering authority.
F7	At the notification of the 'commencement of mining activities' as required under **Condition A4**, a Receiving Environment Monitoring Program (REMP) that has been prepared in accordance with the REMP Design Document must be implemented.

F8	The REMP Design Document must at a minimum: (a) address and comply with the latest version of the administering authority's guideline *Receiving environment monitoring program guideline (ESR/2016/2399); and* (b) determine the optimal monitoring locations for the purpose of establishing baseline water quality conditions to populate **Table F2 - REMP Monitoring Point Locations;** and (c) identify, describe and monitor any adverse impacts to surface water environmental values, quality, and flows; and (d) provide a framework to assess the long-term condition or state of surface waters, sediment, and aquatic ecosystem health; and (e) identify and describe all environmental values of the receiving environment; and (f) assess the receiving environment monitoring results against water quality objectives in **Table F1 – Water quality objectives for potential contaminants**; and (g) include a risk assessment of the potential impacts of the activity and propose appropriate mitigation measures; and assess the status of and any change to aquatic ecosystem health including aquatic flora and fauna within and immediately surrounding the project area; and (h) assess the status of and any change to riparian vegetation health within and immediately surrounding the project area; and (i) apply procedures and/or guidelines from ANZG 2018 and other relevant standards and guideline documents; and (j) describe sampling and analysis methods and quality assurance and control; and (k) incorporate stream flow and hydrological information in the interpretations of water quality and biological data.
F9	A REMP Annual Report must be submitted to WaTERS annually.
F10	The REMP Annual Report required by **Condition F9** must: (a) be prepared by an appropriately qualified person; and (b) outline the findings of the REMP, including but not limited to: (i) an assessment of long-term upstream water quality; and (ii) an assessment of the long-term condition or state of surface waters, sediment and aquatic ecosystem health; and (iii) recommendations for further investigation or actions; and (iv) recommendations for changes or improvements to the monitoring program; and (v) recommendations for potential changes to management of the authorised activity to minimise impacts; and (vi) all monitoring results; and (vii) a description of all conclusions formed.

F11	**Water Management Plan** A Water Management Plan must be developed prior to commencement of mining activities, and implemented for all stages of mining activities.
F12	The Water Management Plan required by **Condition F11** must: (a) provide for effective water management of actual and potential environmental impacts resulting from the mining activity; and (b) include: (i) a study of the source of contaminants; and (ii) a water balance model for the site; and (iii) a water management system for the site; and (iv) a map showing the water management system for the site; and (v) measures to manage and prevent saline mine drainage; and (vi) measures to manage and prevent neutral mine drainage; and (vii) measures to manage and prevent acid metalliferous drainage; and (viii) contingency procedures for incidents and emergences; and (ix) a program for monitoring and review of the effectiveness of the water management plan.
F13	On an annual basis, the Water Management Plan must be updated and re-issued (in accordance with the requirements of **Conditions F11** and **F12**) or reviewed. The update or review must be commenced by **30 November** each calendar year. Where a review is undertaken, the review must be documented and: (a) include a statement that the review has been undertaken by an appropriately qualified person; and (b) assess the plan against the requirements of **Conditions F11** and **F12**; (i) include recommended actions to ensure actual or potential environmental impacts are actively managed; (ii) provide details and timelines of the actions to be taken; and (c) identify any amendments made to the Water Management Plan.
F14	A copy of the Water Management Plan must be kept up to date following each annual review and must be provided to the administering authority on request.

F15	**Water re-use** 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 (with the consent of the third party).
F16	If the responsibility of the water contaminated by mining activities (the water) is given or transferred to a third party in accordance with **Condition F15**, then: (a) the responsibility for the water must only be given or transferred in accordance with a written agreement (the third-party agreement); and (b) include in the third-party agreement a commitment from the third party utilising the water to use the water in such a way as to prevent environmental harm or public health incidents and specifically make the person away 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.
F17	**Stormwater and water sediment controls** Prior to the notification of the 'commencement of mining activities' as required under **Condition A4,** an Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activity.
F18	The Erosions and Sediment Control Plan must demonstrate how erosion and sediment control measures detailed in the plan adequately minimise the release of sediment to receiving waters and must include at least the following: (a) assessment of the size and characteristics of all catchment areas; and (b) assessment of relevant properties of soils, including sodic dispersive soils and waste materials; and (c) identification of receiving waters environmental values, water quality objectives and management intent; and (d) specification of minimum design criteria for erosion and sediment control structures to achieve management intent of receiving waters; and (e) locations and descriptions of all erosion and sediment control measures; and (f) an audit schedule to ensure erosion and Sediment controls are maintained.

F19	On an annual basis, the Erosion and Sediment Control Plan must be updated and re-issued (in accordance with the requirements of **Conditions F17** and **F18**) or reviewed. The update or review must be commenced by **30 November** each calendar year. Where a review is undertaken, the review must be documented and: (a) include a statement that the Erosion and Sediment Control Plan has been reviewed by an appropriately qualified person; and (b) assess the plan against the requirements under **Condition F18**; and (c) include recommended actions to ensure actual and potential environmental impacts are effectively managed; and (d) provide details and timelines of actions to be taken; and (e) identify any amendments made to the Erosion and Sediment Control Plan.
F20	Stormwater, other than mine-affected water, is permitted to be released to waters from: (a) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by **Condition F17**; and (b) water management infrastructure that is installed and operated in accordance with a Water Management Plan that complies with **Condition F11**, for the purpose of ensuring water does not become mine-affected water.

Table F1 – Water quality objectives for potential contaminants

Quality Parameter	Trigger Levels (µg/L)	Comment
Aluminium (pH >6.5)	55	Aquatic ecosystem protection based on 95% for SMD
Arsenic	13	Aquatic ecosystem protection based on 95% for SMD
Cadmium	0.2	Aquatic ecosystem protection based on 95% for SMD
Chromium	1	Aquatic ecosystem protection
Cobalt	1.4	ANZG (2018) Aquatic ecosystem protection
Copper	1.4	Aquatic ecosystem protection based on 95% for SMD
Fluoride	2,000	Stock watering based on ANZECC & ARMCANZ (2000)
Iron	300	Aquatic ecosystem protection
Lead	3.4	Aquatic ecosystem protection based on 95% for SMD
Manganese	1,900	Aquatic ecosystem protection based on 95% for SMD
Mercury	0.2	Aquatic ecosystem protection
Molybdenum	150	Stock watering based on ANZECC & ARMCANZ (2000)
Nickel	11	Aquatic ecosystem protection based on 95% for SMD
Selenium	11	Aquatic ecosystem protection based on 95% for SMD
Uranium	1	For aquatic ecosystem protection, based on LOR for ICPMS
Vanadium	10	Aquatic ecosystem protection based on LOR for ICPMS
Zinc	8	Aquatic ecosystem protection based on 95% for SMD
Ammonia	900	Aquatic ecosystem protection based on 95% for SMD
Total Nitrogen	775	Aquatic ecosystem protection
Petroleum hydrocarbons (C6-C9)	20	Aquatic ecosystem protection based on LOR for GCMS
Petroleum hydrocarbons (C10-C36)	100	Aquatic ecosystem protection based on LOR for GCMS
Suspended Solids	110,000	Mackenzie River sub-basin WQO
Sulfate	10,000	Mackenzie River sub-basin WQO

Table F2 – REMP Monitoring Point Locations*

Monitoring Location	Description	Easting (GDA 2020, Zone 55)	Northing (GDA 2020, Zone 55)

*Table to be populated following submission of REMP design document as required by **Condition F7**.

Schedule G: Sewage Treatment	
Condition number	**Condition**
G1	Treated sewage effluent may only be released to land in accordance with the conditions of this approval as follows**:** (a) within a suitable irrigation area (minimum of **one (1) ha**, excluding buffer zones) to be selected based on the location of mine infrastructure areas and associated sewage treatment plant(s) in accordance with **Condition G2**; (b) haul roads and areas of mining activity for the purpose of dust suppression; and (c) for firefighting.
G2	All effluent released from the treatment plant into the nominated irrigation area identified in **Condition G1(a)** must be monitored at the frequency and for the parameters specified in **Table G1 – Contaminant release limits to land.**
G3	Irrigation with treated effluent must be carried out in a manner such that: (a) vegetation is not damaged; (b) there is no surface ponding of effluent; and (c) there is no run-off of effluent.
G4	If irrigation areas are accessible to employees or the general public, prominent signage must be provided advising that effluent is present and care should be taken to avoid consuming or otherwise coming into unprotected contact with the effluent.
G5	The daily volume of treated effluent used for irrigation must be measured and records kept of the volume of effluent released.
G6	When circumstances prevent the irrigation or beneficial reuse of treated sewage effluent, such as during or following rain events, waters must be directed to a wet weather storage or alternative measures must be taken to store/lawfully dispose of effluent.
G7	Water or stormwater contaminated by irrigation activities must not be released to any waters or the bed and banks of any waters.
G8	Treated sewage effluent must only be supplied to another person organisation that has a written plan detailing how the user of the treated sewage effluent will comply with their general environmental duty under Section 319 of the Act while using the treated sewage effluent. ***Note:*** *The supply of treated wastewater for re-use is regulated under the Water Supply (Safety and Reliability) Act 2008*.

Table G1 – Contaminant release limits to land

Contaminant	Unit	Release limit	Limit type	Monitoring Frequency
5 day biochemical oxygen demand (BOD)	mg/L	20	Maximum	Monthly
Total suspended solids	mg/L	30	Maximum	
Nitrogen	mg/L	30	Maximum	
Phosphorus	mg/L	15	Maximum	
E-coli	CFU/100ml	1,000	Maximum	
pH	pH units	6.0 – 9.0	Range	

Schedule H: Land	
Condition number	**Condition**
H1	All areas significantly disturbed by mining activities must be rehabilitated to achieve the following rehabilitation goals: (a) safe to humans and wildlife; (b) geotechnically stable; (c) non-polluting; and (d) self-sustaining for the post-mining land use of grazing pasture.
H2	All areas significantly disturbed by mining activities must be rehabilitated to grazing pasture in accordance with **Table H1 – Rehabilitation Completion Criteria**.
H3	**Condition H1** does not apply if a mining lease application overlying MDL 3052 is granted within **five (5) years** of the completion of extraction of coal from the bulk sample pit.
H4	The environmental authority holder of the environmental authority must commence the rehabilitation processes on all areas disturbed by activities, apart from those areas currently being utilised, as soon as practicable and at least **within five (5) year** timeframe in **Condition H3**.

<table>
<tr><td>H5</td><td>Rehabilitation Management Monitoring Program

Following the commencement of rehabilitation works, the environmental authority holder must implement an annual rehabilitation monitoring program that details the outcomes of the previous year’s rehabilitation activities in an annual rehabilitation report and submit it to the administering authority by 31 July each year.</td></tr>
<tr><td>H6</td><td>The annual rehabilitation report must:

(a) include the rehabilitation monitoring results;

(b) include the monitoring results from the following reference sites:

<table><tr><th rowspan="2">Reference Site</th><th colspan="2">GDA2022, Zone 55</th></tr><tr><th>Easting</th><th>Northing</th></tr><tr><td>RF1</td><td>706324</td><td>7397359</td></tr><tr><td>RF2</td><td>704517</td><td>7397092</td></tr><tr><td>RF3</td><td>705615</td><td>7395086</td></tr></table>
(c) where a reference site has been replaced following the previous annual report, provide justification for the appropriateness of this change; and

(d) include any actions and recommendations to rectify or improve, areas of rehabilitation that are of concern.</td></tr>
<tr><td>H7</td><td>Infrastructure

All buildings, structures, mining equipment and plant erected and/or used for the mining activities must be removed from the site prior to surrender, except where agreed in writing with the landholder.</td></tr>
<tr><td>H8</td><td>Contaminated land

Before applying for surrender of MDL3052, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the MDL which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.</td></tr>
</table>

H9	Before applying for progressive rehabilitation certification for an area, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the area the subject of the application which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final post-mining land use.
H10	**Chemicals and flammable or combustible liquids** All flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and maintained in accordance with the current edition of *AS1940 – Storage and Handling of Flammable and Combustible Liquids*.
H11	All chemicals and flammable or combustible liquids stored on site that have the potential to cause environmental harm must be stored in or serviced by an effective containment system that is impervious to the materials stored and managed to prevent the release of liquids to waters or land. Where no relevant Australian standard exists, store such materials within an effective on-site containment system. The environmental authority holder must minimise the potential for contamination of land and water by diverting stormwater around contaminated areas and facilities used for the storage of chemicals and flammable or combustible liquids.
H12	**Exploration** Unless otherwise stated by a condition of this environmental authority, disturbance due to exploration activities in areas not authorised to be mined must be rehabilitated in accordance with provision detailed in the *Eligibility criteria and standard conditions for exploration and mineral development projects (Version 2)*.

Table H1 – Rehabilitation Completion Criteria

<table>
<tr><th>Mine domain</th><th>Mine feature name</th><th>Rehabilitation goal</th><th>Rehabilitation objectives</th><th>Indicators</th><th>Completion criteria</th></tr>
<tr><td>Retained Infrastructure</td><td>Dams, water management infrastructure, roads, etc. retained by the underlying landholder with formal agreement.</td><td>N/A</td><td>N/A</td><td>Formal agreement for retention of infrastructure in place.</td><td>A formal agreement is in place between Constellation Mining Pty Ltd and the underlying landholder(s) for any infrastructure that may be retained. Responsibility for the performance of these structures is also transferred to the landholder subject to the agreement.</td></tr>
<tr><td rowspan="2">All domains</td><td rowspan="2">Dams, Waste rock dump, Roads and Infrastructure (where not retained), topsoil stockpiles and backfilled pit.</td><td rowspan="2">Long-term Safety</td><td rowspan="2">Structurally safe for humans and animals with no hazardous materials present</td><td>Contaminated land assessment</td><td>Evidence provided by SQP in contaminated land assessment report that:
a) land is not contaminated land; or
b) where land is identified as contaminated land, action has been taken to remediate the land to prevent serious environmental harm to a person, animal or another part of the environment; or
c) where land is identified as contaminated land, it can be used for stated uses with further management.</td></tr>
<tr><td>Demonstrate stability</td><td>Areas are assessed as by a SQP as meeting the following maximum slope criteria:
<table><tr><td>Roads and MIA areas</td><td>10% (5.7°)</td></tr><tr><td>All other domains (including waste rock dumps)</td><td>20% (11.5°)</td></tr></table></td></tr>
</table>

				Erosion	Active rill and gully erosion has been managed and remediated appropriately where identified after 12 months of vegetative groundcover being established.	
		Non-polluting	No environmental harm	Surface runoff leaving rehabilitation is non-polluting to receiving waters	Surface water runoff must not exceed the water quality objectives for the Mackenzie River Sub-basin waters for a moderately disturbed system as stated in *Table 2 - Water quality objectives to protect aquatic ecosystem environmental value under baseflow (and, where specified, high flow) conditions* of the EP (Water) Policy 2009 *Mackenzie River Sub-basin Environmental Values and Water Quality Objectives.*	
				Groundwater	Groundwater monitoring undertaken through the operational life of the SCP and through the full period of rehabilitation establishment (as required by the EA), has indicated no potential impacts to any groundwater values resulting from the rehabilitated landforms.	
		Land use	Rehabilitation is suitable for sustainable cattle grazing.	Land suitability class	Rehabilitated areas achieve Land Suitability Class 3 for cattle grazing as defined by the *Guideline for Agricultural Land Evaluation in Queensland* (State Department of Queensland 2015)	
			Establish self-sustaining grazing vegetation.	Topsoil and subsoil support the proposed vegetation and land use.	Topsoil applied at an average thickness of 150mm.	
					Soil test results demonstrate soil properties and soil characteristics achieve the following parameters:	
					pH (1:5)	5.0-9.0

					Exchangeable Sodium Percentage	≤15%
					Plant Available Water Capacity	≥75mm
					Bicarbonate P	≥5 ppm
					Rootzone EC or Rootzone Cl	≤0.9 mS/cm or ≤900 ppm
				Groundcover	Groundcover is ≥70% or ≥50% if rocks, logs or other features are present	
				Carrying Capacity	≥70% of the productivity (carrying capacity measured as pasture biomass) of the grazed reference sites.	
				Plant Species Composition	Proportion of preferred, intermediate or suitable sown pasture species constitute >60% of vegetated groundcover. Preferred, intermediate and suitable sown pasture species are defined in *Fitzroy region GLM land types* FT04 and FT24.	

Schedule I: Regulated Structures	
Condition number	**Condition**
I1	**Consequence Category** The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)* or its successor at the following times: (a) prior to the design and construction of the structure; or (b) prior to any change in its purpose or the nature of its stored contents.
I2	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.
I3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)* or its successor.
I4	All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1993)* or its successor. ***Note:*** *Certification of design and construction may be undertaken by different persons.*
I5	Construction of a regulated structure is prohibited unless: (a) the holder has submitted a consequence category assessment report, and certification to the administering authority; and (b) certification for the design, design plan, and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.
I6	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)*, and must be recorded in the Register of Regulated Structures.

I7	Regulated structures must: (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 (ESR/2016/1933);* (b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: (i) floodwaters from entering the regulated dam from any watercourse or drainage line; and (ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line. (c) for dams associated with a failure to contain; 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.
I8	Certification by a suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: (a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and (b) construction of the regulated structure is in accordance with the design plan.

I9	**Operation of a regulated structure** Operation of a regulated structure is prohibited unless: (a) the holder has submitted to the administering authority; (b) one electronic copy of the design plan and certification of the design plan in accordance with **Conditions I4** to **I6**; (c) a set of 'as constructed' drawings and specifications; (d) certification of those 'as constructed' drawings and specifications in accordance with **Condition I8**; (e) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the Design Storage Allowance (DSA) volume across the system, a copy of the certified system design plan; (f) the requirements of this authority relating to the construction of the regulated structure have been met; (g) the holder has entered the details required under this authority, into a Register of Regulated Structures; and (h) there is a current operational plan for the regulated structure (except where the structure does not require operating procedures such as for levees).
I10	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.
I11	**Mandatory Reporting Level** **Conditions I12** to **I15** inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
I12	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.
I13	The holder must, as soon as practical and within **forty-eight (48) hours** of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
I14	The holder must immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated am.
I15	The holder must record any changes to the MRL in the Register of Regulated Structures.

I16	**Design storage allowance** The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to **1 July** of each year.
I17	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 DSA volume for the dam (or network of linked containment systems).
I18	The holder must, as soon as possible, and within **forty-eight (48) hours** of becoming aware that the regulated dam (or network of linked containment systems), will not have the available storage to meet the DSA volume on **1 November** of any year, notify the administering authority.
I19	The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on **1 November** of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.
I20	**Annual Inspection** Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

I21	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. Regulated structures must be assessed: (a) against the most recent hazard assessment report and design plan (or system design plan); (b) against recommendations contained in previous annual inspections reports; (c) against recognised dam safety deficiency indicators; (d) for changes in circumstances potentially leading to a change in hazard category; (e) for conformance with the conditions of this authority; (f) for conformance with the 'as constructed' drawings; (g) for the adequacy of the available storage in each regulated dam, based on an actual observation or observation 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 (h) for evidence of conformance with the current operational plan.
I22	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)*.
I23	The environmental authority holder must: (a) within **twenty (20) business days** of receipt of the annual inspection report, provide to the administering authority: (i) the recommendations section of the annual inspection report; and (ii) if applicable, any actions being taken in response to those recommendations; and (b) if, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within **ten (10) business days** of receipt of the request.
I24	**Transfer arrangements** The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan, and other supporting documentation, to a new holder on transfer of this authority.

I25	**Register of Regulated Structures** A Register of Regulated Structures must be established and maintained by the holder for each regulated dam.
I26	The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.
I27	The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with **Condition I9** and **I10** has been achieved.
I28	The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
I29	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
I30	The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.

Schedule J: Biodiversity	
Condition number	**Condition**
J1	**Prescribed environmental matters - matters of State environmental significance** Impacts to Matters of State Environmental Significance (MSES) as a result of carrying out the activity must only occur within the locations and to the maximum extents stated in **Table J1 – Authorised residual impacts to prescribed environmental matters.**
J2	All impacts to MSES must be determined, documented, and mapped by an appropriately qualified person
J3	Records of impacts to MSES in **Condition J2** must be kept for a period of not less than **six (6) years** from the time the impact occurs and include: (a) the size and extent of impact; and (b) details about the condition of the MSES (e.g. dominant vegetation and remnant status).

Table J1 – Authorised residual impacts to prescribed environmental matters.

Prescribed environmental matters – matter of State environmental significance (MSES)	**Location of impact**	**Maximum impact area**	**Offset Requirement under *Environmental Offsets Act 2014***
Habitat for an animal that is vulnerable wildlife – Ornamental snake (*Denisonia maculate*)	Figure 3 - Authorised Impact to Vulnerable Wildlife Habitat, *Denisonia maculata* and *Geophaps scripta scripta*	**209.5ha**	No
Habitat for an animal that is vulnerable wildlife – Squatter pigeon (southern) (*Geophaps scripta scripta*)	Figure 3 - Authorised Impact to Vulnerable Wildlife Habitat, *Denisonia maculata* and *Geophaps scripta scripta*	**209.5ha**	No

END OF CONDITIONS

Definitions

Words and phrases used throughout this environmental authority are defined below. Where a definition for a term used in this environmental authority is not provided within this environmental authority, but is provided in the EP Act 1994 or subordinate legislation, the definition in the EP Act or subordinate legislation must be used.

'acid metalliferous drainage' means drainage that is characterised by low pH, elevated metal concentrations, high sulfate concentrations and high salinity.

'acid mine 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.

'affected person' is someone whose drinking water can potentially be impacted as a result of discharges from a dam or their life can be put at risk due to dwellings or workplaces being in the path of a dam break flood.

'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).

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

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

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

'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 relating 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.

'background', with reference to the water schedule means the average of samples taken prior to the commencement of mining from the same waterway that the current sample has been taken.

'blasting' means the use of explosive materials to fracture:

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

'certification', **'certifying'** or **'certified'** by an appropriately qualified and experienced person in relation to a design plan or an annual report regarding dams/structures, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time:

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

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

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

'chemical' means:

(a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth); or
(b) a dangerous good under the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council; or
(c) a lead hazardous substance within the meaning of the *Workplace Health and Safety Regulation 1997*;
(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
    (v) a substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or
    (vi) manufacture of plastic or synthetic rubber.

'clean water' means runoff from undisturbed areas or established rehabilitation that has not come into contact with disturbed land or active mining areas. Raw water supplied from an external water supply is also considered clean water.

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

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

'consequence category' means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

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

'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 (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.

'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 information.

'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.

'existing structure' means a structure that prior to 18 September 2014 meets any or both of the following, a structure:

(a) with a design that is in accordance with the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams and that is considerably in progress;
(b) that is under considerable construction or that is constructed.

'exploration activities' are mining activities permitted under an environmental authority, that allows the holder to:

(a) determine the existence, quality and quantity of minerals;
(b) evaluate the potential for development of the mineral resource;
(c) mining and engineering feasibility studies; and
(d) other activities approved by the Minister.

'extreme storm storage' – means a storm storage allowance determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

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

'hazard category' means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in '*Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*'.

'holder' means:

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

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

'infrastructure' means water storage dams, levees,, roads and tracks, buildings and other structures built for the purpose of the mining activity.

'land' in 'Schedule H – Land and rehabilitation' of this document means land excluding waters and the atmosphere, that is, the term has a different meaning from the term as defined in the *Environmental Protection Act 1994*. For the purposes of the *Acts Interpretation Act 1954*, it is expressly noted that the term 'land' in this environmental authority relates to physical land and not to interests in land.

'land use' –means the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

'leachate' means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of at the operational land which contains soluble, suspended or miscible contaminants likely to have been derived from the said material.

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

'low consequence dam' means any dam that is not a high or significant consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)*.

'm' means metres.

'mandatory reporting level or MRL' means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/933)* published by the administering authority.

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

'measures' includes any measures to prevent or minimise environmental impacts of the mining activity such as bunds, silt fences, diversion drains, capping, and containment systems.

'mine-affected water'

(a) means the following types of water:
  (i) pit water, tailings dam water, processing plant water;
  (ii) 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 such runoff, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or potentially contaminated workshop water;
  (iii) groundwater from the mine's dewatering activities;
  (iv) a mix of mine affected water (under any of paragraphs a-c) and other water.

(b) does not include surface water runoff which, to the extent that it has been in contact with areas disturbed by mining activities that have not yet been completely rehabilitated, has only been in contact with:
  (i) land that has been rehabilitated to a stable landform and either capped or revegetated in accordance with the acceptance criteria set out in the environmental authority but only still awaiting maintenance and monitoring of the rehabilitation over a specified period of time to demonstrate rehabilitation success; or
  (ii) land that has partially been rehabilitated and monitoring demonstrates the relevant part of the landform with which the water has been in contact does not cause environmental harm to waters or groundwater, for example:
  (iii) areas that have been capped and have monitoring data demonstrating hazardous material adequately contained with the site;
  (iv) evidence provided through monitoring that the relevant surface water would have met the water quality parameters for mine affected water release limits in this environmental authority, if those parameters had been applicable to the surface water runoff; or
  (v) both.

'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.

'mining waste' means waste rock, spoil, overburden and interburden.

'modification or modifying' (see definition of 'construction').

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

'**neutral mine drainage**' means drainage that is characterised by near-neutral pH, elevated heavy metal concentrations and high sulfate salinity.

'non polluting' means having no adverse impacts upon the receiving environment.

'operational plan' includes:

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

'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.

'register of regulated structure' includes:

(a) date of entry in the register;
(b) name of the structure, its purpose and intended/actual contents;
(c) the consequence category of the dam as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635);
(d) dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;
(e) name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;
(f) for the regulated dam, other than in relation to any levees –
    (i) the dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;
    (ii) coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area;
    (iii) dam crest volume (megalitres);
    (iv) spillway crest level (metres AHD).
    (v) maximum operating level (metres AHD);
    (vi) storage rating table of stored volume versus level (metres AHD);
    (vii) design storage allowance (megalitres) and associated level of the dam (metres AHD);
    (viii) mandatory reporting level (metres AHD);
(g) the design plan title and reference relevant to the dam;
(h) the date construction was certified as compliant with the design plan;
(i) the name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;
(j) details of the composition and construction of any liner;
(k) the system for the detection of any leakage through the floor and sides of the dam;
(l) dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;
(m) dates when recommendations and actions arising from the annual inspection were provided to the administering authority;
(n) dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

'rehabilitation works' for the purposes of determining the commencement of rehabilitation monitoring means completion of topsoil spreading and establishment of first groundcover.

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

'permanent watercourse diversion' is a man-made structure that incorporates the geomorphologic, hydraulic, hydrologic and ecological components of a local watercourse and is designed, constructed, operated and maintained according to an engineering standard that ultimately achieves a self-sustaining watercourse able to function without features or characteristics that rely on ongoing maintenance or that impose a financial or other burden on the proponent, government or the community.

'potable water' means treated water suitable for human consumption.

'protected area' means – a protected area under the *Nature Conservation Act 1992*; or

(a) a marine park under the Marine Parks Act 1992; or
(b) a World Heritage Area.

'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; and
(c) an area of land that is not specified in of this environmental authority.

The term does not include land that is specified in Authorised Activities of this environmental authority.

'receiving waters' means the waters into which this environmental authority authorises releases of mine affected water.

'regulated structure' means any structure in the significant or high consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority. A regulated structure does not include:

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

'rehabilitation' the process of reshaping and revegetating land to restore it to a stable landform.

'release event' means a surface water discharge from mine affected water storages or contaminated areas on the licensed place meaning the mining activities carried out at the mining tenements.

'residual drilling material' means waste drilling materials including muds and cuttings or cement returns from well holes and which have been left behind after the drilling fluids are pumped out.

'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.

'RL' means reduced level, relative to mean sea level as distinct from depths to water.

'representative' means a sample set which covers the variance in monitoring or other data either due to natural changes or operational phases of the mining activities.

'saline mine drainage' means drainage that is characterised by high sulfate and salinity but near-neutral pH and low concentrations of heavy metals.

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

'sediment water' means runoff generated from non-mine-affected disturbed landforms including access/haul roads and unsealed access tracks, cleared areas, and rehabilitation that has not yet established.

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

Note: The definition of 'sensitive place' and 'commercial place' is based on Schedule 1 of EPP Noise. That is, a sensitive place is inside or outside on a dwelling, library & educational institution, childcare or kindergarten, school or playground, hospital, surgery or other medical institution, commercial & retail activity, protected area or an area identified under a conservation plan under *Nature Conservation Act 1992* as a critical habitat or an area of major interest, marine park under *Marine Parks Act 2004*, park or garden that is outside of the mining lease and open to the public for the use other than for sport or organised entertainment. A commercial place is inside or outside a commercial or retail activity.

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) is not a sensitive place for that mine or mining project, 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 holders of the environmental authority for the mining project, or a related company. Accommodation for mine employees or contractors is a sensitive place if the land is held by a mining company or related company, and if occupation is restricted to the employees, contractors and their families for the particular mine or mines which are held by the same company or a related company. For example, a township (occupied by the mine employees, contractors and their families for multiple mines that are held by different companies) would be a sensitive place, even if part or all of the township is constructed on land owned by one or more of the companies.

'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 form the dam, normally under flood conditions or in anticipation of flood conditions.

'stages of mining activities' means (but not limited to) a construction, operational, closure and rehabilitation phase of the mining activity.

'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.

'temporary watercourse diversion' is a man-made structure that may incorporate geomorphologic, hydraulic, hydrologic and ecological components of a local watercourse and is designed, constructed, operated and maintained according to an engineering standard that ensures the diversion does not compromise the equilibrium and performance of the diversion and adjoin watercourses. A temporary diversion is replaced by a permanent diversion, or the re-establishment of the pre-existing watercourse, within the timeframe specified in the design plan.

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

'µS/cm' means micro siemens per centimetre.

'void' means any constructed, open excavation in the ground.

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

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

'watercourse' has the same meaning given in the *Water Act 2000*.

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

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

'waters' includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), storm water channel, storm water drain, and groundwater and any part thereof.

'WaTERS' means the Queensland Government's WaTERS database 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.

Appendices

Figure 1 – Authorised Disturbance Area

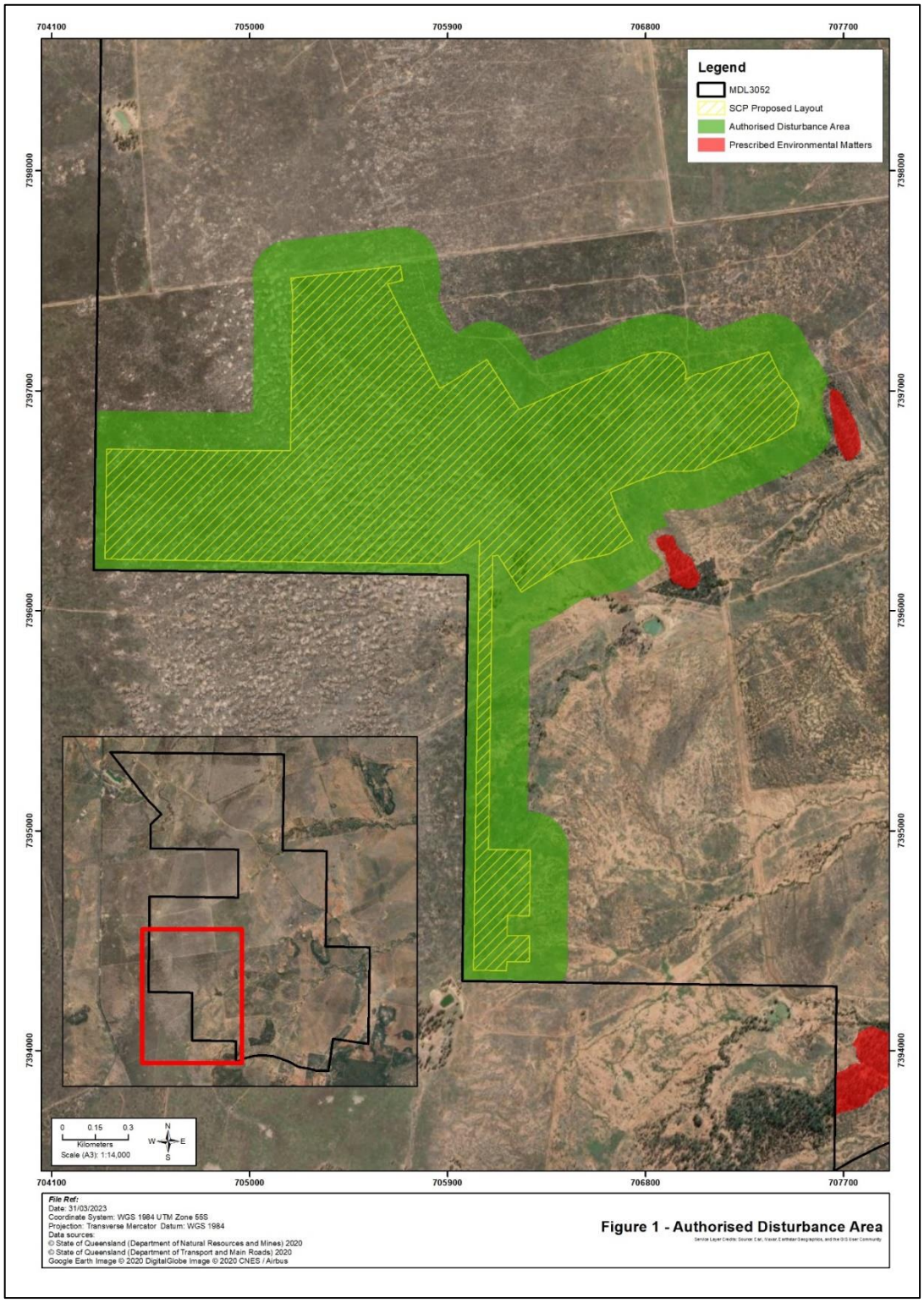


Figure 2 – Groundwater Monitoring Locations

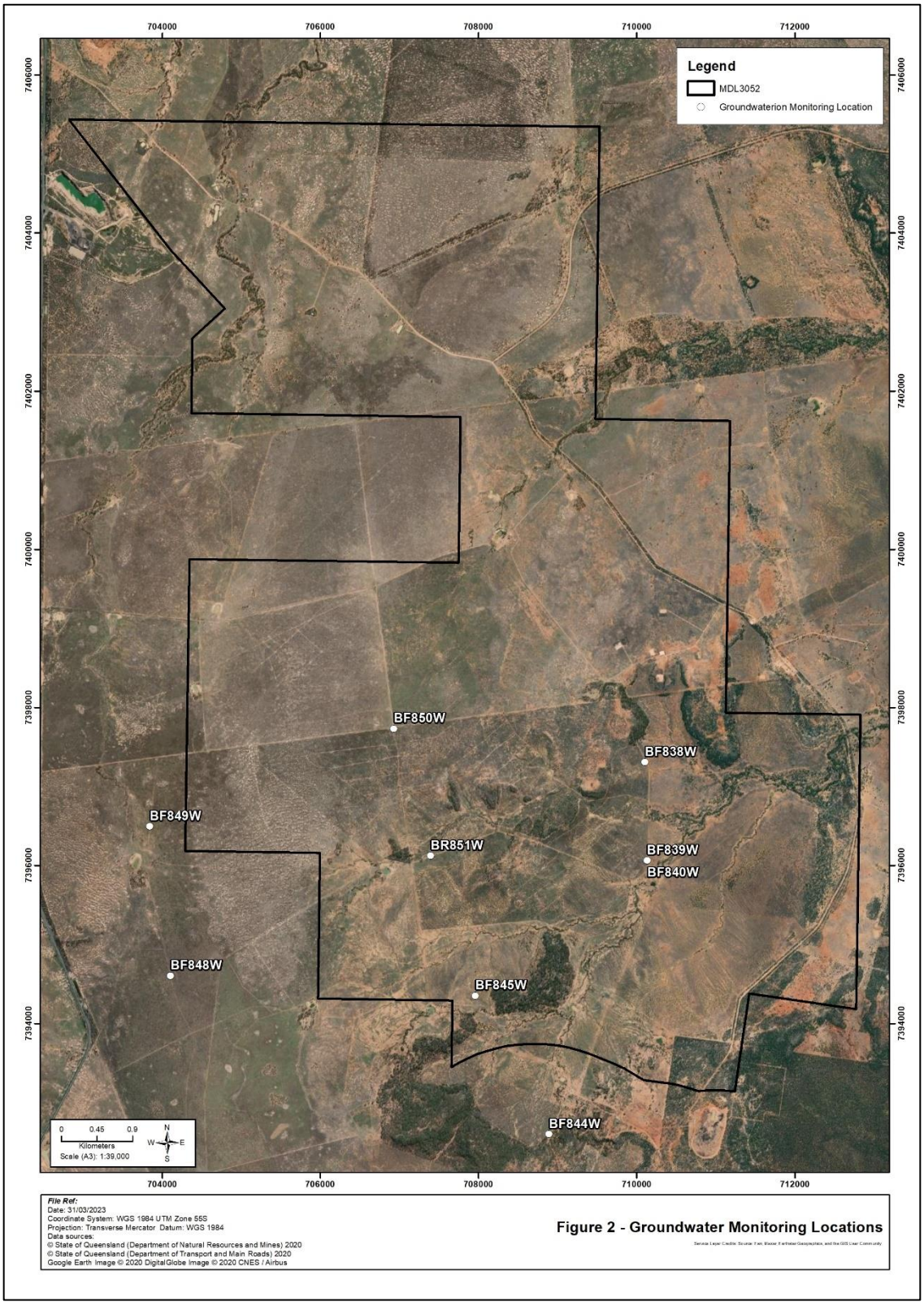
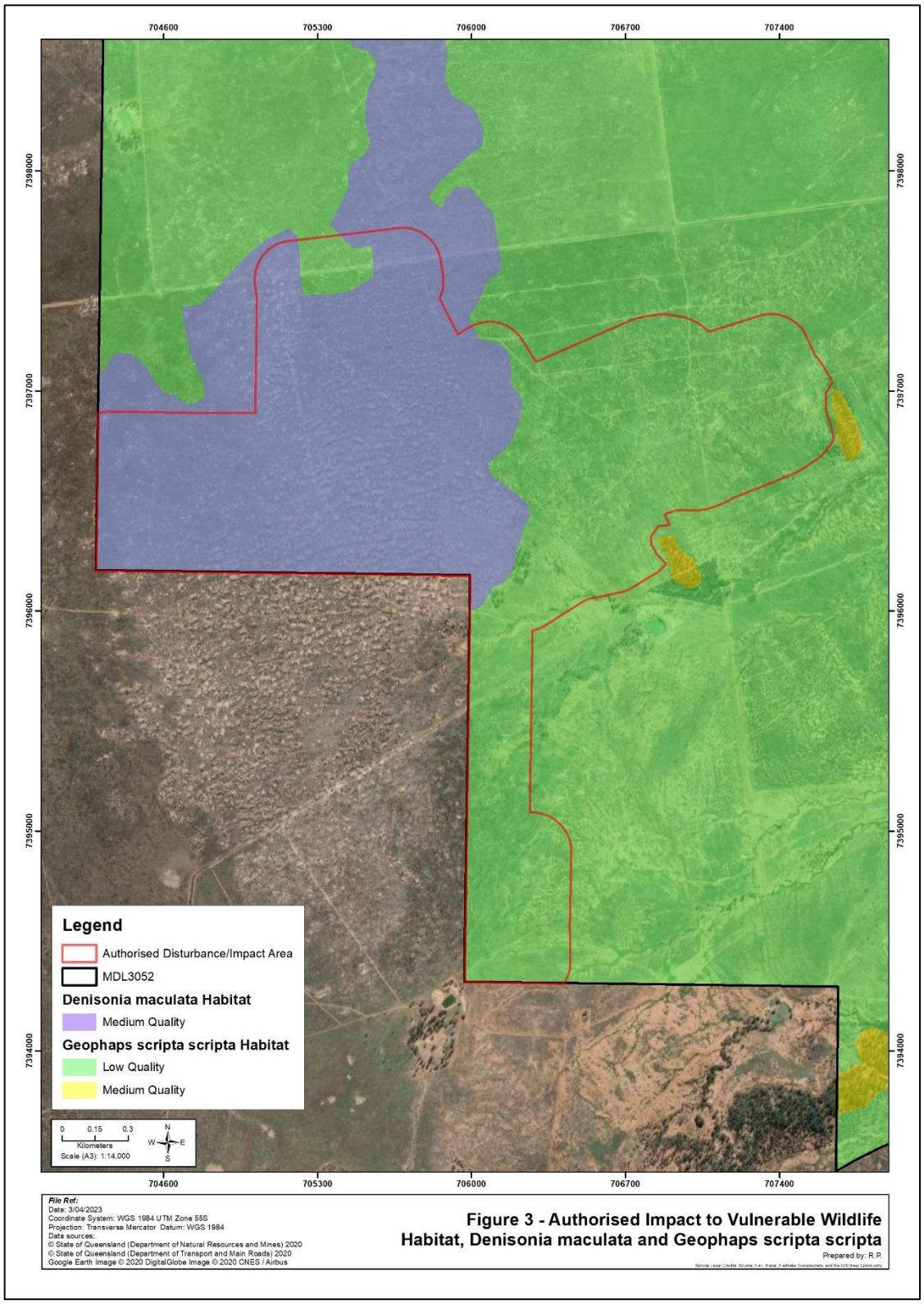


Figure 3 - Authorised Impact to Vulnerable Wildlife Habitat, *Denisonia maculata* and *Geophaps scripta scripta*



END OF ENVIRONMENTAL AUTHORITY