BARALABA SOUTH

Baralaba South Project

Environmental Impact Statement

CHAPTER 19

Proposed Environmental Authority Conditions

aarc ENVIRONMENTAL SOLUTIONS

Table of Contents

List of Tables

19 Proposed Environmental Authority Conditions

This chapter sets out the proposed environmental authority conditions for the Project. The conditions are consistent with, and have been structured in accordance with, the 'Model Mining Conditions, version 6.02' (DES, 2017a). The guidelines 'Structures which are dams and levees constructed as part of environmentally relevant activities, version 9.01' (DES, 2019a), and 'Model water conditions for coal mines in the Fitzroy basin, version 3.01' (DES, 2013) have also been consulted. Condition numbers are provided solely for reference purposes.

19.1 Schedule A – General Conditions

A1 **General**

This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.

A2 In carrying out the mining activity authorised by this environmental authority, disturbance of land must not exceed the allowed disturbance area of 1211 ha.

A3 The holder of this environmental authority must:

a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;

b) maintain such measures, plant and equipment in a proper and efficient condition;

c) operate such measures, plant and equipment in a proper and efficient manner; and

d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.

A4 **Monitoring**

Except where specified otherwise in another condition of this environmental authority, all monitoring records or reports required by this environmental authority must be kept for a period of not less than five years.

A5 **Risk Management**

The holder of this environmental authority must develop and 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, by three months from date of issue.

A6 **Notification of emergencies, incidents and exceptions**

The holder of the environmental authority must notify the administering authority by written notification within 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.

A7 Within 10 business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following:

a) Results and interpretation of any samples taken and analysed.

b) Outcomes of actions taken at the time to prevent or minimise unlawful environmental harm.

c) Proposed actions to prevent a recurrence of the emergency or incident.

A8 **Complaints**

The holder of this environmental authority must record all environmental complaints received about the mining activities including:

a) name, address and contact number for the complainant;

b) time and date of complaint;

c) reasons for the complaint;

d) investigations undertaken;

e) conclusions formed;

f) actions taken to resolve the complaint;

g) any abatement measures implemented; and

h) person responsible for resolving the complaint.

A9 The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within 10 business days of completion of the investigation, or no later than 10 business days after the end of the timeframe nominated by the administering authority to undertake the investigation.

A10 **Third-party reporting**

The holder of this environmental authority must:

a) within one year of the commencement of this environmental authority, obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority;

b) obtain further such reports at regular intervals, not exceeding three-yearly intervals, from the completion of the report referred to above; and

c) provide each report to the administering authority within 90 days of its completion.

A11 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 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 a condition, 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 currently immediately prior to the relevant amendment or change.

19.2 Schedule B – Air

B1 **Dust Nuisance**

The environmental authority holder must ensure that all reasonable and feasible avoidance and mitigation measure are employed so that dust and particulate matter emissions generated by the mining activities do not cause an environmental nuisance at any sensitive or commercial place.

B2 When requested by the administering authority or as a result of a complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer), dust and particulate monitoring (including dust deposition, TSP, and PM_{10} as relevant) must be undertaken, and the results thereof notified to the administering authority within fourteen days following completion of monitoring. This includes providing interim reports if the monitoring lasts for more than one month. Monitoring must be carried out at a place(s) relevant to the potentially affected sensitive receptor.

B3 The environmental authority holder will not be in breach of condition B1 if monitoring undertaken pursuant to condition B2 indicates that dust and particulate matter does not exceed the following air quality objectives when measured at the sensitive or commercial place:

a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air – Determination of particulate matter – Deposited matter – Gravimetric method.

b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version of either:

c) 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

d) Australian Standard AS3580.9.8 Methods for sampling and analysis of ambient air Determination of suspended particulate matter - PM10 continuous direct mass method using a tapered element oscillating microbalance analyser; or

e) 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

f) Australian Standard AS3580.9.11 Methods for sampling and analysis of ambient air Method 9.11: Determination of suspended particulate matter— PM10 beta attenuation monitors; or

g) Any other method of monitoring PM10 which may be agreed to by the administering authority.

Note: Any exceedance of PM10 50 $\mu g/m^3$ (24-hour average) limit, or the dust deposition 120 milligrams per square metre per day limit, is not considered a breach of this condition if the holder of this environmental authority demonstrates that it is caused by natural events (for example bushfires or dust storms

B4 If the monitoring which is carried out in accordance with Condition B2 indicates an exceedance of the air quality objectives in Condition B1, then the environmental authority holder must investigate whether the exceedance is due to emissions from the activity. If the mining activity is found to be the cause of the exceedance, then the environmental authority holder must:

a) address the complaint including the use of appropriate dispute resolution if required; and

b) immediately implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance.

B5 **Air Quality Management Plan**

An Air Quality Management Plan must be implemented by an appropriately qualified person by [*date to be entered*]. The Air Quality Management Plan must be submitted to the administering authority by [*date to be entered*].

B6 **The Air Quality Management Plan required by Condition B5 must include:**

a) a preventative management system for air quality control;

b) a Trigger Action Response Program;

c) performance criteria and monitoring methods;

d) number and location of monitoring sites;

e) quality assurance/quality control (QA/QC) requirements;

f) roles and responsibilities; and

g) reporting.

B7 **Odour Nuisance**

The release of noxious or offensive odour or any other noxious or offensive airborne contaminant resulting from the mining activities must not cause an environmental nuisance at any sensitive or commercial place.

B8 If the administering authority determines the odour released to constitute an environmental nuisance, then the environmental authority holder must:

a) address the complaint including the use of appropriate dispute resolution if required; and

b) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance

19.3 Schedule C – Waste management

C1 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 burnt.

C2 The holder of the environmental authority may burn vegetation cleared in the course of carrying out extraction activities provided the activity does not cause environmental harm at any sensitive place or commercial place.

C3 **Tailings Disposal**

Tailings must be managed in accordance with procedures contained within a Tailings Management Plan. These procedures must include provisions for:

a) containment of tailings;

b) the management of seepage and leachates both during operation and the foreseeable future;

c) the control of fugitive emissions to air;

d) a program of progressive sampling and characterisation to identify acid producing potential and metal concentrations of tailings;

e) maintaining records of the relative locations of any other waste stored within the tailings;

f) rehabilitation strategy; and

g) monitoring of rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of tailings, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover.

C4 **Waste Rock**

A Waste Rock and Spoil Disposal Plan must be developed and implemented prior to the commencement of mining activities.

C5 The Waste Rock and Spoil Disposal Plan must include, where relevant, at least:

a) an effective characterisation of the waste rock and spoil to predict under the proposed placement and disposal strategy the quality of runoff and seepage generated concerning potentially environmentally significant effects including salinity, acidity, alkalinity and dissolved metals, metalloids and non-metallic inorganic substances; and

b) a program of progressive sampling and characterisation to identify dispersive and nondispersive spoil and the salinity, acid and alkali producing potential and metal concentrations of waste rock.

19.4 Schedule D – Noise

D1 **Noise limits**

The holder of this environmental authority must ensure that noise generated by the mining activities does not cause the criteria in Table D1 Noise Limits to be exceeded at a sensitive place commercial place.

D2 **Airblast overpressure nuisance**

The holder of this environmental authority must ensure that blasting does not cause the limits for peak particle velocity and air blast overpressure in Table D2: Airblast Overpressure and Vibration Limits to be exceeded at a sensitive place or commercial place.

D3 **Monitoring and reporting**

Noise monitoring and recording must include the following descriptor characteristics and matters:

a) LAN,T (where N equals the statistical levels of 1, 10 and 90 and T = 15mins).
b) Background noise LA90.
c) The level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to statistical levels.
d) Atmospheric conditions including temperature, relative humidity and wind speed and directions.
e) Effects due to any extraneous factors such as traffic noise.
f) Location, date and time of monitoring.

If the complaint concerns low frequency noise, Max LpLIN,T and one third octave band measurements in dB(LIN) for centre frequencies in the 10-200 Hz range.

D4 The holder of this environmental authority must develop and implement a blast monitoring and management program to monitor compliance with Table D2: Airbalst Overpressure and Vibration Limits for:

g) at least 90% of all blasts undertaken on this site in each year at the nearest sensitive place or commercial place; and

h) all blasts conducted during any time period specified by the administering authority at the nearest sensitive place or commercial place.

Table D1: Noise Limits

Noise Level dB(A)	**Monday to Sunday (including public holidays)**		
	7am to 6pm	**6pm to 7am**	**10 pm to 7 am**
	Measured at a sensitive or commercial place		
LAeq, adj,1hr	40	40	35
LA10, adj, 1 hr	45	45	40
LA1, adj, 1 hr	50	50	45
Low Frequency Noise Limit (dB)(Lin)	–	55	55

Table D2: Airblast Overpressure and Vibration Limits

Blasting Parameter	**7am to 6pm**	**6pm to 7am**
	Measured at a sensitive or commercial place	
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 is allowed during these times
Ground vibration peak particle velocity	5 mm/second peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time	No blasting is allowed during these times

19.5 Schedule E – Groundwater

E1 The holder of this environmental authority must not release contaminants to groundwater.

E2 **Monitoring and reporting**

Groundwater monitoring and analysis must be performed by an appropriately qualified person.

E3 The holder of this environmental authority must implement a groundwater monitoring program before commencement of activities.

E4 The groundwater monitoring program must:

a) be in accordance with Table E1: Groundwater monitoring locations and frequency;

b) identify potential sources of contamination to groundwater from the activity;

c) ensure that all potential groundwater impacts due to the activity are identified, monitored and mitigated;

d) document sampling and monitoring methodology;

e) ensure that adequate groundwater monitoring and data analysis is undertaken to achieve the following objectives:

f) establish baseline datasets from existing monitoring bores;

g) detect any impacts to groundwater levels due to the mining activity;

h) detect any impacts to groundwater quality due to the mining activity;

i) determine trends in groundwater quality; and

j) determine trends in groundwater level;

k) include an appropriate quality assurance and quality control program;

l) include a conceptual numerical groundwater model; and

m) include a review process to improve the program.

E5 Groundwater quality must be monitored at the locations and frequencies defined in Table EE1 Groundwater monitoring locations and Frequency for quality characteristics identified in Table E2: Groundwater Quality Triggers and Limits.

E6 Groundwater levels must be measured at the monitoring locations specified in Table E1: Groundwater Monitoring Locations and Frequency

E7 Results of monitoring of groundwater from bores identified in Table E1: Groundwater Monitoring Locations and Frequency, must not exceed any of the limits defined in Table E2: Groundwater Quality Triggers and Limits.

E8 **Trigger Exceedance Investigation**

If quality characteristics of groundwater from bores identified in Table E1 Groundwater Monitoring Locations and Frequency, exceed any of the trigger levels stated in Table E2 Groundwater Quality Triggers and Limits, or exceed any of the groundwater level trigger threshold stated in Table E3: Groundwater Level Triggers, the holder of this environmental authority must complete an investigation in accordance with the ANZECC and ARMCANZ (2000) and submit a copy the investigation report to the administering authority with 28 days of its completion.

E9 **Bore Construction and Maintenance and Decommissioning**

The construction, maintenance and management 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

Bore ID	Location		Surface RL (m)	Screened Interval (mbgl)	Stratigraphy	Monitoring Frequency	
	Easting	Northing				Level	Quality
A-PB1	787806	7314088	88.4	11.5 - 23.5	Alluvium	Q†	-
A-PB2	791931	7309808	91.5	11.5 - 23.5	Alluvium	Q†	-
A-OB1	787440	7314586	88.9	10 - 22	Alluvium	D	Q/A
A-OB2	787802	7314105	88.3	11.5 - 17.5	Alluvium	D	Q/A
A-OB3	788393	7314309	87.9	12 - 30	Alluvium	Q	Q/A
A-OB4*	789290	7314733	87.5	8 - 17	Alluvium	Q*	-
A-OB6	791402	7309557	91.4	9 - 18	Alluvium	D	Q/A
A-OB7	791935	7309829	91.7	11 - 26	Alluvium	D	Q/A
A-OB8	792501	7310136	91.4	10 - 22	Alluvium	D	Q/A
A-OB10*	789247	7313094	87.5	8 - 20	Alluvium	D*	-
A-OB11	787270	7313771	86.2	9 - 15	Alluvium	D	Q/A
A-OB12	787220	7313767	87.2	9.6 - 15.6	Alluvium	D	Q/A
P-PB1	787805	7314101	88.3	38	BG (interburden)	Q	Q/A
P-OB1	788477	7316388	87.4	105	BG (coal seam)	Q	Q/A
P-OB2	793140	7311758	105.3	147	BG (interburden)	Q	Q/A
P-OB3*	789939	7312422	89.6	29	BG (interburden)	Q*	-
P-OB4*	789205	7314695	87.1	76	BG (coal seam)	Q*	-
P-OB5	792626	7310218	91.4	184	BG (coal seam)	Q	Q/A
P-VWP1	787442	7314568	89.0	38	Interburden	D	-
				105	Interburden	D	-
				147	Interburden	D	-
P-VWP2	787789	7314089	88.51	29	Overburden	D	-
				76	Rewan Formation	D	-
				184	Interburden	D	-
				234	Interburden	D	-

Bore ID	Location		Surface RL (m)	Screened Interval (mbgl)	Stratigraphy	Monitoring Frequency	
	Easting	Northing				Level	Quality
P-VWP3	791922	7309816	91.6	55	Interburden	D	-
				121	Interburden	D	-
				155	Interburden	D	-
				175	Interburden	D	-
P-VWP4	790829	7315606	101.0	25	Interburden	D	-
				80	Interburden	D	-
				150	Interburden	D	-
				200	Interburden	D	-
P-VWP5	789621	7310598	90.4	66	Interburden	D	-
				138	Interburden	D	-
				185	Interburden	D	-
Proposed1	788477	7316388	87.4	~15	Alluvium	Q	Q/A
Proposed2	789319	7312065	TBC	~15	Alluvium	Q	Q/A

1. Monitoring is not required where a bore has been removed as a direct result of the mining activity.
2. RL must be measured to the nearest 5cm from the top of the bore casing.
3. Coordinates in MGA94 Zone 55
4. BG – Blackwater Group
5. *within disturbance footprint, to monitor for baseline data only, no triggers to be applied
6. † - Near other existing bores therefore water level monitoring proposed only
7. D – Daily – bore equipped with level logger/VWP
8. Q – Quarterly
9. Q/A – Quarterly field water quality and annual full suite of water quality.

Table E2: Groundwater Quality Triggers and Limits

Bore	pH (pH-units)	EC (µs/cm)	Sulphate as SO_4 (mg/L)	Al (mg/L)	As (mg/L)	B (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	Cu (mg/L)	Pb (mg/L)	Hg (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/L)	U (mg/L)	Zn (mg/L)
A-PB1	6.33 - 8	8,910	318	0.055	0.013	0.37	0.0002	0.0001	0.003	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.06
A-OB1	6.33 - 8	8,910	318	0.055	0.013	0.37	0.0002	0.0001	0.003	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.06
A-OB2	6.33 - 8	8,910	318	0.055	0.013	0.37	0.0002	0.0001	0.003	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.06
A-0B3	6.33 - 8	8,910	318	0.055	0.013	0.37	0.0002	0.0001	0.003	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.06
A-OB11	6.33 - 8	8,910	318	0.055	0.013	0.37	0.0002	0.0001	0.003	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.06
A-OB12	6.33 - 8	8,910	318	0.055	0.013	0.37	0.0002	0.0001	0.003	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.06
A-OB4	6.28 - 8	37,506	1,500	0.055	0.013	0.37	0.0014	0.01	0.01	0.0014	0.0034	0.0006	0.034	0.03	0.005	0.0604	0.06
A-OB7	6.28 - 8	37,506	1,500	0.055	0.013	0.37	0.0014	0.01	0.01	0.0014	0.0034	0.0006	0.034	0.03	0.005	0.0604	0.06
A-OB8	6.28 - 8	37,506	1,500	0.055	0.013	0.37	0.0014	0.01	0.01	0.03	0.0034	0.0006	0.034	0.03	0.005	0.0738	0.0828
A-OB10	6.28 - 8	37,506	1,500	0.055	0.013	0.37	0.0014	0.01	0.01	0.03	0.0034	0.0006	0.034	0.03	0.005	0.0604	0.06
P-OB1	6.27 - 8	34,154	1,600	0.055	0.013	0.37	0.0002	0.0028	0.0058	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.317
P-OB2	6.27 - 8	34,154	1,600	0.055	0.013	0.37	0.0002	0.0028	0.0058	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.317
P-OB3	6.27 - 8	34,154	1,600	0.055	0.013	0.37	0.0002	0.0028	0.0058	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.317
P-OB4	6.27 - 8	37,411	1,600	0.055	0.013	0.37	0.0002	0.0028	0.0058	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.317
P-OB5	6.27 - 8	34,154	1,600	0.055	0.013	0.37	0.0002	0.0028	0.0058	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.317
P-PB1	6.27 - 8	34,154	1,600	0.055	0.013	0.37	0.0002	0.0028	0.0058	0.03	0.0034	0.0006	0.034	0.011	0.005	0.0005	0.317

Note: These trigger levels are preliminary and will be revised following collection of additional groundwater quality data prior to commencement of operations.

Table E3: Groundwater Level Triggers

Bore	Geology	Drawdown Trigger
A-PB1	Alluvium	> 2 m beyond baseline data ranges
A-OB1	Alluvium	> 2 m beyond baseline data ranges
A-OB2	Alluvium	> 2 m beyond baseline data ranges
A-OB3	Alluvium	> 5.6 m beyond baseline data ranges
A-OB7	Alluvium	> 2.2 m beyond baseline data ranges
A-OB8	Alluvium	> 2.5 m beyond baseline data ranges
A-OB10	Alluvium	> 6.3 m beyond baseline data ranges
A-OB11	Alluvium	> 2 m beyond baseline data ranges
A-OB12	Alluvium	> 2 m beyond baseline data ranges
P-OB3	Baralaba Coal Measures (interburden)	> 13.9 m beyond baseline data ranges
P-OB1	Baralaba Coal Measures (coal seam)	> 10.8 m beyond baseline data ranges
P-OB5	Baralaba Coal Measures (coal seam)	> 21.2 m beyond baseline data ranges
P-OB2	Gyranda Formation	> 14.6 m beyond baseline data ranges
P-PB1	Baralaba Coal Measures (interburden)	> 6.3 m beyond baseline data ranges

Note: These trigger levels are preliminary and will be revised following collection of additional groundwater level data prior to commencement of operations.

19.6 Schedule F - Water

F1 **Contaminant Release**

Contaminants that will or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities, except as permitted under the conditions of this environmental authority.

F2 Unless otherwise permitted under the conditions of the environmental authority, the release of mine affected water to waters must only occur from the release points specified in Table F1: Mine Affected Water Release Points, Sources and Receiving Waters.

F3 The release of mine affected water to internal water management infrastructure installed and operated in accordance with a water management plan that complies with condition F25 is permitted.

F4 The release of mine affected water to waters in accordance with condition F2 must not exceed the release limits stated in Table F2 Mine Affected Water Release Limits when measured at the monitoring points specified in Table F1: Mine Affected Water Release Points, Sources and Receiving Waters for each quality characteristics.

F5 The release of mine affected water to waters from the release points must be monitored at the locations specified in Table F1: Mine Affected Water Release Points, Sources and Receiving Waters for each quality characteristic and at the frequency specified in Table F2: Mine Affected Water

Release Limits and Table F3: Release Contaminant Trigger Investigation Levels, Potential Contaminants.

F6 If quality characteristics of the release exceed any of the trigger levels specified in Table F3: Release contaminant trigger investigation levels, potential contaminants during a release event:

a) the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in F3: Release Contaminant Trigger Investigation Levels, Potential Contaminants. and:

b) where the trigger values are not exceeded then no action is to be taken; or

c) where the downstream results exceed the trigger values specified F3: Release Contaminant Trigger Investigation Levels, Potential Contaminants, for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and:

d) if the result is less than the background monitoring site data, then no action is to be taken; or

e) if the result is greater than the background monitoring site data, complete an investigation into the potential for environmental harm and provide a written report to the administering authority within 90 days of receiving the result, outlining:

f) details of the investigations carried out; and

g) actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with F6 b) 2) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

F7 If an exceedance in accordance with condition F6 b (2) is identified, the holder of the environmental authority must notify the administering authority in writing within 24 hours of receiving the result.

Table F1: Mine Affected Water Release Points, Sources and Receiving Waters

Release Point(s)	Location		Mine affected water source and location	Receiving waters description
	Easting (GDA94)	Northing (GDA94)		
RP1	149.822	–24.0873	Mine affected water system	Dawson River

Note: Exact location coordinates to be confirmed

Table F2: Mine Affected Water Release Limits

Quality characteristic	Release limits	Monitoring frequency
Electrical conductivity (µS/cm)	500 µS/cm Release limits also specified in Table F4 for variable flow criteria	Daily during release (the first sample must be taken within two hours of commencement of release)
pH (pH units)	6.5 (min) – 9.0 (max)	Daily during release (the first sample must be taken within two hours of commencement of release)

Table F3: Release Contaminant Trigger Investigation Levels, Potential Contaminants

Quality characteristic	Trigger levels (µg/L)	Comment on trigger level	Monitoring frequency
Aluminium	55	All values shown have been sourced from 'Model Mining Conditions, version 6.02' (DES, 2017a)	Commencement of release and thereafter weekly during release
Arsenic	13		
Cadmium	0.2		
Chromium	1		
Copper	2		
Iron	300		
Lead	4		
Mercury	0.2		
Nickel	11		
Zinc	8		
Boron	370		
Cobalt	90		
Manganese	1900		
Molybdenum	34		
Selenium	10		

Quality characteristic	Trigger levels (µg/L)	Comment on trigger level	Monitoring frequency
Silver	1		
Uranium	1		
Vanadium	10		
Ammonia	900		
Nitrate	1100		
Petroleum Hydrocarbon (C6–C9)	20		
Petroleum Hydrocarbon (C10–C36)	100		
Fluoride (total)	2000		
Sodium	TBA		
Suspended Solids	Limit to be determined based on receiving water reference data and achievable best practice sedimentation control and treatment		
Sulphate (SO_4^{2-}) (mg/L)	Limit to be determined based on receiving water reference data and achievable best practice sedimentation control and treatment		

1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.
2. The quality characteristics required to be monitored as per Table F3: Release contaminant trigger investigation levels, potential contaminants can be reviewed once the results of two years monitoring data is available, or if sufficient data is available to adequately demonstrate negligible environmental risk, and it may be determined that a reduced monitoring frequency is appropriate or that certain quality characteristics can be removed from Table F3: Release contaminant trigger investigation levels, potential contaminants by amendment.
3. SMD – slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).
4. LOR (limit of reporting) – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.

F8 The holder must ensure a stream flow gauging station/s is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in Table F4: Mine Affected Water Release During Flow Events.

F9 Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with Condition F2 must only take place during periods of natural flow in accordance with the receiving water flow criteria for discharge specified in Table F4: Mine Affected Water Release During Flow Events for the release point(s) specified in Table F1: Mine affected water release points, sources and receiving waters.

F10 The release of mine affected water to waters in accordance with Condition F2 must not exceed the Maximum Release Rate (for all combined release point flows) for each receiving water flow criterion for discharge specified in Table F4: Mine Affected Water Release During Flow Events

when measured at the monitoring points specified in Table F1: Mine affected water release points, sources and receiving waters.

F11 The daily quantity of mine affected water released from each release point must be measured and recorded.

F12 Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters or cause a material build-up of sediment in such waters.

Table F4: Mine Affected Water Release During Flow Events

Receiving Water	Release Points	Gauging Station	Easting (GDA94)	Northing (GDA94)	Receiving water flow recording frequency	Receiving water flow criteria for discharge	Maximum release rate (for all combined RP flows)	Electrical conductivity release limits
Dawson River	RP1	Beckers (130322A)	149.822	–24.0873	Continuous (minimum daily)	30 m3/s	0.5 m3/s	10,000 µS/cm

Note: No mine affected waters are to be released from site until a stream flow gauging station, as required under Table F4: Mine affected water release during flow events, has been installed and sufficient data is available to determine appropriate release flow rates. Location coordinates to be confirmed.

F13 **Notification of Release Event**

The environmental authority holder must notify the administering authority as soon as practicable and no later than 24 hours after commencing to release mine affected water to the receiving environment. Notification must include the submission of written advice to the administering authority of the following information:

a) Release commencement date/time

b) Details regarding the compliance of the release with the conditions of department interest: water of this environmental authority (that is, contaminant limits, natural flow, discharge volume)

c) Release point/s

d) Release rate

e) Release salinity

f) Receiving water/s including the natural flow rate

Note: Notification to the administering authority must be addressed to the Manager and Project Manager of the local Administering Authority via email or facsimile.

F14 The environmental authority holder must notify the administering authority as soon as practicable and nominally no later than 24 hours after cessation of a release event of the cessation of a release notified under Condition F13 and within 28 days provide the following information in writing:

a) Release cessation date/time.

b) Natural flow rate in receiving water.

c) Volume of water released.

d) Details regarding the compliance of the release with the conditions of department interest; water of this environmental authority (i.e. contaminant limits, natural flow, discharge volume).

e) All in-situ water quality monitoring results.

f) Any other matters pertinent to the water release event.

Note: Successive or intermittent releases occurring within 24 hours of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purpose of compliance with Conditions F13 and F14, provided the relevant details of the release are included within the notification provided in accordance with Conditions F13 and F14.

F15 **Notification of Release Event Exceedance**

If the release limits defined in Table F2: Mine Affected Water Release Limits when measured at the monitoring points are exceeded, the holder of the environmental authority must notify the administering authority within 24 hours of receiving the results.

F16 The environmental authority holder must, within 28 days of a release that is not compliant with the conditions of this environmental authority, provide a report to the administering authority detailing:

a) the reason for the release;

b) the location of the release;

c) the total volume of the release and which (if any) part of this volume was non-compliant;

d) the total duration of the release and which (if any) part of this period was non-compliant;

e) all water quality monitoring results (including all laboratory analyses);

f) identification of any environmental harm as a result of the non-compliance;

g) all calculations; and

h) any other matters pertinent to the water release event.

F17 **Receiving environment monitoring and contaminant trigger levels**

The quality of the receiving waters must be monitored at the locations specified in Table F6: Receiving water upstream background sites and downstream monitoring points for each quality characteristic and at the monitoring frequency stated in Table F5: Receiving waters contaminant trigger levels.

F18 If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Table F5: Receiving waters contaminant trigger levels during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and:

a) when the downstream result is the same or a lower value than the upstream value for the quality characteristic, then no action is to be taken; or

b) when the downstream results exceed the upstream results, complete an investigation into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining:

i) details of the investigations carried out; and

ii) actions taken to prevent environmental harm.

Note: When an exceedance of a trigger level has occurred and is being investigated, in accordance with Condition F18 b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

F19 All determinations of water quality monitoring must be performed by suitably experienced and qualified person.

Table F5: Receiving Waters Contaminant Trigger Levels

Quality characteristic	Trigger level	Monitoring frequency
pH (pH Units)	6.5–9.0	Daily during the release
Electrical Conductivity (µS/cm)	500	
Total Suspended Solids (mg/L)	350	
Sulphate (SO_4^{-2}) (mg/L)	250	

Table F6: Receiving Water Upstream Background Sites and Downstream Monitoring Points

Description	Easting (GDA94)	Northing (GDA94)
Upstream (background) monitoring points		
U/S Banana Creek	149.897	-24.3091
U/S Dawson River	149.794	-24.3254
Dawson River / Banana Creek Confluence	149.830	-24.254
MP1 Banana Creek	149.844	-24.2763
Downstream monitoring points		
D/S Dawson River	149.819	-24.2081
Northern Tributary	149.856	-24.236
Dawson River at Baralaba DR1 (Baralaba North Mine) SWMP)	149.805	-24.1825
Dawson River at Beckers (130322A)	149.822	-24.0873

F20 **Receiving Environment Monitoring Program (REMP)**

The environmental authority holder must develop and implement a REMP to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while mine affected water is being discharged from the site.

For the purposes of the REMP, the receiving environment is the waters of the Dawson River and connected or surrounding waterways within 10 km) downstream of the release. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.

The REMP must:

a) assess the condition or state of receiving waters, including upstream conditions, spatially within the REMP area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality);

b) be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected;

c) include monitoring from background reference sites (e.g. upstream or background) and downstream sites from the release (as a minimum, the locations specified in Table F6);

d) specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the 'Queensland Water Quality Guidelines' 2009. This should include monitoring during periods of natural flow irrespective of mine or other discharges;

e) include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in Table F3: Release contaminant trigger investigation levels, potential contaminants;

f) include, where appropriate, monitoring of metals/metalloids in sediments;

g) include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology;

h) apply procedures and/or guidelines from ANZECC and ARMCANZ (2000) and other relevant guideline documents;

i) describe sampling and analysis methods and quality assurance and control; and

j) incorporate stream flow and hydrological information in the interpretations of water quality and biological data.

F21 A REMP Design Document that addresses the requirements of the REMP must be prepared and made available to the administrating authority upon request.

F22 A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared annually and made available on request to the administrating authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.

F23 **Water Reuse**

Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water

storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party (with the consent of the third party).

F24 **Annual Water Monitoring Report**

The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format:

a) The date on which the sample was taken.

b) The time at which the sample was taken.

c) The monitoring point at which the sample was taken.

d) The measured or estimated daily quantity of mine affected water released from all release points.

e) The release flow rate at the time of sampling for each release point.

f) The results of all monitoring and details of any exceedances of the conditions of this environmental authority.

Water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.

F25 **Water Management Plan**

A Water Management Plan must be developed by an appropriately qualified person and implemented.

F26 **Stormwater and Water Sediment Controls**

An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.

F27 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 F27; and

b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with Condition F26 for the purpose of ensuring water does not become mine affected water.

19.7 Schedule G – Sewage treatment

G1 The only contaminant permitted to be released to land is treated sewage effluent in compliance with the release limits stated in Table G1: Contaminant release limits to land.

G2 Treated sewage effluent may only be released to land in accordance with the conditions of this approval:

a) Within the nominated area(s) TBA (sewage treatment plant and effluent disposal); and/or

b) Other land for the purpose of dust suppression and/or firefighting.

G3 The application of treated effluent to land 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 areas irrigated with effluent 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 All sewage effluent released to land must be monitored at the frequency and for the parameters specified in Table G1: Contaminant release limits to land.

G6 The daily volume of effluent release to land must be measured and records kept of the volumes of effluent released.

G7 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.

G8 Treated sewage effluent must only be supplied to another person or 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 Environmental Protection Act 1994 whilst using the treated sewage effluent.

Table G1: Contaminant Release Limits to Land

Contaminant	Unit	Release limit	Limit type	Frequency
5-day Biochemical oxygen demand	mg/L	20	Maximum	Monthly
TSS	mg/L	30	Maximum	Monthly
Nitrogen	mg/L	30	Maximum	Monthly
Phosphorus	mg/L	10	Maximum	Monthly
E-coli	Organisms per 100ml	1000	Maximum	Monthly
pH	pH units	5.0–8.5	Range	Monthly

19.8 Schedule H – Land and Rehabilitation

H1 Land disturbed by mining must be rehabilitated in accordance with Table H1: Rehabilitation objectives and completion criteria, and Table H2: Final land use.

H2 **Contaminated Land**

Hazardous contaminants must not be released to land, except where permitted under this environmental authority.

H3 The environmental authority holder must take all practical measures to minimise potential for contamination by safely securing loads when transporting hazardous materials off/on-site to reduce risk of emissions or spillage.

H4 Before applying for surrender of a mining lease, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the mining lease 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.

H5 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 land use under Condition H1.

H6 **Chemicals and Flammable or Combustible Liquids**

All chemicals must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and is maintained in accordance its relevant Australian Standard.

H7 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 *AS 1940 - Storage and Handling of Flammable and Combustible Liquids.*

H8 All explosives, corrosive substances, toxic substances, gases and dangerous goods must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and maintained in accordance with its relevant Australian Standard.

H9 All chemicals and flammable or combustible liquids stored on site that have known 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 is available, the following must be applied to minimise potential contamination to land and waters:

storage tanks must be bunded so that the capacity and construction of the bund is sufficient to contain at least 110% of a single storage tank or 100% of the largest storage tank plus 10% of the second largest storage tank in multiple storage areas; and

drum storages must be bunded so that the capacity and construction of the bund is sufficient to contain at least 25% of the maximum design storage volume within the bund.

H10 **Spills**

Any unexpected spills (flammable and combustible, chemicals or toxic dangerous goods) must be controlled and managed in a way that prevents environmental harm.

H11 All spills must be management using a suitable spill kit, personal protective equipment and relevant emergency procedure guides that are kept on site at all times. Appropriate training of these protocols must be provided to all staff operating alongside chemicals, flammable and combustible liquids under this approval.

H12 **Impacts to Prescribed Environmental Matters**

The significant residual impacts to prescribed environmental matters are not authorised under this environmental authority or the *Environmental Offsets Act 2014* unless the impact(s) is specified in Table H3: Significant residual impacts to prescribed environmental matters.

H13 Records demonstrating that each impact to a prescribed environmental matter not listed in Table H3: Significant residual impacts to prescribed environmental matters did not, or is not likely to, result in a significant residual impact to that matter must be:

a) completed by an appropriately qualified person; and

b) kept for the life of the environmental authority.

H14 An environmental offset made in accordance with the *Environmental Offsets Act 2014* and 'Queensland Environmental Offsets Policy' (DES, 2019b), as amended from time to time, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in Table H3: Significant residual impacts to prescribed environmental matters, unless a lesser extent of the impact has been approved in accordance with Condition H11.

H15 **Staged Impacts**

The significant residual impacts to a prescribed environmental matter authorised in Condition H12 for which an environmental offset is required by Condition H14 may be carried out in stages. An environmental offset can be delivered for each stage of the impacts to prescribed environmental matters.

H16 Prior to the commencement of each stage, a report completed by an appropriately qualified person, that includes an analysis of the following must be provided to the administering authority:

a) For the forthcoming stage—the estimated significant residual impacts to each prescribed environmental matter; and

b) For the previous stage, if applicable—the actual significant residual impacts to each prescribed environmental matter, to date.

H17 The report required by Condition H16 must be approved by the administering authority before a notice of election for the forthcoming stage, if applicable, is given to the administering authority.

H18 A notice of election for the staged environmental offset referred to in Condition H17, if applicable, must be provided to the administering authority no less than three months before the proposed commencement of that stage, unless a lesser timeframe has been agreed to by the administering authority.

H19 Within six months from the completion of the final stage of the Project, a report completed by an appropriately qualified person, that includes the following matters must be provided to the administering authority:

a) An analysis of the actual impacts on prescribed environmental matters resulting from the final stage.

b) If applicable, a notice of election to address any outstanding offset debits for the authorised impacts.

H21 **Topsoil**

Topsoil may be stripped ahead of mining and will be managed in accordance with the procedures outlined in a Topsoil Management Plan. At minimum, the requirements of the plan will specify:

a) topsoil requirements for the site and how topsoil will be managed for use in rehabilitation;

b) procedures of a topsoil inventory which identify any topsoil deficits including availability of suitable topsoil and how any deficits will be managed for successful rehabilitation; and

c) all management measures to ensure stability and minimised risk of contaminant release, including all vegetating stockpiles, height of stockpiles and re-using stockpiles as soon as possible.

Table H1: Rehabilitation Objectives and Completion Criteria

Mine domain	Rehabilitation goal	Rehabilitation objective	Performance indicator	Completion criteria
Final voids	Safe	Any final void hazards isolated from humans and animals	Presence of permanent safety barriers and signage around the final void	• Provide evidence that signage and safety barriers have been installed to limit access to the final void • All safety barriers and signage have been installed and tested as per the latest guidelines at the time rehabilitation is undertaken (currently 'Technical guidelines for the environmental management of exploration and mining in Queensland' (DME, 1995) and *Coal Mining, Safety and Health Act 1999 (Qld)* (CMSH Act) for signage
			Safety assessment of final void high-walls and low-walls	Provide geotechnical assessment certifying that the final void is safe and stable
	Non-polluting	The final void will be isolated from local surface water and groundwater resources	Water quality monitoring of surface waters and groundwater	• Environmental values of adjacent/downstream surface waters are not impacted by water from the void • Water quality of surrounding groundwater resources remains consistent with baseline and reference data
			Final void surface water level	Provide evidence that final void water levels are behaving in accordance with predicted values
	Stable	Very low probability of wall failure, slippage or rock falls that will cause significant environmental harm	Geotechnical studies of the final void	Provide geotechnical evidence/report supporting a low probability of failure or slippage causing environmental harm
		High-wall and low-wall construction meets geotechnical design criteria	Geotechnical indicators as defined by closure geotechnical assessment	To be determined based on closure geotechnical assessment

Mine domain	Rehabilitation goal	Rehabilitation objective	Performance indicator	Completion criteria
		High-wall/low-wall erosion will be at assessed rates	High-wall/low-wall erosion rates	Provide evidence that erosion is being managed with the required berms/ graded banks, interceptor channels and drains etc.
Final voids (cont.)	Sustainable land use	Pit lake able to support nominated PMLU	Relevant land use monitoring and analysis e.g. functioning hydroelectric scheme and/or native ecosystem function (recycling, vegetation dynamics, habitat complexity and habitat quality etc.)	Report on monitoring that demonstrates: sustainable hydro-electric solar farm commercial enterprise; sustainable fauna usage of the final void; weed diversity and abundance comparable to relevant rehabilitation monitoring reference sites Pest fauna and flora species are not on an increasing trajectory
Water management infrastructure	Safe	Site will be safe for all humans and animals.	Dams are decommissioned and rehabilitated in full accordance with decommissioning requirements specified in the operational plan for the structure.	Provide certification from a suitability qualified person that the structure has been decommissioned and rehabilitated in full accordance with the decommissioning requirements specified in the operational plan for the structure.
			Contaminated land site investigations	The land has either been removed from the environmental management register or the land has a site management plan approved.
	Non-polluting	Hazardous material will be adequately managed, presenting a low risk of environmental harm.	Contaminated land site investigations	The land has either been removed from the environmental management register or the land has a site management plan approved.
			Water quality monitoring	For a period of three consecutive years post-mining, the water quality of any potentially impacted streams meets EA water quality limits or is consistent with upstream/reference site data. For a period of three consecutive years post-mining, water quality of surrounding groundwater aquifers is consistent with baseline and/or reference data.

Mine domain	Rehabilitation goal	Rehabilitation objective	Performance indicator	Completion criteria
	Stable	Vegetative cover will be sufficient to minimise erosion.	Percentage of ground cover	Provide evidence that the percentage of ground cover of the rehabilitated areas is sufficient to limit erosion to rates similar to analogue sites.
Water management infrastructure (cont.)	Sustainable land use	Vegetation and habitat will be established consistent with agreed post-mine land use.	Monitoring of vegetation type, density and regeneration rates	Provide evidence that the vegetation species richness/composition and vegetation cover/density of the rehabilitated areas is statistically equivalent to analogue sites and is self-sustaining over time.
		Soil properties will support desired land use	Soil nutrient testing	Provide evidence that soil nutrient levels are statistically equivalent to analogue sites
		Establish self-sustaining natural vegetation	Monitoring of species composition, species richness, and weed abundance	Provide evidence that vegetation species composition, richness and weed abundance of rehabilitated areas is statistically equivalent to analogue sites
Mining infrastructure areas	Safe	Site will be safe for all humans and animals	Infrastructure removed or retained by agreement	Provide evidence that residual risk is acceptable and risk liability transfer has occurred
	Non-polluting	Hazardous material will be adequately managed, presenting a low risk of environmental harm	Contaminated land site investigations	The land has either been removed from the environmental management register or the land has a site management plan approved
			Water quality monitoring	• For a period of three consecutive years post-mining, the water quality of any potentially impacted streams meets EA water quality limits or is consistent with upstream/reference site data • For a period of three consecutive years post-mining, water quality of surrounding groundwater aquifers is consistent with baseline and/or reference data
	Stable	Vegetative cover will minimise erosion	Percentage of ground cover	Provide evidence that the percentage of ground cover of the rehabilitated areas is statistically equivalent to analogue sites

Mine domain	Rehabilitation goal	Rehabilitation objective	Performance indicator	Completion criteria
	Sustainable land use	Vegetation and habitat will be established consistent with agreed post-mining land use	Vegetation type and density	Provide evidence that the percentage of ground cover of the rehabilitated areas is statistically equivalent to analogue sites
		Soil properties will support desired land use	Soil nutrients	Provide evidence that soil nutrient levels are statistically equivalent to analogue sites
Mining infrastructure areas (cont.)		Establish self-sustaining vegetation	Species composition, species richness and weed abundance	Provide evidence that vegetation species composition, richness and weed abundance of rehabilitated areas is statistically equivalent to analogue sites
Waste rock emplacements	Safe	The spoil dumps will be safe for humans and animals	Safety assessment of slopes that are >30° and >5 m in height	• Certify in the rehabilitation report that slopes have been assessed as safe, and the area is expected to remain so • Safety signage is consistent with the requirements of the CMSH Act or equivalent legislation at the time of mine rehabilitation
	Non-polluting	Hazardous material will be adequately managed	Engineering supervision and design	Certify in the rehabilitation report that the specified minimum cover thickness is in place
		Waste emplacements will not be a source of serious environmental harm to the receiving environment	Water quality	• For a period of three consecutive years post-mining, the water quality of any potentially impacted streams meets EA water quality limits or is consistent with upstream/reference site data • For a period of three consecutive years post-mining, water quality of surrounding groundwater aquifers is consistent with baseline and/or reference data
	Stable	There will be minimal probability of slope failure that will cause significant environmental harm	Geotechnical studies of spoil dumps	Provide geotechnical evidence/report supporting a very low probability of failure or slippage causing environmental harm

Mine domain	Rehabilitation goal	Rehabilitation objective	Performance indicator	Completion criteria
			Past record of slope failure during mining	Provide evidence in the rehabilitation report that appropriate control measures are in place to prevent any recurrence
Waste rock emplacements (cont.)	Stable (cont.)	Landform designs will meet criteria	Slope angle and length	A maximum angle of 10° is achieved for all dump slopes above natural surface
		Vegetative cover will minimise erosion	Percentage of ground cover	Provide evidence that the percentage ground cover of the rehabilitated areas is statistically equivalent to analogue sites
		Low probability of significant erosion	Visual observations of erosion	Provide evidence that the erosion rates of rehabilitated areas are statistically equivalent to analogue sites
	Sustainable land use	Vegetation and habitat will be established consistent with agreed post-mine land use	Vegetation type and density	Provide evidence that vegetation species richness/composition and vegetation cover/density of the rehabilitated areas is statistically equivalent to analogue sites
		Soil properties will support desired land use	Soil nutrients	Provide evidence that soil nutrient levels are statistically equivalent to analogue sites
		Establish self-sustaining natural vegetation	Species composition, species richness and weed abundance	Provide evidence that vegetation species composition, richness and weed abundance of rehabilitated areas is statistically equivalent to analogue sites

Table H2: Final Land Use

	Out-of-pit waste rock dumps	**In-pit waste rock dumps**	**Pit lake**	**Residual void high-wall**	**Mine infrastructure area**	**Retained water infrastructure**
Location	ML 700057	ML 700057	ML 700057	ML 700057	ML 700057	ML 700057
Projected surface area (ha)	790	720	70	55	510	35
Pre-mine land use	Improved pasture grazing	Improved pasture grazing	Improved pasture grazing	Improved pasture grazing	Improved pasture grazing	Improved pasture grazing
Post-mine land use	Improved pasture grazing	Improved pasture grazing	Native ecosystem function—aquatic	Native ecosystem function—terrestrial	Improved pasture grazing	Improved pasture grazing
Alternative post-mine land use if feasible	Grazing with pumped hydroelectric storage and solar power station	Grazing with pumped hydroelectric storage and solar power station	Pumped hydroelectric storage and solar power station	Pumped hydroelectric storage and solar power station	Grazing with pumped hydroelectric storage and solar power station	Pumped hydroelectric storage and solar power station
Post-mine land classification (agriculture land suitability) – Grazng PMLUs only	Class 4 Land suitability	Class 4 Land suitability	na	na	Class 4 Land suitability	Class 4 Land suitability
Design slope range (degrees)	< 10°	< 10°	< 10°	35°-45°	< 10°	< 10°

Table H3: Significant Residual Impacts to Prescribed Environmental Matters

MSES	**Description**	**Maximum Extent Impact Area (ha)**
Connectivity area.	The 'landscape fragmentation and connectivity tool' was applied to the proposed impact areas. The tool determined that the Project would result in a significant residual impact on local connectivity, whereby the analysis showed a significant impact in the reduction of core remnant areas at the local scale.	10

Note: Matters of National Environmental Significance are excluded, as they are proposed for offset under the EPBC Act.

19.9 Schedule I – Regulated Structures

I1 The consequence category of any structure must be assessed by a suitable qualified and experienced person in accordance with the 'Manual for assessing consequence categories and hydraulic performance of structures' (DES, 2016a) at the following times:

a) Prior to the design and construction of the structure if it is not an existing structure; or

b) Prior to any change in its purpose or the nature of its stored contents.

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' (DES, 2016a).

I4 Design and construction of a regulated structure

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' (DES, 2016a).

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 suitable 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' (DES, 2016a), and must be recorded in the register of regulated structures.

I7 Regulated structures must:

a) be designed and constructed in compliance with the 'Manual for assessing consequence categories and hydraulic performance of structures' (DES, 2016a);

b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:

i) floodwater 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.

I8 Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:

a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and

b) construction of the regulated structure is in accordance with the design plan.

I9 Notification of affected persons

All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure:

a) For existing structures that are regulated structures, within 10 business days of this condition taking effect.

b) Prior to the operation of the new regulated structure.

c) If the emergency action plan is amended, within 5 business days of it being amended.

I10 Operation of a regulated structure

Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following:

a) One paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition I5.

b) A set of 'as constructed' drawings and specifications.

c) Certification of the 'as constructed drawings and specifications' in accordance with condition I8.

d) Where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan.

e) The requirements of this authority relating to the construction of the regulated structure have been met.

f) The holder has entered the details required under this authority, into a register of regulated structures.

g) There is a current operational plan for the regulated structure.

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 practicable but within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.

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 dam.

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 Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).

I18 The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.

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 report**

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 a recommendations section, with any recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.

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' (DES, 2016a).

I23 The holder must within 20 business days of receipt of the annual inspection report, provide to the administering authority:

a) the recommendations section of the annual inspection report;

b) if applicable, any actions being taken in response to those recommendations; and

c) if, following receipt of the recommendations and (if applicable) recommended actions, the administering authority requests a copy of the annual inspection report from the holder, provide this to the administering authority within 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 structure:

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 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.

I31 **Decommissioning of Regulated Structure**

Regulated structures must not be abandoned but instead:

a) decommissioned and rehabilitated to achieve compliance with Table H1: Rehabilitation objectives and completion criteria; or

b) be left in-situ for a use by the landholder provided that:

   i) it no longer contains contaminants that will migrate into the environment; and

   ii) it contains water of a quality that is demonstrated to be suitable for its intended use(s); and

c) the holder of the environmental authority and the landholder agree in writing that the;

d) dam will be used by the landholder following the cessation of the environmentally relevant; and

e) landholder is responsible for the same, on and from an agreed date.

19.10 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 or subordinate legislation, the definition in the EP Act or subordinate legislation must be used.

Acid Mine Drainage – Alternative terminology e.g. acid rock water or acid rock drainage, refers to the outflow of acidic water from metal mines or coal mines. Acid mine drainage occurs naturally within most environments as part of the rock weathering process. However, this is exacerbated by large-scale earth disturbances characteristic of mining and other large construction activities, usually within rocks containing an abundance of sulphide minerals.

Administering Authority: As defined in section 4 of the EP Act:

a) for a matter, the administration and enforcement of which has been developed to local government under section 514 – the local government: or

b) for another matter – the chief executive.

Affected Person: A person 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.

Annual Exceedance Probability (AEP): The probability that a flood of a defined magnitude or larger will occur in any year.

Appropriately Qualified Person: 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.

Blasting: The use of explosives to fracture rock, coal or other materials for later recovery.

Bund (or Bund Wall or Bunding): An embankment that is constructed around an area and/or structure that is designed to prevent inflow or outflow of water or can be used to reduce the impact of noise to the surrounding environment.

Coal Reject: Solid waste produced during the processing of coal, typically from a CHPP. Coal reject typically comprises crushed siltstone, mudstone and fine-grained sandstone, which is mined as coal seam roof, parting or floor material during the extraction of ROM coal. Coal reject is commonly produced in different size fractions (fine and coarse reject).

Commercial Place: 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 Category: 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: Regulated structure reference 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.

Contaminate: To render impure by contact or mixture. A contaminant can be:

a) a gas, liquid or solid; or

b) an odour; or

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

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

e) a combination of contaminants.

Contaminated: Substance has come into contact with a contaminant.

Dam: 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. A dam does not mean 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.

Disturbance: Alteration to land through:

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

c) susceptible to erosion;

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

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

f) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts,

g) dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is

h) to be removed after the mining activity has ceased; or

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

Design Plan: Documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include design and investigation reports, specifications and certifications, together with the planned decommissioning and rehabilitation works and outcomes. A design plan may include 'as constructed' drawings.

Ecosystem: A functional unit consisting of all the living organisms (plants, animals and microbes) in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow.

Effluent: Treated wastewater released from sewage treatment plants.

Electrical Conductivity: The measure of water's capability to pass electrical flow, which is directly relation to the concentration of ions in the water.

Environment: As defined in section 8 of the EP Act:

a) ecosystems and their constituent parts, including people and communities; and

b) all natural and physical resources; and

c) the qualities and characteristics of locations, places and areas, however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community; and

d) the social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned in paragraphs (a) to (c).

Environmental Authority: As defined in section 4 of the EP Act:

a) Generally:

   i) An environmental authority issued under section 195 that approves an environmentally relevant activity applied for in an application; or

   ii) If a replacement environmental authority is issued for an environmental authority – the replacement environmental authority; or

b) For chapter 5, part 14, division 3, see section 316 A.

Environmentally Relevant Activities: As defined in subdivision 4, section 18 of the EP Act:

Each of the following is an environmentally relevant activity:

a) an agricultural ERA as defined under section 79;

b) a resource activity as defined under section 109; and

c) an activity prescribed under section 19 as an environmentally relevant activity.

Environmental Value: As defined in section 9 of the EP Act:

a) a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or

b) another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation.

Financial Assurance: A security required under the Environmental Protection Act 1994 by the administering authority to cover the cost of rehabilitation or remediation of disturbed land or to secure compliance with the environmental authority.

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

Groundwater: The water beneath the Earth's surface in soil pore spaces and in the fractures of rock formations.

Groundwater Dependent Ecosystems (GDE): Ecosystems that are reliant on either the subsurface presence or surface expression of groundwater.

Hazardous Material: Substance, whether liquid, solid or gaseous that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause environmental harm.

Hydraulic Performance: Capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant consequence category in the *'Manual for assessing consequence categories and hydraulic performance of structures'* (DES, 2016).

Infrastructure: Water storage dams, roads and tracks, buildings and other structures built for the purpose of the mining activity.

LA_{eq}, adj, 1 hr: The A-weighted sound pressure level of a continuous steady sound, (adjusted for tonal character and impulsiveness of the sound) within a 1 hour period has the same mean square sound pressure of a sound that varies with time.

LA_{10}, adj, 1 hr: The A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 1-hour measurement period, using Fast response.

LA_{1}, adj, 1 hr: The A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 1-hour measurement period, using Fast response

Leachate**:** 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.

Material Environmental Harm: As defined in subdivision 3, section 16 of the EP Act:

1) Material environmental harm is environmental harm (other than environmental nuisance)—
   a) that is not trivial or negligible in nature, extent or context; or
   b) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than the threshold amount but less than the maximum amount; or
   c) that results in costs of more than the threshold amount but less than the maximum amount being incurred in taking appropriate action to:
      i) prevent or minimise the harm; and
      ii) rehabilitate or restore the environment to its condition before the harm.
2) In this section:
   a) maximum amount means the threshold amount for serious environmental harm;
   b) threshold amount means $5000 or, if a greater amount is prescribed by regulation, the greater amount.

Mine Affected Water: the following types of water:

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

d) 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; or

e) both.

Mineral: Substance which normally occurs naturally as part of the earth's crust or is dissolved or suspended in water within or upon the earth's crust and includes a substance which may be extracted from such a substance, and includes—

a) clay if mined for use for its ceramic properties, kaolin and bentonite;

b) foundry sand;

c) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil there from;

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

e) marble;

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

g) peat;

h) salt including brine;

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

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

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

But does not include:

a) living matter;

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

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

d) water.

Mineral Waste: Overburden, interburden and similar 'waste rock' (spoil) material mined and disposed during extraction of coal.

Natural Flow: Flow of water through waters caused by nature.

Non-Acid Forming (NAF): Considered unlikely to be a source of acidic drainage.

Non-polluting: No adverse impacts upon the receiving environment.

Offset: An action that balances, counteracts, or compensates for the adverse impacts of another action.

pH**:** A relative measure of the acidity or alkalinity of a water based upon a scale that ranges between 0 and 14 with 7 being neutral.

PM_{10}: Fine airborne particles with a diameter of less than 10 µm are small enough to be breathed into the lungs

$PM_{2.5}$: Particles with an aerodynamic diameter of less than 2.5 µm.

Potentially Acid Forming (PAF): Material that has a significant sulphur content and is likely to generate acid in excess of its inherent neutralising capacity.

Peak Particle Velocity: A measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second ($mm.s^{-1}$).

Receiving Waters: Waters into which this environmental authority authorises releases of mine affected water**.**

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

Regulated Structure: 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; and

c) a flare pit.

Rehabilitation: The restoration of a landscape and especially the vegetation following its disturbance.

Sensitive Place:

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;

Residual Void (or Final Void): An open pit resulting from the removal of ore and/or waste rock which will remain following the cessation of all mining activities and completion of rehabilitation processes.

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

Significant Residual Impacts: Corresponds to meaning in section 8 *Environmental Offsets Act 2014*.

Spoil Dump: The area where mine waste (overburden or other waste material removed in mining, quarrying, dredging, or excavating) are disposed of or piled.

Stable: Geotechnical stability of the rehabilitated landform where instability related to the excessive settlement and subsidence caused by consolidation / settlement of the wastes deposited and sliding / slumping instability has ceased.

Terrestrial: Living on land or on the ground.

Topsoil: The upper most layer of soil where the highest concentration of organic matter and micro-organisms are found.

Total Suspended Particulate: Tiny airborne particles that are less than 100 µm in diameter.

Void**:** Any man-made, open excavation in the ground.

Water:

a) water in waters or spring;

b) underground water;

c) overland flow water; or

d) water that has been collected in a dam.

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

3) A river, creek or stream in which water flows permanently or intermittently—

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

a) in an artificial channel that has changed the course of the watercourse.

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

Water Quality: The chemical, physical and biological condition of water.

Waste: As defined in subdivision 2, section 13 of the EP Act:

5) Waste includes anything, other than a resource approved under the Waste Reduction Act, Chapter 8, that is:

a) left over, or an unwanted by-product, from an industrial, commercial, domestic or other activity; or

a) surplus to the industrial, commercial, domestic or other activity generating the waste;

6) Waste can be a gas, liquid, solid or energy, or a combination of any of them;

7) A thing can be waste whether or not it is of value.

8) For subsection (1), if the approval of a resource under the Waste Reduction Act, Chapter 8, is a specific approval, the resource stops being waste only in relation to the holder of the approval;

9) Despite subsection (1), a resource approved under the Waste *Reduction Act*, Chapter 8, becomes waste:

a) when it is disposed of at a waste disposal site; or

a) if it is deposited at a place in a way that would, apart from its approval under that chapter, constitute a contravention of the general littering provision or the illegal dumping of waste provision under that Act—when the depositing starts.

10) In this section:

a) for waste disposal site see the Waste Reduction Act, section 8A; and

a) Waste Reduction Act means the Waste Reduction and Recycling Act 2011

µS/L: Micro siemens per litre.

µS/cm: Micro siemens per centimetre.