

Environmental Protection Act 1994

Environmental authority EPML00739113

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

Environmental authority number: EPML00739113

Environmental authority takes effect on 03 August 2023.

Environmental authority holder(s)

Name(s)	Registered address
Anglo Coal (German Creek) Pty Ltd	Level 11, 201 Charlotte St BRISBANE QLD 4000
Jena Pty Ltd	Level 11, 201 Charlotte St BRISBANE QLD 4000
Mitsui German Creek Investment Pty Ltd	Level 46, Gateway, 1 Macquarie PI SYDNEY NSW 2000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Resource Activity, Schedule 3 – 13: Mining black coal	ML70336, ML700076
Ancillary Activity, Schedule 2 – 08: Chemical Storage 3 – Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)	
Ancillary Activity, Schedule 2 – 16: Extraction and Screening 3I – Screening, in a year, the following quantity of material – more than 1,000,000t	
Ancillary Activity, Schedule 2 – 62 – Resource recovery and transfer facility operation 1I – Operating a facility for receiving and sorting, dismantling, baling or temporarily storing category 2 regulated waste	
Ancillary Activity, Schedule 2 – 62 – Resource recovery and transfer facility operation 1(d) – Operating a facility for receiving and sorting, dismantling, baling or temporarily storing category 1 regulated waste	
Ancillary Activity, Schedule 2 – 63 – Sewage Treatment 1(b-i) – Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	

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.

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

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



Signature

03 August 2023

Date

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

Enquiries:
Business Centre Coal
PO Box 3028 EMERALD QLD 4720
Phone: (07) 4987 9320
Email: CRMining@des.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

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

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Other permits required

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

Conditions of environmental authority

Schedule A – General	
Condition No.	Condition
A1	Financial assurance The activity must not be carried out until the environmental authority holder has given financial assurance to the administering authority as security for compliance with this environmental authority and any costs or expenses, or likely costs or expenses, mentioned in section 298 of the <i>Environmental Protection Act 1994</i>.
A2	The amount of financial assurance must be reviewed by the holder of this environmental authority when a plan of operations is amended or replaced or the authority is amended.
A3	Maintenance of measures, plant and equipment The environmental authority holder must ensure: (a) That all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority are installed; (b) That such measures, plant and equipment are maintained in a proper condition; and (c) That such measures, plant and equipment are operated in a proper manner.
A4	Monitoring Record, compile and keep for a minimum of five (5) years all monitoring results required by this environmental authority and make available for inspection all or any of these records upon request by the administering authority.
A5	Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.
A6	Spillage of all flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm (other than trivial harm) and maintained in accordance with the most current version of the Australian Standard - Storage and Handling of Flammable and Combustible Liquids.
A7	The environmental authority holder is approved for a coal extraction rate of up to 6.5 million tonnes per annum (Mtpa) of run-of-mine (ROM) ore.
A8	A figure depicting the maximum area of disturbance that must not be exceeded in carrying out the mining activity must be provided to the administering authority by 13 September 2018.
A9	Within forty (40) business days of receiving the administering authority's comments on the figure produced for condition A8, update the figure to address the comments and resubmit the figure to the administering authority with an application to amend this environmental authority.

Schedule B – Air	
Condition No.	Condition
B1	Dust Nuisance Subject to condition B2 the release of dust or particulate matter or both resulting from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place
B2	When requested by the administering authority, dust and particulate monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of monitoring.

Schedule C – Water	
Condition No.	Condition
C1	Contaminant release Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities, except as permitted under the conditions of this environmental authority.
C2	Unless otherwise permitted under the conditions of this environmental authority, the release of mine affected waters to waters must only occur from the release points specified in Table C1 - Mine affected water release points, sources and receiving waters and depicted in Appendix 1 - Release Points (R/P) and Monitoring (M/P) for Lake Lindsay Mine attached to this environmental authority.

Table C1 (Mine affected water release points, sources and receiving waters)

Release Point (RP)	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)	Mine affected water source and location	Mine affected water monitoring location	Stream flow monitoring point	Receiving waters description
RP5	-23.048364	148.769952	Lake Lindsay Pits (X1, X2, X3, X4), Highwall dams in the Lake Lindsay mining area, Central Storage Dam, Oak Park Pits (V and W) via Central Storage Dam.	Sample tap on release line at RP5 (adjacent to X4) enables sampling of all waters discharged through this release point. Oaky Creek Upstream (U/S) Oaky Creek Downstream (D/S)	Oaky Creek Upstream (U/S)	Oaky Creek

C3	The release of mine affected water to internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with condition C33 is permitted.
C4	The release of mine affected water to waters in accordance with condition C2 must not exceed the release limits stated in Table C2 - Mine affected water release limits when measured at the monitoring points specified in Table C1 - Mine affected water release points, sources and receiving waters for each quality characteristic.

Table C2 (Mine affected water release limits)

Quality Characteristic	Release Limits	Monitoring frequency	Comment
Electrical conductivity (microsiemens per centimetre)	<10,000	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
pH (pH Unit)	6.5 (minimum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
	9.0 (maximum)		
Turbidity (NTU)	Turbidity limit for discharge of mine water from all release points is defined as being equal to or less than the upstream turbidity value for the receiving waters.[A] and [B]	Daily during release [A] (the first sample must be taken within 2 hours of commencement of release)	Turbidity is required to assess ecosystems impacts and can provide instantaneous results.
Suspended solids (mg/L)	No limit [B]	Daily during release [A] (the first sample must be taken within 2 hours of commencement of release)	Suspended solids are required to measure the performance of sediment and erosion control measures.
Sulphate (mg/L)	<3,000	First sample within 2 hours of commencement of release. Weekly thereafter [A]	Drinking water environmental values from NHMRC 2006 guidelines or ANZECC.
<i>Note:</i> [A] This condition is approved with the implementation of sediment and erosion control measures to manage onsite stormwater. [B] Data relating to the correlation between turbidity and suspended solids must be recorded and kept for a period of at least two (2) years.			

C5	The release of mine affected water to waters from the release points must be monitored at the locations specified in Table C1 - Mine affected water release points, sources and receiving waters for each quality characteristics and at the frequency specified in Table C2 - Mine affected water release limits and Table C3 - Release contaminant trigger investigation levels. <i>Note: The administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition C5 is contravened due to a temporary lack of safe or practical access. The administering authority expects the environmental authority holder to take all reasonable and practicable measures to maintain safe and practical access to designated monitoring locations.</i>
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Table C3 (Release contaminant trigger investigation levels)

Quality Characteristic	Trigger Levels (micrograms per litre)	Comment on Trigger Level	Monitoring Frequency
Aluminium	55	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
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	
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	
Uranium	1	For aquatic ecosystem protection, based on LOR for ICPMS	
Ammonia	900	For aquatic ecosystem protection, based on SMD guideline	
Petroleum hydrocarbons (C6-C9)	20		
Petroleum hydrocarbons (C10-C36)	100		
Sodium	To be supplied to the administering authority by 30 June 2018.		

Note:

- All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.
- The quality characteristics required to be monitored as per **Table C3 - Release contaminant trigger investigation levels** can be reviewed once the results of two years monitoring data is available and it may be determined that a reduced monitoring frequency is appropriate or that certain quality characteristics can be removed from **Table C3 - Release contaminant trigger investigation levels** by amendment.

C6	If quality characteristics of the release exceed any of the trigger levels specified in Table C3 - Release contaminant trigger investigation levels during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in Table C3 - 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 C3 for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and; (a) if the result is less than the background monitoring site data, then no action is to be taken; or (b) if the result is greater than the background monitoring site data, complete an investigation into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: (i) details of the investigations carried out; and (ii) actions taken to prevent environmental harm. <i>Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with C6(2)(b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.</i>
C7	If an exceedance in accordance with condition C6(2)(b) is identified, the holder of the authority must notify the administering authority within fourteen (14) days of receiving the result.
C8	Mine affected water release events The holder must ensure a stream flow gauging station/s is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in Table C4 - Mine affected water release during flow events.

Table C4 (Mine affected water release during flow events)

Receiving waters/ stream	Release Point (RP)	Monitoring Point (MP)	Monitoring Point Latitude (decimal degree, GDA94)	Monitoring Point Longitude (decimal degree, GDA94)	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for discharge (cubic metres per second) [A]
Oaky Creek	RP 5	Oaky Creek Downstream (D/S)	-23.05150	148.77383	Continuous (minimum daily)	0.5

Note: [A] Receiving water flow criteria for discharge and maximum release rates should be reviewed at a minimum of two (2) years from the approval date and bi-annually thereafter.

C9	Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with condition C2 must only take place during periods of natural flow events in accordance with the receiving water flow criteria for discharge specified in Table C4 - Mine affected water release during flow events for the release point(s) specified in Table C1 - Mine affected water release points, sources and receiving waters .
C10	The releases of mine affected water to waters in accordance with condition C2 must not exceed a maximum release rate for all combined release point flows of 2.0 cubic metres per second.
C11	The electrical conductivity (EC) values recorded at the downstream monitoring points on Oaky Creek (Oaky Creek D/S) must not exceed 2000 microsiemens per centimetre at any time during the release influence period.

C12	The electrical conductivity (EC) values recorded at the Barwon Park monitoring station on Roper Creek must not exceed 1500 microsiemens per centimetre at any time during the release influence period.
C13	If electrical conductivity recorded at Bingeang Weir exceeds 650 microsiemens per centimetre during a release event, the environmental authority holder must immediately notify the administering authority and seek written approval to continue releasing mine affected water.
C14	The daily quantity of mine affected water released from each release point must be measured and recorded at the monitoring points in Table C1 - Mine affected water release points, sources and receiving waters and Table C4 - Mine affected water release during flow events .
C15	Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build-up of sediment in such waters.
C16	Notification of Release Event The environmental authority holder must notify the administering authority via either the WaTERS online reporting system or via the WaTERS email (CRWaters@ehp.qld.gov.au) as soon as practicable and no later than twenty-four (24) hours after commencing to release mine affected water to the receiving environment. Notification must include the submission of written advice to the administering authority of the following information: (a) release commencement date/time; (b) expected release cessation date/time; (c) release point/s; (d) release volume (estimated); (e) receiving water/s including the natural flow rate; and (f) any details (including available data) regarding likely impacts on the receiving water(s).
C17	The environmental authority holder must notify the administering authority via either the WaTERS online reporting system or via the WaTERS email (CRWaters@ehp.qld.gov.au) as soon as practicable (nominally within twenty-four (24) hours after cessation of a release event) of the cessation of a release notified under condition C16 and within twenty-eight (28) days provide the following information in writing: (a) release cessation date/time; (b) natural flow volume in receiving water; (c) volume of water released; (d) details regarding the compliance of the release with the conditions of Agency Interest: Water of this environmental authority (i.e. contamination limits, natural flow, discharge volume); (e) all in-situ water quality monitoring results; and (f) any other matters pertinent to the water release event. <i>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 C16 and C17, provided the relevant details of the release are included within the notification provided in accordance with conditions C16 and C17.</i>
C18	Notification of Release Event Exceedance If the release limits defined in Table C2 - Mine affected water release limits are exceeded, the holder of the environmental authority must notify the administering authority within twenty-four (24) hours of receiving the results.

C19	The authority holder must, within twenty-eight (28) days of a release that exceeds the conditions of this authority, provide a report to the administering authority detailing: (a) the reason for the release; (b) the location of the release; (c) all water quality monitoring results; (d) any general observations; (e) all calculations; and, (f) any other matters pertinent to the water release event.
C20	Monitoring of Water Storage Quality Water storages stated in Table C5 - Water storage monitoring must be monitored for the water quality characteristics specified in Table C6 - Onsite water storage contaminant limits at the monitoring locations and at the monitoring frequency specified in Table C5 - Water storage monitoring.
C21	In the event that water storages defined in Table C5 - Water storage monitoring exceed the contaminant limits defined in Table C6 - Onsite water storage contaminant limits the holder of the environmental authority must implement measures to prevent access to waters by all livestock.
C22	Receiving Environment Monitoring and Contaminant Trigger Levels The quality of the receiving waters must be monitored at the locations specified in Table C8 - Receiving water upstream (U/S) background sites and downstream (D/S) monitoring points for each quality characteristic and at the monitoring frequency stated in Table C7 - Receiving waters contaminant trigger levels.

Table C5 (Water storage monitoring)

Water Description	Storage	Latitude (GDA94)	Longitude (GDA94)	Monitoring Location	Frequency of Monitoring
Lake Lindsay Industrial Dam		-23.00802	148.71073	Any safe access	Quarterly
Lake Lindsay Farm Dam		-23.04408	148.73122		
Dump Station Sediment Dam		-23.02831	148.72644		
X3 Stockpile Runoff Dam		-23.03906	148.73938		

Table C6 (Onsite water storage contaminant limits)

Quality Characteristic	Test Value	Contaminant Limit
pH (pH unit)	Range	Greater than 4, less than 9 [B]
EC (microsiemens per centimetre)	Maximum	5970 [A]
Sulphate (mg/L)	Maximum	1000 [A]
Fluoride (mg/L)	Maximum	2 [A]
Aluminium (mg/L)	Maximum	5 [A]
Arsenic (mg/L)	Maximum	0.5 [A]
Cadmium (mg/L)	Maximum	0.01 [A]
Cobalt (mg/L)	Maximum	1 [A]
Copper (mg/L)	Maximum	1 [A]
Lead (mg/L)	Maximum	0.1 [A]
Nickel (mg/L)	Maximum	1 [A]
Zinc (mg/L)	Maximum	20 [A]
Note: [A] Contaminant limit based on ANZECC and ARMCANZ (2000) stock water quality guidelines. [B] Page 4.2-4.15 of ANZECC and ARMCANZ (2000) Soil and animal health will not generally be affected by water with pH in the range of 4–9. Total measurements (unfiltered) must be taken and analysed.		

Table C7 (Receiving waters contaminant trigger levels)

Quality Characteristic	Trigger Level	Monitoring Frequency
pH	6.5 - 8.5	Daily during the release [A]
Turbidity (NTU)	Mine waters released must not exceed background level.	
Sulphate (mg/L)	250 (Protection of drinking water environmental value)	
Sodium (mg/L)	To be provided to the administering authority by 30 June 2018	
Note: [A] Sulphate (mg/L) to be sampled within 2 hours of commencement of a release and at weekly intervals thereafter.		

Table C8 (Receiving water upstream (U/S) background sites and downstream (D/S) monitoring points)

Monitoring Points (MP)	Receiving Waters Location Description	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)
Upstream Background Monitoring Points			
Oaky Creek U/S	Upstream Oaky Creek	-23.07014	148.74208
Downstream Monitoring Points			
Oaky Creek D/S	Downstream Oaky Creek	-23.05150	148.77383
Barwon Park	Roper Creek at Barwon Park	-23.057	148.888
<i>Note: The data from background monitoring points must not be used where they are affected by releases from other mines.</i>			

C23	If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Table C7 - Receiving waters contaminant trigger levels during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and: (1) where the downstream result is the same or a lower value than the upstream value for the quality characteristic then no action is to be taken; or (2) where the downstream results exceed the upstream results complete an investigation into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: (a) details of the investigations carried out; and (b) actions taken to prevent environmental harm. <i>Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with C23(2) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.</i>
C24	Receiving Environment Monitoring Program (REMP) The environmental authority holder must develop and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity. This must include monitoring the effects of the mine on the receiving environment periodically (under natural flow conditions) and while mine affected water is being discharged from the site. For the purposes of the REMP, the receiving environment is the waters of Oaky Creek to the Roper Creek junction and connected or surrounding waterways within 10km downstream of the release. The REMP must encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.

C25	The REMP must: (a) Assess the condition or state of receiving waters, including upstream conditions, spatially within the REMP area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality); and (b) Be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; and (c) Include monitoring from background reference sites (e.g. upstream or background) and downstream sites from the release (as a minimum, the locations specified in Table C8); and (d) Specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the latest version of Queensland Water Quality Guidelines 2006. This must include monitoring during periods of natural flow irrespective of mine or other discharges; and (e) Include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in Table C2 - Mine affected water release limits and Table C3 - Release contaminant trigger investigation levels); and (f) Include, where appropriate, monitoring of metals/metalloids in sediments (in accordance with ANZECC and ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.1 Guidance on Sampling of Bottom Sediments); and (g) Include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology; and (h) Apply procedures and/or guidelines from ANZECC and ARMCANZ 2000 and other relevant guideline documents; and (i) Describe sampling and analysis methods and quality assurance and control measures; and (j) Incorporate stream flow and hydrological information in the interpretations of water quality and biological data.
C26	A REMP Design Document that addresses each criterion presented in conditions C24 and C25 must be prepared and submitted to the administering authority. Due consideration must be given to any comments made by the administering authority on the REMP Design Document and subsequent implementation of the program.
C27	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions C24 and C25 must be prepared annually and made available on request to the administering authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.
C28	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 either at German Creek Mine or into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party (with the consent of the third party).
C29	Water general All determinations of water quality and biological monitoring must be:

	(a) performed by a person or body possessing appropriate experience and qualifications to perform the required measurements; (b) made in accordance with methods prescribed in the latest edition of the Department of Environment and Resource Management's Monitoring and Sampling Manual; (c) collected from the monitoring locations identified within this environmental authority, within 5 hours of each other where possible; (d) carried out on representative samples; and (e) analysed at a laboratory accredited (e.g. NATA) for the method of analysis being used. <i>Note: Condition C29 requires the Monitoring and Sampling Manual to be followed and where it is not followed because of exceptional circumstances this should be explained and reported with the results</i>
C30	The release of any contaminants as permitted by this environmental authority, directly or indirectly to waters, other than internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with conditions C33 to C38 inclusive: (a) must not produce any visible discolouration of receiving waters; and (b) must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum, litter or other objectionable matter.
C31	Annual water monitoring reporting The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format with each annual return: (a) the date on which the sample was taken; (b) the time at which the sample was taken; (c) the monitoring point at which the sample was taken; (d) the measured or estimated daily quantity of mine affected water released from all release points; (e) the release flow rate at the time of sampling for each release point; (f) the results of all monitoring and details of any exceedances of the conditions of this environmental authority; and (g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.
C32	Temporary interference with waterways Temporarily destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring necessary for and associated with mining operations must be undertaken in accordance with the Department of Natural Resources and Mines' (or its successor) Guideline - Activities in a Watercourse, Lake or Spring associated with Mining Activities.
C33	Water management plan The Water Management Plan (approved as the Capcoal Water Management Plan, CAP_ENV_070_SWP) must be maintained by an appropriately qualified person and implemented.

C34	The Water Management Plan must: (a) provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining activity carried out under this environmental authority; and (b) be developed in accordance with Department of Environment and Resource Management guideline Preparation of water management plans for mining activities 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.
C35	The Water Management Plan must be reviewed each calendar year and a report prepared by an appropriately qualified person. The report must: (a) assess the plan against the requirements under condition C34; (b) include recommended actions to ensure actual and potential environmental impacts are effectively managed for the coming year; and, (c) identify any amendments made to the water management plan following the review.
C36	The holder of this environmental authority must attach to the review report required by condition C35, a written response to the report and recommended actions, detailing the actions taken or to be taken by the environmental authority holder on stated dates: (a) to ensure compliance with this environmental authority; and (b) to prevent a recurrence of any non-compliance issues identified.
C37	The review report required by condition C35 and the written response to the review report required by condition C36 must be submitted to the administering authority with the subsequent annual return under the signature of the appointed signatory for the annual return.
C38	A copy of the Water Management Plan must be provided to the administering authority on request.
C39	Saline drainage The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of saline drainage
C40	Acid rock drainage The holder of this environmental authority must ensure proper and effective measures are taken to avoid or otherwise minimise the generation and/or release of acid rock drainage.
C41	Stormwater and water sediment controls An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.

C42	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 C41 ; and, (b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with conditions C33 to C38 inclusive, for the purpose of ensuring water does not become mine affected water
C43	The maintenance and cleaning of any vehicles, plant or equipment must not be carried out in areas from which contaminants can be released into any receiving waters.
C44	Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable to minimise the release of wastes, contaminants or materials to any stormwater drainage system or receiving waters.
C45	Sewage effluent All effluent released from the treatment plant must be monitored at the frequency and for the parameters specified in Table C9 - Sewage effluent quality targets for dust suppression and irrigation .

Table C9 (Sewage effluent quality targets for dust suppression and irrigation)

Quality Characteristic	Release Limit	Limit type	Monitoring frequency
5-Day BOD	20 mg/L	Max	Fortnightly
Suspended Solids	39 mg/L	Max	Weekly
pH units	6.5-8.0 units	Range	Daily and Weekly
Faecal Coliforms (organisms/100 ml)	150 thermotolerant coliforms/100 ml	Max	Monthly
Free Chlorine Residual	1 mg/L	Max	Daily and Weekly

C46	Groundwater Groundwater affected by the mining activities must be monitored at the location and frequencies defined in Table C10 - Groundwater monitoring locations and frequency .
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Table C10 (Groundwater monitoring locations and frequency)

Monitoring location	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)	Monitoring frequency
Alluvium Bore Quality; and Level	-23.0541	148.765	Annually

C47	The method of water sampling required by this environmental authority must comply with that set out in the latest edition of the administering authority's Water Quality Sampling Manual.
RR1	Conditions C24 to C27 do not apply if the environmental authority holder is a participant of the FRREMP.
RR2	The environmental authority holder must notify the administering authority in a written statement within twenty (20) business days of ceasing to be a participant of the FRREMP. The written statement must detail how the environmental authority holder is going to fulfil the requirements of conditions C24 to C27 .

Schedule D – Regulated Structures	
Condition No.	Condition
D1	Assessment of consequence category The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the latest version of the administering authority's Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933) at the following times: (a) prior to the design and construction of the structure, if it is not an existing structure; or (b) prior to any change in its purpose or the nature of its stored contents.
D2	A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
D3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the "Manual for assessing consequence categories and hydraulic performance of structures" (ESR/2016/1933).
D4	Design and construction of a regulated structure Conditions D5 to D9 inclusive do not apply to existing structures.
D5	All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the "Manual for assessing consequence categories and hydraulic performance of structures" (ESR/2016/1933).
D6	Construction of a regulated structure is prohibited unless: (a) the holder has submitted a consequence category assessment report and certification to the administering authority; (b) certification for the design, design plan and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.
D7	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the "Manual for assessing consequence categories and hydraulic performance of structures" (ESR/2016/1933), and must be recorded in the Register of Regulated Structures.

D8	Regulated structures must: (a) be designed and constructed in compliance with the “Manual for assessing consequence categories and hydraulic performance of structures” (ESR/2016/1933); (b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: (i) floodwaters entering the regulated dam from any watercourse or drainage line; and (ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line. (c) for regulated structures associated with a failure to contain seepage, have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.
D9	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: (a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and (b) construction of the regulated structure is in accordance with the design plan.
D10	Notification of affected persons All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure: (a) for existing structures that are regulated structures, within ten (10) business days of this condition taking effect; (b) prior to the operation of the new regulated structure; and (c) if the emergency action plan is amended, within five (5) business days of it being amended.
D11	Operation of a regulated structure Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following: (a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition D6; (b) a set of 'as constructed' drawings and specifications; (c) certification of the 'as constructed drawings and specifications' in accordance with condition D9; (d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan; (e) the requirements of this authority relating to the construction of the regulated structure have been met; (f) the holder has entered the details required under this authority, into a Register of Regulated Structures; and (g) there is a current operational plan for the regulated structure.

D12	For existing structures that are regulated structures: (a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within 12 months of the commencement of this condition a copy of the certified system design plan including that structure; and (b) there must be a current operational plan for the existing structures.
D13	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in compliance with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.
D14	Mandatory reporting level Conditions D15 to D16 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
D15	The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.
D16	The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
D17	The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
D18	The holder must record any changes to the MRL in the Register of Regulated Structures.
D19	Design storage allowance The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.
D20	By 1 November of each year , storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).
D21	The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year , notify the administering authority.
D22	The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year , act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.
D23	Annual inspection report Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

D24	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include a recommendations section, with any recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.
D25	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the "Manual for assessing consequence categories and hydraulic performance of structures" (ESR/2016/1933).
D26	The holder must within twenty (20) business days of receipt of the annual inspection report, provide to the administering authority: (a) The recommendations section of the annual inspection report; and (b) If applicable, any actions being taken in response to those recommendations; and (c) If, following receipt of the recommendations and (if applicable) recommended actions, the administering authority requests a copy of the annual inspection report from the holder, provide this to the administering authority within ten (10) business days of receipt of the request.
D27	Transfer arrangements The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.
D28	Register of Regulated Structures A Register of Regulated Structures must be established and maintained by the holder for each regulated structure.
D29	The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.
D30	The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with condition D11 and D12 has been achieved.
D31	The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
D32	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
D33	The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.
D34	Transitional arrangements All existing structures that have not been assessed in accordance with either the Manual or the former Manual for Assessing Hazard Categories and Hydraulic Performance of Dams must be assessed and certified in accordance with the Manual prior to 13 April 2018 .

D35	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in Table D1 (Transitional hydraulic performance requirements for existing structures) , depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.
D36	Table D1 ceases to apply for a structure once any of the following events has occurred: (a) it has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or (b) it has been decommissioned; or (c) it has been certified as no longer being assessed as a regulated structure.
D37	Certification of the transitional assessment required by D34 and D35 (as applicable) must be provided to the administering authority prior to 13 April 2018 .

Table D1 (Transitional hydraulic performance requirements for existing structures)

Table D1 (Transitional hydraulic performance requirements for existing structures)			
Transition period required for existing structures to achieve the requirements of the Manual for Assessing Consequence Categories and Hydraulic Performance of Dams			
Compliance criteria	High consequence	Significant consequence	Low consequence
>90% and a history of good compliance performance in last 5 years	No transition required	No transition required	No transitional conditions apply. Review consequence assessment every 7 years.
>70%-≤90%	13 September 2024 unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	13 September 2027 unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	No transitional conditions apply. Review consequence assessment every 7 years.
>50-≤70%	13 September 2022 unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	13 September 2024 unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Review consequence assessment every 7 years.
≤50%	13 September 2022 or as per compliance requirements (e.g. TEP timing).	13 September 2022 or as per compliance requirements (e.g. TEP timing).	Review consequence assessment every 5 years.
Regulated levee designed to prevent the ingress of clean flood water <100% compliant.	13 September 2022 unless otherwise agreed with the administering authority.		
<i>Note: Levees designed for the diversion of contaminated waters or protection of the structural integrity of a dam are not to be considered as part of this provision. These levees are considered a key design element of the relevant dam and transitional periods should as such align to that relevant compliance criteria and consequence category.</i>			

Schedule E – Acoustic	
Condition No.	Condition
E1	Noise Nuisance Subject to condition E2 noise from the mining activity must not cause environmental nuisance, at any sensitive or commercial place.
E2	When requested by the administering authority, noise monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken believe in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within fourteen (14) days to the administering authority following completion of the monitoring.

Schedule F – Waste Management	
Condition No.	Condition
F1	Storage of Tyres Tyres stored awaiting disposal or transport for take-back and, recycling, or waste-to-energy options should be stockpiled in volumes less than 3m in height and 200 metres squared in area and at least 10m from any other tyre storage area.
F2	All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a 10m radius of the scrap tyre storage area.
F3	Waste Management The German Creek Waste Management Program, in accordance with the Waste Reduction and Recycling Act 2011, must include the area under this authority.
F4	A designated area must be set aside for the segregation of economically viable, recyclable solid and liquid waste.

Schedule G – Land	
Condition No.	Condition
G1	All areas significantly disturbed by mining activities must be rehabilitated to a safe, stable and non-polluting landform with self-sustaining vegetation.
G2	All areas significantly disturbed by mining activities must be rehabilitated to meet or exceed the requirements of Table G1 - Final land use and rehabilitation approval schedule and Table G2 - Landform design .

Table G1 (Final Land use and rehabilitation approval schedule)

Tenure ID Lake Lindsay ML70336	Disturbance Type				
	Boxcut Spoil	Internal Spoil	Void Ramp	Access Road	Infrastructure
Post mine land use	Bushland [A]	Bushland [A]	VOIDS	Grazing	Grazing
Post mine land capability	VIII	VI	VIII	VI	VI
Post Mine Community	Bushland [A]	Bushland [A]	NA	Pre-existing community	Pre-existing community
Rock mulch depth (Soil physical and chemical profile)	1m	0.5m	NA	NA	NA
Topsoil	150mm	150mm	NA	Return stockpile reserves	Return stockpile reserves
Veg cover percentage	NA	NA	NA	>30 percent Ref site [B]	>30 percent Ref site [B]
Veg/rock cover percentage	30 percent veg [D]	30 percent veg [D]	NA	NA	NA
	50 percent rock [C]	50 percent rock [C]			
Dominant sp	Standard	Standard	NA	NA	NA
Key Species Recruitment	>10 species with viable seed	>10 species with viable seed	-	>10 species with viable seed	>10 species with viable seed
Habitat Complexity	Comparable to reference site [F]	Comparable to reference site [F]	-	Comparable to reference site [F]	Comparable to reference site [F]
Downstream Impacts of pH and Conductivity	Comparable to reference site [E]	Comparable to reference site [E]	-	Comparable to reference site [E]	Comparable to reference site [E]

Note:

[A] Mix of eucalypt, acacia and groundcover species;

[B] Reference Site – location to be determined

[C] 50 percent surface expression of rock

[D] 40 percent vegetation cover on non-rock surface

[E] Reference Site – upstream monitoring station (pH+/-1; Conductivity within +/- 30 percent of upstream values)

[F] Reference Site – location to be determined

Table G2 (Landform design)

Disturbance type	Area (ha)	Design criteria
Boxcut spoil	160	Slope <1V:3H
		Covered with 1m rock mulch
Internal spoil	96	Slope gradient <1V:10H
		Slope <1V:6H for slope length <30m
		Covered with 0.5m of rock mulch
Voids and Ramps	305	Remain as is if geotechnical stability is sound or,
		Reshape to obtain stability or to ensure landform integrity of surrounding landforms if failure occurs or,
		Fill with mine waste, cover with inert material and rehabilitate.
Roads	141	Slope < 1V:10H
Infrastructure	60	Slope <1V:10H

G3	Progressive rehabilitation must commence when areas become available within the operation land.
G4	The acceptance criteria will be reviewed in consultation with the administering authority as research continues to meet the outcomes in Table G1 - Final land use and rehabilitation approval schedule and landform design criteria in Table G2 - Landform Design .
G5	Monitoring rehabilitation must be undertaken for the purpose of reviewing the rehabilitation process undertaken with the intent to improve rehabilitation practices and validating the proposed post mining land use. The rehabilitation monitoring must at a minimum include: (a) Species diversity; (b) Vegetation ground cover; (c) Tree density and stem thickness; (d) Visible indicators of erosion; and (e) Foliage projective cover.
G6	No net loss of remnant vegetation as the result of the commissioning of roads and infrastructure within the Lake Lindsay mining lease shall occur.
G7	Records of all disturbance of all remnant vegetation, included vegetation type, as a result of the commissioning of roads and infrastructure within the Lake Lindsay mining lease must be recorded.
G8	A plan nominating the areas to achieve the commitment of no net loss of remnant vegetation as a result of the commissioning of roads and infrastructure within the Lake Lindsay mining lease must be outlined in the current plan of operations.

G9	Residual void outcome Residual voids must comply with the following outcomes: (a) Residual voids must not cause any serious environmental harm to land surface waters or any recognised groundwater aquifer, other than the environmental harm constituted by the existence of the residual void itself and subject to any other condition within this environmental authority; and (b) Residual voids must comply with Table G3 - Residual Void Design.
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Table G3 (Residual void design)

Void Identification	Void wall - competent rock max slope (percentage)	Void maximum surface area (ha)	Void wall - incompetent rock max slope (percentage)
Pit X	70	525	45 (Highwall) tertiary/ weathered Permian 34 Low wall for tertiary weathered Permian

G10	Monitoring of residual void slope is to be undertaken every four (4) years to validate the predictive model of the long term geotechnical behaviour of the voids as outlined in the Slope Design for Longterm Geotechnical Stability at German Creek Mine by Geotechnical Consulting Service Pty Ltd, report 109.
G11	Infrastructure All infrastructure, constructed by or for the environmental authority holder during the mining activities including water storage structures, must be removed from the site prior to mining lease surrender, except where agreed in writing by the post mining land owner/holder. <i>Note: this is not applicable where the landowner/holder is also the environmental authority holder.</i>
G12	Topsoil and capping material The topsoil requirements for rehabilitation of the mine and the availability of suitable topsoil on site must be detailed in the plan of operations.
G13	The capping material (other than topsoil) requirements for rehabilitation of the mine and the availability of suitable capping material (other than topsoil) on site must be detailed in the plan of operations.

Schedule H – Social	
Condition No.	Condition
H1	Complaint Response All complaints received must be recorded including details of complainant, reasons for the complaint, investigations undertaken, conclusions formed and actions taken. This information must be made available for inspection by the administering authority on request.

Definitions

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

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

- (a) vegetation establishment, survival and succession;
- (b) vegetation productivity, sustained growth and structure development;
- (c) fauna colonisation and habitat development;
- (d) ecosystem processes such as soil development and nutrient cycling, and the recolonisation of specific fauna groups such as collembola, mites and termites which are involved in these processes;
- (e) microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;
- (f) effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;
- (g) resilience of vegetation to disease, insect attack, drought and fire; and
- (h) vegetation water use and effects on ground water levels and catchment yields.

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

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

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

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

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

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

“ANZECC” means the Australian and New Zealand Guidelines for Fresh Marine Water Quality 2000.

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

“assessed” 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 at any time:

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

“associated works” in relation to a dam, means:

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

“authority” means environmental authority or a development approval.

“background” means 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.

“bed and banks” means for a waters, river, creek, stream, lake, lagoon, pond, swamp, wetland or dam means land over which the water of the waters, lake, lagoon, pond, swamp, wetland or dam normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed and banks that is from time to time covered by floodwater.

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

“Certifying, certify or certified” have a corresponding meaning to “certification”.

“chemical” means –

- (a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth); or
- (b) a dangerous good under the dangerous goods code; or
- (c) a lead hazardous substance within the meaning of the *Workplace Health and Safety Regulation 2008*; or
- (d) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers’ Advisory Council and published by the Commonwealth; or
- (e) any substance used as, or intended for use as –
 - (i) a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product; or
 - (ii) a surface active agent, including, for example, soap or related detergent; or
 - (iii) a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide; or
 - (iv) a fertiliser for agricultural, horticultural or garden use; or
- (f) a substance used for, or intended for use for –
 - (i) mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or
 - (ii) manufacture of plastic or synthetic rubber.

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

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

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

“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 structure 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)*.

“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**.

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

“design storage allowance” or “DSA” means an available volume, estimated in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an **annual exceedance probability (AEP)** specified in that Manual.

“disturbance” of land includes:

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

“EC” means electrical conductivity.

“effluent” means treated waste water discharged from sewage treatment plants.

“emergency action plan” means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are

to minimise the risk and consequences of failure, and ensure timely warning to affected persons and the implementation of protection measures. The plan must require dam owners to annually review and update contact information where required.

“existing structure” means a structure that prior to 13 September 2017 meets any or both of the following, a structure:

- (a) with a design that is in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933, version 5.00) and that is considerably in progress;
- (b) that is under considerable construction or that is constructed.

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

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

“FRREMP” means a Fitzroy Basin Receiving Environment Monitoring Program for the region in which the EA is located, that has been endorsed in writing by the administering authority.

“holder” for a mining tenement, means a holder of the tenement under the *Mineral Resources Act 1989*, and the holder of the associated environmental authority under the *Environmental Protection Act 1994*.

“hydraulic performance” means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the “Manual for assessing consequence categories and hydraulic performance of structures” (ESR/2016/1933).

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

“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 capability” as defined in the DME 1995 Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland.

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

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

“limit of reporting” or “LOR” means typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.

“m” means metres.

“mandatory reporting level” or “MRL” means a warning and reporting level determined in accordance with the criteria in the “Manual for assessing consequence categories and hydraulic performance of structures” (ESR/2016/1933) published by the administering authority.

“manual” means the “Manual for assessing consequence categories and hydraulic performance of structures” (ESR/2016/1933) published by the administering authority, as amended from time to time.

“mg/L” means milligrams per litre.

“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 2008* if it had not formed part of the mining activity
 - (iii) rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage such runoff, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water
 - (iv) groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;
 - (v) groundwater from the mine's dewatering activities
 - (vi) a mix of mine affected water (under any of paragraphs i)-v) and other water.
- (b) does not include surface water runoff which, to the extent that it has been in contact with areas disturbed by mining activities that have not yet been completely rehabilitated, has only been in contact with:
- (i) land that has been rehabilitated to a stable landform and either capped or revegetated in accordance with the acceptance criteria set out in the environmental authority but only still awaiting maintenance and monitoring of the rehabilitation over a specified period of time to demonstrate rehabilitation success, or
 - (ii) land that has partially been rehabilitated and monitoring demonstrates the relevant part of the landform with which the water has been in contact does not cause environmental harm to waters or groundwater, for example:
 - a. areas that are been capped and have monitoring data demonstrating hazardous material adequately contained with the site
 - 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

“modification” or “modifying” (see definition of ‘construction’)

“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.

“operational plan” includes:

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

“Participant of the FRREMP” means an environmental authority holder that is identified as a current participant by the organisation carrying out the Regional REMP.

“protected area” means:

- (a) a protected area under the *Nature Conservation Act 1992*;
- (b) a marine park under the *Marine Parks Act 2004*; or
- (c) a World Heritage Area.

“progressive rehabilitation” means rehabilitation (defined below) undertaken progressively or a staged approach to rehabilitation as mining operations are ongoing.

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

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

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

“register of regulated structures” includes:

- (a) Date of entry in the register;
- (b) Name of the structure, its purpose and intended/actual contents;
- (c) The consequence category of the dam as assessed using the “Manual for assessing consequence categories and hydraulic performance of structures” (ESR/2016/1933);
- (d) Dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;
- (e) Name and qualifications of the suitably qualified and experienced person who certified the design plan and ‘as constructed’ drawings;
- (f) For the regulated dam, other than in relation to any levees –
 - (i) The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;
 - (ii) Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area
 - (iii) Dam crest volume (megalitres);
 - (iv) Spillway crest level (metres AHD);
 - (v) Maximum operating level (metres AHD);
 - (vi) Storage rating table of stored volume versus level (metres AHD);
 - (vii) Design storage allowance (megalitres) and associated level of the dam (metres AHD);
 - (viii) Mandatory reporting level (metres AHD);
- (g) The design plan title and reference relevant to the dam;
- (h) The date construction was certified as compliant with the design plan;
- (i) The name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;
- (j) Details of the composition and construction of any liner;
- (k) The system for the detection of any leakage through the floor and sides of the dam;
- (l) Dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;
- (m) Dates when recommendations and actions arising from the annual inspection were provided to the administering authority;
- (n) Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

“regulated structure” means any structure in the significant or high consequence category as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority. A regulated structure does not include:

- (a) a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container;

- (b) a sump or earthen pit used to store residual drilling material and drilling fluid only for the duration of drilling and well completion activities;
- (c) a flare pit.

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

“release influence period” is the period during which the downstream monitoring points are influenced by mine affected water releases and includes both the duration of release and any lag time between release point/s and the corresponding downstream monitoring points.

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

“residual void” means an open pit resulting from the removal of ore and/or waste rock which will remain following the cessation of all mining activities and completion of rehabilitation processes.

“saline drainage” means the movement of waters, contaminated with salt(s), as a result of the mining activity.

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

“sensitive place” means:

- (a) a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- (b) a motel, hotel or hostel; or
- (c) an educational institution; or
- (d) a medical centre or hospital; or
- (e) a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* 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 not 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.

However, 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.

“slightly moderately disturbed” or “SMD” means slightly moderately disturbed level of protection guideline refers ANZECC & ARMCANZ (2000).

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

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

“stormwater” means all surface water runoff from rainfall.

“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:

- (a) demonstrable competency, experience and expertise in:
 - (i) investigation, design or construction of watercourses diversions
 - (ii) operation and maintenance of watercourse diversions
 - (iii) geomechanics with particular emphasis on channel equilibrium, geology and geochemistry
 - (iv) hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology
 - (v) hydraulics with particular reference to sediment transport and deposition and erosion control
 - (vi) hydrogeology with particular reference to seepage and groundwater solute transport processes and monitoring thereof, or
- (b) 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**
- (c) 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.

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

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

“μS/cm” means microsiemens per centimetre.

“μg/L” means micrograms per litre.

“void” means any man-made, open excavation in the ground.

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

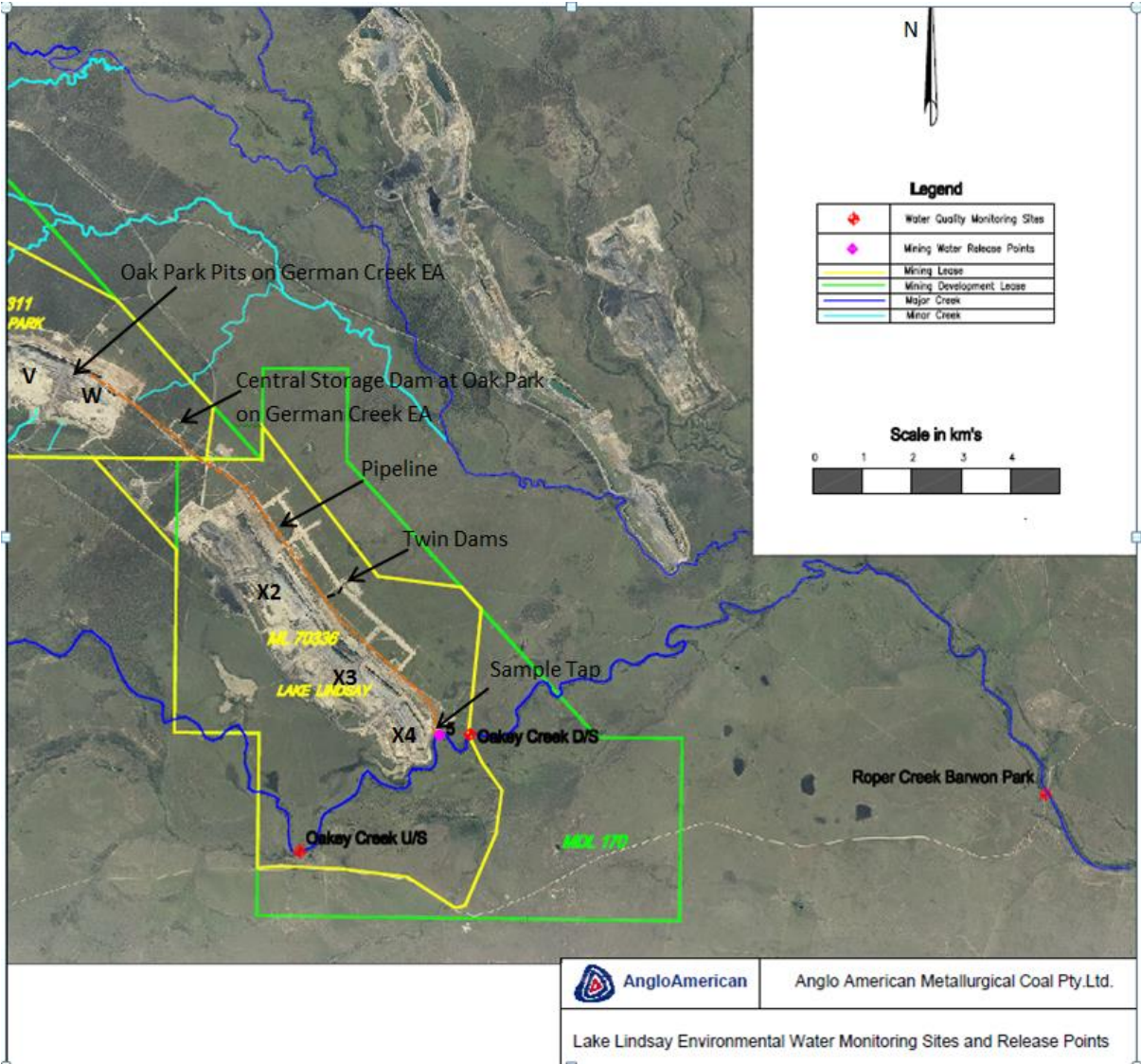
“waste water” means used water from the activity, process water or contaminated storm water.

‘water’ is defined under Schedule 4 of the *Water Act 2000*.

‘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.

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

Appendix 1 - Release Points (R/P) and Monitoring (M/P) for Lake Lindsay Mine



END OF ENVIRONMENTAL AUTHORITY