Permit[1]

Environmental Protection Act 1994

Environmental authority EPML00732813

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

Permit[1] number: EPML00732813

Environmental authority takes effect 14 January 2015.

The anniversary date of the environmental authority is 31 May.

Environmental authority holder(s)

Name	Registered address
Bligh Coal Limited	Level 28 10 Eagle Street BRISBANE CITY QLD 4000
Idemitsu Queensland Pty Ltd	Ensham Resources Pty Ltd PO Box 1565 EMERALD QLD 4720
LG International (Australia) Pty Ltd	Suite 3202, Level 32 Northpoint Building 100 Miller Street NORTH SYDNEY NSW 2060

[1] Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation JC

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
Schedule 2: **ERA 8(3) Chemical Storage** – storing more than 500m³ of chemicals of class C1 or C2 combustible liquids under AS1940 or dangerous goods class 3 under subsection (1)(c). **ERA 16(2)(a) Extractive and Screening Activities** – extracting, other than by dredging, in a year, the following quantity of material - 5000t to 100,000t. **ERA 56 Regulated Waste Storage** – receiving and storing regulated waste. **ERA 60(1)(d) Waste Disposal** – operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) - more than 200000t. **ERA 62 Waste Transfer Station Operation** – operating on a commercial basis or in course of carrying on a commercial enterprise, a waste transfer station that receives a total quantity of at least 30t or 30m³ of waste on any day. **ERA 63(1)(a)(i) Sewage Treatment** – operating sewage treatment works, other than no-release works, with a total daily peak design capacity of 21 to 100EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme. ***Environmental Protection Regulation 2008 – Schedule 2A:*** **ERA 13 Mining black coal**	ML7459 ML7460 ML70049 ML70326 ML70365 ML70366 ML70367

Additional information for applicants

Environmentally relevant activities

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

An environmental authority authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the authority 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 if an owner or occupier of land becomes aware a notifiable activity (as defined in Schedule 3 and Schedule 4) is being carried out on the land, or that the land has been, or is being, contaminated by a hazardous contaminant, the owner or occupier must, within 22 business days after becoming so aware, give written notice to the chief executive.

Signature

14/01/15
Date

Justin Cagney
Department of Environment and Heritage Protection
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
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Obligations under the *Environmental Protection Act 1994*

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

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

Conditions of environmental authority

Agency interest: General	
Condition number	**Condition**
A1	Provide a financial assurance in the amount and form required by the administering authority prior to the commencement of activities proposed under this environmental authority. NOTE: *The calculation of financial assurance for condition A1 must be in accordance with the administering authority's Guideline – Calculating financial assurance for mining projects, and may include a performance discount. The amount is defined as the maximum total rehabilitation cost for complete rehabilitation of all disturbed areas, which may vary on an annual basis due to progressive rehabilitation. The amount required for the financial assurance must be the highest total rehabilitation cost calculated for any year of the Plan of Operations and calculated using the formula: (Financial Assurance = Highest total annual rehabilitation cost x Percentage required).*
A2	The financial assurance is to remain in force until the administering authority is satisfied that no claim on the assurance is likely. NOTE: *Where progressive rehabilitation is completed and acceptable to the administering authority, progressive reductions to the amount of financial assurance will be acceptable where rehabilitation has been completed in accordance with the acceptance criteria defined within this environmental authority.*

A3	**Prevent and/or minimise likelihood of environmental harm** In carrying out the environmentally relevant activities, you must take all reasonable and practicable measures to prevent and/or 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 authority. NOTE: *This authority authorises the environmentally relevant activity. It does not authorise environmental harm unless a condition contained within this authority explicitly authorises that harm. Where there is no condition or the authority is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.*
A4	**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.
A5	**Monitoring and records** 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.
A6	Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.
A7	**Notification of emergencies, incidents and exceptions** All reasonable actions are to be taken to minimise environmental harm, or potential environmental harm, resulting from any emergency, incident or circumstances not in accordance with the conditions of this environmental authority.
A8	As soon as practicable after becoming aware of any emergency, incident or information about circumstances which results or may result in environmental harm not in accordance with the conditions of this environmental authority, the administering authority must be notified in writing.

A9	Not more than ten (10) business days following the initial notification of an emergency, incident or information about circumstances which result or may result in environmental harm, written advice must be provided to the administering authority in relation to: a) proposed actions to prevent a recurrence of the emergency or incident; b) the outcomes of actions taken at the time to prevent or minimise environmental harm; and c) proposed actions to respond to the information about circumstances which result or may result in environmental harm.
A10	As soon as practicable, but not more than six (6) weeks following the initial notification of an emergency, incident or information about circumstances which result or may result in environmental harm, environmental monitoring must be performed and written advice must be provided of the results of any such monitoring performed to the administering authority.
A11	Contaminants must not be released to the receiving environment unless they are in accordance with the contaminant limits authorised by this environmental authority.
A12	This environmental authority does not authorise environmental harm unless a condition contained within the authority explicitly authorises that harm. Where there is no condition or the authority is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.
A13	**Definitions** Words and phrases used throughout this environmental authority are defined in Definitions section of this environmental authority. Where a definition for a term used in this environmental authority is sought and the term is not defined within this environmental authority, the definitions in the *Environmental Protection Act 1994*, its Regulations and Environmental Protection Policies must be used.
A14	**Scope of activity** This environmental authority authorises the mining of 12 million tonnes of run of mine (ROM) coal per annum.
Agency interest: Air	
Condition number	**Condition**
B1	**Dust nuisance** The release of dust or particulate matter or both resulting from the mining activity must not cause an environmental nuisance at any nuisance sensitive or commercial place.

B2	When requested by the administering authority or as a result of a complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer), dust and particulate monitoring must be undertaken, and the results thereof notified to the administering authority within fourteen (14) days following completion of monitoring. Monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place. Dust and particulate matter must not exceed the following levels when measured at any nuisance sensitive or commercial place: a) dust deposition of 120 milligrams per square metre per day, when monitored in accordance with *Australian Standard AS 3580.10.1 of 2003* (or more recent editions); and b) a concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a 24 hour averaging time, at a nuisance sensitive or commercial place downwind of the site, cannot be exceeded more than five (5) times per year, when monitored in accordance with: i) Australian Standard AS 3580.9.6 of 2003 (or more recent editions) Ambient air - Particulate matter - Determination of suspended particulate PM10 high-volume sampler with size-selective inlet -Gravimetric method; or ii) any alternative method of monitoring PM10 which may be permitted by the *Air Quality Sampling Manual* as published from time to time by the administering authority. iii) any alternative method of monitoring PM10 as set out in the relevant Australian Standard including AS/NZ 3580.9.9:2006 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM10 low volume sampler – Gravimetric method; AS/NZS 3580.9.6:2003 Methods for sampling and analysis of ambient air – Determination of particulate matter – PM10 high volume sampler with size-selected inlet – Gravimetric method; AS/NZS 3580.9.7:2009 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – Dichotomous sampler (PM10, coarse PM and PM2.5) – Gravimetric method; AS/NZS 3580.9.8:2008 Methods for sampling and analysis of ambient air – Method 9.8: Determination of suspended particulate matter – PM10 continuous direct mass method using a tapered element oscillating microbalance analyser, AS/NZS 3580.9.11:2008 Methods for sampling and analysis of ambient air – Method 9.11 Determination of suspended particulate matter – PM10 beta attenuation monitors (or more recent editions).
B3	If monitoring indicates exceedance of the relevant limits in condition B2, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance.
B4	The release of noxious or offensive odour(s) or any other noxious or offensive airborne contaminant(s) resulting from the mining activity must not cause an environmental nuisance at any nuisance sensitive or commercial place.

B5	When requested by the administering authority, odour 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.
B6	If the administering authority determines the odour released to constitute an environmental nuisance, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement odour abatement measures so that emissions of odour from the activity do not result in further environmental nuisance.
Agency interest: Water	
Condition number	**Condition**
W1	**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.
W2	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 1 and depicted in Appendix 1 attached to this environmental authority.

Table 1 Mine affected water release points, sources and receiving waters

Release Point (RP)	Easting (GDA94)	Northing (GDA94)	Mine Affected Water Source and Location	Monitoring Point	Receiving waters description
RP 1	653753	7401398	Ramp 24 Fill Point Dam, Ramp ¾ Drain, A, B, C, D, E, F and Y Pits	End of pipe	Nogoa River
RP2	654270	7412235	Y pit	End of pipe	Boggy creek

W3	The release of mine affected water to internal water management infrastructure that is installed and operated in accordance with a water management plan that complies with conditions W30 is permitted.

W4	The release of mine affected water to waters in accordance with condition W2 must not exceed the release limits stated in Table 2 when measured at the monitoring points specified in Table 1 for each quality characteristic.

Table 2 (Mine Affected Water Release Limits)

Quality Characteristics	Release Limits	Monitoring Frequency
Electrical conductivity (uS/cm)	10,000 µS/cm (end of pipe)	Real time telemetry for EC and pH with grab samples at commencement and weekly thereafter when safe to do so and access permits. Daily grab samples if telemetry not available. The first sample must be taken as soon as practicable following commencement of release.
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	
Sulphate (SO_4^{2-})	1,000mg/L	Commencement of release and thereafter weekly during release.
Turbidity (NTU)	360	Daily during release (the first sample must be taken within 2 hours of commencement of release).

W5	The release of mine affected water to waters from the release points must be monitored at the locations specified in Table 1 for each quality characteristics and at the frequency specified in Table 2 and Table 3. NOTE: *the administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition W5 is contravened due to a temporary lack of safe or practical access. The administering authority expects the environmental authority holder to take all reasonable and practicable measures to maintain safe and practical access to designated monitoring locations.*

Table 3 Release contaminant trigger investigation levels

Quality Characteristic	Trigger Levels* (µg/L)	Monitoring Frequency
Aluminium	300	Commencement of release and thereafter weekly during release.
Ammonia	900	
Arsenic	13	
Boron	370	
Cadmium	0.2	
Chromium	1.0	
Cobalt	90	
Copper	10	
Fluoride (total)	2000	
Iron	300	
Lead	4	
Manganese	1900	
Mercury	0.2	
Molybdenum	34	
Nickel	11	
Nitrate	1100	
Selenium	10	
Silver	1	
Sodium	TBA	
Petroleum hydrocarbons (C6-C9)	20	
Petroleum hydrocarbons (C10-C36)	100	
Uranium	20	
Vanadium	20	
Zinc	20	

NOTE:

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 3 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 3 by amendment.

3. SMD – slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (200).

4. LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.

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W6	If quality characteristics of the release exceed any of the trigger levels specified in Table 3 during a release event, the environmental authority holder must compare the downstream monitoring point (MP5) to the trigger values specified in Table 3 and: a) where the trigger values are not exceeded then no action is to be taken; or b) where the downstream monitoring points outlined in Table 6 exceed the trigger values specified Table 3 for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and; i) if the result is less than or equal to the background monitoring site data, then no action is to be taken; or ii) if the result is greater than the background monitoring site data, complete an investigation into the potential for environmental harm and provide a written report to the administering authority within 90 days, outlining: 1) details of the investigations carried out; and 2) actions taken to prevent environmental harm. NOTE: *Where an exceedance of a trigger level has occurred and is being investigated, in accordance with W6 2(b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*
W7	If an exceedance in accordance with condition W6 2(b) is identified, the holder of the authority must notify the administering authority in writing within 24 hours of receiving the result.
W8	**Mine Affected Water Release Events** The environmental authority holder must ensure a stream flow gauging station/s is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in Table 4.
W9	Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with condition W2 must only take place during periods of natural flow events in accordance with the receiving water flow criteria for discharge specified in Table 4 for the release point(s) specified in Table 1.

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Table 4 (Contaminant Release during Flow Events)

Receiving waters	Release point (RP)	Gauging Station	Gauging Station Easting (GDA94)	Gauging Station Northing (GDA94)	Receiving water flow recording frequency	Receiving water flow criteria for discharge (m^3/s)	Electrical conductivity and sulphate release limits (µs/cm)
Nogoa River	**RP1**	**"GS2"** DNRM Gauging Station 130219A Nogoa River at Duck Ponds.	650392	7402391	Continuous real time	**Medium Flow** $10m^3$/sec	Electrical conductivity (µS/cm): 10,000 Sulphate (SO_4^{2-}): 1,000mg/L
						Low Flow For a period of 28 days after natural flow events that exceed $10m^3$/sec	Electrical conductivity (µS/cm): <650 Sulphate (SO_4^{2-}): <250 mg/L
Boggy Creek	**RP2**	**"GS3"** Ramp 8 crossing of Boggy Creek at Yongala.	654855	7412729	Continuous real time	**Medium Flow** $2m^3$/sec	Electrical conductivity (µS/cm): 10,000 Sulphate (SO_4^{2-}): 1,000mg/L
						Low Flow <$1.0m^3$/sec for a period of 28 days after natural flow events that exceed $2m^3$/sec	Electrical conductivity (µS/cm): <650 Sulphate (SO_4^{2-}): <250 mg/L

W10	The holder is prohibited from releasing mine affected water into releases made from Fairbairn Dam for entitlement holders or environmental flows in accordance with the *Water Act 2000*, *Water Regulation 2002*, *Water Resource (Fitzroy Basin) Plan 2011* or *Fitzroy Basin Resource Operations Plan.*
W11	The daily quantity of mine affected water released from each release point must be measured and recorded at the monitoring points in Table 1.
W12	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.

W13	The 80th percentile of electrical conductivity (EC) values recorded at the downstream monitoring point (MP5) must not exceed 1,200µS/cm at any time during the release influence period and have a maximum value of no greater than 1,440µS/cm. The 80th percentile must be calculated using all EC values recorded by the monitoring station during the release influence period. NOTE: *The release influence period is the period during which the downstream monitoring points are influenced by mine affected water released from Ensham Coal Mine and includes both the duration of release and any lag time between release point/s and downstream monitoring points.*
W14	If electrical conductivity recorded at MP6 exceeds 650µS/cm during a release event, the environmental authority holder must immediately notify the administering authority and seek written approval to continue releasing mine affected water.
W15	**Notification of Release Event** The environmental authority holder must notify the administering authority as soon as practicable and no later than 24 hours after commencing to release mine affected water to the receiving environment. Notification must include the submission of written advice to the administering authority of the following information: a) release commencement date/time; b) details regarding the compliance of the release with the conditions of Department Interest: Water of the environmental authority (that is, contaminant limits, natural flow, discharge volume); c) release point/s; d) release rate; e) release salinity; and f) receiving water/s including the natural flow rate. NOTE: *Notification to the administering authority must be addressed through a notification to the WaTERS Unit.*

W16	The environmental authority holder must notify the administering authority as soon as practicable and nominally no later than twenty-four (24) hours after cessation of a release event of the cessation of a release notified under condition W15 and within 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 Department 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. 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 W15 and W16, provided the relevant details of the release are included within the notification provided in accordance with conditions W15 and W16.*
W17	**Notification of Release Event Exceedance** If the release limits defined in Table 2 are exceeded, the holder of the environmental authority must notify the administering authority within twenty-four (24) hours of receiving the results.
W18	The environmental authority holder must, within twenty-eight (28) days of a release that is not compliant with the conditions of this environmental authority, provide a report to the administering authority detailing: a) the reason for the release; b) the location of the release; c) the total volume of the release and which (if any) part of this volume was non-compliant; d) the total duration of the release and which (if any) part of this period was non-compliant; e) all water quality monitoring results (including all laboratory analyses); f) identification of any environmental harm as a result of the non-compliance; g) all calculations; and h) any other matters pertinent to the water release event.

W19	**Release notification – potentially affected stakeholder** The environmental authority holder must notify all potentially affected stakeholders on commencement (within 2 hours or another time frame as agreed to in writing with the relevant potentially affected stakeholder) of releasing mine affected water to the receiving environment. Notification must be in the form agreed to by the potentially affected stakeholder. Notification must include the following information unless otherwise agreed to by the potentially affected stakeholder: a) release commencement date/time; b) release location (release point/s); c) release rate; d) receiving waters for the release; e) receiving water flow rate f) water quality of the release including salinity and pH; and g) estimated duration of the release.
W20	**Receiving Environment Monitoring and Contaminant Trigger Levels** The quality of the receiving waters must be monitored at the locations specified in Table 6 for each quality characteristic and at the monitoring frequency stated in Table 5.

Table 5 Receiving waters contaminant trigger levels

Quality Characteristic	Contaminant Trigger Levels	Monitoring Frequency	Comments
Electrical Conductivity (µS/cm)	**Cease Release** 1,440µS/cm (MP5) 1,200µS/cm (80th%ile) (MP5) **Approval Trigger** 650µS/cm (MP6)	Real time telemetry. Daily grab samples if telemetry not available (the first sample must be taken as soon as practicable).	Grab samples shall be taken only when safe to do so and access permits. Refer to condition W14.
pH	6.5 – 9.0		
Suspended Solids (mg/L)	1,000	Grab samples at commencement and weekly thereafter.	Grab samples shall be taken only when safe to do so and access permits.
Sulphate (SO_4^{2-}) (mg/L)	250		

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.*

** Quality characteristics required to be monitored as stated. Trigger level to be reviewed once the results of appropriate monitoring data is available.*

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Table 6 Receiving water upstream background sites and downstream monitoring points

Monitoring Points	Receiving Waters Location Description	Easting (GDA94)	Northing (GDA94)
Upstream background monitoring point			
MP2	Nogoa River at Duckponds (130219A)	650392.4	7402391.3
MP4	Boggy Creek – Ramp 9 crossing at Yongala	655397	7414473
Downstream monitoring points			
MP5	Nogoa River at Ensham Lease Boundary	654688	7400679
MP6	Mackenzie River at Riley's Crossing (130113A)	663861	7395396

W21	If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels for pH, suspended solids or sulphate specified in Table 5 during a release event the environmental authority 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 downstream results exceed the upstream results complete an investigation into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining: i) details of the investigations carried out; and ii) actions taken to prevent environmental harm. NOTE: *Where an exceedance of a trigger level has occurred and is being investigated, in accordance with W21(2) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*

W22	**Receiving Environment Monitoring Program (REMP)** The environmental authority holder must maintain 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 the Nogoa River, downstream of Ensham Coal Mine to Riley's Crossing of the Mackenzie River and downstream of the Comet River junction. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water.
W23	The REMP must: a) assess the condition or state of receiving waters, including upstream conditions, spatially within the REMP area, considering background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality); b) be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected; c) include monitoring from background reference sites (e.g. upstream or background) and downstream sites from the release (as a minimum, the locations specified in Table 6); d) specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the *Queensland Water Quality Guidelines* 2006. This should include monitoring during periods of natural flow irrespective of mine or other discharges; e) include monitoring and assessment of dissolved oxygen saturation, temperature and all water quality parameters listed in Table 2 and 3; f) include, where appropriate, monitoring of metals/metalloids in sediments (in accordance with ANZECC & ARMCANZ 2000, BATLEY and/or the most recent version of AS5667.*1 Guidance on Sampling of Bottom Sediments*); g) include, where appropriate, monitoring of macroinvertebrates in accordance with the AusRivas methodology, h) apply procedures and/or guidelines from ANZECC & ARMCANZ 2000 and other relevant guideline documents; i) describe sampling and analysis methods and quality assurance and control; and j) incorporate stream flow and hydrological information in the interpretations of water quality and biological data.

W24	A report outlining the findings of the REMP, including all monitoring results and interpretations in accordance with conditions W22 and W23 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.
W25	**Water Reuse** Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party (with the consent of the third party).
W26	All determinations of water quality and biological monitoring must be performed by an appropriately qualified person.
W27	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 condition W30: 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.
W28	**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 the contaminants 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 with 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.

W29	**Activities within watercourses** 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 administering authority's *Guideline - Activities in a Watercourse, Lake or Spring associated with Mining Activities.*
W30	**Water Management Plan** A Water Management Plan must be developed by an appropriately qualified person and implemented.
W31	**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.
W32	**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.
W33	**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.
W34	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 W33; and b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with condition W30, for the purpose of ensuring water does not become mine affected water.
W35	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.
W36	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.
W37	**Sewage effluent** Sewage effluent used for dust suppression or irrigation must not exceed sewage release limits defined in Table 7 (Sewage effluent quality standards).

Table 7 (Sewage effluent quality standards)

Quality	Release limit	Units	Limit type	Monitoring frequency
5 Day BOD	20	mg/L	max	On release
pH	6 - 8		range	On release
Free Chlorine residuals	1.0	mg/L	max	On release
Faecal coliforms (based on the average of a minimum of 5 samples)	1,000	Colonies per 100ml	max	On release

W38	**Groundwater** Groundwater affected by mining activities must be monitored at the locations and frequencies and for the parameters defined in Table 8 (Groundwater monitoring locations). The groundwater monitoring locations are shown in Appendix 2. If, based on assessment of the monitoring results by a suitably qualified person, the Ensham mine is demonstrated to have adversely affected the use of privately owned bores listed in Table 8 (Groundwater monitoring locations), the holder of the environmental authority will provide an equivalent (in quality and quantity), alternative water supply to the owner of the bore/s for the impact caused by the Ensham mine. Monitoring of bores owned by private landholders is subject to the landholder providing access to the bore and ensuring that the bore is in a suitable condition such that it is able to be monitored.
W39	Subject to requirements of condition W38, if the groundwater investigation trigger levels defined in Table 9 (Groundwater investigation trigger levels) are exceeded then the environmental authority holder must complete an investigation into the potential for environmental harm and notify the administering authority with twenty-eight (28) days of receiving the analysis results.

Table 8 (Groundwater monitoring locations)

Location	Monitoring Point	Easting (GDA94)	Northing (GDA94)	Aquifer	Parameters	Frequency
Nogoa River Alluvium	EC01	650018	7403059	Alluvium	Water Level and Quality (as per Table 9)	Quarterly
	EC03	650338	7402547	Alluvium		
	EC07	650973	7401746	Alluvium		
	EC09A	651354	7401504	Alluvium		
	EC11	651517	7401192	Alluvium		
	EC13	651517	7400776	Alluvium		
	EC22	651693	7400494	Alluvium		
	GW01	653934	7400423	Alluvium		
Regional Bores (Private Property)	Karanga (Bore A)	649043	7388304	Unknown	Water Level and Quality (as per Table 9)	Quarterly
	Winton Creek (Bore 4)	642771	7400758	Unknown		
	Twin Bore (Bore 5)	641319	7401567	Unknown		
	Jamar Bore (Bore 7)	642025	7399084	Rewan Formation		
	Yongala (RN89383	657586	7415693	Burngrove Formation		
	Fairhills (RN89380	658696	7416877	Burngrove Formation		
	Railway (RN90140)	663591	7412470	Undiff Coal Measures		
	Conmurra (RN103788)	657954	7390072	Fair Hill Formation		
Regional Bores (Ensham Mine)	RB1	650018	7412835	Rewan, Rangal	Water Level and Quality (as per Table 9)	Quarterly once installed
	RB2	647787	7410365	Rewan, Rangal		
	RB3	645503	7402324	Rewan, Rangal		
	RB4	642784	7398932	Rewan		
	RB5	646209	7395311	Rangal – overburden, coal		
	RB6	648836	7392168	Rangal coal		

Table 9 (Groundwater investigation trigger levels)

Parameter	Unit	Trigger Levels	Limit Type
pH	pH Units	6.5 – 8.5	Minimum/Maximum
Electrical Conductivity	µS/cm	mean ± 3s#	DERM (2010)[1]
Total Dissolved Solids	mg/L	mean + 3s#	DERM (2010)[1]
Calcium	mg/L	mean + 3s#	DERM (2010)[1]
Magnesium	mg/L	mean + 3s#	DERM (2010)[1]
Sodium	mg/L	mean + 3s#	DERM (2010)[1]
Potassium	mg/L	mean + 3s#	DERM (2010)[1]
Chlorine	mg/L	mean + 3s#	DERM (2010)[1]
SO4	mg/L	mean + 3s#	DERM (2010)[1]
CO3	mg/L	mean + 3s#	DERM (2010)[1]
HCO3	mg/L	mean + 3s#	DERM (2010)[1]
Iron	mg/L	mean + 3s#	DERM (2010)[1]
Aluminium	mg/L	5	ANZECC (2000) Livestock Drinking Water Level
Silver	mg/L	0.002	Based on available dataset upper limit
Arsenic	mg/L	0.5 – 5.0	ANZECC (2000) Livestock Drinking Water Level
Mercury	mg/L	0.002	ANZECC (2000) Livestock Drinking Water Level
Antimony	mg/L	0.005	Based on available dataset upper limit
Molybdenum	mg/L	0.15	ANZECC (2000) Livestock Drinking Water Level
Selenium	mg/L	0.1	Based on available dataset upper limit
Total Petroleum Hydrocarbons C6-C9 (silica gel)*	µg/L	≤20 (LOR)	Laboratory limit of reporting (LOR)
Total Petroleum Hydrocarbons C10-C14 (silica gel)*	µg/L	≤50 (LOR)	Laboratory limit of reporting (LOR)
Total Petroleum Hydrocarbons C15-C28 (silica gel)*	µg/L	≤100 (LOR)	Laboratory limit of reporting (LOR)
Total Petroleum Hydrocarbons C29-C36 (silica gel)*	µg/L	≤50 (LOR)	Laboratory limit of reporting (LOR)

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.*

* *TPH analysis with silica gel clean-up. If monitoring requirements change to TRH according to the National Environment Protection Measures (NEPM) the trigger levels should remain unchanged.*

\# *Specific limits for individual monitoring points apply. Trigger levels applied to individual bores at the time of submission of the Background Groundwater Monitoring Program are included in Appendix 3 with recognition that as the volume of groundwater data increases, these limits will be modified when applied to ongoing sampling results.*

1 *DERM (2010) "Guideline – Recording Interpretation and Analysis of Monitoring Results, ERA 60 – Waste Disposal".*

W40	Subject to requirements of condition W38, groundwater levels and groundwater drawdown fluctuations, not resulting from the pumping of licensed bores, must be notified within twenty-eight (28) days to the administering authority following completion of monitoring.
W41	**Background groundwater monitoring program** A background groundwater monitoring program must be maintained and implemented to include bore(s) that are located an appropriate distance from potential sources of impact from mining activities to provide the following: a) representative groundwater samples from the aquifers potentially affected by mining activities; b) routine sampling to determine background groundwater data as far as practicable; and c) background groundwater data in hydraulically isolated background bore(s) that have not been affected by any mining activities.
W42	The groundwater monitoring data must be reviewed on an annual basis. The review must include the assessment of groundwater levels and quality data and the suitability of the monitoring network. The assessment must be submitted to the administering authority within twenty-eight (28) days of receiving the report.
W43	The following information must be recorded in relation to all groundwater water sampling: 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; and d) the results of all monitoring.

Agency interest: Dams and Levees	
Condition number	**Condition**
C1	**All dams** The holder of this environmental authority must ensure that each dam is designed, constructed, operated and maintained in accordance with accepted engineering standards and is fit for the purpose for which it is intended.
C2	The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635) at the following times: a) prior to the design and construction of the structure, if it is not an existing structure; or b) if it is an existing structure, prior to the adoption of this schedule; or c) prior to any change in its purpose or the nature of its stored contents.

C3	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.
C4	Dams having a hazard category assessed as significant or high, must be specifically authorised by this environmental authority.
C5	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 (EM635).
C6	The condition of dams must be monitored for early signs of loss of structural or hydraulic integrity, based on the advice of a suitably qualified and experienced person. The methods of monitoring and frequency of monitoring shall be as assessed by that suitably qualified and experienced person, based on the hazard category and particular circumstances of each dam.
C7	In the event of early signs of loss of structural or hydraulic integrity, the holder of this environmental authority must immediately take action to prevent or minimise any actual or potential environmental harm, and report in writing any findings and actions taken to the administering authority within twenty eight (28) days of that event.
C8	The holder of this environmental authority must not abandon any dam but must decommission each dam such that ongoing environmental harm is prevented.
C9	As a minimum, decommissioning must be conducted such that each dam is: a) either: i) a stable landform, that no longer contains flowable substances, or ii) approved or authorised under relevant legislation for a beneficial use, or iii) is a void authorised by the administering authority to remain after decommissioning; and b) compliant with the rehabilitation requirements of this environmental authority.
C10	**Certification and operation** Conditions C11 to C15 inclusive do not apply to existing structures.
C11	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 (EM635).*
C12	Construction of a regulated structure is prohibited unless the holder has submitted a consequence category assessment report and certification to the administering authority has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.

C13	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 (EM635)*, and must be recorded in the Regulated Dams/Levees register.
C14	Regulated structures must: a) be designed and constructed in accordance with and conform to the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635);* b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: i) floodwaters from entering the regulated dam from any watercourse or drainage line; and ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.
C15	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; b) construction of the regulated structure is in accordance with the design plan.
C16	Operation of a regulated structure, except for an existing structure, is prohibited unless: a) the holder has submitted to the administering authority: i) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition C12, and ii) a set of 'as constructed' drawings and specifications, and iii) certification of those 'as constructed drawings and specifications' in accordance with condition C12, and iv) 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. v) the requirements of this authority relating to the construction of the regulated structure have been met; vi) the holder has entered the details required under this authority, into a Register of Regulated Dams; and vii) there is a current operational plan for the regulated structures.

C17	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 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.
C18	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.
C19	Documentation required by the conditions in this schedule must be kept available for inspection by the administering authority for a period of five (5) years after the conclusion of the environmentally relevant activity in respect of which this environmental authority has been granted.
C20	The holder of this environmental authority must not commence construction of a regulated dam unless: a) the holder has submitted to the administering authority two (2) copies of a design plan, together with the certification of a suitably qualified and experienced person that the design of the regulated dam will deliver the performance stated in the design plan and that it will be compliant in all respects with this environmental authority, and b) at least twenty (20) business days has passed since the receipt of those documents, or the administering authority notifies the holder that a design plan and certification in accordance with this environmental authority, has been received.
C21	Each design plan for a regulated dam under this environmental authority, must consider the likely outcomes for releases to the environment using estimates of likely contaminant concentrations using data from contact testing, output from modelling on site and modelling for flows in the nearby watercourses.
C22	Each design plan for a regulated dam under this environmental authority, must include the outcomes from water balance modelling of the worst case scenarios of wet season storage and discharges. This information must be presented graphically at a suitable time step and be able to compare the incident rainfall, runoff and environmental releases for all regulated dams.
C23	When construction or modification of any regulated dam is complete, the holder of this environmental authority must submit to the administering authority two (2) copies of a set of 'as constructed' drawings, together with the certification of a suitably qualified and experienced person that the dam 'as constructed' will deliver the performance stated in the design plan and that it will be compliant in all respects with this environmental authority.

C24	The holder of this environmental authority must ensure that there is always a current operational plan for each regulated dam, which may form part of other plans required by legislation.
C25	The holder of this environmental authority must ensure that, where a current operational plan covers decommissioning and rehabilitation, operations are consistent with the objectives in any design plan for the dam.
C26	The holder of this environmental authority must notify the administering authority immediately of the level in any regulated dam reaching the mandatory reporting level (MRL), and confirm in writing within seven (7) days.
C27	**Annual inspection and report** Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
C28	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.
C29	The holder of this environmental authority must immediately act upon recommendations arising from an annual inspection on condition and adequacy of a dam.
C30	At each annual inspection, the adequacy of the available storage against the design storage allowance (DSA) specified must be assessed and, if a MRL is required, it must be determined and marked on each regulated dam.
C31	A final assessment of adequacy of available storage in each regulated dam must be based on a dam level observed within the month of October, accepted as valid by the suitably qualified and experienced person, and resulting in an estimate of the level in that dam as at 1 November.
C32	**Mandatory reporting level** Conditions C33 to C36 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
C33	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.
C34	The holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
C35	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.
C36	The holder must record any changes to the MRL in the Register of Regulated Structures.

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C37	**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.
C38	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).
C39	The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.
C40	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.
C41	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 (EM635).
C42	The holder must: a) within 20 business days of receipt of the annual inspection report, provide to the administering authority: i) the recommendations section of the annual inspection report; and ii) if applicable, any actions being taken in response to those recommendations; and b) if, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days6 of receipt of the request.
C43	**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.

C44	**Decommissioning and rehabilitation** Dams must not be abandoned but be either: a) decommissioned and rehabilitated to achieve compliance with condition (C45); or b) be left in-situ for a beneficial use(s) provided that: i) it no longer contains contaminants that will migrate into the environment; and ii) it contains water of a quality that is demonstrated to be suitable for its intended beneficial use(s); and iii) the administering authority, the holder of the environmental authority and the landholder agree in writing that the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies).
C45	After decommissioning, all significantly disturbed land caused by the carrying out of the environmentally relevant activity(ies) must be rehabilitated to meet the following final acceptance criteria: a) the landform is safe for humans and fauna; b) the landform is stable with no subsidence or erosion gullies for at least three (3) years; c) any contaminated land (e.g. contaminated soils) is remediated and rehabilitated; d) not allowing for acid mine drainage; or e) there is no ongoing contamination to waters (including groundwater); f) rehabilitation is undertaken in a manner such that any actual or potential acid sulfate soils on the area of significant disturbance are treated to prevent or minimise environmental harm in accordance with the Instructions for the treatment and management of acid sulfate soils (2001); g) all significantly disturbed land is reinstated to the pre-disturbed soil suitability class; h) for land that is not being cultivated by the landholder: i) groundcover, that is not a declared pest species is established and self-sustaining; ii) vegetation of similar species richness and species diversity to pre-selected analogue sites is established and self-sustaining; and iii) the maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance caused by carrying out the petroleum activity(ies). i) for land that is to be cultivated by the landholder, cover crop is revegetated, unless the landholder will be preparing the site for cropping within 3 months of petroleum activities being completed.
C46	**Register of Regulated Dams** A Register of Regulated Dams must be established and maintained by the holder for each regulated dam:

C47	The holder must provisionally enter the required information in the Register of Regulated Dams when a design plan for a regulated dam is submitted to the administering authority.
C48	The holder must make a final entry of the required information in the Register of Regulated Dams once compliance with condition C16 and C17 has been achieved.
C49	The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.
C50	All entries in the Register of Regulated Dams must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
C51	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 Dams, in the electronic format required by the administering authority.
C52	**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 within 6 months of amendment of the authority adopting this schedule.
C53	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in Table 10 (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.
C54	Table 1 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.
C55	Certification of the transitional assessment required by C52 and C53 (as applicable) must be provided to the administering authority within 6 months of amendment of the authority adopting this schedule.

Table 10 (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 with criteria	**High**	**Significant**	**Low**
>90% and a history of good compliance performance in last 5 years	No transition required	No transition required	No transitional conditions apply. Review consequence assessment every 7 years.
>70%-≤90%	Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 10 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	No transitional conditions apply. Review consequence assessment every 7 years.
>50-≤70%	Within 5 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 7 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Review consequence assessment every 7 years.
≤50%	Within 5 years or as per compliance requirements (e.g. TEP timing)	Within 5 years or as per compliance requirements (e.g. TEP timing)	Review consequence assessment every 5 years.

C56	**Flood protection levee – Additional conditions** The design plan in accordance with condition C16 must include: a) drawings describing the location and dimensions of the levee and the mining excavations in the vicinity of the levee, including confirmation the levee meets the specified design requirements in condition C57; and b) a documented procedure for surveillance of the levee and any adjacent mining excavation slopes to detect and report to the administering authority any ground movement that compromises or may compromise the integrity of the levee.
C57	Design requirements for the levee and adjacent mining excavation include: a) the design level of the levee crest shall be at least one (1) metre above the estimated 1 in 1,000 ARI flood event for the adjacent watercourses; and b) mining excavation slopes adjacent to the levee must remain stable and are to be designed with a factor of safety of one point five (1.5) (calculated from the levee toe) or above based on an accepted stability analysis.
C58	The flood protection levee authorised under this environmental authority must be constructed and maintained such that: a) it does not result in increased erosion of the bank or bed of the Nogoa River; b) it does not significantly impact upon riparian or existing remnant vegetation; and c) the levee itself will not erode during any flood events up to the 1 in 1,000 ARI event.

C59	**Flood protection levee – Surveillance and remedial works** The condition of constructed levees including the surface area between the downstream toe of the levee and the end wall crest of the open-cut mining pit should be monitored for surface cracks and must at a minimum be inspected and assessed by a suitably qualified and experienced person at least once per year between the months of May and October inclusive (i.e. during the 'dry' season and before the onset of the 'wet' season), and at any time if alarming, unusual or otherwise unsatisfactory conditions are observed.
C60	For each flood protection levee annual inspection, two copies of the surveillance report, including any recommendations for remedial works, must be provided to the administering inspection within twenty-eight (28) days of the date of inspection.
C61	Remedial works identified as being required for the flood protection levee during the inspections and assessments conducted under conditions C59 and C60, must be notified in writing to the administering authority within fifteen (15) business days of the completion of the inspections, and commenced within twenty-eight (28) days unless otherwise agreed in writing by the administering authority.
C62	The annual return for this environmental authority shall be accompanied by a report, by a suitably qualified and experienced person, that certifies that the documented procedure for surveillance of the levee has been applied in accordance with the procedure, that there has been no erosion, cracking or vertical or horizontal deformation that has impacted on the integrity of the levee, and that the levee has been maintained in accordance with the certified design plan.
C63	**Regulated dams – Location and basic specifications** The following are the only regulated dams authorised under this environmental authority, and those dams are to be located within the control points defined in Table 11 (Location of regulated dams).

Table 11 (Location of regulated dams)

Name of regulated dam	Easting (GDA94)	Northing (GDA94)
Northern Flood Protection Levee	651117	7405591
	651160	7404548
	651600	7403725
	651655	7402768
	652414	7402045
	653545	7402072
	653578	7403413
Southern Flood Protection Levee	649460	7399042
	650238	7400726
	652960	7400527
	653694	7399903
	653315	7398692
	651751	7397325

C64	The following are the only regulated dams authorised under this environmental authority, and those dams are to accord with the basic specifications in Table 12 (Basic specification of regulated dams).

Table 12 (Basic specification of regulated dams)

Name of regulated dam	Maximum surface area of dam (ha)	Maximum volume of dam (ML)	Maximum height of Dam (m)	Purpose of dam
Northern Flood Protection Levee	N/A	N/A	8	Flood protection for mine workings
Southern Flood Protection Levee	N/A	N/A	6.5	Flood protection for mine workings

C65	The following are the only regulated dams authorised under this environmental authority, and those dams are to accord with the hydraulic specifications in Table 13 (Hydraulic performance of regulated dams) below.

Table 13 (Hydraulic performance of regulated dams)

Regulated Dam	Design Storage Allowance	Spillway or Protection Critical Design Event	Mandatory Reporting Level
Northern Flood Protection Levee	N/A	AEP 0.001 (1-in-1,000) plus 1 metre minimum freeboard	N/A
Southern Flood Protection Levee	N/A	AEP 0.001 (1-in-1,000) plus 1 metre minimum freeboard	N/A

Agency interest: Noise	
Condition number	**Condition**
D1	**Noise nuisance** Noise from activities must not cause an environmental nuisance at any sensitive receptor or commercial place.
D2	All noise from activities must not exceed the levels for the time periods specified in Table 14 (Noise limits) at any sensitive receptor or commercial place.

Table 14 (Noise limits)

Noise Level dB(A)	7am – 6pm	6pm – 10pm	10pm – 7am
	Noise measured at a 'Noise sensitive place'		
$L_{A\ 10,\ adj,\ 10\ mins}$	B/g + 5	B/g + 5	B/g +3
$L_{A\ 1,\ adj,\ 10\ mins}$	N/A	N/A	B/g + 8
	Noise measured at a 'Commercial place'		
$L_{A\ 10,\ adj,\ 10\ mins}$	B/g + 10	B/g + 10	B/g + 5

D3	**Noise monitoring** When requested by the administering authority, noise monitoring must be undertaken to investigate any compliant of noise nuisance, and the results notified within fourteen (14) days to the administering authority. Monitoring must include: a) $L_{A\ 10,\ adj,\ 10\ mins}$ b) $L_{A\ 1,\ adj,\ 10\ mins}$ c) the level and frequency of occurrence of impulsive or tonal noise; d) atmospheric conditions including wind speed and direction; e) effects due to extraneous factors such as traffic noise; and f) location date and time of recording.

D4	Noise is not considered to be a nuisance under condition D1 if monitoring shows that noise does not exceed the levels in the time periods specified in Table 14 (Noise limits).
D5	The method of measurement and reporting of noise monitoring must comply with the current edition of the administering authority's *Noise Measurement Manual*.
D6	If monitoring indicates exceedance of the relevant limits in condition D4, then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.
D7	**Vibration nuisance** Vibration from the licensed activities must not cause an environmental nuisance at any sensitive or commercial place.
D8	When requested by the administering authority, vibration 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.
D9	If the environmental authority holder can provide evidence through monitoring that the limits defined in Table 15 (Vibration limits) are not being exceeded then the environmental authority holder is not in breach of condition D7. Monitoring must include: a) location of the blast(s) within the mining area (including which bench level); and b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and c) location, date and time of recording.

Table 15 (Vibration limits)

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

D10	If monitoring indicates exceedance of the relevant limits in Table 15 (Vibration limits), then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement vibration abatement measures so that vibration from the activity does not result in further environmental nuisance.
D11	**Airblast overpressure nuisance** The airblast overpressure level from blasting operations on the premises must not exceed the limits defined in Table 16 (Airblast overpressure level) at any nuisance sensitive or commercial place.

Table 16 (Airblast overpressure level)

Location	Airblast Overpressure Measured
Sensitive or commercial place	Air blast overpressure level of 115 db (Linear peak) for nine (9) out of ten (10) consecutive blasts initiated and not greater than 120 db (Linear peak) at any time.

D12	When requested by the administering authority, airblast overpressure 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.
D13	Airblast overpressure monitoring must include the following descriptors, characteristics and conditions: a) location of the blast(s) within the mining area (including which bench level); b) atmospheric conditions including temperature, relative humidity and wind speed and direction; and c) location, date and time of recording.
D14	If monitoring indicates exceedance of the relevant limits in Table 17 (Airblast overpressure level), then the environmental authority holder must: a) address the complaint including the use of appropriate dispute resolution if required; and b) immediately implement airblast overpressure abatement measures so that airblast overpressure from the activity does not result in further environmental nuisance.
D15	The method of measurement and reporting of airblast overpressure levels must comply with the current edition of the administering authority's *Noise Measurement Manual*.

Agency interest: Waste	
Condition number	**Condition**
E1	**Storage of tyres** Scrap tyres stored awaiting disposal or transport for take-back and recycling, or waste-to-energy options must be stored in stable stacks and at least 10m from any other scrap tyre storage area, or combustible or flammable material, including vegetation.
E2	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.
E3	Disposing of scrap tyres resulting from the authorised activities in spoil emplacements is acceptable, provided tyres are placed as deep in the spoil as reasonably practicable. A record must be kept of the number and location for tyres disposed.
E4	Scrap tyres resulting from the mining activities disposed within the operational land must not impede saturated aquifers or compromise the stability of the consolidated landform.

E5	**Waste Management** A Waste Management Plan, in accordance with the *Environmental Protection (Waste Management) Policy 2000,* must be implemented and must cover: a) describe how Ensham mine recognise and apply the waste management hierarchy; b) identify characterisations of wastes generated from the project and general volume trends over the past five (5) years; c) a program for safe recycling or disposal of all wastes - reusing and recycling where possible; d) waste commitments with auditable targets to reduce, reuse and recycle; e) the waste management control strategies must consider: i) the type of wastes; ii) segregation of the wastes; iii) storage of the wastes; iv) transport of the wastes; v) monitoring and reporting matters concerning the waste; vi) emergency response planning; vii) disposal, reused and recycling options; f) identify the potential adverse and beneficial impacts of the wastes generated; g) detail the hazardous characteristics of the waste generated (if any); h) cover a disposal procedure for hazardous wastes ; i) outline the process to be implemented to allow for continuous improvement of the waste management systems; j) identify responsible staff (positions) for implementing, managing and reporting the Waste Management Plan; and k) cover a staff awareness and induction program that encourages re-use and recycling.
E6	Waste must not be burned or allowed to be burned on the licensed site unless by approval of the administering authority.
E7	A designated area must be set aside for the segregation of economically viable, recyclable solid and liquid waste.

E8	Records must be kept for five (5) years, and must include the following information: a) date of pickup of waste; b) description of waste; c) cross reference to relevant waste transport documentation; d) quantity of waste; e) origin of the waste; f) destination of the waste; and g) intended fate of the waste, for example, type of waste treatment, reprocessing or disposal. NOTE: *Records of documents maintained in compliance with a waste tracking system established under the Environmental Protection Act 1994 or any other law for regulated waste will be deemed to satisfy this condition.*
E9	Records of trade and regulated wastes or material leaving the mining lease for recycling or disposal, including the final destination and method of treatment, must be in accordance with the *Environmental Protection (Waste Management) Policy 2000*.
E10	All regulated waste received at and removed from the site must be transported by a person who holds a current authority to transport such waste under the provisions of the *Environmental Protection Act 1994*.
E11	Except as otherwise provided by the conditions of this authority, all waste removed from the site must be taken to a facility that is lawfully allowed to accept such waste under the provisions of the *Environmental Protection Act 1994*.
Agency interest: Land	
Condition number	**Condition**
F1	**Preventing contaminant release to land** Contaminants must not be released to land in manner which constitutes nuisance, material or serious environmental harm.
F2	**Bord and pillar – factors of safety** The holder of the environmental authority will determine relevant pillar and roadway dimensions to ensure that the following factors of safety are achieved: a) 2.11 for bord and pillar workings beneath the Nogoa River anabranch; b) 2.11 for access roadways beneath the Nogoa River to connect the bord and pillar and longwall mining areas; and c) 1.6 for all other bord and pillar workings beneath the floodplain of the Nogoa River.

F3	Operational management protocols must be put in place to ensure that minimum pillar and roadway dimensions calculated to achieve the factors of safety in condition F2 are achieved during the life of the bord and pillar operation.
F4	**Topsoil** Topsoil resources that are suitable for use in rehabilitation must be salvaged ahead of mining disturbance (or spoil placement) for strategic use in rehabilitation of the mine spoil dump area. This topsoil removal relocation must be documented in a topsoil management plan.
F5	**Rehabilitation landform criteria** All areas significantly disturbed by mining activities must be rehabilitated to a stable landform with a self-sustaining vegetation cover in accordance with Table 20 (Landform design criteria) which will be populated and submitted in conjunction with an environmental authority amendment application required by condition F7.
F6	Progressive rehabilitation must commence within three (3) years when areas become available within the operational land.
F7	A Rehabilitation Management Plan proposing completion criteria for all mining areas must be developed by **29 March 2013** and submitted to the administering authority for review and comment. The Rehabilitation Management Plan must, at a minimum: a) map existing areas of rehabilitation; b) develop design objectives for rehabilitation of disturbed areas and post mining land uses across the mine; c) specify spoil characteristics, soil analysis, soil separation for use on rehabilitation; d) detail rehabilitation methods applied to areas; e) detail landform design criteria including end of mine design; f) detail how landform design will be consistent with surrounding topography; g) identify success criteria for areas and itemize revegetation criteria; h) explain planned native vegetation rehabilitation areas and corridors; i) identify at least a minimum of three (3) reference and three (3) rehabilitation sites to be used to develop rehabilitation success criteria; j) describe rehabilitation indicators and the monitoring program to be used; k) develop a contingency plan for rehabilitation maintenance or redesign; l) describe end of mine landform design planning and post mining land uses across the mine; and m) include a cost benefit analysis/triple bottom line assessment (or a comparative alternative assessment method) of the proposed final landform design criteria and alternatives.

F8	**Residual void outcome** 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.
F9	An investigation into residual voids proposing acceptance criteria to meet the outcomes in condition F8 and landform design criteria must be developed by **29 March 2013** and submitted to the administering authority for review and comment. On acceptance of the criteria proposed in the residual void management plan, the criteria must be specified in the environmental authority. The investigation must at a minimum include the following: a) a study of options available for minimising final void area and volume; b) design criteria for rehabilitation of final voids; c) a void hydrology study, addressing the long-term water balance in the voids, connections to groundwater resources and water quality parameters in the long term; d) a pit wall stability study, considering the effects of long-term erosion and weathering of the pit wall and the effects of significant hydrological events; e) a study of void capability to support native flora and fauna; and f) a proposal/s for end of mine void rehabilitation success criteria and final void areas and volumes.
F10	The rehabilitated landform criteria and residual void outcomes must be reviewed every three (3) years from the **29 March 2013** submission date. Any amendments to rehabilitation criteria and landform designs must be re-submitted to the administering authority.
F11	**Rehabilitation Monitoring Program** Once rehabilitation has commenced, the holder of the environmental authority must conduct a Rehabilitation Monitoring Program on a yearly basis, which must include sufficient spatial and temporal replication to enable statistically valid conclusions as established under the rehabilitation program.
F12	The Rehabilitation Monitoring Program must be developed and implemented by a person possessing appropriate qualifications and experience in the field of rehabilitation management, nominated by the environmental authority holder.
F13	The Rehabilitation Monitoring Program must be included in the Plan of Operations and updated with each subsequent Plan of Operations, describing: a) how the rehabilitation objectives as per condition F7 will be achieved; and b) verification of rehabilitation success.

F14	**Post Closure Management Plan** A Post Closure Management Plan for the site must be prepared at least 18 months prior to the final coal processing on site and implemented for a nominal period of: a) at least thirty (30) years following final coal processing on site; or b) a shorter period if the site is proven to be geotechnically and geochemically stable and it can be demonstrated to the satisfaction of the administering authority that no release of contaminants from the site will result in environmental harm.
F15	The Post Closure Management Plan must include the following elements: a) operation and maintenance of: i) wastewater collection and reticulation systems; ii) wastewater treatment systems; iii) the groundwater monitoring network; iv) final cover systems; and v) vegetative cover. b) monitoring of: i) surface water quality; ii) groundwater quality; iii) seepage rates; iv) erosion rates; v) the integrity and effectiveness of final cover systems; and vi) the health and resilience of native vegetation cover.

F16	**Tailings storage facility** The management of tailings disposal must be in accordance with the following: a) all tailings material must be progressively characterised during disposal for acid generating capacity and selected metals and salts. Samples shall be tested for the following parameters: pH, Electrical Conductivity (EC), Acid Neutralising Capacity (ANC), Net Acid Generation (NAG) (reporting NAG capacity and NAG pH after oxidation), Total Sulphur (S), Chromium Reducible Sulphur (Scr), Boron (B) Cadmium (Cd), Iron (Fe), Aluminium (Al), Copper (Cu), Magnesium (Mg), Manganese (Mn), Calcium (Ca), Sodium (Na), Zinc (Zn) and Sulphate (SO_4); b) the sample parameters in a) above can be reviewed following 6 months of mine coal wash plant operation, and if it can be demonstrated that certain individual sample parameters are not present in sufficient quantities to warrant further monitoring, these can be removed from a) above; c) one tailing sample will be collected each and every week while the mine coal wash plant is operational and the sample will be stored. After 4 samples have been collected the samples will be composited and the composite sample characterised as outlines in (a) above. Subject to operation of the coal wash plant, a minimum of 1 composite tailing sample will undergo characterisation per month. Subject to operation of the coal wash plant a minimum of 12 composite tailing samples will undergo characterisation per year; d) records must be kept of the tailings disposal to indicate locations and characteristics of tailings stored within the tailings storage facility; e) where the acid producing potential of tailings material has not been conclusively determined, geochemical kinetic testing must be conducted to indicate oxidation rates, potential reaction products and effectiveness of control strategies; and f) tailings identified as potentially acid producing will be covered or placed to minimise surface oxidation. The maximum duration of surface exposure of these materials is one (1) month.

F17	**Mine Waste** A Mining Waste Management Plan together with the certification by an appropriately qualified person must be developed and implemented during the continuation of the environmental authority. The Mining Waste Management Plan must at a minimum include: a) characterisation programs to ensure that all mining waste is progressively characterised during disposal for net acid producing potential, salinity and the following parameters: pH, Electrical Conductivity (EC), Acid Neutralising Capacity (ANC), Net Acid Generation (NAG) (reporting NAG capacity and NAG pH after oxidation), Total Sulphur (S), Chromium Reducible Sulphur (Scr), Boron (B) Cadmium (Cd), Iron (Fe), Aluminium (Al), Copper (Cu), Magnesium (Mg), Manganese (Mn), Calcium (Ca), Sodium (Na), Zinc (Zn) and Sulphate (SO_4); b) individual parameters in a) above can be removed following sufficient mine waste characterisation to demonstrate that certain individual parameters are not present in sufficient quantities to warrant further characterisation; c) characterisation programs to ensure that the physical properties of the mining waste is progressively characterised during disposal; d) the availability or leachability of metals from the mining waste; e) quantification of PAF from mining waste present; f) review impacts of the PAF mining waste on the rehabilitation; g) management actions for mining waste that has been identified as having a high availability or leachability of metals; h) management actions for mining waste that has been defined as PAF; i) identification of environmental impacts and potential environmental impacts; j) control measures for routine operations to minimise likelihood of environmental harm; k) contingency plans and emergency procedures for non-routine situations; and l) periodic review of environmental performance and continual improvement.
F18	**Storage and handling of flammable and combustible liquids** All flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and maintained in accordance with the current version of *AS 1940 – Storage and Handling of Flammable and Combustible Liquids*.
F19	Spillage of all flammable and combustible liquids must be controlled in a manner that prevents environmental harm.
F20	**Storage and handling of chemicals** All chemicals must be contained within an on-site containment system and controlled in a manner that prevents environmental harm and maintained in accordance with the current version of the relevant Australian Standard.
F21	Spillage of all chemicals must be controlled in a manner that prevents environmental harm.

F22	**Infrastructure** All infrastructure, constructed by or for the environmental authority holder during the licensed activities including water storage structures, must be removed from the site prior to surrender, except where agreed in writing by the post mining land owner / holder. NOTE: *This is not applicable where the landowner / holder is also the environmental authority holder.*
F23	**Exploration** Disturbance due to exploration activities in areas not authorised to be mined must be rehabilitated in accordance with provisions detailed in the *Code of Environmental Compliance for Exploration and Mineral Development Projects*.
Agency interest: Community	
Condition number	**Condition**
G1	**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.
G2	The holder of this environmental authority must record the following details for all complaints received and provide this information to the administering authority on request: a) time, date, name and contact details of the complainant; b) reasons for the complaint; c) conclusions formed; and d) any actions taken

Definitions

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

"acceptance criteria" means the measures by which 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 disturbed by the environmentally relevant activities. Acceptance criteria may include information regarding:

a) stability of final land forms in terms of settlement, erosion, weathering, pondage and drainage;
b) control of geochemical and contaminant transport processes;
c) quality of runoff waters and potential impact on receiving environment;
d) vegetation establishment, survival and succession;
e) vegetation productivity, sustained growth and structure development;
f) fauna colonisation and habitat development;
g) 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;
h) microbiological studies including recolonisation by mycorrhizal fungi, microbial biomass and respiration;
i) effects of various establishment treatments such as deep ripping, topsoil handling, seeding and fertiliser application on vegetation growth and development;
j) resilience of vegetation to disease, insect attack, drought and fire; and
k) vegetation water use and effects on ground water levels and catchment yields.

"**accepted engineering standards**" in relation to dams, means those standards of design, construction, operation and maintenance that are broadly accepted within the profession of engineering as being good practice for the purpose and application being considered. In the case of dams, the most relevant documents would be publications of the Australian National Committee on Large Dams (ANCOLD), guidelines published by Queensland government departments, and relevant Australian and New Zealand Standards.

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

"administering authority" means the Department of Environment and Heritage Protection or its successor.

"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 (dB).

"ambient (or total) noise" at a place, means the level of noise at the place from all sources (near and far), measured as the Leq for an appropriate time interval.

"**Annual Exceedence Probability**" or "**AEP**" means the probability that at least one event in excess of a particular magnitude will occur in any given year.

"**ANZECC**" means the *Australian and New Zealand Guidelines for Fresh Marine Water Quality 2000.*

"**authority**" means environmental authority (mining activities) under the *Environmental Protection Act 1994.*

"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 "**assess**" by a suitably qualified and experienced person in relation to a hazard 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 (mining activities) under the *Environmental Protection Act 1994.*

"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.

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

"**beneficial use**" in respect of dams means that the current or proposed owner of the land on which a dam stands, has found a use for that dam that is:

a) of benefit to that owner in that it adds real value to their business or to the general community,
b) in accordance with relevant provisions of the *Environmental Protection Act 1994*,
c) sustainable by virtue of written undertakings given by that owner to maintain that dam, and
d) the transfer and use have been approved or authorised under any relevant legislation.

"blasting" means the use of explosive materials to fracture-

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

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

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

"**chemical**" means –

a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth); or
b) a dangerous good under the dangerous goods code; or
c) a lead hazardous substance within the meaning of the *Workplace Health and Safety Regulation 1997*; or
d) a drug or poison in the *Standard for the Uniform Scheduling of Drugs and Poisons* prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth; or
e) any substance used as, or intended for use as –
    i) a pesticide, insecticide, fungicide, herbicide, rodenticide, 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.

"construction" or "constructed" in relation to a dam includes building a new dam and modifying or lifting an existing dam, but does not include investigations and testing necessary for purposes of preparing a design plan.

"**contaminated**" means the substance has come into contact with a contaminant.

"**contaminant**" A contaminant can be –

a) a gas, liquid or solid; or
b) an odour; or
c) an organism (whether alive or dead), including a virus; or
d) energy, including noise, heat, radioactivity and electromagnetic radiation; or
e) a combination of contaminants.

"dam" means a land-based structure or a void that is designed to contain, divert or control flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works. A dam does not mean a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container.

"design plan" is the documentation required to describe the physical dimensions of the dam, the materials and standards to be used for construction of the dam, and the criteria to be used for operating the dam. The documents must include all investigation and design reports, plans and specifications sufficient to hand to a contractor for construction, and planned decommissioning and rehabilitation outcomes; so as to address all hazard scenarios that would be identified by a properly conducted hazard assessment for the structure. Documentation must be such that a 'suitable qualified and experience person' could conduct an independent review without seeking further information from the designer.

"design storage allowance" or **"DSA"** means an available volume, estimated in accordance with the *Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland* (DME 1995), that must be provided in a dam as at the first of November each year in order to prevent a discharge from that dam to a probability (AEP) specified in that guideline. The DSA is estimated based on 100% runoff of wet season rainfall at the relevant AEP, taking account of process inputs during that wet season, with no allowance for evaporation.

"**effluent**" treated waste water discharged from sewage treatment plants.

"environmental authority" means an environmental authority granted in relation to an environmentally relevant activity under the *Environmental Protection Act 1994*.

"environmental authority holder" means the holder of this environmental authority.

"environmentally relevant activity" means an environmentally relevant activity as defined under Section 18 of the Environmental Protection Act 1994 and listed under Schedule 2 of the *Environmental Protection Regulation 2008*.

"**financial assurance**" means a security required under the *Environmental Protection Act 1994* by the administering authority to cover the cost of rehabilitation or remediation of disturbed land or to secure compliance with the environmental authority.

"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.

"**foreseeable future**" is the period used for assessing the total probability of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the end of a 150 year foreseeable future with an acceptable probability of failure before that time.

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

"hazard category" means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland* (DME 1995).

"hazardous waste" means any substance, whether liquid, solid or gaseous, derived by or resulting from, the processing of minerals that tends to destroy life or impair or endanger health.

"**hydraulic performance**" means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category in the *Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland* (DME 1995).

"infrastructure" means water storage dams, roads and tracks, buildings and other structures built for the purpose and duration of the conduct of the environmentally relevant activities, but does not include other facilities required for the long term management of the impact of those activities or the protection of potential resources. Such other facilities include dams other than water storage dams, waste dumps, voids, or stockpiles

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and assets, that have been decommissioned, rehabilitated, and lawfully recognised as being subject to subsequent transfer with ownership of the land.

"**lake**" includes –

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

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

"$L_{A\ 10,\ adj,\ 10\ mins}$" means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10-minute measurement period, using Fast response.

"$L_{A\ 1,\ adj,\ 10\ mins}$" means the A-weighted sound pressure level, (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10-minute measurement period, using Fast response.

"$L_{A,\ max\ adj,\ T}$" means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over any 10 minute period, using Fast response.

"land capability" as defined in the *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland* (DME 1995).

"land suitability" as defined in the *Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland* (DME 1995).

"land use" term to describe the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

"levee", "dyke" or "bund" means a long embankment that is designed only to provide 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.

"mandatory reporting level" or **"MRL"** means a warning and reporting level determined in accordance with the *Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland* (DME 1995). An MRL is the lowest level required in a regulated dam to allow either of the following to be retained:

a) the runoff from a 72 hour duration storm at the AEP specified in Table 15 of this environmental authority; or

b) a wave allowance at that AEP as estimated using a recognised engineering method.

"**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:
      1) areas that are been capped and have monitoring data demonstrating hazardous material adequately contained with the site;
      2) 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.

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

a) clay if mined for use for its ceramic properties, kaolin and bentonite;
b) foundry sand;
c) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the

purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil there from;

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

e) marble;

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

g) peat;

h) salt including brine;

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

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

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

but does not include—

l) living matter;

m) petroleum within the meaning of the Petroleum Act 1923;

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

o) water.

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

"**nature**" includes:

a) ecosystems and their constituent parts; and

b) all natural and physical resources; and

c) natural dynamic processes.

"noxious" means harmful or injurious to health or physical well being, other than trivial harm.

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

"**operational land**" means the land associated with the project for which this environmental authority has been issued.

"**operational plan**" means a document that amongst other things sets out procedures and criteria to be used for operating a dam during a particular time period. The operational plan as defined herein may form part of a plan of operations or plan otherwise required in legislation.

"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 (mms^{-1}).

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'Potentially Affected Stakeholders' includes (but should not be limited to)

a) the administering authority; and

b) a local landholder whose property is riparian, downstream of the release point specified in Table W1 of the environmental authority and is determined by the environmental authority holder to be potentially impacted by mine affected water releases; and

c) other party nominated by the administering authority; ;and

d) the relevant local government authority; and

e) a Resource Operations Licence (ROL) holder or other water entitlement holder under the Water Act 2000 located between the nearest compliance point listed in Table 1 of the operational policy and the release point specified in Table W1 of the environmental authority; and

f) does not include a landholder or other party who by written agreement with the environment authority holder has declined to be notified for the purpose of this condition.

"protected area" means - a protected area under the *Nature Conservation Act 1992*; or

a) a marine park under the *Marine Parks Act 1992*; or

b) a World Heritage Area.

"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 as photographs, computer generated images and vegetation models etc.

"**regulated dam**" means any dam in the significant or high hazard category as assessed using the *Site Water Management Technical Guideline for Environmental Management of Exploration and Mining in Queensland* (DME 1995).

"regulated waste" means non-domestic waste mentioned in schedule 7 of the Environmental Protection Regulation 2008 (whether or not it has been treated or immobilised), and includes:

a) for an element – any chemical compound containing the element; and

b) anything that has contained the waste.

"rehabilitation" 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.

"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" 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 1992 or a World Heritage Area; or
f) a public park or gardens.

"**sewage**" means the used water of person's to be treated at a sewage treatment plant.

"**significant disturbance**" – includes land

a) if it is contaminated land; or
b) it has been disturbed and human intervention is needed to rehabilitate it.
    i) to a state required under the relevant environmental authority; or
    ii) if the environmental authority does not require the land to be rehabilitated to a particular state – to its state immediately before the disturbance.

Some examples of disturbed land include:

a) areas where soil has been compacted, removed, covered, exposed or stockpiled;
b) areas where vegetation has been removed or destroyed to an extent where the land has been made susceptible to erosion; (vegetation & topsoil)
c) areas where land use suitability or capability has been diminished;
d) areas within a watercourse, waterway, wetland or lake where mining activities occur;

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e) areas submerged by tailings or hazardous contaminant storage and dam walls in all cases;

f) areas under temporary infrastructure. Temporary infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after mining activities have ceased; or

g) areas where land has been contaminated and a suitability statement has not been issued.

However, the following areas are not included:

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

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

c) by agreement with the administering authority, areas previously significantly 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, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner. The agreement to leave permanent infrastructure must be recorded in the Landowner Agreement and lodged with the administering authority; and

e) disturbances that pre-existed the grant of the tenure unless those areas are disturbed during the term of the tenure.

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

"**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.

"suitably qualified and experienced person" in relation to dams means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 1988*, OR registered as a National Professional Engineer (NPER) with the Institution of Engineers Australia, OR holds equivalent professional qualifications to the satisfaction of the administering authority for the Act; AND the administering authority for the Act is satisfied that person has knowledge, suitable experience and demonstrated expertise in relevant fields, as set out below:

a) knowledge of engineering principles related to the structures, geomechanics, hydrology, hydraulics, chemistry and environmental impact of dams; and

b) a total of five years of suitable experience and demonstrated expertise in the geomechanics of dams with particular emphasis on stability, geology and geochemistry, and

c) a total of five years of suitable experience and demonstrated expertise each, in three of the following categories:

   i) investigation and design of dams;

ii) construction, operation and maintenance of dams;
iii) hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology;
iv) hydraulics with particular reference to sediment transport and deposition, erosion control, beach processes;
v) hydrogeology with particular reference to seepage, groundwater;
vi) solute transport processes and monitoring thereof; and
vii) dam safety.

"**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.

"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.

"**void**" means any man-made, open excavation in the ground.

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

"**water**" means –
a) water in waters or spring;
b) underground water;
c) overland flow water; or
d) water that has been collected in a dam.

"**waste water**" means used water from the activity, process water or contaminated storm water.

"watercourse" means a river, creek or stream in which water flows permanently or intermittently in a visibly defined channel (natural, artificial or artificially improved) with:
a) continuous bed and banks;
b) an extended period of flow for some months after rain ceases, and
c) an adequacy of flow that sustains basic ecological processes and maintains biodiversity.

"waters" includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and banks of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater.

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"**µg/L**" means micrograms per litre.

Attachments

Appendix 1 - Release points (RP) and monitoring points (MP) for Ensham mine

Appendix 2 - Groundwater monitoring locations

Appendix 3 - Groundwater Trigger Levels (Background Groundwater Monitoring Report)

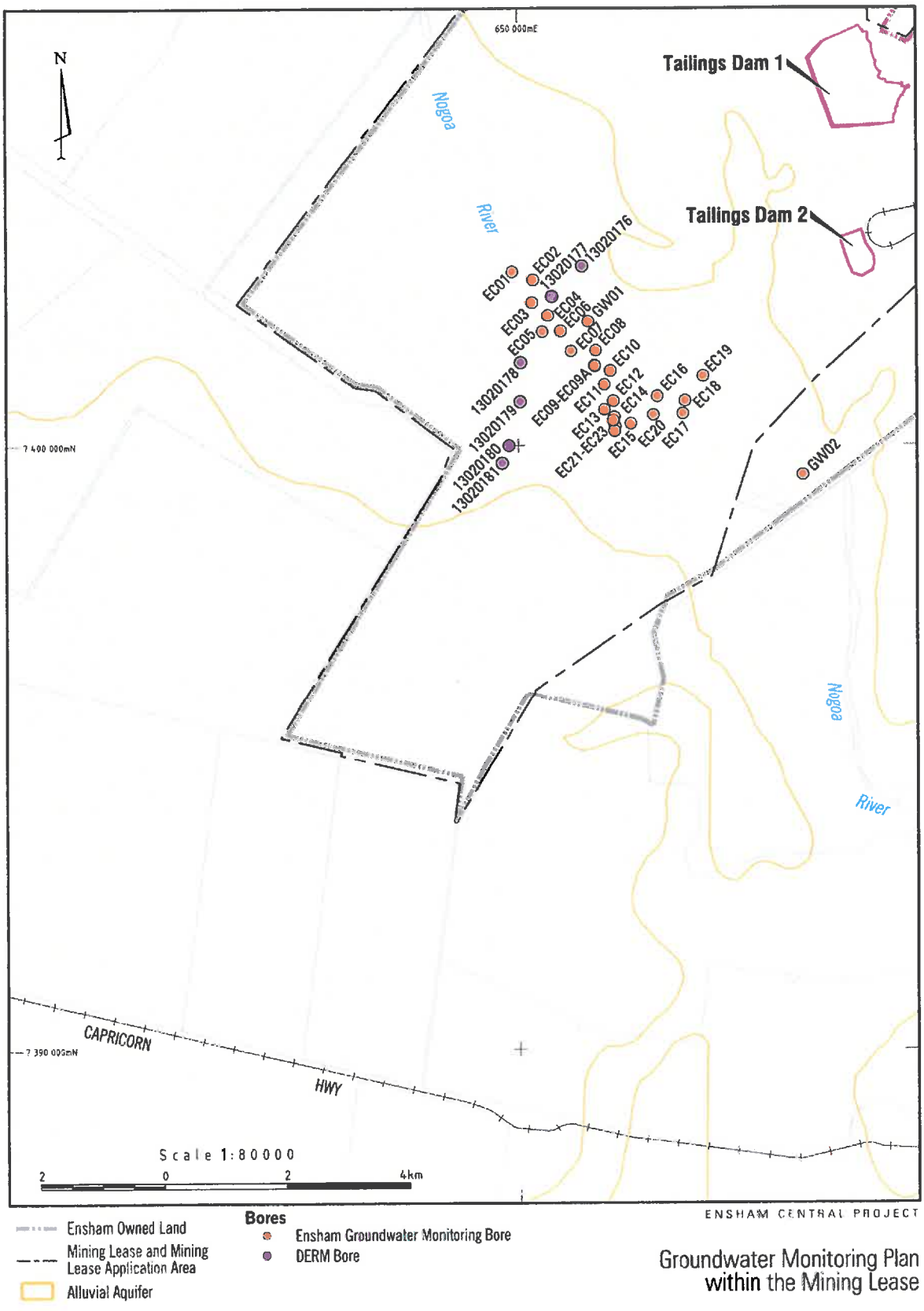
END OF PERMIT

Appendix 1 (Release points (RP) and monitoring points (MP) for Ensham mine)

Proposed Water Release Points and Water Quality Monitoring Locations

Ensham | HansenBailey | **FIGURE 1**

Appendix 2 (Groundwater monitoring locations)



Appendix 3 (Groundwater Trigger Levels (Background Groundwater Monitoring Report))

Monitoring	pH	EC	TDS	Ca	Mg	Na	K	Cl	SO_4	CO_3	HCO_3	Fe
Units	pH units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Limit type	range	max	max	max	max	max	max	max	max	max	max	max
Bore EC01	6.2 – 8.1	62,981	43,934	1,344	2,162	10,714	15	21,212	2,040	8	2,739	3.66
Bore EC02	6.7 – 7.9	17,092	13,992	149	356	2,720	9	4,413	390	9	1,547	3.82
Bore ECO3	5.6 – 8.2	48,046	40,928	1,800	2,186	5,672	24	16,647	1,749	9	1,214	21.21
Bore EC04	6.6 – 8.0	5,763	3,563	275	222	761	9	1,304	173	9	1,519	3.45
Bore EC05	6.9 – 8.2	53,642	38,430	1,360	1,853	8,209	27	18,939	1,783	9	1,220	2.02
Bore EC06	6.3 – 7.8	6,176	4,608	426	317	625	26	1,794	143	9	1,409	7.55
Bore EC07	6.3 – 8.1	30,191	18,412	1,149	1,264	4,964	23	11,930	1,080	9	896	11.31
Bore EC08	6.8 – 7.7	2,502	1,552	136	82	342	13	502	11	10	807	14.08
Bore EC09	6.2 – 8.3	50,525	42,532	1,737	1,829	6,807	15	17,961	1,607	10	869	13.43
Bore EC09A	5.9 – 8.2	47,110	35,183	1,406	1,926	6,346	21	15,881	1,446	9	1,291	21.83
Bore EC10	6.5 – 8.4	7,640	3,637	203	227	832	7	1,583	162	9	563	1.15
Bore EC11	6.0 – 8.2	27,783	18,583	838	807	3,362	21	7,820	695	9	1,070	33.45
Bore EC12	5.2 – 8.7	16,732	11,326	1,017	1,086	1,594	18	6,768	359	8	615	31.05
Bore EC13	5.7 – 8.4	33,755	28,172	1,209	953	4,386	32	10,567	858	9	1,144	10.16
Bore EC14	5.9 – 8.2	11,814	10,211	608	512	1,237	26	3,646	227	9	838	12.57
Bore EC15	6.6 – 8.1	4,280	2,577	258	218	249	6	1,176	79	1	559	2.41
Bore EC16	6.4 – 8.5	1,844	1,106	32	27	386	7	281	23	9	750	9.47
Bore EC17	6.1 – 7.8	2,698	2,173	146	96	327	7	550	425	1	464	9.94
Bore EC18	-[2]	-[2]	5,000[1]	1,000[1]	-[2]	-[2]	-[2]	-[2]	1,000[1]	-[2]	-[2]	-[2]
Bore EC19	7.0 – 8.1	629	429	21	32	63	1	26	18	1	241	0.05
Bore EC20	6.2 – 7.6	1,326	753	88	53	122	6	196	49	1	409	0.92
Bore EC22	6.2 – 8.5	6,859	6,020	320	342	792	11	2,256	1,727	9	694	2.45
Bore EC23	9.2 – 8.5	9,019	6,352	420	438	1,037	8	2,710	183	1	1,024	1.21
Bore GW1	7.1 – 8.8	15,634	9,003	182	460	2,189	10	4,178	284	93	2,043	1.25
Bore GW2	6.7 – 7.9	5,078	2,448	57	30	120	8	1,051	143	10	599	2.08
DERM 13020177	6.2 – 9.1	7,092	3,747	60	124	1,060	3	1,561	471	10	748	5.77
Weir Bore	6.5 – 9.4	3,264	1,872	39	56	568	12	879	110	79	1,035	1.30
Jamar	7.1 – 8.6	6,595	3,624	108	81	1,160	18	2,101	3	1	538	8.04
100169	-[2]	-[2]	5,000[1]	1,000[1]	-[2]	-[2]	-[2]	-[2]	1,000[1]	-[2]	-[2]	-[2]
100037	-[2]	-[2]	5,000[1]	1,000[1]	-[2]	-[2]	-[2]	-[2]	1,000[1]	-[2]	-[2]	-[2]
132290	-[2]	-[2]	5,000[1]	1,000[1]	-[2]	-[2]	-[2]	-[2]	1,000[1]	-[2]	-[2]	-[2]
37512	-[2]	-[2]	5,000[1]	1,000[1]	-[2]	-[2]	-[2]	-[2]	1,000[1]	-[2]	-[2]	-[2]
103685	-[2]	-[2]	5,000[1]	1,000[1]	-[2]	-[2]	-[2]	-[2]	1,000[1]	-[2]	-[2]	-[2]
RN100036	-[2]	-[2]	5,000[1]	1,000[1]	-[2]	-[2]	-[2]	-[2]	1,000[1]	-[2]	-[2]	-[2]
RN103024	-[2]	-[2]	5,000[1]	1,000[1]	-[2]	-[2]	-[2]	-[2]	1,000[1]	-[2]	-[2]	-[2]

1 *ANZECC Water Quality Guidelines (2000) Stockwater used in the absence of sufficient data to support a site specific trigger value.*
2 *Additional data required to set a trigger value*

END OF ENVIRONMENTAL AUTHORITY