

Permit

Environmental Protection Act 1994

Environmental authority EA0002046

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

Environmental authority number: EA0002046

Environmental authority takes effect upon grant of the mining leases.

Environmental authority holder(s)

Name(s)	Registered address
Wilton Coking Coal Pty Ltd	Level 11, 52 Phillip Street SYDNEY NSW 2000 AUSTRALIA

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 13: Mining black coal	ML700028
Schedule 3 13: Mining black coal	ML700029
Ancillary 60 - Waste disposal 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) (a) less than 50,000t	ML700028
Ancillary 60 - Waste disposal 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) (a) less than 50,000t	ML700029

Additional information for applicants

Environmentally relevant activities

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

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

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

Contaminated land

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

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

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

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

Take effect

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

- a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
- b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
- c) otherwise- on the day the authority is issued.

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

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

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

Obligations under the Environmental Protection Act 1994

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

- general environmental duty (section 319);
- duty to notify environmental harm (section 320-320G);
- offence of causing serious or material environmental harm (sections 437-439);
- offence of causing environmental nuisance (section 440);
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG); and

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

Other permits required

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

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

Date Issued: 07 January 2021

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Conditions of environmental authority

Schedule A: General	
Condition number	Condition
A1	This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm
A2	Conditions of this environmental authority continue to apply in the event that this environmental authority is suspended.
A3	Prevent and /or minimise likelihood of environmental harm In carrying out the environmentally relevant activities, the holder must take all reasonable and practicable measures to prevent and/or to minimise the likelihood of environmental harm being caused. Any environmentally relevant activity, that, if carried out incompetently, or negligently, may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this environmental authority.
A4	The holder is approved for an extraction rate of up to one point six five (1.65) million tonnes per annum (mtpa) of ROM.
A5	Authorised Disturbance Surface disturbance by mining activities is authorised within areas marked “Authorised Surface Disturbance” in Figure 1 - (Authorised Disturbance Areas).
A6	Sub-surface disturbance by mining activities is authorised within areas marked as “Authorised Sub-Surface Disturbance” in Figure 1 - (Authorised Disturbance Areas) .
A7	Disturbance by mining activities within areas marked as “Limited Disturbance Authorised” in Figure 1 - (Authorised Disturbance Areas): a) is only authorised to the extent reasonably necessary for the construction and installation the environmental monitoring equipment, and associated access tracks; and b) must not result in significant residual impact to prescribed environmental matters.

Schedule A: General	
Condition number	Condition
A8	Maintenance of measures, plant and equipment The holder must: a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; b) maintain such measures, plant and equipment in a proper and efficient condition; c) operate such measures, plant and equipment in a proper and efficient manner; and d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.
A9	Monitoring All monitoring records or reports required by this environmental authority must be kept until surrender of this environmental authority.
A10	Monitoring and determinations required under any condition of this environmental authority must be conducted by an appropriately qualified person.
A11	Management Plans and Reports Management plans and reports required under any condition of this environmental authority must be developed by an appropriately qualified person.
A12	Upon request from the administering authority, copies of monitoring results, records, registers, management plans, reports, and spatial information required by the conditions of this environmental authority must be made available and provided to the administering authority within fourteen (14) days or an alternative timeframe agreed between the administering authority and the holder.
A13	Within thirty (30) days of receiving comments from the administering authority for a management plan or report required under any condition of this environmental authority, the holder must: a) update the management plan or report to address the comment(s); and b) amend the management plan or report to adopt any recommendation(s).
A14	Notification of emergencies, incidents and exceptions The holder must notify the administering authority in writing within twenty-four (24) hours after becoming aware of any emergency; or incident that results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.

Schedule A: General	
Condition number	Condition
A15	Within fourteen (14) days following the notification in accordance with condition A14, or an alternative timeframe agreed between the administering authority and the holder (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; a) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and b) proposed actions to prevent a recurrence of the emergency or incident.
A16	Any further monitoring results related to information provided in accordance with condition A15 must be provided to the administering authority within fourteen (14) days after they are received by the holder.
A17	Complaints The holder must record in a register all complaints received about the mining activities.
A18	The register required by condition A17 must include: a) complainant details: i) name; ii) address; iii) contact number; and b) time and date of complaint; c) the complainant's observations (statement, photo and/ or video); d) reasons for the complaint; e) investigations undertaken by the holder; f) conclusions formed by the holder; g) actions taken to resolve the complaint by the holder; h) any abatement measures implemented by the holder; and i) person responsible for resolving the complaint.

Schedule A: General	
Condition number	Condition
A19	When requested by the administering authority, the holder must investigate any complaint that is neither frivolous nor vexatious in the opinion of the authorised person, of nuisance or environmental harm, by: a) undertaking the monitoring specified by the administering authority; b) undertaking the monitoring in the timeframe nominated or agreed to by the administering authority; c) completing an analysis and interpretation of the monitoring results; and d) implementing abatement measures, where required.
A20	The results of the investigation undertaken in accordance with condition A19 must be provided to the administering authority within thirty (30) days of completion of the monitoring timeframe in accordance with condition A19(b), or an alternative timeframe agreed to by the administering authority.
A21	If the monitoring undertaken in accordance with condition A19 indicates the occurrence of environmental harm or nuisance then the environmental authority holder must: a) address any complaint including the use of appropriate dispute resolution if required; and b) immediately implement abatement measures so that the environmental harm or nuisance to which the complaint relates ceases.
A22	Third-party reporting The holder must: a) obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority within one (1) year of the commencement of mining activities; and b) obtain further such reports at regular intervals, not exceeding two (2) years, from the completion of the report required by condition A22(a).
A23	Within ninety (90) days of completing the third party report in accordance with condition A22, provide the report to the administering authority that has been certified by the appropriately qualified independent third party auditor, detailing any non-compliance issues that were found (if no non-compliance issues were found this should be stated in the report). If non-compliance issues were found the report must also address: a) actions taken by the holder to ensure compliance with this environmental authority; and b) actions taken to prevent a recurrence of the non-compliance(s).

Schedule A: General	
Condition number	Condition
A24	Risk management The holder must: a) develop a risk management system that mirrors the content requirement of the Standard for Risk Management (ISO31000:2009), or an Australian standard for risk management, to the extent relevant to environmental management; b) develop a risk management system, required by condition A24(a), prior to commencing mining activities; and c) implement a risk management system, required by condition A24(a), for the duration of the mining activities.
A25	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 must: a) comply with the amended or changed standard, policy or guideline within two (2) years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation, the time specified in that condition; and b) until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.
A26	The holder must notify the administering authority of the commencement date of the mining activities, in writing and at least fourteen (14) days prior to the commencement of the mining activities.

Schedule B: Air	
Condition number	Condition
B1	Air Quality The holder must ensure that dust deposition and particulate matter emissions generated by the mining activities do not cause exceedances of the following limits when measured at any 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, for no more than five exceedances recorded each year, when monitored in accordance with the most recent version of either: 1. Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 high volume sampler with size-selective inlet – Gravimetric method, or 2. Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 low volume sampler—Gravimetric method. c) A concentration of particulate matter with an aerodynamic diameter of less than 2.5 micrometres (PM2.5) suspended in the atmosphere of 25 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.10 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM2.5 low volume sampler—Gravimetric method. d) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1 year averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.3:2003 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method.
B2	An Air Quality Management Plan must: a) be developed prior to commencing mining activities; and b) be implemented for the duration of mining activities.

Schedule B: Air	
Condition number	Condition
B3	The Air Quality Management Plan required by condition B2 must: a) provide for the effective management of actual and potential environmental impacts to air resulting from the mining activities; b) identify all sources of air emissions that may occur as a result of the mining activity; c) identify all potential sensitive and commercial places that may be affected by air emissions from the mining activities; d) detail the collection of air quality and meteorological data in accordance with the administering authority's Air Quality Sampling Manual; e) develop and implement a real-time meteorological monitoring method which predicts and identifies adverse meteorological conditions likely to produce elevated levels of air quality parameters nominated in condition B1 at any sensitive place or commercial place, due to the mining activities; f) develop and implement a real time air quality monitoring network to measure air quality parameters nominated in condition B1; g) detail the protocols for regular maintenance of plant and equipment to minimise the potential for fugitive dust emissions; h) describe the procedures to be undertaken if any non-compliance is detected; i) detail the period of regular review of the plan to determine the adequacy and effectiveness in avoiding and minimising air emissions and dust at a sensitive place or commercial place; j) include a preventative management system for air emissions; k) include a Trigger Action Response Program; and l) describe the procedures that will be used to manage dust emissions. Procedures must include the following measures committed to in the site-specific environmental authority application, or equivalent measures that at achieve the same level of dust and particulate matter deposition.

Schedule C: Waste	
Condition number	Condition
C1	Waste disposal Unless otherwise specified in the conditions of this environmental authority, waste, other than any spoil, tyres, overburden, or vegetation removed as part of the mining activity or permitted by another condition of the environmental authority, must not be disposed of within the mining leases.
C2	Disposal of Tyres Scrap tyres resulting from the mining activities may be disposed in spoil emplacements within the mining leases listed on this environmental authority.
C3	A record must be kept of the number, volume, and location for all scrap tyres disposed.
C4	Waste management A Waste Management Plan must: a) be developed prior to commencing mining activities; and b) implemented for the duration of mining activities.
C5	The Waste Management Plan required by condition C4 must include a) a description of the mining activities that may generate waste; b) waste management control strategies, including: i) the types and amounts of wastes generated by the mining activities; ii) segregation of the wastes; iii) storage of the wastes; iv) transport of the wastes; and v) monitoring and reporting matters concerning the wastes; c) how the waste will be dealt with in accordance with the waste management hierarchy (that is, avoid, reuse, recycling, energy recovery, disposal); d) the hazardous characteristics of the wastes generated including disposal procedures for hazardous wastes; e) procedures for dealing with accidents, spills and other incidents; f) the indicators or other criteria on which the performance of the waste management program will be assessed; and g) staff training.

Schedule D: Acoustic						
Condition number	Condition					
D1	Noise Noise generated by the mining activities must not exceed the limits identified in Table D1 – Noise Limits at any sensitive place or commercial place.					
Table D1 - Noise Limits.						
Noise level dB(A) measured as	Monday to Saturday			Sundays and public holidays		
	7am – 6pm	6pm – 9pm	9pm – 7am	7am – 6pm	6pm – 9pm	9pm – 7am
	Noise measured at a sensitive place					
L _{Aeq} , adj, 15mins	35	35	30	35	35	30
Max L _{pA}			47			47
	Noise measured at a commercial place					
L _{Aeq} , adj, 15mins	40	40	35	40	40	35
D2	Noise monitoring must be: a) conducted in accordance with the administering authority's Noise Measurement Manual; b) noise measurement must be undertaken in a manner that: i) source noise levels must be expressed as component noise levels for the purposes of comparison with noise limits defined within Table D1 - Noise Limits ; ii) all noise monitoring devices must be calibrated in accordance with AS IEC 61672.1-2004; and iii) monitoring location must be relevant to the matter under investigation.					
D3	Blasting Blasting must not cause the limits in Table D2 - Airblast overpressure and vibration limits to be exceeded at any sensitive place or commercial place.					

Schedule D: Acoustic

Condition number	Condition
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Table D2 - Airblast overpressure and vibration limits

Parameter	Airblast overpressure measured at a sensitive place or commercial place		
	Monday to Friday	Monday to Friday	Saturday, Sunday and Public Holidays
	9am to 4pm	4pm to 9am	Anytime
Airblast overpressure (dB (Linear) Peak)	115dB (Linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time	No Blasting to occur	
Ground vibration peak particle velocity (mm/second)	5mm/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 to occur	

D4	The holder must develop and implement a blast monitoring program that is consistent with AS2187.2-2006 Explosives – Storage and use.
D5	Blast monitoring must be conducted in accordance with the blast monitoring program required by condition D4 .

Schedule E: Water (Surface Water)					
Condition number	Condition				
E1	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.				
E2	Unless otherwise permitted under the conditions of this environmental authority, the release of mine affected water to waters must only occur from the release points specified in Table E1 - Mine affected water release points, sources and receiving waters and depicted in Figure 2 - (Mine affected water release points) .				
Table E1 - Mine affected water release points, sources and receiving waters					
Release point (RP)	Easting (GDA94, zone 55)	Northing (GDA94, zone 55)	Mine affected water source and location	Monitoring point	Receiving waters description
RP 1	660550	7417633	Waste rock dump and pit	WSW8	Un-named water course (tributary of Red Rock Creek)
RP 2	661347	7416714	Waste rock dump and pit	WSW2a	Un-named water course (tributary of Red Rock Creek)
E3	Notwithstanding condition E2 of this environmental authority, the release of mine affected water to waters from RP1 and RP2 is not permitted until the holder amends this environmental authority to include: a) the installed location details for RP1 and RP2, and Monitoring Points in Table E1 - Mine affected water release points, sources and receiving waters; b) the release limit value for Turbidity (NTU) in Table E2 - Mine affected water release limits; c) the installed location details for gauging stations in Table E4 - Mine affected water release during flow events; d) the installed details for each of the monitoring points in Table E6 - Receiving water upstream background sites and downstream monitoring points; and e) the release limit value for EC (µS/cm) , Turbidity (NTU), Aluminium (mg/L), Barium (mg/L), Cobalt (mg/L), Uranium (mg/L), and Vanadium (mg/L) in Table E5 - Receiving waters contaminant trigger levels.				
E4	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 E30 to E32 inclusive is permitted.				

Schedule E: Water (Surface Water)														
Condition number	Condition													
Table E2 - Mine affected water release limits														
	<table><tr><th>Quality characteristic</th><th>Release limits</th><th>Monitoring frequency</th></tr><tr><td>Electrical conductivity (µS/cm)</td><td>Release limits specified in Table E4 - Mine affected water release during flow events for variable flow criteria</td><td rowspan="4">Daily during a release and within 2 hours of commencing the release</td></tr><tr><td>Dissolved Oxygen (%sat)</td><td>85 - 110</td></tr><tr><td>pH (pH units)</td><td>6.5 - 8.5</td></tr><tr><td>Turbidity (NTU)</td><td>TBA</td></tr></table>	Quality characteristic	Release limits	Monitoring frequency	Electrical conductivity (µS/cm)	Release limits specified in Table E4 - Mine affected water release during flow events for variable flow criteria	Daily during a release and within 2 hours of commencing the release	Dissolved Oxygen (%sat)	85 - 110	pH (pH units)	6.5 - 8.5	Turbidity (NTU)	TBA	
Quality characteristic	Release limits	Monitoring frequency												
Electrical conductivity (µS/cm)	Release limits specified in Table E4 - Mine affected water release during flow events for variable flow criteria	Daily during a release and within 2 hours of commencing the release												
Dissolved Oxygen (%sat)	85 - 110													
pH (pH units)	6.5 - 8.5													
Turbidity (NTU)	TBA													
E5	The release of mine affected water to waters in accordance with condition E2 must not exceed the release limits stated in Table E2 - Mine affected water release limits when measured at the monitoring points specified in Table E1 - Mine affected water release points, sources and receiving waters for each quality characteristic.													
E6	The release of mine affected water to waters from the release points must be monitored at the locations specified in Table E1 - Mine affected water release points, sources and receiving waters for each quality characteristic and at the frequency specified in Table E2 - Mine affected water release limits and Table E3 - Release contaminant trigger investigation levels .													

Table E3 - Release contaminant trigger investigation levels

Quality characteristic	Trigger Level (ug/L)	Comment on trigger level	Monitoring frequency
Aluminium	55	For aquatic ecosystem protection, based on SMD guideline.	Within 2 hours of commencing the release and thereafter daily during release
Arsenic	13	For aquatic ecosystem protection, based on SMD guideline.	
Cadmium	0.2	For aquatic ecosystem protection, based on SMD guideline.	
Chromium	1	For aquatic ecosystem protection, based on SMD guideline.	
Copper	2	For aquatic ecosystem protection, based on LOR for ICPMS	
Iron	300	For aquatic ecosystem protection, based on low reliability guideline	
Lead	4	For aquatic ecosystem protection, based on SMD guideline.	
Mercury	0.2	For aquatic ecosystem protection, based on LOR for CV FIMS	
Nickel	11	For aquatic ecosystem protection, based on SMD guideline.	
Zinc	8	For aquatic ecosystem protection, based on SMD guideline.	
Boron	370	For aquatic ecosystem protection, based on SMD guideline	
Cobalt	90	For aquatic ecosystem protection, based on low reliability guideline.	
Manganese	1900	For aquatic ecosystem protection, based on SMD guideline.	
Molybdenum	34	For aquatic ecosystem protection, based on low reliability guideline.	
Selenium	10	For aquatic ecosystem protection, based on LOR for ICPMS	
Silver	1	For aquatic ecosystem protection, based on LOR for ICPMS	
Uranium	1	For aquatic ecosystem protection, based on LOR for ICPMS	

Schedule E: Water (Surface Water)			
Condition number	Condition		
	Vanadium	10	For aquatic ecosystem protection, based on LOR for ICPMS
	Ammonia	900	For aquatic ecosystem protection, based on SMD guideline.
	Nitrate	1100	For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN.
	Petroleum hydrocarbons (C6-C9)	20	
	Petroleum hydrocarbons (C10-C36)	100	
	Fluoride (total)	2000	Protection of livestock and short term irrigation guideline.

Notes:

1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.
2. The quality characteristics required to be monitored as per **Table E3 - Release contaminant trigger investigation levels** 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 E3 - Release contaminant trigger investigation levels** by amendment.
3. SMD—slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).
4. LOR—typical reporting for method stated. ICPMS/CV FIMS—analytical method required to achieve LOR.

Schedule E: Water (Surface Water)	
Condition number	Condition
E7	If quality characteristics of the release exceed any of the trigger levels specified in Table E3 - Release contaminant trigger investigation levels during a release event, the holder must compare the downstream results in the receiving waters to the trigger values specified in Table E3 - Release contaminant trigger investigation levels and: 1. where the trigger values are not exceeded then no action is to be taken; or 2. where the downstream results exceed the trigger values specified Table E3 - Release contaminant trigger investigation levels for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and; a) if the result is less than the background monitoring site data, then no action is to be taken; or b) if the result is greater than the background monitoring site data, complete an investigation into the potential for environmental harm and provide a written report to the administering authority outlining: i) details of the investigations carried out; ii) actions taken to prevent environmental harm; and iii) proposed actions to prevent a recurrence of the exceedance. Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with E7 2(b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.
E8	If an exceedance in accordance with condition E7 2(b) is identified, the holder must notify the administering authority within twenty-four (24) hours of receiving the result.
E9	The report required by condition E7 2(b) must be provided to the administering authority within fourteen (14) days following the notification under condition conditions E8.
E10	Mine Affected Water Release Events The holder must ensure a stream flow gauging station is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in Table E4 - Mine affected water release during flow events
E11	Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with condition E2 must only take place during periods of natural flow events in accordance with the receiving water flow criteria for discharge specified in Table E4 - Mine affected water release during flow events for the release points specified in Table E1 - Mine affected water release points, sources and receiving waters.

Schedule E: Water (Surface Water)								
Condition number	Condition							
E12	The release of mine affected water to waters in accordance with condition E2 must not exceed the electrical conductivity and sulphate release limits or the maximum release rate (for all combined release point flows) for each receiving water flow criteria for discharge specified in Table E4 - Mine affected water release during flow events when measured at the monitoring points specified in Table E1 - Mine affected water release points, sources and receiving waters .							
Table E4 - Mine affected water release during flow events								
Receiving Waters	Release Point (RP)	Gauging Station	Gauging Station Northing (GDA94, z55)	Gauging Station Easting (GDA94, z55)	Receiving Water Flow recording frequency	Receiving Water Flow criteria for discharge (m³/s)	Maximum Permitted Release Rate Dilution (Ratio of MAW to Natural Flow)	Electrical Conductivity Release limits
Un-named water course (tributary of Red Rock Creek)	RP1	Gauging Station 1	662127	7418822	Continuous (minimum of 1 data point every 1 hour)	>0.1 (m³/s)	1:20	Electrical conductivity (µS/cm): 1,470
Un-named water course (tributary of Red Rock Creek)	RP2	Gauging Station 2	663479	7418694	Continuous (minimum of 1 data point every 1 hour)	>0.1 (m³/s)	1:20	Electrical conductivity (µS/cm): 1,470
E13	The daily quantity of mine affected water released from each release point must be measured and recorded.							
E14	Releases to water must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build-up of sediment in such waters.							

Schedule E: Water (Surface Water)	
Condition number	Condition
E15	Notification of release event The holder must notify the administering authority via WaTERS within twenty-four (24) hours after commencing a release of mine affected water to the receiving environment. Notification must include the submission of written advice to the administering authority of the following information: a) release commencement date and time; b) details regarding the compliance of the release with the conditions of Schedule: Water (Surface Water) of this environmental authority (that is, contaminant limits, natural flow, discharge volume); c) release point(s); d) release rate; e) release salinity; and f) receiving water including the natural flow rate.
E16	The holder must notify the administering authority via WaTERS as soon as practicable and no later than twenty-four (24) hours after cessation of a release event notified under condition E15. The release cessation notification must include the submission of written advice to the administering authority of the following information: a) release cessation date and time; b) receiving water(s) including the natural flow rate; and c) volume of water released. NOTE: Successive or intermittent releases occurring within twenty-four (24) hours of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purpose of compliance with conditions E15, E16, and E17, provided the relevant details of the release are included within the notification provided in accordance with conditions E15, E16, and E17.

Schedule E: Water (Surface Water)	
Condition number	Condition
E17	Within twenty-eight (28) days of notification under condition E15, the holder must provide the administering authority via WaTERS the following information in writing: a) confirmation of: i) the release commencement date and time; ii) the release cessation date and time; iii) receiving water(s) including the natural flow rate; and iv) volume of water released; b) all in-situ and laboratory water quality monitoring results; c) details regarding the compliance of the release with the conditions of Schedule E: Water (Surface Water) of this environmental authority (i.e. contamination limits, natural flow, discharge volume); d) whether the release of water resulted in any impacts to the receiving environment; and e) any other matter(s) pertinent to the water release event.
E18	Notification of release event exceedance If the release limits defined in Table E2 - Mine affected water release limits are exceeded, the holder must notify the administering authority within twenty-four (24) hours of receiving the results.
E19	Within twenty-eight (28) days of notification under condition E18, the holder must provide the administering authority via WaTERS the following information in writing: 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.
E20	Receiving Environment Monitoring and Contaminant Trigger Levels The quality of the receiving waters must be monitored at the locations specified in Table E6 - Receiving water upstream background sites and downstream monitoring points for each quality characteristic and at the monitoring frequency stated in Table E5 - Receiving waters contaminant trigger levels and Table E3 - Release contaminant trigger investigation levels.

Table E5 - Receiving waters contaminant trigger levels.

Quality characteristic	Release limits	Monitoring frequency
pH (pH units)	6.5 (lower trigger); 8.5 (upper trigger)	Within 6 hours of a release of MAW or first flow.
EC (µS/cm)	1000	Subsequent monitoring must be conducted daily during the flow.
Turbidity (NTU)	TBD ^B	
Nitrate + Nitrite (mg/L)	0.7	
Ammonia (mg/L)	0.9	Within 12 hours of a release of MAW or first flow. Subsequent monitoring must be conducted weekly during the flow.
Aluminium (mg/L)	TBD ^B	
Arsenic (mg/L)	0.013	
Barium (mg/L)	TBD ^B	
Boron (mg/L)	0.37	
Cadmium (mg/L)	0.0002	
Chromium (mg/L)	0.001	
Cobalt (mg/L)	TBD ^B	
Copper (mg/L)	0.0014	
Lead (mg/L)	0.0034	
Manganese (mg/L)	1.9	
Mercury (mg/L)	0.00006	
Nickel (mg/L)	0.011	
Selenium (total; mg/L)	0.005	
Uranium (mg/L)	TBD ^B	
Vanadium (mg/L)	TBD ^B	
Zinc (mg/L)	0.008	
Total BTEX (µg/L)	10 ^C	
Total Xylenes (µg/L)	5 ^C	
TRH (C6-C10) (µg/L)	50 ^C	
Sulphate (mg/L)	250	
TSS (mg/L)	110 ^A	

Default ANZECC & ARMCANZ (2000) Freshwater Aquatic ecosystems trigger value for 95% species protection used with exception of the following:

^A Water quality objectives to protect aquatic ecosystem environmental values under baseflow for Mackenzie River.

Schedule E: Water (Surface Water)

Condition number	Condition
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^B Insufficient number of samples to determine interim trigger.

^C Limit of reporting.

Table E6 – Receiving water upstream background sites and downstream monitoring points

Monitoring points	Receiving waters location description	Easting (UTM, GDA94, Zone 55)	Northing (UTM, GDA94, Zone 55)
Upstream background monitoring points			
WSW4	Upstream location on drainage channels leading to Red Rock Creek	659057	7418376
WSW3	Upstream location on drainage channels leading to Frying Pan Creek	661039	7415166
Downstream monitoring points			
WSW2a	Downstream location on drainage channels leading to Red Rock Creek	661962	7417156
WSW2b	Downstream location on drainage channels leading to Red Rock Creek	662373	7416631
WSW8	Downstream location on drainage channels leading to Red Rock Creek, a tributary of Cooroora Creek	661485	7418590

Notes:

- The data from background monitoring points must not be used where they are affected by releases from other mines.
- Location of monitoring points are indicative, the holder must amend this environmental authority upon construction and installation of monitoring points.

Schedule E: Water (Surface Water)	
Condition number	Condition
E21	If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Table E5 - Receiving waters contaminant trigger levels and Table E3 - Release contaminant trigger investigation levels during a release event the holder must compare the downstream results to the upstream results in the receiving waters and: a) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; or b) where the down stream 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.
E22	Receiving Environmental Monitoring Program The holder must develop and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised 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 Red Rock Creek Catchment and connected or surrounding waterways within ten (10) km downstream of the release. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised activity that will potentially be directly affected by an authorised release of mine affected water.

Schedule E: Water (Surface Water)	
Condition number	Condition
E23	The REMP required by condition E22 must: a) Meet the minimum content requirements of the administering authority 'Guideline- Receiving environment monitoring program guideline (ESR/2016/2399); b) 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); c) be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; d) 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 E6 - Receiving water upstream background sites and downstream monitoring points; e) 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; f) include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in Table E2 - Mine affected water release limits and Table E3 - Release Contaminant Trigger Investigation Levels ; g) include, where appropriate, monitoring of metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 Guidance on Sampling of Bottom Sediments); h) include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology, i) apply procedures and/or guidelines from ANZECC & ARMCANZ 2000 and other relevant guideline documents; j) describe sampling and analysis methods and quality assurance and control; and k) incorporate stream flow and hydrological information in the interpretations of water quality and biological data.
E24	A REMP Design Document that addresses each criterion presented in conditions E22 and E23 must: a) be developed prior to commencing mining activities; and b) implemented for the duration of mining activities. Due consideration must be given to any comments made by the administering authority on the REMP Design Document and subsequent implementation of the program.

Schedule E: Water (Surface Water)	
Condition number	Condition
E25	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with condition E22 and E23 must be prepared annually. The report 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.
E26	Water reuse Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party for the purpose of: a) supplying stock water subject to compliance with the quality release limits specified in Table E7 - Stock Water Release Limits; or b) supplying irrigation water subject to compliance with the quality release limits specified in Table E8 - Irrigation Release Limits.

Table E7 - Stock Water Release Limits			
Quality Characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical Conductivity	µS/cm	0	5000

Table E8 – Irrigation Release Limits			
Quality Characteristic	Units	Minimum	Maximum
pH	pH units	6.5	8.5
Electrical Conductivity	µS/cm	0	Site specific value determined in accordance with ANZECC & ARMCANZ (2000) Irrigation Guidelines

E27	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, for the purpose of supplying water to any operation licensed for either ERA13 (mining black coal) or ERA31 (mineral processing). The volume, pH and electrical conductivity of water transferred must be monitored and recorded.
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Schedule E: Water (Surface Water)	
Condition number	Condition
E28	If the responsibility for mine affected water is given or transferred to another person in accordance with conditions E26 or E27: a) the responsibility for the mine affected water must only be given or transferred in accordance with a written agreement (the third party agreement); and b) the third party agreement must include a commitment from the person utilising the mine affected water to use it in such a way as to prevent environmental harm or public health incidents and specifically make the persons aware of the General Environmental Duty (GED) under section 319 of the <i>Environmental Protection Act 1994</i>, environmental sustainability of the water disposal and protection of environmental values of waters; and c) the third party agreement must be signed by both parties to the agreement.
E29	Annual water monitoring reporting The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority via WaTERs: a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; d) the measured or estimated daily quantity of mine affected water released from all release points; e) the release flow rate at the time of sampling for each release point; f) the results of all monitoring and details of any exceedances of the conditions of this environmental authority; and g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.
E30	Water Management Plan A Water Management Plan must: a) be developed prior to commencing mining activities; and b) implemented for the duration of mining activities.

Schedule E: Water (Surface Water)	
Condition number	Condition
E31	The Water Management Plan required by condition E30 must include: a) provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining activity carried out under this environmental authority; and b) be developed in accordance with administering authority's guideline <i>Preparation of Water Management Plans for Mining Activities (ESR/2016/3111)</i> and include: i) a study of the source of contaminants; ii) a water balance model for the site; iii) a water management system for the site; iv) measures to manage and prevent saline drainage; v) measures to manage and prevent acid rock drainage; vi) contingency procedures for emergencies; and vii) a program for monitoring and review of the effectiveness of the water management plan.
E32	The Water Management Plan must be reviewed annually to assess the adequacy of the plan, ensure actual and potential environmental impacts are managed, identify any necessary amendments to the plan and submitted with the annual return.
E33	Stormwater and water sediment controls An Erosion and Sediment Control Plan must be developed prior to commencing mining activities, and implemented for the duration of mining activities to: a) minimise erosion and the release of sediment to receiving waters; and b) minimise contamination of stormwater.
E34	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 E33; and b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with condition E30 to E32, for the purpose of ensuring water does not become mine affected water.

Schedule E: Water (Surface Water)	
Condition number	Condition
E35	All Dams The consequence category of each dam must be assessed by a suitably qualified and experienced person: a) prior to the construction of the dam; and b) at regular intervals not exceeding two (2) years, from the completion of the assessment required by condition E35 a).
E36	The holder must only construct a dam of low consequence category.

Schedule F: Water (Groundwater)	
Condition number	Condition
F1	The holder must not release contaminants to groundwater.
F2	The holder must notify the administering authority in writing within twenty-four (24) hours if the holder takes or interferes with underground water.
F3	Groundwater quality and standing water levels must be monitored: a) at the location specified in Table F1 - Groundwater monitoring locations and frequency; b) at the monitoring frequency specified in Table F1 - Groundwater monitoring locations and frequency; and c) for the groundwater quality characteristics and standing water level identified in Table F2 - Groundwater quality triggers and limits.

Table F1 – Groundwater monitoring locations and frequency

Monitoring Point	Location (GDA94, Zone 55)		Surface RL (m) ^[1]	Screened interval (mBGL)	Monitoring Frequency
	Easting	Northing			
Burngrove/Emerald Formation					
Reference Bores					
RN89380	660390	7419905	TBC	42 – 54	Monthly
Compliance Bores					
WMB03	661026	7415587	239.66	30.5 – 33.5	Monthly
WMB04S	658774	7416974	250.83	24 - 30	Monthly
WMB04D	658801	7416981	250.86	71 - 77	Monthly
WMB05	659494	7417274	255.96	60 - 81	Monthly
Fairhill Formation					
Reference Bores					
W-GWB2	661857	7415811	198.40	67 - 103	Monthly
Compliance bores					
WMB01	660241	7417004	219.11	37 - 49	Monthly
WMB02	661857	7415811	216.14	22 - 28	Monthly

¹ RL must be measured to the nearest 5cm.

Table F2 – Groundwater quality triggers and limits

Groundwater quality parameter	Burngrove/Emerald Formation		Fairhill Formation	
	Trigger value (Limit A)	Contaminate Limit (Limit B)	Trigger value (Limit A)	Contaminate Limit (Limit B)
Drawdown	No Limit	> 2m	No Limit	>0.5m
pH (pH Units) ⁴	6.66 - 7.76	6.31- 8.0	7.9 - 8.1	7.825 – 8.15
EC (µS/cm) ⁴	3,020	3,800	No Limit	4,600
Major ions (Na, Ca, Mg, K, Cl, HCO ₃ , CO ₃)	For interpretation only			
Sulfate (mg/L) ³	No Limit	250	No Limit	250
Fluoride (mg/L)	0.32	1	0.36	0.48
Nitrate (mg/L as N) ¹	No Limit	0.7	No Limit	0.7
Ammonia (mg/L as N) ¹	0.9	0.9	0.9	0.9
Boron (mg/L) ⁴	0.73	0.812	0.646	0.678
Barium (mg/L) ⁴	0.36	0.563	0.896	0.952
Manganese (mg/L) ¹	No Limit	1.9	No Limit	1.9
Iron Dissolved (mg/L) ²	No Limit	0.246	No Limit	0.2515
Aluminium Dissolved (mg/L) ¹	0.055	0.09	0.055	0.09
Copper Dissolved (mg/L) ²	No Limit	0.03	No Limit	0.03
Lead Dissolved (mg/L) ¹	No Limit	0.0034	No Limit	0.0034
Arsenic Dissolved (mg/L) ¹	No Limit	0.013	No Limit	0.013
Nickel Dissolved (mg/L) ¹	No Limit	0.011	No Limit	0.011
Cobalt Dissolved (mg/L) ⁴	0.004	0.00785	0.002	0.002
Chromium Dissolved (mg/L) ⁴	0.0168	0.0291	0.001	0.001
Selenium Dissolved (mg/L) ⁴	No Limit	0.005	No Limit	0.005
Cadmium Dissolved (mg/L) ¹	No Limit	0.0002	No Limit	0.0002
Vanadium Dissolved (mg/L) ⁴	0.0074	0.015	0.005	0.01075
Uranium Dissolved (mg/L) ³	No Limit	0.017	No Limit	0.017
Zinc Dissolved (mg/L) ²	No Limit	0.027	No Limit	0.027
Mercury Dissolved (mg/L) ¹	No Limit	0.0006	No Limit	0.0006

Schedule F: Water (Groundwater)	
Condition number	Condition
Notes ¹ Default ANZECC & ARMCANZ (2000) Freshwater Aquatic ecosystems trigger value for 95% species protection used with the exception of Se which is 99% due to potential for bioaccumulation ² Fitzroy Groundwater zone 34, 80th percentile, deep bores. ³ Australian Drinking Water Quality Guideline. ⁴ Site-specific triggers.	
F4	Groundwater quality measured from any compliance bore specified in Table F1 - Groundwater monitoring locations and frequency must not exceed: a) Trigger Value (Limit A) for any quality characteristic specified in Table F2 – Groundwater quality triggers and limits on any five (5) consecutive sampling occasions for the same characteristic; or b) Contaminate Limit (Limit B) for any quality characteristic specified in Table F2 – Groundwater quality triggers and limits on any three (3) consecutive sampling occasions.
F5	Exceedance investigation If an exceedance is detected in accordance with condition F4, the holder must notify the administering authority via WaTERS within seven (7) days.
F6	Within fourteen (14) days of the notification given under condition F5; commence an investigation into the cause of the exceedance including: a) a comparison of the compliance monitoring bore results to baseline data, observation and reference bores, and other relevant data; b) an investigation of the potential for environmental harm; and c) the actions taken or to be taken to ensure compliance with condition F1 of this environmental authority.
F7	The exceedance investigation under condition F6 must be completed and submitted to the administering authority via WaTERS within three (3) months of notifying the administering authority under condition F5.
F8	Where an investigation completed under condition F7 identifies the potential for environmental harm, an action plan to mitigate potential environmental harm must be developed by an appropriately qualified person and implemented within one (1) month of the completion of the investigation under condition F7.
F9	Groundwater Monitoring Program A Groundwater Monitoring Program must:

Schedule F: Water (Groundwater)	
Condition number	Condition
	a) be developed prior to commencing mining activities; and b) implemented for the duration of mining activities.
F10	The Groundwater Monitoring Program required by condition F9 must: a) identify potential sources of contamination to groundwater from mining activities; b) identify the environmental values that need to be protected; 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) detect any impacts to groundwater levels due to the activity; g) detect any impacts to groundwater quality due to the activity; h) determine compliance with condition F1; i) determine trends in groundwater quality; j) include an appropriate quality assurance and quality control program; k) include a conceptual groundwater model; and l) include a review process to identify improvements to the program. .
F11	The holder must: a) have the Groundwater Monitoring Program reviewed by an appropriately qualified person to determine if the Groundwater Monitoring Program continues to meet the requirements in condition F9 within one (1) year of commencement of mining activities; and b) complete such reviews at regular intervals, not exceeding one (1) year, from the completion of the report required by condition F11(a).
F12	Annual Monitoring Report The holder must complete an Annual Monitoring Report and submit the report to the administering authority with the annual return.

Schedule F: Water (Groundwater)	
Condition number	Condition
F13	The Annual Monitoring Report required by condition F12 must include a) the standing water level in the compliance bores; b) any changes in water quality in the compliance bores; c) maps showing the actual water level drawdown contours caused by the take of underground water for each aquifer; d) details of any review undertaken of the numerical groundwater model since the previous Annual Monitoring Report; e) an assessment of any differences between the actual water level impact and the impact predicted for the same period in the most current numerical groundwater model; f) details of any bores which are predicted by the most current numerical groundwater model to be located in the affected area; and g) raw data within usable electronic format.
F14	The construction, maintenance and decommissioning of groundwater monitoring bores must be undertaken in a manner that: a) prevents contaminants entering the groundwater; b) ensures the integrity of the bores to obtain representative groundwater samples from the target aquifer; and c) maintains the hydrogeological environment within the aquifer.
F15	A bore drill log must be kept for all groundwater monitoring bores that includes: a) bore identification reference and geographic coordinate location; b) specific construction information including but not limited to depth of bore, depth and length of casing, depth and length of screening and bore sealing details; c) standing groundwater level and water quality parameters including physical parameters and results of laboratory analysis for the possible trigger parameters; d) lithological data and stratigraphic interpretation by an appropriately qualified person to identify important features associated with groundwater monitoring; and e) target aquifer formation of the bore.

Schedule F: Water (Groundwater)	
Condition number	Condition
F16	Monitoring and sampling of groundwater quality and standing water levels must be carried out in accordance with written procedures and must address the requirements of the latest version of the following documents: a) for groundwater and aquatic environments, the Queensland Government's Monitoring and Sampling Manual 2009 – Environmental Protection (Water and Wetland Biodiversity) Policy 2019 b) for groundwater, Groundwater Sampling and Analysis – A Field Guide (2009:27 GeoCat#6890.1) and Australian Standard AS/NZS 5667.11:1998 Water Quality – Sampling – Guidance on sampling of groundwaters; and c) for subterranean aquatic fauna, the Guideline for the Environmental Assessment of Subterranean Aquatic Fauna.

Schedule G: Land	
Condition number	Condition
G1	Preventing contaminant release to land Contaminants must not be released to land unless otherwise authorised by a condition of this environmental authority.
G2	Storage and handling of chemicals and flammable or combustible liquids All chemicals and flammable or combustible liquids must be stored and handled in accordance with the Australian Standard where such is applicable. Where no relevant Australian Standard exists, store such materials within an effective on-site containment system.
G3	Topsoil Management Plan A Topsoil Management Plan must: a) be developed prior to commencing mining activities; and b) be implemented for the duration of mining activities.

Schedule H: Rehabilitation	
Condition number	Condition
H1	A Rehabilitation Management Plan must: a) be developed prior to commencing mining activities; and b) implemented for the duration of mining activities.
H2	The Rehabilitation Management Plan required by condition H1, must address all relevant requirements within this environmental authority, and at a minimum include the following items: a) detail how all land disturbed by the mining activities will be rehabilitated to ensure that it is; i) safe for humans and wildlife; ii) non-polluting iii) stable; iv) able to sustain an agreed post mining land use; and b) specify mining material characteristics for specific rehabilitation strategies; c) final completion criteria for all domains, which aligns with Appendix A - Rehabilitation Completion Criteria and Table H1 - Residual Void Design; d) provide a schematic representation, which aligns with Figure 3 - (Cross Sections of Post Mining Landform), of final landform inclusive of; i) drainage design and features; ii) slope designs; iii) cover design; iv) erosion controls proposed on reshaped land; and e) detail the progressive rehabilitation strategy to be implemented, which aligns with Table H2 – Progressive Rehabilitation Requirements; f) map and tabulate the rehabilitation requirements applied to all mine domains with respect to rehabilitation goals, rehabilitation objectives, indicators and completion criteria; g) details of how the final land uses will align with local planning scheme requirements; h) identify a minimum of 6 reference sites and 6 rehabilitation sites to be used to develop rehabilitation acceptance criteria to allow valid comparison of self-sustaining rehabilitation vegetation communities to local reference sites; i) a plan to demonstrate how the Landscape Function Analysis (LFA) reference sites shall be established within the first year of commencement of the action to provide suitable baseline reference for progressive rehabilitation; j) a process to adequately strip, stockpile, and maintain any topsoil disturbed by the mining activities, to ensure its volume, and physical and chemical characteristics are maintained

Schedule H: Rehabilitation

Condition number	Condition
	in a way that will not constrain the achievement of the defined rehabilitation completion criteria; k) a compliance table that directs any reader of the plan to the relevant section/s which address all the relevant rehabilitation requirements of this environmental authority; l) describe a program for monitoring and review of the effectiveness of the Rehabilitation Management Plan; and management actions to be implemented for when rehabilitation objectives are not progressing towards meeting the completion criteria.

Table H1 - Residual Void Design

Void identification	Void high wall – slope	Void low Wall - slope	Void Maximum Surface area (ha)	Void Maximum depth (RL mAHD)	Void Maximum volume (ML)
Void	< 30%	< 30%	52	220	6,449

H3	Land disturbed by mining activities must be progressively rehabilitated in accordance with the Rehabilitation Management Plan required by condition H1 .
H4	Rehabilitation activities carried out in accordance with Table H2 - Progressive Rehabilitation Requirements must achieve the completion criteria as stated in Appendix A - Rehabilitation Completion Criteria .

Table H2 - Progressive Rehabilitation Requirements.

Year	Progressive Rehabilitation (Minimum percentage (%) of disturbed area)
Year 1 ¹	0
Year 2	16
Year 3	32
Year 4	48
Year 5	64
Year 6	80
Year 7	100

Notes

¹ Means one (1) year from the commencement of mining activities.

Schedule H: Rehabilitation	
Condition number	Condition
H5	By 1 March in the year following the reporting period, the holder must provide to the administering authority a rehabilitation progress report for the project. The report must include an analysis of the following a) for the relevant Reporting Period – the actual amount of rehabilitation completed for that period; and b) for the immediately preceding Reporting Period, if applicable – the estimated amount of rehabilitation to be completed in that period.

Schedule J: Offset			
Condition number	Condition		
J1	Significant residual impacts to prescribed environmental matters are not authorised under this environmental authority or the <i>Environmental Offsets Act 2014</i> unless the impact(s) is specified in Table J1 - Significant residual impacts to prescribed environmental matters .		
Table J1 - Significant residual impacts to prescribed environmental matters			
Prescribed Environmental Matter (PEM)	Location of Impact	Maximum Extent of Impact (ha)	Environmental Offset Required
Wetlands and Watercourses			
Un-named watercourse (stream order 1)	Figure 4 - (Location of Impact to Prescribed Environmental Matters)	5.50	Yes
J2	Records demonstrating that each impact to a prescribed environmental matter not listed in Table J1 - 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.		
J3	An environmental offset made in accordance with the <i>Environmental Offsets Act 2014</i> and Queensland Environmental Offsets Policy, as amended from time to time, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in Table J1 - Significant residual impacts to prescribed environmental matters .		
J4	Prior to the commencement of any impacts to a prescribed environmental matter for which an environmental offset is required by condition J3 , a report completed by an appropriately qualified person that contains an analysis of the estimated maximum extent of impact to each prescribed environmental matter must be provided to the administering authority.		
J5	The report required by condition J4 must be approved by the administering authority before the notice of election, if applicable, is given to the administering authority.		
J6	The notice of election for the environmental offset required by condition J5 , if applicable, must be provided to the administering authority no less than three (3) months (or a lesser timeframe agreed to by the administering authority) before the proposed commencement of the significant residual impacts for which the environmental offset is required.		

END OF CONDITIONS

Definitions

Words and phrases used throughout this environmental authority are defined below except where identified in the *Environmental Protection Act 1994* or subordinate legislation. Where a word or term is not defined, the ordinary English meaning applies, and regard should be given to the Macquarie Dictionary.

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

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

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

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

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

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

‘associated works’ in relation to a dam, means:

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

‘authority’ means this environmental authority.

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

‘blasting’ means the use of explosive materials to fracture:

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

‘chemical’ means:

- a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth);
- b) a dangerous good under the *Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council*;
- c) a lead hazardous substance within the meaning of the *Workplace Health and Safety Regulation 1997*;
- d) a drug or poison in the *Standard for the Uniform Scheduling of Drugs and Poisons* prepared by the Australian Health Ministers’ Advisory Council and published by the Commonwealth; or
- e) any substance used as, or intended for use as:
 - i) a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product;
 - ii) a surface active agent, including, for example, soap or related detergent;
 - iii) a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide;
 - iv) a fertiliser for agricultural, horticultural or garden use;
 - v) a substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or
 - vi) manufacture of plastic or synthetic rubber.

‘commercial place’ means a 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.

‘completion criteria’ means the measures by which actions implemented are deemed to be complete. The acceptance criteria indicate the success of the decommissioning and rehabilitation outcomes or remediation of areas which have been significantly been disturbed by the mining activities. Acceptance criteria may include information regarding:

- stability of final land forms in terms of settlement, erosion, weathering, pondage and drainage;
- control of geochemical and contaminant transport processes;
- quality of runoff waters and potential impact on receiving environment;
- vegetation establishment, survival and succession;
- vegetation productivity, sustained growth and structure development;
- fauna colonisation and habitat development;
- ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes;
- microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;
- effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;
- resilience of vegetation to disease, insect attack, drought and fire; and
- vegetation water use and effects on ground water levels and catchment yields.

‘consecutive sampling occasion’ means consecutive sequential **‘sampling occasions’** regardless of frequency.

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

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

‘CSIRO’ means Commonwealth Scientific and Industrial Research Organisation.

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

‘disturbance’ of land includes:

- a) compacting, removing, covering, exposing or stockpiling of earth;
- b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion;
- c) carrying out mining within a watercourse, waterway, wetland or lake;
- d) the submersion of areas by hazardous contaminant storage and dam/structure walls;
- e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after the mining activity has ceased; or
- f) releasing of contaminants into the soil, or underlying geological strata.

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

- a) areas off lease (e.g. roads or tracks which provide access to the mining lease);
- b) areas previously disturbed which have achieved the rehabilitation outcomes;
- c) by agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);
- d) areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner; or
- e) disturbance that pre-existed the grant of the tenure.

‘EC’ means electrical conductivity.

‘environmental authority’ has the same meaning as given in the *Environmental Protection Act 1994*.

‘environmental offset’ has the meaning in section 7 of the *Environmental Offsets Act 2014*.

‘EP Act’ means the *Environmental Protection Act 1994*.

‘holder’ has the same meaning as given in the *Environmental Protection Act 1994*.

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

'L_{A eq, adj, 15 mins}' means an A-weighted sound pressure level of a continuous steady sound, adjusted for tonal character, that within a **fifteen (15) minute** period has the same mean square sound pressure of a sound that varies with time.

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

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

'LFA' means Landscape Function Analysis developed by Tonyway and Hindley (2004), as known as Ecosystem Function Analysis as CSIRO's principal method for mine rehabilitation assessment within the arid zone.

'licensed place' means the mining activities carried out on mining lease (ML) 700028 and ML 700029.

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

'm' means metres.

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

'Max LpA' means the maximum A-weighted sound pressure level measured using Fast response.

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

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

'mine affected water':

- a) means the following types of water:
 - i) pit water, tailings dam water, processing plant water;
 - ii) water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the Environmental Protection Regulation 2019 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; or
 - 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:
 - a. areas that are been capped and have monitoring data demonstrating hazardous material adequately contained with the site; and
 - b. evidence provided through monitoring that the relevant surface water would have met the water quality parameters for mine affected water release limits in this environmental authority, if those parameters had been applicable to the surface water runoff, or
 - iii) both.

‘mining activities’ means the activities:

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

‘mining lease’ has the same meaning as given in the *Mineral Resources Act 1989*

‘ML’ has the same meaning as **‘mining lease’**

‘minimise’ is to reduce to the smallest possible amount or degree.

‘NATA’ means National Association of Testing Authorities, Australia.

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

‘non-polluting’ means having no adverse impacts upon the receiving environment.

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

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

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

‘progressive rehabilitation’ means **‘rehabilitation’** undertaken progressively or a staged approach to rehabilitation as mining operations are ongoing.

‘project’ means the Wilton Coal Project (WCP) assigned mining lease (ML) 700028 and ML 700029.

‘project area’ means the designated areas within **Figure 1 - (Authorised Disturbance Areas)**.

‘protected area’ means – a protected area under the:

- a) *Nature Conservation Act 1992*;
- b) a marine park under the *Marine Parks Act 1992*, or
- c) a World Heritage Area.

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

- a) a watercourse;
- b) groundwater; or
- c) an area of land that is not specified in conditions **A6** to **A8** of this environmental authority.

The term does not include land that is specified in conditions **A6** to **A8** of this environmental authority.

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

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

‘referral dam’ has the meaning given by section 341 of the *Water Supply (Safety and Reliability) Act 2008*.

‘rehabilitation’ the process of reshaping and revegetating land to restore it to a safe, stable, non-polluting landform.

‘release event’ means a surface water discharge from mine affected water storages or contaminated areas on the licensed place.

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

‘reporting period’ means a calendar year.

‘resampling event’ means the resampling that is required to take place within **fourteen (14) days** of receipt of the results.

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

‘ROM’ means run of mine of black coal.

‘saline drainage’ The movement of waters, contaminated with salts, as a result of the mining activity.

‘sampling occasion’ means the collection of a sample undertaken in accordance with the sampling frequency specified, and where an exceedance is recorded the **‘sampling occasion’** together with the **‘resampling event’**.

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

‘sensitive place’ means:

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

- f) a public park or gardens.

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

A mining camp (i.e., accommodation and ancillary facilities for mine employees or contractors or both, associated with the mine the subject of the environmental authority) is not a sensitive place for that mine or mining project, whether or not the mining camp is located within a mining tenement that is part of the mining project the subject of the environmental authority. For example, the mining camp might be located on neighbouring land owned or leased by the same company as one of the holders of the environmental authority for the mining project, or a related company. Accommodation for mine employees or contractors is a sensitive place if the land is held by a mining company or related company, and if occupation is restricted to the employees, contractors and their families for the particular mine or mines which are held by the same company or a related company.

For example, a township (occupied by the mine employees, contractors and their families for multiple mines that are held by different companies) would be a sensitive place, even if part or all of the township is constructed on land owned by one or more of the companies.

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

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

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

'sub-surface disturbance' means the excavation below natural ground level for the removal of overburden and coal, and does not mean excavation associated with water management structures, or other infrastructure.

'suitably qualified and experienced person' means a person who is a Registered Professional Engineer of Queensland under the provisions of the *Professional Engineers Act 2002*, who has an **appropriate level of expertise** in the structures, geomechanics, hydrology, hydraulics and environmental impact of watercourse diversions.

An **appropriate level of expertise** includes:

- demonstrable competency, experience and expertise in:
 - investigation, design or construction of watercourses diversions;
 - operation and maintenance of watercourse diversions;
 - geomechanics with particular emphasis on channel equilibrium, geology and geochemistry;
 - hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology;
 - hydraulics with particular reference to sediment transport and deposition and erosion control;
 - hydrogeology with particular reference to seepage and groundwater;

- solute transport processes and monitoring thereof; or
- sufficient knowledge and experience to certify that where the **suitably qualified and experienced person** has relied on advice and information provided by other **persons with relevant expertise**:
 - they consider it reasonable to rely on that advice and information; and
 - the expert providing the advice and information has knowledge, competency, suitable experience and demonstrated expertise in the matters related to watercourse diversions.

Persons with relevant expertise include:

- Geomorphologist: person who has demonstrated competency and relevant experience in stream geomorphology and watercourse diversions.
- Geotechnical expert: person who has demonstrated competency and relevant experience in geotechnical assessment of soil characteristics suitable for watercourse diversions.
- Vegetation expert: person who has demonstrated competency and relevant experience in the identification, role and function of vegetation with watercourses and adjoining floodplains, and has demonstrated competency and relevant experience in revegetation of watercourse diversions and adjoining floodplains.
- Groundwater expert: person who has demonstrated competency and relevant experience in groundwater systems.
- Surface water expert: person who has demonstrated competency and relevant experience in hydrology.
- Engineer: person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Persons Act 2002* or has similar qualifications under a respected professional registration association, and has demonstrated competency and relevant experience in design and construction of watercourse diversions.
- Soils expert: person who has demonstrated competency and relevant experience in soil classification including the physical, chemical and hydrologic analysis of soil.

‘surface disturbance’ means all disturbance, including excavation associated with water management structures or other infrastructure, other than sub-surface disturbance.

‘the Act’ means the *Environmental Protection Act 1994*.

‘underground water’ has the meaning given by schedule 4 of the *Water Act 2000*.

‘void’ means any constructed, open cut excavation in the ground.

‘void maximum surface area’ means the 2D view, measured from the top of the low wall to the top of the highwall.

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

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

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

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

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

'WaTERS' means the administering authority's Water Tracking and Electronic Reporting System (WaTERS) to submit surface and ground water monitoring and tracking data online, which can be accessed via following web link - www.business.qld.gov.au/industries/mining-energy-water/water/maps-data/submit-data.

'year' means a period of **twelve (12) months** beginning on 1 January.

'µS/cm' means micro siemens per centimetre.

END OF DEFINITIONS

Appendix A - Rehabilitation Completion Criteria

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Domain 1 - Final pit void			
Safe for humans and animals	The site is safe, structurally sound, and stable for humans and fauna.	No exposed hazardous materials.	Coal seams are fully capped by at least 2 metres of competent and benign material. No evidence of spontaneous combustion post closure.
		No contaminated mine drainage.	Water quality in the void achieves stock water quality (ANZECC) demonstrated by surface water quality monitoring regime post closure. Monitoring of surface material quality has demonstrated that physical and chemical properties are safe and able to support the identified post closure land use. The area is not listed on the Contaminated Land Register and Environmental Management Register.
		Risk Assessment documentation.	Risk assessment documents potential risks and it is demonstrated that identified controls and mitigation measures have been successfully implemented post closure in accordance with relevant guidelines and Australian Standards such as ISO31000 Risk Management. Risk/s identified as per risk assessment must be low. Demonstrate that risk assessment documents risk and controls, and mitigation measures have been successfully implemented.

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Stable	Low probability of subsidence, rock falls, slumping of slopes.	Geotechnically stable.	Slopes of the post mining landform are geotechnically stable as demonstrated by a geotechnical assessment conducted by a suitably qualified and experienced person. No slopes steeper than 30%. Slopes between 15% and 30% must consist of competent rock (as built design reports to demonstrate adequate cover and materials placement by a suitably qualified and experienced person). Vertical intervals between slope breaks are 10m. No evidence of slumping identified as per the geotechnical assessment conducted by a suitably qualified and experienced person.
	Landform design achieves appropriate erosion rates.	Rate of soil loss will be similar to sites in the general area surrounding the mine.	No evidence of the formation of erosion gullies and rill erosion. Benchmark erosion study completed by an appropriately qualified person, has been conducted and compares sediment run-off rates from the post closure landform versus the sediment run-off rates in undisturbed regions. The erosion rates on the post closure landform are similar to rates of reference sites.
	Vegetation cover sufficient for a self-sustaining community and to minimise erosion.	Vegetation type and density.	Evidence that the vegetation type and density are of species suited to the sites characteristics including soil type, topography and climate and that soil erosion. Ground cover of at least 90% compared to the reference sites.

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Non-polluting	Water quality solute concentrations met. Low risk of contamination. No mine drainage issues. Mine affected water contained on site. Current and future groundwater quality values will be maintained at acceptable levels for downstream users.	Void that are a sink for water have no risk to fauna (i.e. meet stock drinking water contaminant limits at all void monitoring locations).	Water quality of surface water runoff does not exceed limits outlined in Environmental Protection (Water) Policy 2009; Mackenzie River Sub-basin Environmental Values and Water Quality Objectives. Groundwater quality does not exceed limits outlined in Environmental Protection (Water) Policy 2009; Mackenzie River Sub-basin Environmental Values and Water Quality Objectives. Evidence that no significant decline in groundwater quality has occurred relative to historic (background) groundwater quality.
	Hazardous and toxic materials are not buried within the mine area unless encapsulated.		An audit of the hazardous materials register has been conducted to identify the location, use and disposal of potentially hazardous materials during the life of the mine.

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Able to sustain an agreed post-mining land use of grazing	Agreed vegetation cover to achieve species richness and density comparable to surrounding grazing areas.	Ecosystem functioning indicators water level and quality (dissolved oxygen, pH, temperature, salinity and nutrients (nitrogen and phosphorus)) Habitat indicators: width, continuity, extent of shading and species composition.	Landscape Function Analysis (LFA) monitoring demonstrates that vegetation cover, types and densities are comparable to relevant rehabilitation monitoring reference sites. Soil characteristics demonstrate acceptable levels of surface roughness, infiltration capacity, aggregate stability and surface condition as defined in the Australian Soil and Land Survey Handbook and capable of sustaining the identified post closure land use. Final landform demonstrates the ability to sustain grazing as the identified post closure land use. Landform suitable for grazing activities and provides suitable access to water for stock and able to sustain pre-mining grazing capacity. Certification by an appropriately qualified person, that the vegetation type and density of species in rehabilitated areas are suited to the soil composition, slope, aspect, climate and agreed post mining land use. Certification by an appropriately qualified person, that species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence, and will continue to do so. Certification by an appropriately qualified person that the vegetation in rehabilitated areas includes the presence of species suitable and complimentary to the post-mining land use, and are at a density and composition comparable to reference sites.
		Regenerative capacity and resilience of the pastures	Pasture productivity recovers following natural and man-made events (e.g. grazing, fire, slashing, and drought).
	Weed infestation less than pre-mining conditions.	Weed and pest species absence.	Evidence that weed and pest species management is occurring where appropriate. The presence of weeds and pest species is no greater than the prevalence on the reference sites.

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Domain 2 - Overburden Spoil dump			
Safe for humans and animals	The site is safe, structurally sound, and stable for humans and animals.	No exposed hazardous material.	Potential hazardous materials have been identified during mine life and removed, or selected capping material has been applied with cover thickness appropriate to the contaminant as determined by appropriately qualified person.
		Risk Assessment documentation.	Risk assessment documents potential risks and it is demonstrated that identified controls and mitigation measures have been successfully implemented post closure in accordance with relevant guidelines and Australian Standards such as ISO31000 Risk Management. Risk/s identified as per risk assessment must be low. Demonstrate that risk assessment documents risk and controls, and mitigation measures have been successfully implemented.
Stable	Low probability of subsidence, rock falls, slumping of slopes	Geotechnically stable	Slopes of the post mining landform are geotechnically stable as demonstrated by a geotechnical assessment conducted by a suitably qualified and experienced person. No slopes steeper than 30%. Slopes between 15% and 30% must consist of competent rock (as built design reports to demonstrate adequate cover and materials placement by a suitably qualified and experienced person). Vertical intervals between slope breaks are 10m. No evidence of slumping identified as per the geotechnical assessment conducted by a suitably qualified and experienced person.

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	Landform design achieves appropriate erosion rates.	Rate of soil loss will be similar to sites in the general area surrounding the mine.	No evidence of the formation of erosion gullies and rill erosion. Benchmark erosion study completed by an appropriately qualified person, has been conducted and compares sediment run-off rates from the post closure landform versus the sediment run-off rates in undisturbed regions. The erosion rates on post closure landform are similar to rates of reference sites.
	Vegetation cover sufficient for a self-sustaining community and to minimise erosion.	Vegetation type and density.	Evidence that the vegetation type and density are of species suited to the sites characteristics including soil type, topography and climate. Ground cover of at least 90% compared to the reference sites.

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Non-polluting	Water quality solute concentrations met. Low risk of contamination. No mine drainage issues. Mine affected water contained on site. Current and future groundwater quality values will be maintained at acceptable levels for downstream users.	Overburden Spoil Dump water runoff have no risk to receiving environment (i.e. meet stock drinking water contaminant limits at all void monitoring locations).	Water quality of surface water runoff does not exceed limits outlined in Environmental Protection (Water) Policy 2009; Mackenzie River Sub-basin Environmental Values and Water Quality Objectives. Groundwater quality does not exceed limits outlined in Environmental Protection (Water) Policy 2009; Mackenzie River Sub-basin Environmental Values and Water Quality Objectives. Evidence that no significant decline in groundwater quality has occurred relative to historic (background) groundwater quality.
	Hazardous and toxic materials are not buried within the mine area unless encapsulated.	A life of mine hazardous materials register indicating the volumes.	An audit of the hazardous materials register has been conducted to identify the location, use and disposal of potentially hazardous materials during the life of the mine.

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Able to sustain an agreed post-mining land use of grazing	Agreed vegetation cover to achieve species richness and density comparable to surrounding grazing areas.	Ecosystem functioning indicators water level and quality (dissolved oxygen, pH, temperature, salinity and nutrients (nitrogen and phosphorus). Habitat indicators: width, continuity, extent of shading and species composition.	LFA monitoring demonstrates that vegetation cover, types and densities are comparable to relevant rehabilitation monitoring reference sites. Soil characteristics demonstrate acceptable levels of surface roughness, infiltration capacity, aggregate stability and surface condition as defined in the Australian Soil and Land Survey Handbook and capable of sustaining the identified post closure land use. Final landform demonstrates the ability to sustain grazing as the identified post closure land use. Landform suitable for grazing activities and provides suitable access to water for stock and able to sustain pre-mining grazing capacity. Certification by an appropriately qualified person, that the vegetation type and density of species in rehabilitated areas are suited to the soil composition, slope, aspect, climate and agreed post mining land use. Certification by an appropriately qualified person, that species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence, and will continue to do so. Certification by an appropriately qualified person that the vegetation in rehabilitated areas includes the presence of species suitable and complimentary to the post-mining land use, and are at a density and composition comparable to reference sites.
		Regenerative capacity and resilience of the pastures	Pasture productivity recovers following natural and man-made events (e.g. grazing, slashing, fire, and drought).
	Weed infestation less than pre-mining conditions.	Weed and pest species absence.	Evidence that weed and pest species management is occurring where appropriate. The presence of weeds and pest species is no greater than the prevalence on the reference sites.
Domain 3 - Water storage Infrastructure – to be retained			

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Safe for humans and animals	The site is safe, structurally sound, and stable for humans and animals.	Risk Assessment documentation.	Risk assessment documents potential risks and it is demonstrated that identified controls and mitigation measures have been successfully implemented post closure in accordance with relevant guidelines and Australian Standards such as ISO31000 Risk Management. Risk/s identified as per risk assessment must be low. Demonstrate that risk assessment documents risk and controls, and mitigation measures have been successfully implemented.
Stable	Water Storage is fit for purpose. No long-term erosion and geotechnical instability.	Structurally and geotechnically stable and hydraulic adequacy No major erosion.	Final structure is fit for purpose as demonstrated by a suitably qualified and experienced person. Spillway must have adequate capacity to safely manage a 1:100 year flood event. No evidence of the formation of erosion gullies and rill erosion. Benchmark erosion study completed by an appropriately qualified person, has been conducted and compares sediment run-off rates from the post closure landform versus the sediment run-off rates in undisturbed regions. The erosion rates on post-closure landform are similar to rates of reference sites.
Non-polluting	Acid mine drainage will not cause serious environmental harm Water quality solute concentrations met No mine drainage issues Mine affected water contained on site	Stock drinking water limits are met	Water quality is within the ANZECC stock watering quality criteria as demonstrated by surface water quality monitoring regime post closure. No acid mine drainage or discharges. Surface water quality does not exceed limits outlined in Environmental Protection (Water) Policy 2009; Mackenzie River Sub-basin Environmental Values and Water Quality Objectives. Sediments/sludge removed from the structure.

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	Low risk of contamination	No seepage to groundwater	Groundwater quality does not exceed limits outlined in Environmental Protection (Water) Policy 2009; Mackenzie River Sub-basin Environmental Values and Water Quality Objectives Evidence that no significant decline in groundwater quality has occurred relative to historic (background) groundwater quality.
Able to sustain an agreed post-mining land use	Water quality in the dam is suitable for the post mining land uses	Water quality Sediment Quality	Water quality of surface water runoff does not exceed limits outlined in Environmental Protection (Water) Policy 2009; Mackenzie River Sub-basin Environmental Values and Water Quality Objectives. Sediment at the base of the dam complies with the levels outlined in the Draft Guidelines for the Assessment and Remediation of Contaminated Sites in Queensland or any later guideline.
	Post Mining landholder to retain infrastructure, and tracks	Legally binding agreement between entities	Sign off by post mining landholder – asset transfer agreement; receiver of the structure is aware of risks. Water storage Infrastructure retained must not be a referral dam under the <i>Water Supply (Safety and Reliability) Act 2008</i> Certification and condition report on all Water storage Infrastructure to be retained by post mining landholder.
Domain 4 - Mine infrastructure (Site office, ROM pad, and Workshop buildings), Access tracks and haul roads and Water storage Infrastructure – to be decommissioned			
Safe for humans and animals	The site is safe, structurally sound, and stable for humans and animals	Risk Assessment documentation.	Risk assessment documents potential risks and it is demonstrated that identified controls and mitigation measures have been successfully implemented post closure in accordance with relevant guidelines and Australian Standards such as ISO31000 Risk Management. Risk identified as per risk assessment must be moderate to low or additional mitigation measure implement. Demonstrate that risk assessment documents risk and controls, and mitigation measures have been successfully implemented

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	Rehabilitation of exploration drill holes and groundwater monitoring bores	All exploration drill holes and all monitoring bores established on the Mining Leases have been rehabilitated	All exploration drill holes and monitoring bores have been rehabilitated in accordance with the applicable Australian Standard or guideline. All aquifers have been isolated where exploration drill holes or monitoring bores have intersected more than one water bearing strata, in accordance with the 'Minimum Construction Requirements for Water Bores in Australia' (Australian Government, February 2012) or latest edition.
Stable	Low probability of subsidence, rock falls, slumping or inert material loss	Structural and geo-technical adequacy.	Achieve geotechnically stable as demonstrated by a geotechnical assessment conducted by a suitably qualified and experienced person. Slopes of the post mining landform are similar to those pre mining topography.
	Landform design achieves appropriate erosion rates.	No major erosion. Rate of soil loss will be similar to sites in the general area surrounding the mine.	No evidence of the formation of erosion gullies and rill erosion. Benchmark erosion study completed by an appropriately qualified person, has been conducted and compares sediment run-off rates from the post closure landform versus the sediment run-off rates in undisturbed regions. The erosion rates on disturbed land are similar to rates of reference sites.
Non-polluting	Current and future groundwater quality values will be maintained at acceptable levels for downstream users	Surface water runoff from the rehabilitation areas meet water quality objectives	Groundwater quality does not exceed limits outlined in Environmental Protection (Water) Policy 2009; Mackenzie River Sub-basin Environmental Values and Water Quality Objectives. Evidence that no significant decline in groundwater quality has occurred relative to historic (background) groundwater quality.

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	Current and future surface water quality values will be maintained at acceptable levels for downstream users	Ecosystem functioning indicators water level and quality	Water quality of surface water runoff does not exceed limits outlined in Environmental Protection (Water) Policy 2009; Mackenzie River Sub-basin Environmental Values and Water Quality Objectives.
	Removal of potential sources of contamination.	Results of site contaminated land investigation report.	Evidence in the Rehabilitation Report that measures required in site contaminated land investigation report have been implemented. Site is within agreed contaminant levels, suitable for the proposed post-mining land use being beef cattle grazing, and removed from Contaminated Land Register and/or Environmental Management Register.

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Able to sustain an agreed post-mining land use of grazing	Agreed vegetation cover to achieve species richness and density comparable to surrounding grazing areas	Ecosystem functioning indicators water level and quality (dissolved oxygen, pH, temperature, salinity and nutrients (nitrogen and phosphorus)) Habitat indicators: width, continuity, extent of shading and species composition	LFA monitoring demonstrates that vegetation cover, types and densities are comparable to relevant rehabilitation monitoring reference sites. Soil characteristics demonstrate acceptable levels of surface roughness, infiltration capacity, aggregate stability and surface condition as defined in the Australian Soil and Land Survey Handbook and capable of sustaining the identified post closure land use. Ground cover of at least 90% compared to the reference sites. Final landform demonstrates the ability to sustain grazing as the identified post closure land use. Landform suitable for stock and related stock management activities and able to sustain pre-mining grazing capacity. Certification by an appropriately qualified person, that the vegetation type and density of species in rehabilitated areas are suited to the soil composition, slope, aspect, climate and agreed post mining land use. Certification by an appropriately qualified person, that species in rehabilitated areas show evidence of flowering, viable seed setting, germination and emergence, and will continue to do so. Certification by an appropriately qualified person, which the vegetation in rehabilitated areas includes the presence of species suitable and complimentary to the post-mining land use, and are at a density and composition comparable to reference sites.
		Regenerative capacity and resilience of the pastures	Pasture productivity recovers following natural and man events (e.g. grazing, slashing, fire, and drought).

Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	Post Mining landholder to retain infrastructure and tracks	Legally binding agreement between entities	Sign off by post mining landholder – asset transfer agreement; receiver of the equipment or asset are aware of risks. Certification and condition report on all buildings to retain by post mining landholder.
	Weed infestation less than pre-mining conditions	Weed and pest species absence	Evidence that weed and pest species management is occurring where appropriate. The presence of weeds and pest species is no greater than the prevalence on the reference sites.

END OF APENDICES

Figure 2 - (Mine affected water release points)

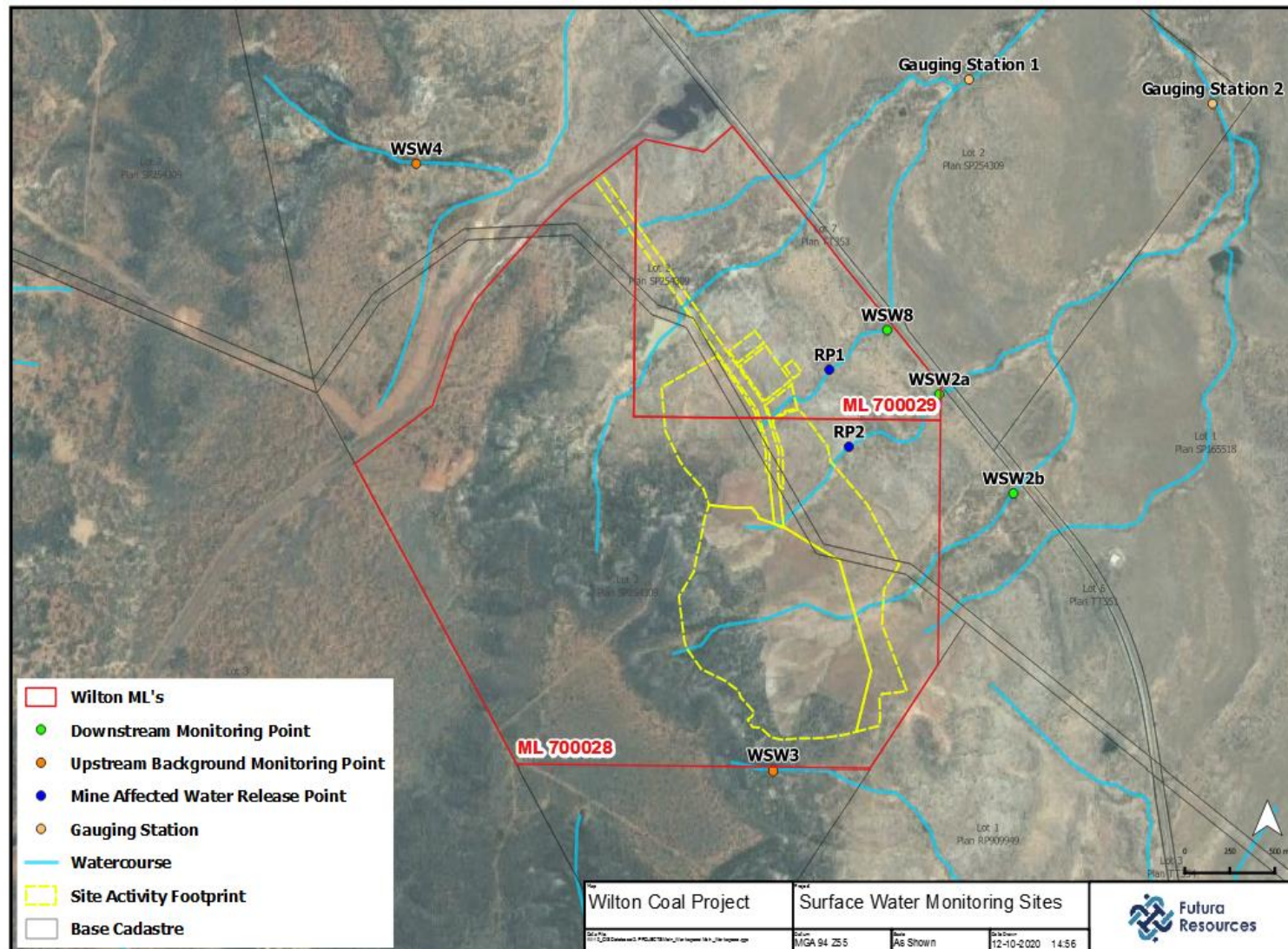
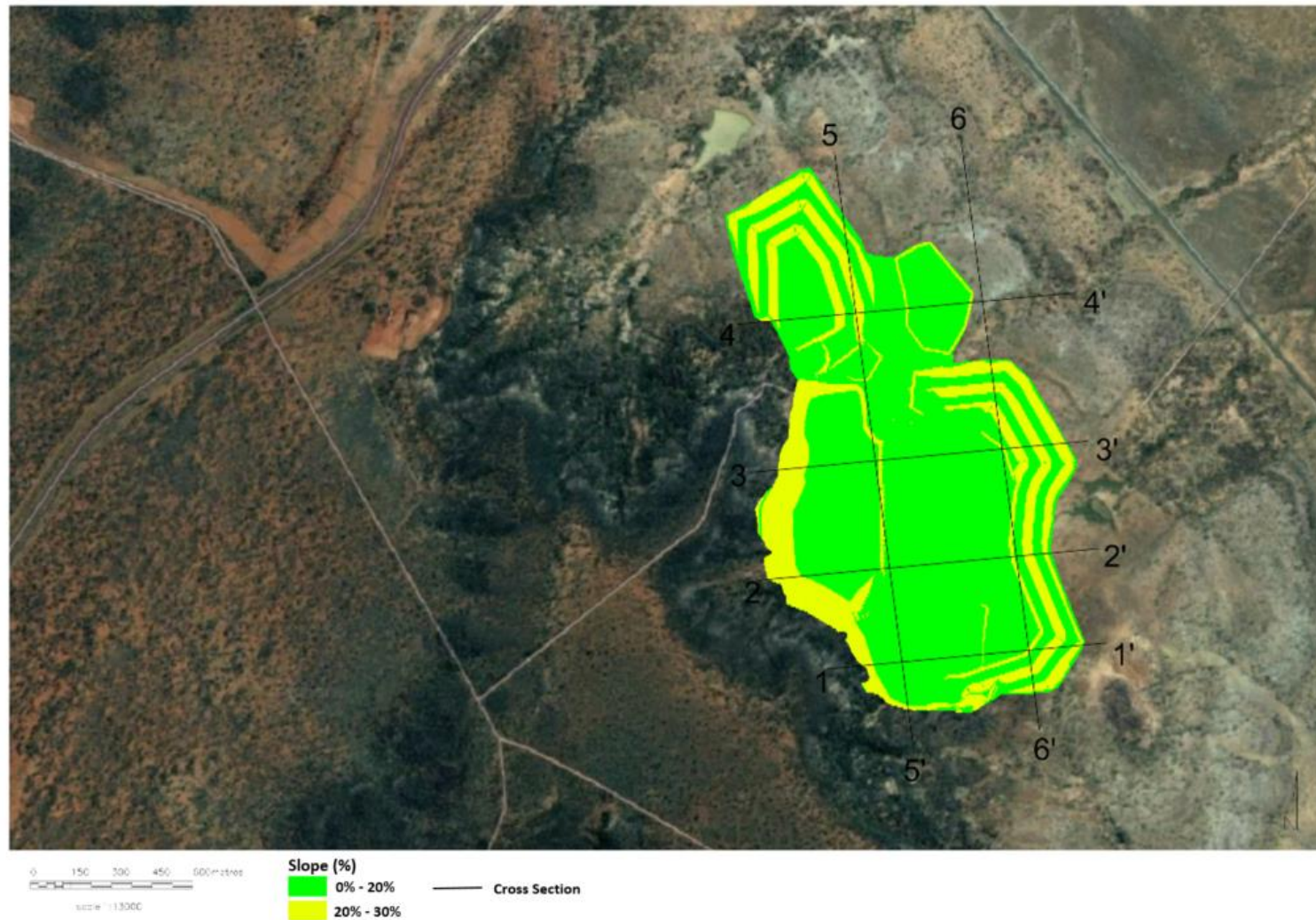
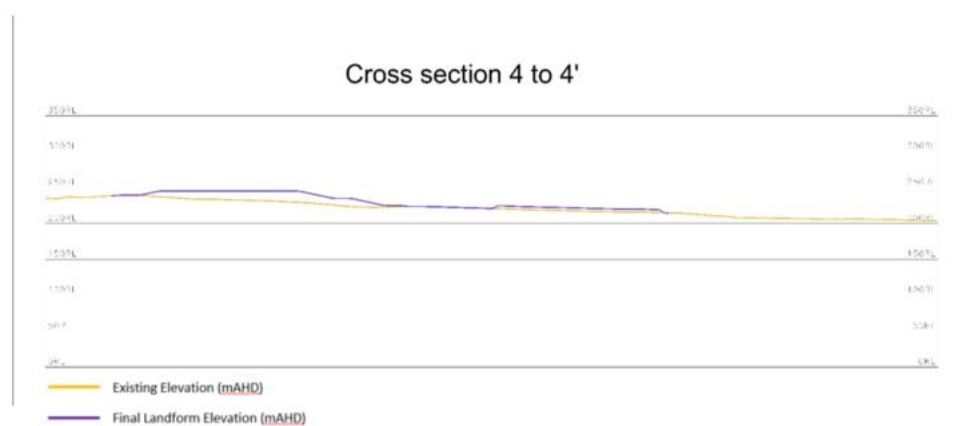
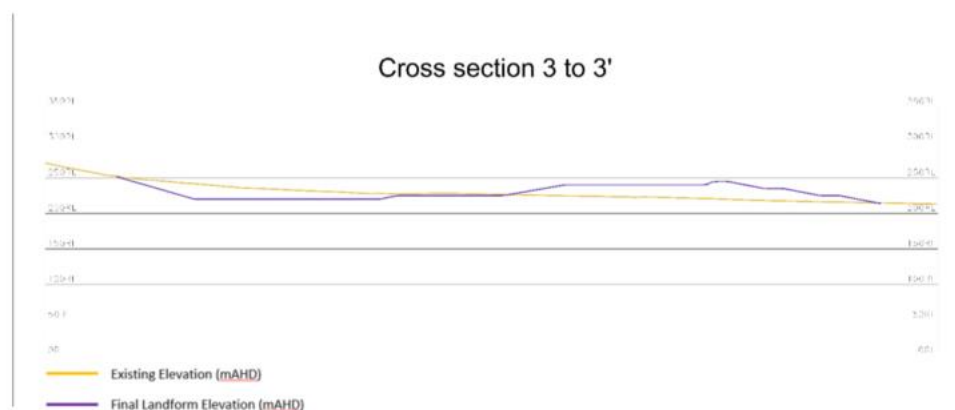
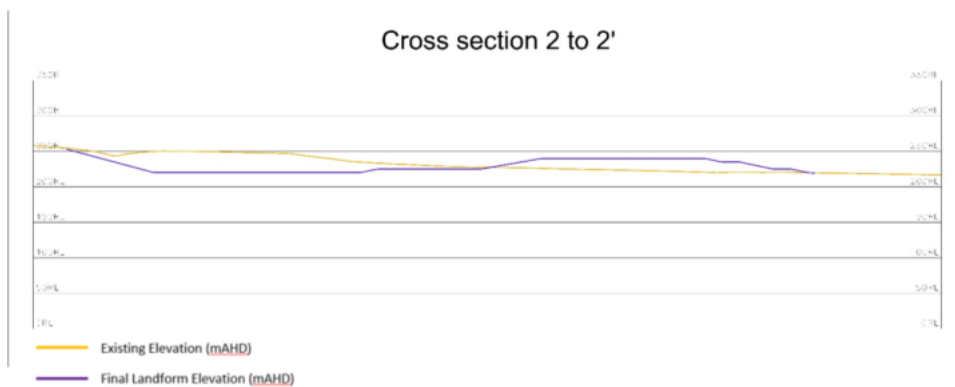
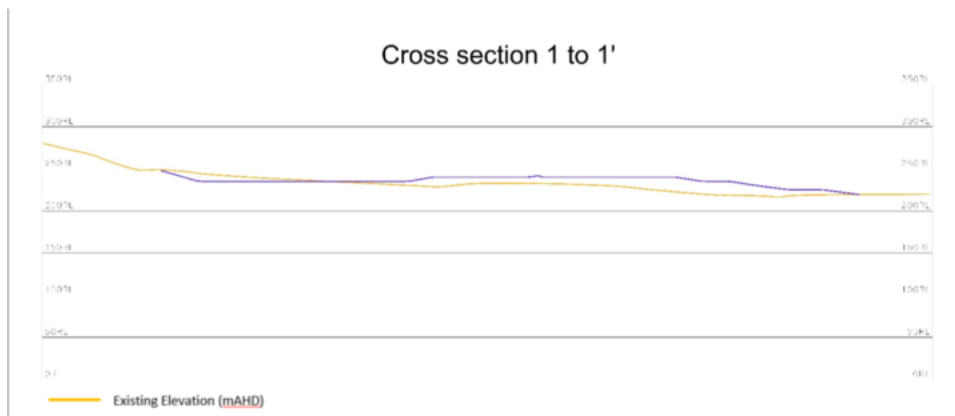
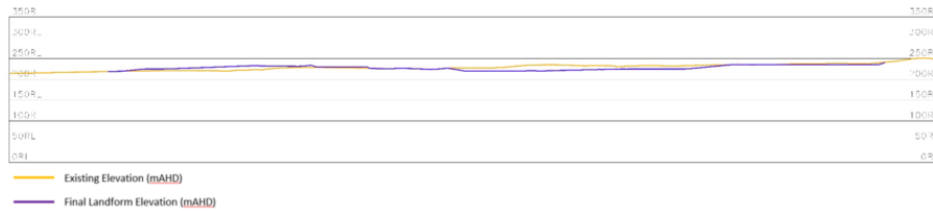


Figure 3 - (Cross Sections of Post Mining Landform)





Cross section 5 to 5'



Cross section 6 to 6'

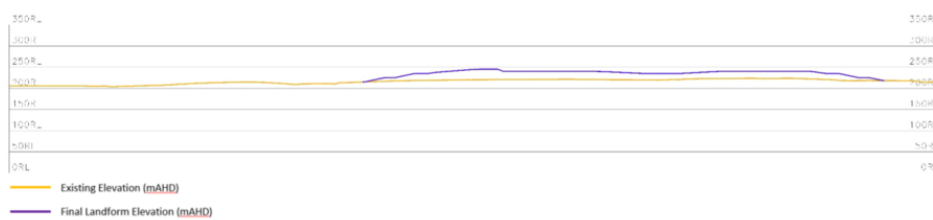
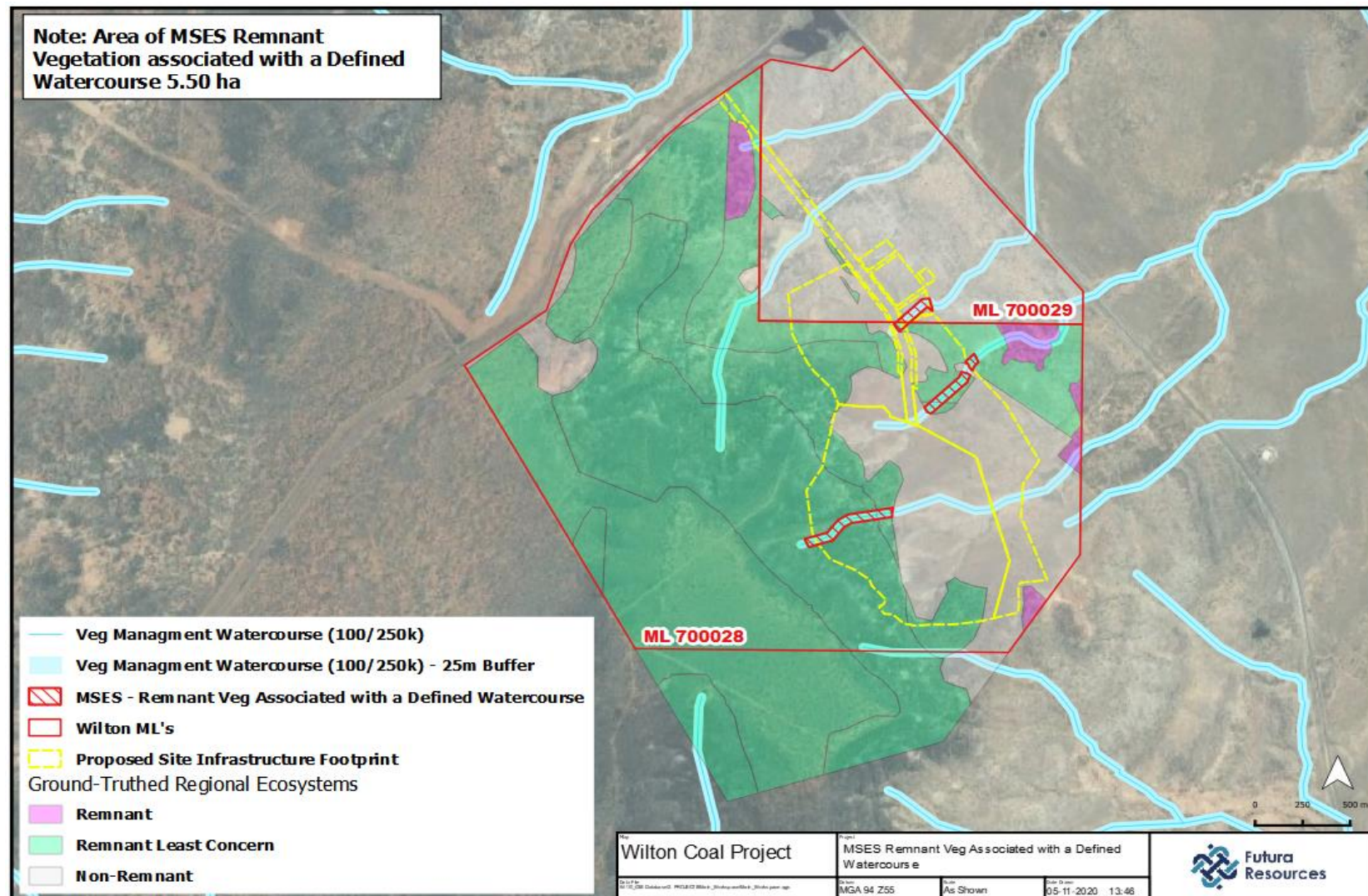


Figure 4 - (Location of Impact to Prescribed Environmental Matters)



END OF FIGURES

END OF ENVIRONMENTAL AUTHORITY