Jellinbah Group

LAKE VERMONT MEADOWBROOK PROJECT ENVIRONMENTAL IMPACT STATEMENT

CHAPTER 23 PROPOSED ENVIRONMENTAL AUTHORITY CONDITIONS

arc ENVIRONMENTAL SOLUTIONS

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23 Proposed Environmental Authority Conditions

This chapter sets out the proposed Environmental Authority (EA) conditions for the Project. These conditions are based upon the existing Lake Vermont Mine EA, with proposed changes structured in accordance with, the 'Model Mining Conditions, version 6.02' (DES 2017c). The guidelines 'Structures which are dams and levees constructed as part of environmentally relevant activities, version 9.01' (DES 2022b) and 'Model water conditions for coal mines in the Fitzroy basin, version 3.01' (DES 2013c) have also been consulted here. Condition numbers are provided for reference purposes.

It is noted that as a result of the proposed amendments, subsequent administrative updates may be required to be made, for example, in order to update references to figure, table and attachment numbers and descriptions.

23.1 Schedule A – General Conditions

Condition	Existing EA condition	Proposed EA condition	Justification for change
A1	**General** This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.	No change proposed.	NA
A2	**Scope of approval** The environmental authority holder is approved for a maximum coal extraction rate of twelve (12) million tonnes per annum (Mtpa) of run-of-mine (ROM) coal in accordance with the conditions of this environmental authority.	No change proposed.	NA
A3	In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with **Attachment 1: Authorised Disturbance Footprint** attached to this environmental authority**.**	In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with **Attachment 1: Authorised Disturbance Footprint (Lake**	To illustrate the Authorised Disturbance Footprint for the Project, including attachment of a map. For description of disturbance, refer

Condition	Existing EA condition	Proposed EA condition	Justification for change
		Vermont Coal Mine) and **Attachment 2: Authorised Disturbance Footprint (Meadowbrook Project)** attached to this environmental authority**.**	Chapter 3, Project Description, Section 3.4.7.
A4	The holder of this authority must: install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority maintain such measures, plant and equipment in a proper and efficient condition operate such measures, plant and equipment in a proper and efficient manner ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.	No change proposed.	NA
A5	**Monitoring** Except where specified otherwise in another condition of this environmental authority, all monitoring records or reports required by this environmental authority must be kept for a period of not less than **five (5) years**.	No change proposed.	NA
A6	Monitoring and determinations required under any condition of this environmental authority must be conducted by an appropriately qualified person.	No change proposed.	NA
A7	**Management Plan, Monitoring programs and Reports**	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	Management plans, monitoring programs and reports required under any condition of this environmental authority must be developed by an appropriately qualified person.		
A8	Upon request from the administering authority, copies of monitoring results, records, registers, monitoring programs, management plans and reports required by the conditions of this environmental authority must be made available and provided to the administering authority within: a) **ten (10) business days**; or b) an alternative timeframe agreed between the administering authority and the environmental authority holder.	No change proposed.	NA
A9	**Risk Management** The holder of this environmental authority must develop and implement a risk management system for mining activities which mirrors the content requirement of the 'Standard for Risk Management (ISO31000:2009)', or the latest edition of an Australian standard for risk management, to the extent relevant to environmental management, by **20 November 2015**.	No change proposed.	NA
A10	**Notification of Emergencies, Incidents and Exceptions** The holder of this environmental authority must notify the administering authority by written notification within **twenty-four (24) hours**, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority.	No change proposed.	NA
A11	Within **ten (10) business days** following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following:	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	a) results and interpretation of any samples taken and analysed; b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and c) proposed actions to prevent a recurrence of the emergency or incident.		
A12	**Complaints** The holder of this environmental authority must record all environmental complaints received about the mining activities including: a) name, address and contact number for of the complainant; b) time and date of complaint; c) reasons for the complaint; d) investigations undertaken; e) conclusions formed; f) actions taken to resolve the complaint; g) any abatement measures implemented; and h) person responsible for resolving the complaint.	No change proposed.	NA
A13	Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority, the holder of this environmental authority must:	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	a) comply with the amended or changed standard, policy or guideline within two years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation, or where the amendment or change relates specifically to regulated structures referred to in **conditions I1** to **I38**, the time specified in that condition; and b) until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.		

23.2 Schedule B – Air

Condition	Existing EA condition	Proposed EA condition	Justification for change
B1	**Dust and Particulate Matter Monitoring** The environmental authority holder shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that the dust and particulate matter emissions generated by the mining activities do not cause exceedances of the following levels when measured at any sensitive or commercial place: a) Dust deposition of 120 milligrams per square metre per day, averaged over one (1) month, when monitored in accordance with the most recent version of 'Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter— Deposited matter – Gravimetric method'. b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM_{10}) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, for no more than five	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	exceedances recorded each year, when monitored in accordance with the most recent version of either: i) 'Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air— Determination of suspended particulate matter—PM_{10} high volume sampler with size-selective inlet – Gravimetric method'; or ii) 'Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air— Determination of suspended particulate matter—PM_{10} low volume sampler—Gravimetric method'. c) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a one (1) year averaging time, when monitored in accordance with the most recent version of 'AS/NZS3580.9.3:2003 Methods for sampling and analysis of ambient air— Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method'. *[Note 1]: The five exceedances for the* PM_{10} *standard were introduced to account for the impact of bushfires, dust storms and fuel reduction for fire management purposes. The five exceedances are in essence arbitrary in that the number was chose as it is difficult to determine exactly the number of times these events may happen in any one year. More than five exceedances as a result of one or more of these events would not be considered to be a breach of condition.*		
B2	The release of dust and or particulate matter in accordance with the conditions of this environmental authority must not cause environmental nuisance to any nuisance sensitive place or commercial place.	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
B3	*This is a proposed new condition.*	The ROM haul road from the project to the existing CHPP must be sealed with bitumen or an equivalent hard surface and cleaned as necessary to minimise the release of dust and particulate matter to the atmosphere.	To provide the requirement to seal the haul road from the Project to deliver upon the commitment made within Chapter 22, Proposed Environmental Management and Monitoring Commitments, Table 22.1.
B4	*This is a proposed new condition.*	A Decarbonisation Plan must be developed for the Meadowbrook Project, by an appropriately qualified person.	To provide the requirement to have Decarbonisation Plan, developed by an appropriately qualified person, that addresses the requirements of the Decarbonisation Plan Policy. It is noted that a standard condition requiring a Decarbonisation Plan does not exist within the 'Model mining conditions guideline' (ESR/2016/1936). As such, this Condition has been developed consistent with the Water Management Plan condition. The proposed Decarbonisation Plan for the Project will deliver upon the commitments made within Chapter 22, Proposed Environmental Management

Condition	Existing EA condition	Proposed EA condition	Justification for change
			and Monitoring Commitments, Table 22.1.
B5	*This is a proposed new condition.*	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), additional dust and particulate monitoring (including dust deposition, total suspended particles (TSP), PM10 and PM2.5) must be undertaken, and the results thereof notified to the administering authority within fourteen days following completion of monitoring. This includes providing interim reports if the monitoring lasts for more than one month. Monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place. Monitoring must be conducted in	To provide a means to regulate particulate emissions when not appropriately managed without a permanent monitoring program, as requested by DESI.

Condition	Existing EA condition	Proposed EA condition	Justification for change
		accordance with the appropriate standards	

23.3 Schedule C – Water

Condition	Existing EA condition	Proposed EA condition	Justification for change
C1	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.	No change proposed.	NA
C2	Unless otherwise permitted under Schedule K of this environmental authority, the release of mine affected water to waters must only occur from the release points specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters** and depicted in **Attachment 1: Authorised Disturbance Footprint** attached to this environmental authority.	No change proposed.	NA
C3	The release of mine affected water to internal water management infrastructure that is installed and operated in accordance with a water	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	management plan that complies with **condition C27** to **C29** inclusive is permitted.		
C4	**Conditions C5, C9, C10, C11, C17, C19** and **C20** do not apply when releasing mine affected water under enhanced contaminated release conditions specified in Schedule K, at release points specified in **condition K1**.	No change proposed.	NA
C5	The release of mine affected water to waters in accordance with **condition C2** must not exceed the release limits started in **Table C2: Mine Affected Water Release Limits** when measured at the monitoring points specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters** for each quality characteristic.	No change proposed.	NA
C6	The release of mine affected water to waters from the release points must be monitored at the locations specified in **Table C1 Mine Affected Water Release Points, Sources and Receiving Water** for each quality characteristics and at the frequency specified in **Table C2: Mine Affected Water Release Limits** and **Table C3: Release Contaminant Trigger Investigation Levels, Potential Contaminants**. *Note: The administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition C7 is contravened due to a temporary lack of safe or practicable access. The administering authority expects the*	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	environmental authority holder to take all reasonable and practicable measures to maintain safe and practical access to designated monitoring locations.		
C7	If quality characteristics of the release exceed any of the trigger levels specified **Table C3: Release Contaminant Trigger Investigation Levels, Potential Contaminants** during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in **Table C3: Release Contaminant Trigger Investigation Levels, Potential Contaminants** and: a) where the trigger values are not exceeded then no action is to be taken; or where the downstream results exceed the trigger values specified Table C3: Release Contaminant Trigger Investigation Levels, Potential Contaminants for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and: i) if the result is less than 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	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	provide a written report to the administering authority within **ninety (90) days** of receiving the result, 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 **C7 (b)(ii)** of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*		
C8	If an exceedance in accordance with **condition C7 (b)(ii)** is identified, the holder of the environmental authority must notify the administering authority via WaTERS within **twenty-four (24)** hours of receiving the result.	No change proposed.	NA
C9	**Mine Affected Water Release Events** The holder must ensure a stream flow gauging station/s is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in **Table C4: Mine Affected Water Release During Flow Events**.	No change proposed.	NA
C10	The release of mine affected water to waters in accordance with **condition C2**, must only take place in accordance with the receiving water flow	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	criteria for discharge specified in **Table C4: Mine Affected Water Release During Flow Events** for the release point(s) specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters.**		
C11	The release of mine affected water to waters in accordance with **condition C2** must not exceed the release limits stated in **Table C4: Mine Affected Water Release During Flow Events** when measured at the monitoring points specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters** for each quality characteristic.	No change proposed.	NA
C12	The daily quantity of mine affected water released from each release point must be measured and recorded.	No change proposed.	NA
C13	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.	No change proposed.	NA
C14	**Notification of Release Event** The environmental authority holder must notify the administering authority as soon as practicable and no later than **twenty-four (24) hours** after commencing to release mine affected water to the receiving environment. Notification must include the submission of written advice to the	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	administering authority of the following information: a) release commencement date/time; b) expected release cessation date/time; c) release point/s; d) release volume (estimated); e) receiving water/s including the natural flow rate; and f) any details (including available data) regarding likely impacts on the receiving water(s).		
C15	The environmental authority holder must notify the administering authority via WaTERS as soon as practicable within **twenty-four (24) hours** after cessation of a release notified under **condition C14**. The cessation notification must include the submission of written advice to the administering authority of the following information: a) release cessation date and time; and b) total volume of water released.	No change proposed.	NA
C16	The environmental authority holder must notify the administering authority within **twenty-eight (28) days** provide the following information in writing via WaTERS:	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	a) release commencement and cessation dates and time; b) natural flow rate in receiving water; c) volume of water released; d) details regarding the compliance of the release with the conditions of this environmental authority (i.e. contaminant limits, natural flow, discharge volume); e) all continuous and in-situ water quality monitoring results (including laboratory analyses); and f) any other matters pertinent to the water release event.		
C17	**Notification of Release Event Exceedance** If the release limits defined in **Table C2: Mine Affected Water Release Limits** are exceeded, the holder of the environmental authority must notify the administering authority within **twenty-four (24) hours** of receiving the results.	No change proposed.	NA
C18	The environmental authority holder must, within **twenty-eight (28) days** of a release that exceeds the conditions of this environmental authority, provide a report to the administering authority via WaTERS detailing: a) the reason for the release;	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	b) the location of the release; c) all water quality monitoring results; d) any general observations; e) all calculations; and f) any other matters pertinent to the water release event.		
C19	**Receiving environment monitoring and contaminant trigger levels** The quality of the receiving waters must be monitored at the locations specified in **Table C6: Receiving Water Upstream Background Sites and Downstream Monitoring Points** for each quality characteristic and at the monitoring frequency stated in **Table C5: Receiving Waters Contaminant Trigger Levels.**	No change proposed.	NA
C20	If quality characteristics of the receiving water at Phillips Creek, Isaac River and Carfax Gully monitoring points exceed any of the trigger levels specified in **Table C5: Receiving Waters Contaminant Trigger Levels** during a release event the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and: **a)** where the downstream result is the same or a lower value than the upstream value	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	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 proved 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 **C20 (b)** of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*		
C21	**Receiving Environmental Monitoring Program (REMP)** The environmental authority holder must develop and implement a Receiving Environmental 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	**Receiving Environmental Monitoring Program (REMP)** The environmental authority holder must develop and implement a Receiving Environmental 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	To include the waters of One Mile Creek and Boomerang Creek as part of the receiving environment for the Project, for the purpose of updating the existing Lake Vermont Mine REMP. Note that no changes are proposed to **Table C6: Receiving Water Upstream Background Sites and Downstream Monitoring Points** as the location of REMP monitoring points on One Mile Creek will be determined subject to a REMP design process. Refer Chapter 8, Surface Water, Section 8.4.5.

Condition	Existing EA condition	Proposed EA condition	Justification for change
	conditions) and while mine affected water is being discharged from the site. For the purposes of the REMP, the receiving environment is Phillips Creek and the Isaac River within 15km downstream of the release points. 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.	discharged from the site. The REMP must also monitor fish passage through culverts of Phillips Creek and One Mile Creek to determine success of fish passage at these structures. For the purposes of the REMP, the receiving environment is the waters of One Mile Creek, Boomerang Creek, Phillips Creek and the Isaac River within 15km downstream of the release points. The REMP should encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be directly affected by an authorised release of mine affected water. The REMP should apply procedures and guidelines from ANZG and other relevant guideline document.	Fish passage success monitoring under the REMP condition detail requested by DESI.
C22	A REMP Design Document that addresses the requirements of the REMP must be prepared and made available to the administrating authority upon request.	A REMP Design Document that addresses the requirements of the REMP must be prepared (including for the Meadowbrook Project), and made available to the administrating authority upon request.	To specify that condition applies to the Meadowbrook Project as well as other operations under the EA.
C23	A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared annually and made available on request to the administrating authority. This must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives,	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	and the suitability of current discharge limits to protect downstream environmental values.		
C24	**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).	No change proposed.	NA
C25	**Annual Water Monitoring Reporting** The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority via WaTERS: a) the date on which the sample was taken; b) the time at which the sample was taken; c) the monitoring point at which the sample was taken; d) the measured or estimated daily quantity of mine affected water released from all release points;	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	e) the release flow rate at the time of sampling for each release point; f) the results of all monitoring and details of any exceedances of the conditions of this environmental authority; and g) water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.		
C26	**Temporary Interference with Waterways** Temporarily destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring necessary for, and associated with, mining activities must be undertaken in accordance with Department of Natural Resources and Mines (or its successor) Guideline – Activities in a Watercourse, Lake or Spring associated with Mining Activities.	No change proposed.	NA
C27	**Water Management Plan** A Water Management Plan must be developed and implemented for the duration of mining activities, and at a minimum include the following: a) provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining	**Water Management Plan** A Water Management Plan must be developed by an appropriately qualified person, prior to mining activities commencing, and remain implemented for the duration of mining activities, and include the following. a) provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining	To provide the requirement to have a Water Management Plan, developed by an appropriately qualified person. It is noted that the proposed EA condition is consistent with the 'Model mining conditions guideline' (ESR/2016/1936). As such, this Condition requires a Water Management Plan to be maintained for all stages of the Lake Vermont Mine, including the proposed Project.

Condition	Existing EA condition	Proposed EA condition	Justification for change
	activity carried out under this environmental authority; and b) be developed in accordance with the administering authority's guideline Preparation of water management plans for mining activities (EM324) and include: i) a study of the source of contaminants; ii) a water balance model for the site; iii) a water management system for the site; iv) measures to manage and prevent saline drainage; v) measures to manage and prevent acid rock drainage; vi) contingency procedures for emergencies; and vii) a program for monitoring and review of the effectiveness of the water management plan.	activity carried out under this environmental authority; and b) be developed in accordance with the administering authority's guideline Preparation of water management plans for mining activities (EM324) and include: i) a study of the source of contaminants; ii) a water balance model for the site; iii) a water management system for the site; iv) measures to manage and prevent saline drainage; v) measures to manage and prevent acid rock drainage; vi) contingency procedures for emergencies; and vii) a program for monitoring and review of the effectiveness of the water management plan.	
C28	**Stormwater and water sediment controls** An Erosion and Sediment Control Plan must be developed and implemented for all stages of the mining activities on the site to minimise erosion	No change proposed.	It is noted that this condition (as it exists) is consistent with the 'Model mining conditions guideline' (ESR/2016/1936). As such, this Condition requires an Erosion and Sediment Control Plan to

Condition	Existing EA condition	Proposed EA condition	Justification for change
	and the release of sediment to receiving waters and contamination of stormwater.		be maintained for all stages of the Lake Vermont Mine, including the proposed Project.
C29	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 C28**; and b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with **condition C27**, for the purpose of ensuring water does not become mine affected water.	No change proposed.	NA

Table C1: Mine Affected Water Release Points, Sources and Receiving Waters

Release Point (RP)	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)	Mine Affected Water Source and Location	Monitoring Point	Receiving Waters Description
RP1	-22.4305	148.4433	Mine Area	Pipe or drain	Unnamed gully and Isaac River
RP2	-22.4377	148.4482	Mine Area	Pipe or drain	Unnamed gully and Isaac River
RP3	-22.4621	148.4638	Mine Area	Pipe or drain	Unnamed gully and Isaac River

Release Point (RP)	Latitude (decimal degree, GDA94)	Longitude (decimal degree, GDA94)	Mine Affected Water Source and Location	Monitoring Point	Receiving Waters Description
RP4	-22.4289	148.3886	Mixed MineWater (pumped to release point)	Pipe or drain	Phillips Creek
RP5	-22.3905	148.4319	Mixed Mine Water (pumped to release point)	Pipe or drain	Phillips Creek
RP6	-22.4362	148.3845	Mixed MineWater (pumped to release point)	Pipe or drain	Phillips Creek
RP7	-22.4436	148.3846	Mixed MineWater (pumped to release point)	Pipe or drain	Phillips Creek
RP8	-22.3636	148.4502	Mixed Mine Water Release	Pipe or drain	Phillips Creek
RP9	-22.4125	148.4603	Mixed MineWater Release	Pipe or drain	Unnamed gully and Isaac River
RP10	-22.3954	148.4097	Mixed MineWater Release	Pipe or drain	Unnamed gully and Isaac River

Table C2: Mine Affected Water Release Limits

Quality Characteristic	Release Limits	Monitoring Frequency	Comment
Electrical conductivity (µS/cm)	Release limits specified in **Table C4: Mine Affected Water Release During Flow Events** for variable flow criteria	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
pH (pH Unit)	6.5 (minimum) 9.0 (maximum)	Daily during release (the first sample must be taken within 2 hours of commencement of release)	
Turbidity (NTU)	N/A	Daily during release [Note 1] (first sample within 2 hours of commencement of release)	Turbidity is required to assess ecosystems impacts and can provide instantaneous results
Suspended Solids (mg/L)	1,500	Daily during release [Note 1] (first sample within 2 hours of commencement of release)	Suspended solids are required to measure the performance of sediment and erosion control measures.
Sulphate (mg/L)	Release limits specified in **Table C4: Mine Affected Water Release During Flow Events** for variable flow criteria	Daily during release (first sample within 2 hours of commencement of release)	

Note: Limit for suspended solids can be omitted if turbidity limit is included. Limit for turbidity not required if suspended solids limit included. Both indicators should be measured in all cases.

Table C3: Release Contaminant Trigger Investigation Levels, Potential Contaminants

Quality Characteristic	Trigger Levels (µg/L)	Comment on Trigger Level	Monitoring Frequency
Aluminium	55	For aquatic ecosystem protection, based on SMD guideline	Commencement of release and thereafter weekly during release
Arsenic	13	For aquatic ecosystem protection, based on SMD guideline	
Cadmium	0.2	For aquatic ecosystem protection, based on SMD guideline	
Chromium	1	For aquatic ecosystem protection, based on SMD guideline	
Copper	2	For aquatic ecosystem protection, based on LOR for ICPMS	
Iron	300	For aquatic ecosystem protection, based on low reliability guideline	
Lead	4	For aquatic ecosystem protection, based on SMD guideline	
Mercury	0.2	For aquatic ecosystem protection, based on LOR for CV FIMS	
Nickel	11	For aquatic ecosystem protection, based on SMD guideline	
Zinc	8	For aquatic ecosystem protection, based on SMD guideline	
Boron	370	For aquatic ecosystem protection, based on SMD guideline	
Cobalt	90	For aquatic ecosystem protection, based on low reliability guideline	
Manganese	1900	For aquatic ecosystem protection, based on SMD guideline	
Molybdenum	34	For aquatic ecosystem protection, based on low reliability guideline	
Selenium	10	For aquatic ecosystem protection, based on LOR for ICPMS	
Silver	1	For aquatic ecosystem protection, based on LOR for ICPMS	
Uranium	1	For aquatic ecosystem protection, based on LOR for ICPMS	
Vanadium	10	For aquatic ecosystem protection, based on LOR for ICPMS	

Quality Characteristic	Trigger Levels (µg/L)	Comment on Trigger Level	Monitoring Frequency
Ammonia	900	For aquatic ecosystem protection, based on SMD guideline	
Nitrate	1100	For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) forTN	
Petroleum hydrocarbons (C6-C9)	20	For aquatic ecosystem protection, based on LOR	
Petroleum hydrocarbons (C10-C36)	100	For aquatic ecosystem protection, based on LOR	
Fluoride (total)	2000	Protection of livestock and short-term irrigation guideline	
Sodium (mg/L)	180	Australian Drinking Water Guidelines. Trigger may require amendment if future advice from Queensland Health becomes available	

Notes:

1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levelsfor metal/metalloids apply if dissolved results exceed trigger.

2. The quality characteristics required to be monitored as per **Table C3: Release Contaminant Trigger Investigation Levels, Potential Contaminants** *can be reviewed once the results of two years monitoring data isavailable, 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 C3: Release Contaminant Trigger Investigation Levels, Potential Contaminants** *by amendment.*

3. SMD – slightly moderately disturbed level of protection, guideline refers ANZECC and ARMCANZ (2000).

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

Table C4: Mine Affected Water Release During Flow Events

Receiving Waters/ Stream	Release Point (RP)	Gauging Station	Gauging Station Latitude (decimal degree, GDA94)	Gauging Station Longitude (decimal degree, GDA94)	Receiving Water Flow Recording Frequency	Receiving Water Flow Criteria for Discharge (m3 /s)	Maximum Release Rate (for all combine d RP flows)	Electrical Conductivity Release Limits
Isaac River	RP1, RP2, RP3, and RP9.	Isaac at Deverill (DNRN Gauging Station #130410 A)	-22.1726	148.3822	Continuous (minimum daily)	≥37.5 cubic meters/sec	0.5 cubic meters/ sec	Electrical conductivity: <1,500 µS/cm (Maximum, based on protection of aquatic ecosystems) Sulphate <300mg/L
Phillips Creek	RP4, RP5, RP6, RP7, RP8, and RP10	Isaac at Deverill (DERM Gauging Station #130410 A)	-22.1726	148.3822	Continuous (minimum daily)	Low/No Flow – 28 days after natural flow events that exceed 7.5 cubic meters/sec at Isaac at Deverill	0.5 cubic meters/ sec	Electrical conductivity:<720 µS/cm Sulphate: <300mg/L
Phillips Creek	RP4, RP5, RP6, RP7, RP8, and RP10	Isaac at Deverill (DERM Gauging Station #130410A)	-22.1726	148.3822	Continuous (minimum daily)	Medium Flow ≥7.5 cubic meters/sec in the Isaac River	<0.610 cubic meters/sec	Electrical conductivity: 1,500 µS/cm Sulphate: <600mg/L
Phillips Creek	RP4, RP5, RP6, RP7, RP8, and RP10	Isaac at Deverill (DERM Gauging Station #130410A)	-22.1726	148.3822	Continuous (minimum daily)	Medium Flow ≥ 7.5 cubic meters/sec in the Isaac River	<0.223 cubic meters/sec	Electrical conductivity: <3,500 µS/cm Sulphate: <1,200mg/L
Phillips Creek	RP4, RP5, RP6, RP7, RP8, and RP10	Isaac at Deverill (DERM Gauging Station #130410 A)	-22.1726	148.3822	Continuous (minimum daily)	High Flow >1.0 cubic meters/sec at Phillips Creek Gauging Station AND ≥ 37.5 cubic meters/sec in the Isaac River	<0.684 cubic meters/sec	Electrical conductivity: <5,500 µS/cm Sulphate: <1,400mg/L

Table C5: Receiving Waters Contaminant Trigger Levels

Quality Characteristic	Trigger Level	Monitoring Frequency
pH (pH units)	6.5 – 8.5	Daily during the release[1]
Electrical Conductivity (µS/cm)	1,000	
Suspended solids (mg/L)	1,500	
Sulfate ($SO4^{2-}$) (mg/L)	300	
Sodium (mg/L)	180	

[1] *Samples shall not be collected where temporary access to monitoring points presents a serious health and safety risk. However, 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 C6: Receiving Water Upstream Background Sites and Downstream Monitoring Points

Monitoring Points	Receiving Waters Location Description	Latitude (GDA94)	Longitude (GDA94)
Upstream Background Monitoring Points[1, 3]			
MP1	Downs Creek at Mine Accessand Golden mile Road intersection	-22.5413	148.4091
MP2	Phillips Creek	-22.4502	148.3784
Downstream Monitoring Points[2]			
MP3	Isaac River	-22.3559	148.4941
MP4	Phillips Creek	-22.3820	148.4479
MP5	Isaac River	-22.4514	148.5611
MP6	Carfax Gully	-22.4549	148.5398

[1]The upstream monitoring point should be within 5km of the release point.
[2]The downstream point should not be greater than 5km from the release point.
[3]The data from the background monitoring points must not be used where they are affected byreleases from other mines.

23.4 Schedule K – Enhanced Releases

Condition	Existing EA condition	Proposed EA condition	Justification for change
K1	**Enhanced Contaminant Release** The enhanced release of mine affected water must only occur from release points RP4, RP5,RP6, RP7 and RP10, as specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters** and depicted in **Attachment 1: Authorised Disturbance Footprint**.	No change proposed.	NA
K2	**Enhanced Contaminant Release – Control of Contaminant Releases** The enhanced release of mine affected water in accordance with **condition K1**, must have release control mechanisms. Release control mechanisms must be: a) Fitted at release points RP4, RP5, RP6, RP7 and RP10, as specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters** and depicted in **Attachment 1: Authorised Disturbance Footprint** attached to this environmental authority, prior to the commencement of an enhanced release at that point; b) Capable of immediately ceasing the discharge of mine water; and c) Able to reduce or stop the release when: i) Downstream electrical conductivity (EC) approaches the limit specified in **Table K1: Receiving Waters Contaminant Trigger Levels**; or ii) The administering authority issues a cease release order.	No change proposed.	NA
K3	**Enhanced Monitoring** The enhanced release of mine affected water in accordance with **condition K1**, must be able to be monitored via real-time telemetry (minimum hourly) for flow rate, EC and pH at:	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	a) The release points RP4, RP5, RP6, RP7 and RP10 as specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters** prior to commencement of release at that point; and b) At MP2 and MP4 as specified in **Table C6: Receiving Water Upstream Background Sites and Downstream Monitoring Points** of this environmental authority.		
K4	All continuous environmental monitoring systems required by this environmental authority must have an instrument availability during release events of at least 80% except for the continuous monitoring of release points RP4, RP5, RP6, RP7 and RP10 as specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters** which must have an instrument availability of at least 90%.	No change proposed.	NA
K5	**Contaminant Release Events** The enhanced release of mine affected water in accordance with **condition K1** may commence when the receiving water flow criteria for commencement of a release as in **Table K2: Enhanced Contaminant Release Limits** is met, and must not exceed the release limits stated in **Table K2: Enhanced Contaminant Release Limits** when measured at the monitoring points RP4, RP5, RP6, RP7 and RP10 as specified in **Table C1: Mine Affected Water Release Points, Sources and Receiving Waters.**	No change proposed.	NA
K6	The enhanced release of mine affected water to waters in accordance with **condition K1** must cease when the limit stated in **Table K3: Receiving Water Cease Release Limit** is exceeded when measured at MP4 as specified in **Table C6: Receiving Water Upstream Background Sites and Downstream Monitoring Points**.	No change proposed.	NA
K7	**Notification of release event exceedance** If the limits defined in **Table K2: Enhanced Contaminant Release Limits** are exceeded,the holder of the environmental authority must:	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	a) Notify the administering authority via WaTERS within **twenty-four (24)** hours of receiving the results; and b) Provide a report within **twenty-eight (28)** days in accordance with condition **C18**.		
K8	**Receiving environment monitoring and contaminant trigger levels** The quality of the receiving waters must be monitored at the locations specified in **Table C6: Receiving Water Upstream Background Sites and Downstream Monitoring Points** for each quality characteristic and at the monitoring frequency stated in **Table K1: Receiving Waters Contaminant Trigger Levels**.	No change proposed.	NA
K9	If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in **Table K1: Receiving Waters Contaminant Trigger Levels** during a release event, the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and: a) 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 **K9(b)** of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
K10	If an exceedance in accordance with **condition K9(b)** is identified, the holder of the authority must notify the administering authority within **fourteen (14) days** of receiving the result.	No change proposed.	NA
K11	**Release notification – potentially affected stakeholders** The environmental authority holder must notify all potentially affected stakeholders on commencement (within **two (2) hours** or another time frame as agreed to in writing with the relevant potentially affected stakeholder) of releasing mine affected water in accordance with **Schedule K** 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.	No change proposed.	NA
K12	**Enhanced Contaminant Release – Annual Reporting** The environmental authority holder must provide the administering authority an annual independent assessment of the effectiveness of the on-site water management practices, tobe submitted by **31 August each year**.	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	This assessment must be undertaken by an appropriately qualified person that is independentof the environmental authority holder and must demonstrate the continued effectiveness of on-site water management to the extent that is practicable including: 1) Control of mine-affected water generation: a) Minimisation of disturbance within rehabilitated or undisturbed areas; b) Minimisation of raw water imports for mining processes; c) Prioritised re-use of mine-affected water where practicable, particularly in highwater usage processes such as coal beneficiation; and d) Effective irrigation, evaporation and re-use of treated sewage effluent to prevent it from entering mine-affected water storages; 2) Separation of mine-affected and non-mine-affected catchments on site:) Mine-affected water catchments are being effectively reduced by theenvironmental authority holder's implemented rehabilitation program; a) Mine design should allow for runoff from successfully rehabilitated disturbedareas to be shed from site without being retained in the mine-affected watersystem; and b) Rehabilitation completion criteria should include water quality limits to define successfully rehabilitated (i.e. non mine-affected) catchments. For example, water quality is an indicator that an area has been successfully rehabilitated and is no longer generating mine affected water; and 3) Details of any progressive rehabilitation that demonstrates mine-affected water catchments are being effectively reduced by the environmental authority holder's implemented rehabilitation program.		

Condition	Existing EA condition	Proposed EA condition	Justification for change
K13	If the administering authority determines that the annual assessment report does not demonstrate the continued effectiveness of the on-site water management practices in accordance with **condition K12**, the administering authority will: 1) revoke the enhanced contaminant release conditions; and 2) notify the EA holder in writing within **ten (10) business days** of making the decision. *Note: This does not exclude other enforcement actions under the Department of Environmentand Science Enforcement Guidelines.*	No change proposed.	NA
K14	If, subject to **condition K13** the enhanced contaminant release conditions are revoked, then the contaminant release limit for electrical conductivity and sulphate will revert to the pre-existing limits as detailed in **Table C2: Mine Affected Water Release Limits**.	No change proposed.	NA

Table K1: Receiving Waters Contaminant Trigger Levels

Quality Characteristic	Trigger Level	Monitoring Frequency
EC (µS/cm)	1,800	Real-time monitoring of pH, EC and flow at MP4 during active release to Phillips Creek. At other sites where real-time monitoring is not available, daily grab sampling during active release as soon as possible after commencementof release, when safe access permits (during daylight hours only).
pH (pH units)	6.5 – 9.0	
Suspended solids (mg/L)	1,500	Daily during release (first sample within two hours of commencement of release)
Sulfate ($SO4^{2-}$) (mg/L)	300	
Sodium (mg/L)	180	

Table K2: Enhanced Contaminant Release Limits

Quality Characteristic	Maximum Release rate (for all combined RP flows)	Receiving Water FlowCriteria for Commencement of Release	Enhanced Release Limit	Monitoring Frequency
EC (µS/cm)	2.5 cubic meters/sec	Flow at Isaac at Deverill (DNRM Gauging Station #130410A) >1.0 cubic meters/sec	8,000	Continuous (minimum hourly)
pH (pH Units)	2.5 cubic meters/sec	Flow at Isaac at Deverill (DNRM Gauging Station #130410A) >1.0 cubic meters/sec	6.5 – 9.0	
Sulphate (mg/L)	2.5 cubic meters/sec	Flow at Isaac at Deverill (DNRM Gauging Station #130410A) >1.0 cubic meters/sec	1,689[1]	Daily during release (first sample within two hours of commencement of release)
Turbidity (NTU)	2.5 cubic meters/sec	Flow at Isaac at Deverill (DNRM Gauging Station #130410A) >1.0 cubic meters/sec	NA[2]	
Suspended Solids (mg/L)	2.5 cubic meters/sec	Flow at Isaac at Deverill (DNRM Gauging Station #130410A) >1.0 cubic meters/sec	1,500	

[1] Sulphate trigger determined from site specific mine water storage data of 8,000 µS/cm EC using EC:Sulphate ratio
[2] Limit for suspended solids can be omitted if turbidity limit is included. Limit for turbidity not required if suspended solids limit is included. Both indicators should be measures in all cases.

Table K3: Receiving Water cease Release Limit at Downstream Points

Contaminant Limit EC (microsiemens/cm) Phillips Creek	Monitoring Frequency
2,000	Real-time monitoring of pH, EC, and flow at MP4 during active release to Phillips Creek. At other sites where real-time monitoring is not available daily grab sampling during release as soon as possible after commencement of active release, when safe access permits (during daylight hours only).

23.5 Schedule D – Groundwater

Condition	Existing EA condition	Proposed EA condition	Justification for change
D1	The holder of this environmental authority must not release contaminants, directly or indirectly, to groundwater.	No change proposed.	NA
D2	**Assessment Criteria for Compliance Bores** The assessment criteria for compliance bores specified in **Table D1: Groundwater Monitoring Locations and Frequency** includes: a) A trigger event is defined as a single exceedance of the criteria defined in **Table D2: Groundwater Quality Triggers and Limits**; and b) A limit exceedance is defined as **three (3)** consecutive exceedances of the criteria specified in **Table D2: Groundwater Quality Triggers and Limits**.	No change proposed.	NA
D3	Groundwater quality of compliance and reference bores must be monitored at the locations and frequencies defined in **Table D1: Groundwater Monitoring Locations and Frequency** and **Attachment 3: Groundwater Bore Monitoring Locations** for quality characteristic identified in **Table D2: Groundwater Quality Triggers and Limits**.	Groundwater quality of compliance and reference/interpretation bores must be monitored at the locations and frequencies defined in **Table D1: Groundwater Monitoring Locations and Frequency** and **Attachment 3: Groundwater Bore Monitoring Locations (Lake Vermont)** and **Attachment 4: Groundwater Monitoring Locations (Meadowbrook Project)** for quality characteristic identified in **Table D2: Groundwater Quality Triggers and Limits**.	To define the groundwater quality monitoring locations and frequencies for the proposed Project. Please note that **Table D1: Groundwater Monitoring Locations and Frequency** is also

Condition	Existing EA condition	Proposed EA condition	Justification for change
			proposed to be updated to achieve this objective. The groundwater monitoring program is described in Chapter 7, Groundwater, Section 7.4.2.
D4	Water quality criteria, specified in **Table D2: Groundwater Quality Triggers and Limits**, may be updated by an amendment application submitted to the administering authority, following the collection of additional baseline monitoring data prior to the commencement of overburden removal within ML70528.	Water quality criteria, specified in **Table D2: Groundwater Quality Triggers and Limits**, may be updated by an amendment application submitted to the administering authority, following and based on results of the collection of at least twelve months (no more than one month apart) baseline monitoring data prior to the commencement of overburden removal within ML70528; and prior to mining commencement in the Meadowbrook area, for all Meadowbrook monitoring bores (per Attachment 4: Groundwater Monitoring Locations (Meadowbrook Project). *Note: Condition D8 specifies groundwater trigger level thresholds*	To provide for a future update to **Table D2: Groundwater Quality Triggers and Limits** (prior to mining commencement) which will set specific groundwater quality criteria/triggers/limits for the Project. Note that this definition of Table D2 is deferred to enable further data collection from the Meadowbrook monitoring bores.
D5	Groundwater level must be monitored at the locations and frequencies defined in **Table D1: Groundwater Monitoring Locations and**	Groundwater level must be monitored at the locations and frequencies defined in **Table D1: Groundwater Monitoring Locations and Frequency** and **Attachment 3: Groundwater Bore Monitoring Locations (Lake Vermont Coal**	To define the groundwater level monitoring locations and frequencies for

Condition	Existing EA condition	Proposed EA condition	Justification for change
	Frequency and **Attachment 2: Groundwater Bore Monitoring Locations**.	**Mine)** and **Attachment 4: Groundwater Monitoring Locations (Meadowbrook Project)**.	the proposed Project. Please note that **Table D1: Groundwater Monitoring Locations and Frequency** is also proposed to updated to achieve this objective. The groundwater monitoring program is described in Chapter 7, Groundwater, Section 7.4.2.
D6	Results of monitoring of groundwater from compliance bores identified in **Table D1: Groundwater Monitoring Locations and Frequency**, must not exceed any of the limits defined in **Table D2: Groundwater Quality Triggers and Limits** on **three (3)** consecutive occasions.	No change proposed.	NA
D7	If the limits specified in in **Table D2: Groundwater Quality Triggers and Limits** are exceeded at the compliance bores on **three (3)** consecutive occasions, the holder of the environmental authority must notify the administering authority	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	via WaTERS within **twenty-four (24) hours** of receiving the results.		
D8	**Trigger Investigation** If monitoring results from water quality compliance bores or water level bores specified in **Table D1: Groundwater Monitoring Locations and Frequency**, exceed any of the limits specified in in **Table D2: Groundwater Quality Triggers and Limits** or **Table D3: Groundwater Level Monitoring**, the holder of the environmental authority must complete an investigation within **fourteen (14) days** of detection to determine if the exceedance is a result of: a) mining activities authorised under this environmental authority; b) natural variation; or c) neighbouring land use resulting in groundwater impacts.	**Trigger Investigation** If monitoring results from water quality compliance bores or water level bores specified in **Table D1: Groundwater Monitoring Locations and Frequency**, exceed any of the limits specified in **Table D2: Groundwater Quality Triggers and Limits, Table D3:** Lake Vermont **Groundwater Level Monitoring or** Table D4: Meadowbrook Groundwater Level Monitoring, the holder of the environmental authority must complete an investigation within **fourteen (14) days** of detection to determine if the exceedance is a result of: a) mining activities authorised under this environmental authority; b) natural variation; or **c)** neighbouring land use resulting in groundwater impacts.	To define groundwater quality and level trigger thresholds for the proposed Project. The groundwater monitoring program is described in Chapter 7, Groundwater, Section 7.4.3.
D9	The holder of this environmental authority must notify the administering authority via WaTERS and provide a report of the investigation to the administering authority via WaTERS within **twenty-eight (28) days** of completion of the investigation under **condition D8**.	No change proposed.	NA
D10	If the investigation under **condition D8** determined that the exceedance was the result of	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	mining authorised under this environmental authority, then investigations must be undertaken by the holder of this environmental authority to establish whether environmental harm has occurred or may occur.		
D11	If an investigation undertaken in accordance with **condition D10** determines that environmental harm has or may occur, the holder of this environmental authority must: a) implement immediate measures to reduce the potential for environmental harm; and b) develop long-term mitigation measures to address any existing groundwater contamination and prevent recurrence of groundwater contamination.	No change proposed.	NA
D12	The holder of this environmental authority must provide details of the measures implemented to reduce the potential for environmental harm as well as the long-term mitigation measures to the administering authority within **twenty-eight (28) days** after completing the investigation under **condition D10**.	No change proposed.	NA
D13	**Bore Construction, Maintenance and Decommissioning** The construction, maintenance and management of groundwater bores (including groundwater	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	monitoring bores) must be undertaken in a manner that prevents or minimises impacts to the environment and ensures the integrity of the bores to obtain accurate monitoring.		
D14	*This is a proposed new condition.*	**Groundwater Dependent Ecosystems** The activities authorised under this environmental authority must not cause harm to any groundwater dependent ecosystems, as specified in **Table D5 – Meadowbrook Groundwater Dependent Ecosystems**, and as illustrated in (**Attachment 11: Identified GDE locations Meadowbrook)**.	Condition requested by DES.
D15	*This is a proposed new condition.*	**A Groundwater Dependent Ecosystem Management and Monitoring Plan (GDEMMP)** must be developed, implemented and maintained to ensure compliance with Condition D14.	Condition requested by DES.

Table D1: Groundwater Monitoring Locations and Frequency

Monitoring Bore[1]	Groundwater Unit	Longitude easting (GDA2020)	Latitude northing (GDA2020)	Surface RL (mAHD)	Monitoring frequency
Lake Vermont Reference Bores – for interpretational purposes only					
1238_MB1	Tertiary	650785	7522923	TBC	2-Monthly
1238_MB2	Vermont Seam (Permian Rangal Coal measures)				2-Monthly
2372-MB1	Tertiary	647635	7526194	166.91	2-Monthly
2372-MB2	Rewan Group				2-Monthly
2372-MB3	Vermont Seam (Permian Rangal Coal measures)				2-Monthly
2393-MB1	Tertiary	645811	7523225	173.24	2-Monthly
2393-MB2	Leichhardt Seam (Permian Rangal Coal measures)				2-Monthly
2393-MB3	Vermont Lower Seam (Permian Rangal Coal measures)				2-Monthly
2394-MB1	Tertiary	645013	7523144	173.96	2-Monthly
2394-MB2	Rewan Group				2-Monthly
West_MB1	Tertiary	642987	7520111	184	2-Monthly
West_MB2	Permian Rangal Coal Measures				2-Monthly
Meadowbrook Interpretation Bores – for interpretational purposes only					
W2_MB1	Tertiary sediments	637483	7531634	187.92	Quarterly
W2_MB2	Girah 1 Seam	637485	7531634	187.93	Quarterly
W3_MB1	Quaternary alluvium	640585	7529617	176.80	Quarterly

Monitoring Bore[1]	Groundwater Unit	Longitude easting (GDA2020)	Latitude northing (GDA2020)	Surface RL (mAHD)	Monitoring frequency
W4_MB1	Quaternary alluvium	638287	7528917	179.00	Quarterly
W6_MB1	Permian overburden	637873	7528074	179.85	Quarterly
W6_MB2	Girah 1 Seam	637876	7528075	179.95	Quarterly
W7_MB1	Permian overburden	637599	7526327	180.69	Quarterly
W8_MB1	Girah 1 Seam	639421	7523800	177.67	Quarterly
W9_MB1	Tertiary sediments	641068	7524299	177.46	Quarterly
W10_MB1	Rewan Group	641984	7524441	177.00	Quarterly
W10_MB2	Vermont Upper Seam	641984	7524441	177.00	Quarterly
W13_MB1	Vermont Lower Seam	645496	7531109	166.80	Quarterly
W13_MB2	Girah 1 Seam	645494	7531109	166.80	Quarterly
W14_MB2	Permian Coal Seam	645490	7528697	167.80	Quarterly
W15_MB1	Tertiary sediments	649123	7527686	163.50	Quarterly
W15_MB2	Vermont Upper Seam	649123	7527686	163.50	Quarterly
W15_MB3	Vermont Lower Seam	649123	7527686	163.50	Quarterly
Lake Vermont Water Quality Compliance Bores					
2371W-MB1	Tertiary Sediments	643246	7522129	178.92	2-Monthly
2375-MB2	Vermont Seam (Permian Rangal Coal measures)	648156	7524056	168.36	2-Monthly
2226-MB2	Rewan Group	643249	7522129	178.84	2-Monthly

Monitoring Bore[1]	Groundwater Unit	Longitude easting (GDA2020)	Latitude northing (GDA2020)	Surface RL (mAHD)	Monitoring frequency
2226-MB3	Leichhardt Seam (Permian Rangal Coal measures)				2-Monthly
2218-MB2	Rewan Group	645641	7522938	173.29	2-Monthly
2218-MB3	Leichhardt Seam (Permian Rangal Coal measures)	645638	7522936	173.29	2-Monthly
Meadowbrook Water Quality Compliance Bores					
W1_MB1	Tertiary sediments	638029	7531555	187.09	Quarterly
W1_MB2	Leichhardt Lower Seam	638031	7531554	187.06	Quarterly
W1_MB3	Vermont Seam	638034	7531554	187.18	Quarterly
W3_MB2	Tertiary sediments	640583	7529617	176.20	Quarterly
W4_MB2	Permian overburden	638284	7528917	179.25	Quarterly
W5_MB1	Rewan Group	638502	7528005	181.15	Quarterly
W5_MB2	Leichhardt Lower Seam	638500	7528002	181.16	Quarterly
W5_MB3	Vermont Seam	638499	7527999	181.14	Quarterly
W9_MB2	Vermont Upper Seam	641068	7524301	177.42	Quarterly
W9_MB3	Vermont Lower Seam	641067	7524303	177.42	Quarterly
W10_MB3	Vermont Lower Seam	641984	7524443	177.00	Quarterly
W11_MB1	Rewan Group	644056	7525042	174.42	Quarterly
W11_MB2	Leichhardt Seam	644058	7525043	174.27	Quarterly
W12_MB1	Tertiary sediments	643383	7530347	166.80	Quarterly

Monitoring Bore[1]	Groundwater Unit	Longitude easting (GDA2020)	Latitude northing (GDA2020)	Surface RL (mAHD)	Monitoring frequency
W14_MB1	Tertiary sediments	645488	7528697	166.80	Quarterly
Lake Vermont Water Level Monitoring Bores[2]					
2226-VWP	Rewan Group, Permian coal measures	643244	7522132	178.84	2-Monthly
2183-VWP	Permian Rangal Coal Measures	644183	7520540	185.16	2-Monthly
2218-VWP	Rewan Group, Permian Rangal Coal Measures	645641	7522935	173.29	2-Monthly
2372R-VWP	Permian Rangal Coal Measures	647630	7526189	166.91	2-Monthly
2375W-VWP	Permian Rangal Coal Measures	648154	7524047	168.36	2-Monthly
1235C-VWP	Permian Rangal Coal Measures	649913	7522236	170.81	2-Monthly
2369W-MB1	Tertiary Clay/Sand	645639	7522934	173.4	2-Monthly
2370W-MB1	Tertiary Sand/Sandy Clay	648151	7524060	168.30	2-Monthly
Meadowbrook Proposed Additional Interpretation Bores					
W16_MB1	Quaternary alluvium	648779	7530462	162	
W16_MB2	Tertiary sediments	648779	7530462	162	
W16_MB1	Quaternary alluvium	649341	7530086	161.5	
W16_MB2	Tertiary sediments	649341	7530086	161.5	

[1] *If any of the monitoring bores in*

Table D1: Groundwater Monitoring Locations and Frequency *become unfit for purpose, as a result of advancing mining activities, the environmental authority holder must submit proposed replacement bores to the administering authority for approval and inclusion in*

Table D1: Groundwater Monitoring Locations and Frequency**.**

[2] Groundwater level monitoring only.

[3] Collar RL (mAHD).

Table D2: Groundwater Quality Triggers and Limits[1]

Project area	Parameter	Groundwater unity – Triggers and Limits		
		Tertiary	**Rewan**	**Permian**
Physical parameters/sulphate				
Lake Vermont	pH (pH units) (field)	5.13 – 7.24	5.13 – 7.24	5.13 – 7.24
	Electrical Conductivity (EC) (µS/cm)(field)	40,712	30,944	30,581
	Sulphate (mg/L) (all bores other than 2371W-MB1)	1,942	1,270	756
	Sulphate (mg/L) – 2371W-MB1	4,180		
Meadowbrook	pH (pH units) (field)	5.84 – 6.79	6.44 – 7.17	6.24 – 8.66
	Electrical Conductivity (EC) (µS/cm)(field) (all bores other than W14 MB1)	30422	24581	41567
	Electrical Conductivity (EC) (µS/cm)(field) (W14 MB1)	1205	-	-
	Sulphate (mg/L) (all bores excluding where separate limit proposed for individual bores	1250	-	1760
	Sulphate (mg/L) W14_MB1	163	-	-
	Sulphate (mg/L) W5_MB1	-	1696	-
	Sulphate (mg/L) W1_MB1	-	165	-
	Sulphate (mg/L) W1_MB2	-	-	20
	Sulphate (mg/L) W1_MB3	-	-	20

Project area	Parameter	Groundwater unity – Triggers and Limits		
		Tertiary	Rewan	Permian
Metals/metalloids (mg/L) (dissolved, by ICP-MS/FIMS)				
Lake Vermont	Aluminium	0.055	0.055	0.055
	Chromium	0.006	0.001	0.001
	Cobalt	0.016	0.044	0.007
	Copper	0.013	0.005	0.055
	Manganese	1.9	1.9	1.9
	Molybdenum	0.034	0.034	0.034
	Nickel	0.02	0.022	0.011
	Selenium	0.01	0.01	0.01
	Zinc	0.08	0.04	0.017
Meadowbrook	Aluminium	0.055	0.055	0.055
	Chromium	0.005	0.005	0.006
	Cobalt	0.008	0.005	0.024
	Copper	0.008	0.008	0.153
	Manganese	1.9	1.9	1.9
	Molybdenum	0.034	0.047	0.070
	Nickel	0.223	0.410	0.075
	Selenium	0.01	0.01	0.01

Project area	Parameter	Groundwater unity – Triggers and Limits		
		Tertiary	Rewan	Permian
	Zinc	0.107	0.066	0.13
Major Ions (mg/L)				
	Calcium	For interpretational purposes only		
	Chloride	For interpretational purposes only		
	Potassium	For interpretational purposes only		
	Magnesium	For interpretational purposes only		
	Sodium	For interpretational purposes only		
	Bicarbonate	For interpretational purposes only		

[1] *Trigger levels and compliance limits are applicable to compliance bores.*
Monitoring to be conducted

Table D3: Lake Vermont Groundwater Level Monitoring

Monitoring location	Aquifer	Water Level Trigger[1]
2226-VWP	Rewan Group	5m/year
2183-VWP	Permian Coal Measures	5m/year
2218-VWP	Rewan Group	5m/year
2372R-VWP	Permian Coal Measures	5m/year
2375W-VWP	Permian Coal Measures	5m/year
1235C-VWP	Permian Coal Measures	5m/year

Monitoring location	Aquifer	Water Level Trigger[1]
2369W-MB1	Tertiary Clay/Sand	2m/year
2370W-MB1	Tertiary Clay/Sandy Clay	2m/year

[1] *Water level triggers have been derived from Section 362 of the Water Act 2000.*
Note: Trigger levels and compliance limits are applicable to compliance bores. Monitoring to be conducted at all bores.

Table D4: Meadowbrook Groundwater Level Monitoring

Monitoring location	Groundwater unit	Level Trigger Threshold (mAHD)
W1_MB1	Tertiary sediments	158.4
W1_MB2	Leichhardt Lower Seam	158.54
W1_MB3	Vermont Seam	159.07
W3_MB2	Tertiary sediments	142.1
W4_MB2	Permian overburden	149.47
W5_MB1	Rewan Group	151.87
W5_MB2	Leichhardt Lower Seam	146.44
W5_MB3	Vermont Seam	155.52
W9_MB2	Vermont Upper Seam	96.32
W9_MB3	Vermont Lower Seam	98.01
W10_MB3	Vermont Lower Seam	130.73
W11_MB1	Rewan Group	115.24
W11_MB2	Leichhardt Seam	13.99

Monitoring location	Groundwater unit	Level Trigger Threshold (mAHD)
W12_MB1	Tertiary sediments	138.35
W14_MB1	Tertiary sediments	145.84

Table D5: Meadowbrook groundwater dependent ecosystems

GDE description	Catchment	Location
TYPE 1: GDE associated with the narrow belts of alluvium that are associated with larger incised drainage lines of Boomerang and Phillips Creek, extending eastward to the Isaac River.	Boomerang Creek; and Phillips Creek catchments.	*Refer Attachment 11 – Identified GDE locations (Meadowbrook)*
TYPE 2: GDE systems which are supported by a lens of fresh groundwater that lies at depth below the surface wetland system, located near the junction of Boomerang & Ripstone Creeks.	Ripstone Creek catchment.	*Refer Attachment 11 – Identified GDE locations (Meadowbrook)*

23.6 Schedule E – Sewage Treatment

Condition	Existing EA condition	Proposed EA condition	Justification for change
E1	The only contaminant permitted to be released to land is treated sewage effluent in compliance with the release limits and monitoring frequency states in **Table E1:**	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	Contaminant release Limits to Land.		
E2	Treated sewage effluent may only be released to land in accordance with the conditions of this approval at the following locations: a) within areas approved for effluent disposal.; and b) other land for the purpose of dust suppression and/or fire-fighting.	Treated sewage effluent may only be released to land in accordance with the conditions of this approval ~~at the following locations:~~ within areas approved for effluent disposal.~~; and~~ ~~other land for the purpose of dust suppression and/or fire-fighting.~~	In response to request from DES for condition to be in line with recent Queensland Health guideline changes.
E3	The application of treated effluent to land must be carried out in a manner such that: a) vegetation is not damaged; b) there is no surface ponding of	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	treated effluent; and c) there is no run-off of effluent.		
E4	If areas irrigated with effluent are accessible to employees or the general public: a) prominent signage must be provided advising that effluent is present and care should be taken to avoid consuming or otherwise coming into unprotected contact with effluent; and b) effluent irrigation pipes must be lilac or lilac striped	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
E5	The daily volume of effluent release to land must be measured and records kept of the volumes of effluent released.	No change proposed.	NA
E6	When circumstances prevent the irrigation or beneficial reuse of treated sewage effluent such as during or following rain events, waters must be directed to a wet weather storage or alternative measure must be taken to store/lawfully dispose of effluent.	No change proposed.	NA
E7	Treated sewage effluent must only be supplied to another person or organisation that has a written plan detailing how the user of the treated sewage effluent will comply with their general environmental duty under section 319 of the *Environmental*	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	Protection Act 1994 whilst using the treated sewage effluent. *Note: the supply of treated wastewater for re-use is regulated under the Water Supply (Safety and Reliability) Act 2008.*		
E8	*This is a proposed new condition.*	A Site-Based Irrigation Management Plan be developed and implemented to manage risks associated with effluent irrigation, which includes monthly visual inspections of crop 'health' status.	Condition requested by DES (wording developed by proponent).

Table E1: Contaminant release Limits to Land

Quality Characteristics	Release Limit	Units	Limit Type	Monitoring Frequency
5 day Biochemical oxygen demands (BOD5)	20	mg/L	80th percentile	Quarterly
pH	6.5 – 8.5	pH units	Range	Quarterly
Free Chlorine Residual	1	mg/L	Maximum	Quarterly
Ecoli	1000	CFU/100ml	Maximum	Quarterly
Total Phosphorus as P	20	mg/L	Maximum	Quarterly
Total Nitrogen as N	60	mg/L	Maximum	Quarterly

23.7 Schedule F – Acoustic

Condition	Existing EA condition	Proposed EA condition	Justification for change
F1	The holder of this environmental authority must ensure that noise generated by the mining activities does not cause the criteria in **Table F1: Noise Limits** to be exceeded at a sensitive place or commercial place.	No change proposed.	NA
F2	The holder of this environmental authority must ensure that blasting does not cause the limits for peak particle velocity and air blast overpressure in **Table F2: Blasting Noise Limits** to be exceeded at a sensitive place or commercial place.	No change proposed.	NA
F3	**Monitoring and Reporting** Noise monitoring and recording must include the following descriptor characteristics and matters: a) (a) $L_{AN,T}$ (where N equals the statistical levels of 1, 10 and 90 and T = 15 mins); b) background noise L_{A90}; c) the level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to statistical levels; d) atmospheric conditions including temperature, relative humidity and wind speed and directions;	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	e) effects due to any extraneous factors such as traffic noise; f) location, date and time of monitoring; and g) if the complaint concerns low frequency noise, Max $L_{pLIN,T}$ and one third octave band measurements in dB(LIN) for centre frequencies in the 10-200Hz range.		
F4	The holder of this environmental authority must develop and implement a blast monitoring program to monitor compliance with **Table F2: Blasting Noise Limits**.	No change proposed.	NA

Table F1: Noise Limits (applicable to activities within ML70331, ML70477 and ML70528)

Sensitive place						
Noise level dB(A) measured as:	**Monday to Saturday**			**Sundays and public holidays**		
	7am to 6pm	**6pm to 10pm**	**10pm to 7am**	**9am to 6pm**	**6pm to 10pm**	**10pm to 9am**
$L_{Aeq, adj, 15 mins}$	40	40	35	40	40	35
$L_{A1, adj, 15 mins}$	45	45	40	45	45	40
Commercial place						
Noise level dB(A) measured as:	**Monday to Saturday**			**Sundays and public holidays**		
	7am to 6pm	**6pm to 10pm**	**10pm to 7am**	**9am to 6pm**	**6pm to 10pm**	**10pm to 9am**
$L_{Aeq, adj, 15 mins}$	45	45	40	45	45	40

Notes:
1. In the event that measured bg (LA90, adj, 15 mins) is less than 30 dB(A), then 30 dB(A) can be substituted for the measured background level.
2. bg = background noise level (LA90, adj, 15 mins) measured over 3-5 days at the nearest sensitive receptor.
3. If the project is unable to meet the noise limits as calculated above alternative limits may be calculated using the processes outlined in the "Planning for Noise Control" guideline.

Table F2: Blasting Noise Limits

Blasting noise limits	**Sensitive or commercial place limits**	
	7am to 6pm	**6pm to 7am**
Airblast overpressure	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	No blasting to occur
Ground vibration peak particle velocity	5mm/second peak particle velocity for nine (9) out of ten (10) consecutive blasts and not greater than 10 mm/second peak particle velocity at any time	No blasting to occur

23.8 Schedule G – Land

Condition	Existing EA condition	Proposed EA condition	Justification for change
G1	**Rehabilitation** All areas significantly disturbed by mining activities must be rehabilitated to achieve the following rehabilitation goals: **a)** safe to humans and wildlife; **b)** stable; **c)** non-polluting; and d) self-sustaining for the post-mining land use.	No change proposed.	NA
G2	Rehabilitation must commence progressively as areas become available.	No change proposed.	NA
G3	A Rehabilitation Plan must be developed by **20 August 2017** by a suitably qualified person and implemented.	No change proposed.	NA
G4	The Rehabilitation Plan required in **condition G3** must include: a) rehabilitation objectives to achieve the rehabilitation goals for all disturbed areas; b) detailed rehabilitation methods for each disturbed area;	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	c) rehabilitation indicators to measure the success of the rehabilitation against the rehabilitation objectives; d) final completion criteria that will achieve the rehabilitation goals and objectives; and e) details of appropriate monitoring and maintenance of rehabilitation.		
G5	The environmental authority holder must notify the administering authority of any changes to the Rehabilitation Plan developed under **condition G3**, and submit to the administering authority.	No change proposed.	NA
G6	All areas significantly disturbed by mining activities must be rehabilitated in accordance with the Rehabilitation Plan to achieve the final completion criteria.	No change proposed.	NA
G7	**Contaminated Land** Before applying for a surrender, or partial surrender of the environmental authority, the holder must (if applicable) provide to the administering authority a site investigation report under the *Environmental Protection Act 1994*, in relation to any part of the mining lease which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	as a result of that report to ensure that the land is suitable for its final land use.		
G8	Before applying for progressive rehabilitation certification of an area, the holder must (if applicable) provide to the administering authority a site investigation report under the *Environmental Protection Act 1994*, in relation to any part of the area the subject of the application which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use and rehabilitation requirements in accordance with the rehabilitation plan required by **condition G3**.	No change proposed.	NA
G9	**Biodiversity Offsets** Impacts to prescribed environmental matters are not authorised unless the impacts are authorised in **conditions G10** and **G11**.	No change proposed.	NA
G10	Notwithstanding **condition G9**, impacts to prescribed environmental matters, are only authorised to occur if: a) for the prescribed environmental matters specified in **Table G1: Authorised Impacts to Prescribed Environmental Matters**, the impacts do not exceed the maximum extent of impact specified for that prescribed environmental matter.	No change proposed.	No changes to **condition G10** are proposed. Note that **Table G1: Authorised Impacts to Prescribed Environmental Matters** is proposed to be updated to include prescribed environmental matters and required offsets for activities associated with the Project. Prescribed environmental matters are discussed in Chapter 10, Terrestrial Ecology, Sections 10.6 and 10.7.

Condition	Existing EA condition	Proposed EA condition	Justification for change
G11	An environmental offset must be delivered for each impact specified in **Table G1: Authorised Impacts to Prescribed Environmental Matters** requiring an environmental offset.	No change proposed.	No changes to **condition G11** are proposed. Note that **Table G1: Authorised Impacts to Prescribed Environmental Matters** is proposed to be updated to include prescribed environmental matters and required offsets for activities associated with the Project. Proposed offsets are discussed in Chapter 10, Terrestrial Ecology, Section 10.9.
G12	*Note conditions within Schedule G have been re-ordered, to facilitate grouping of related conditions.* *This is a proposed new condition.*	Records demonstrating that each Meadowbrook Project impact to a prescribed environmental matter not listed in **Table G1: Authorised Impacts to Prescribed Environmental Matters** did not, or is not likely to, result in a significant residual impact to that matter must be: a) completed by an appropriately qualified person; and b) kept for the life of the environmental authority.	Additional condition applicable to the Project area only, consistent with the 'Model mining conditions guideline' (ESR/2016/1936) to manage impacts to prescribed environmental matters.
G13	*Note conditions within Schedule G have been re-ordered, to facilitate grouping of related conditions.* *This is a proposed new condition.*	An environmental offset made in accordance with the *Environmental Offsets Act 2014* and Queensland Environmental Offsets Policy, as amended from time to time, must be undertaken for the maximum extent of Meadowbrook Project impact to each prescribed environmental matter authorised in **Table G1: Authorised Impacts to Prescribed Environmental Matters**, unless a lesser extent of the impact has been approved in accordance with **condition G14**.	Additional condition applicable to the Project area only, consistent with the 'Model mining conditions guideline' (ESR/2016/1936) to regulate the establishment of environmental offsets (under the Queensland Environmental Offsets Policy). Proposed offsets are discussed in Chapter 10, Terrestrial Ecology, Section 10.9.

Condition	Existing EA condition	Proposed EA condition	Justification for change
G14	*Note conditions within Schedule G have been re-ordered, to facilitate grouping of related conditions.* *This is a proposed new condition.*	The significant residual impacts to a prescribed environmental matter authorised in **condition G9** (and set out in **Table G1**), for which an environmental offset is required by **condition G11** may be carried out in stages. An environmental offset can be delivered for each stage of the impacts to prescribed environmental matters.	Additional condition applicable to the Project area only, consistent with the 'Model mining conditions guideline' (ESR/2016/1936) to regulate the establishment of environmental offsets (under the Queensland Environmental Offsets Policy). This condition enables impacts to prescribed environmental matters to be undertaken in stages to allow **conditions G15** to **G17** to be updated accordingly. The Project has been considered to comprise four (4) distinct stages of potential impact on terrestrial ecology values; these stages are described in Chapter 10, Terrestrial Ecology, Section 10.5.
G15	Prior to the commencement of any impacts to a prescribed environmental matter for which an environmental offset is required by **condition G11**, an analysis of the anticipated maximum extent of impact to each prescribed environmental matter must be provided to the administering authority: a) for the forthcoming stage – the estimated significant residual impacts to each prescribed environmental matter; and b) for the previous stage, if applicable – the actual significant residual impacts to each prescribed environmental matter, to date.	Prior to the commencement of any impacts to a prescribed environmental matter for which an environmental offset is required by **condition G11**, or stage as authorised by **condition G14**, an analysis of the anticipated maximum extent of impact to each prescribed environmental matter must be provided to the administering authority: a) for the forthcoming stage – the estimated significant residual impacts to each prescribed environmental matter; and b) for the previous stage, if applicable – the actual significant residual impacts to each prescribed environmental matter, to date.	See justification for **condition G14**.
G16	The analysis of impacts required by **condition G12** must be approved by the administering authority	The analysis of impacts required by **condition G15** must be approved by the administering authority before the notice of election, or the notice of	See justification for **condition G14**.

Condition	Existing EA condition	Proposed EA condition	Justification for change
	before the notice of election is given to the administering authority.	election of a forthcoming stage, if applicable, is given to the administering authority.	
G17	The notice of election must be provided to the administering authority no less than **three (3) months** before the proposed commencement of the prescribed activities.	The notice of election, or the notice of election of a forthcoming stage, if applicable, must be provided to the administering authority no less than **three (3) months** before the proposed commencement of the prescribed activities, or the proposed commencement of that stage, unless a lesser timeframe has been agreed to by the administering authority.	See justification for **condition G14**.
G18	Within **six (6) months** from the completion of the final stage of the project, a report completed by an appropriately qualified person, that includes the following matters must be provided to the administering authority: a) an analysis of the actual impacts on prescribed environmental matters resulting from the final stage; and b) if applicable, a notice of election to address any outstanding offset debits for the authorised impacts.	No change proposed.	NA
G19	*Note conditions within Schedule G have been re-ordered, to facilitate grouping of related conditions.* *This is a proposed new condition.*	Ornamental Snake Management Plan An Ornamental Snake Management Plan must be developed by an appropriately qualified person and be implemented prior to the commencement of mining. The Ornamental Snake Management Plan must:	To provide the requirement to have an Ornamental Snake Management Plan, developed by an appropriately qualified person, that addresses the management of impacts from the proposed Project's activities on the species. It is noted that a standard condition requiring a species management plan does not exist within the

Condition	Existing EA condition	Proposed EA condition	Justification for change
		a) provide the management measures to avoid, mitigate and manage impacts; b) provide a risk assessment of potential impacts and residual risk after measures are implemented; provide timeframes for implementation of management measures; address construction, operation and decommissioning project phases; provide monitoring measures and associated performance indicators, adaptive management and corrective actions; provide incident and non-conformance reporting requirements.	'Model mining conditions guideline' (ESR/2016/1936). As such, this Condition has been developed consistent with the Water Management Plan condition. The proposed Ornamental Snake Management Plan for the Project will deliver upon the commitments made within Chapter 22, Proposed Environmental Management and Monitoring Commitments, Table 22.1.
G20	*Note conditions within Schedule G have been re-ordered, to facilitate grouping of related conditions.* *This is a proposed new condition.*	**Subsidence Management Plan** A Subsidence Management Plan must be developed by an appropriately qualified person and be implemented prior to the commencement of underground longwall mining. The Subsidence Management Plan must: a) provide an overview of the existing environment of the proposed subsidence area;	To provide the requirement to have a Subsidence Management Plan, developed by an appropriately qualified person, that addresses the management of subsidence impacts from the proposed Project's underground mining activities. It is noted that a standard condition requiring a Subsidence Management Plan does not exist within the 'Model mining conditions guideline' (ESR/2016/1936). As such, this Condition has been developed consistent with similar EAs authorising underground mining activities.

Condition	Existing EA condition	Proposed EA condition	Justification for change
		b) provide a summary of the key impacts that may arise as a result of the proposed subsidence; c) provide for the proper and effective monitoring and management of the actual and potential environmental impacts of the proposed subsidence; including but not limited to impacts to: i. landform conditions; ii. surface cracking; iii. erosion; iv. ponding; v. watercourse channel/geomorphic conditions; vi. ecology; vii. an assessment of the adequacy of any completed repair works or recommended actions from the previous monitoring period. d) provide for the development of management actions (eg. repairs or rehabilitation works) and establish a process to monitor the completion of actions.	The proposed Subsidence Management Plan for the Project will deliver upon the commitments made within Chapter 22, Proposed Environmental Management and Monitoring Commitments, Table 22.1.

Condition	Existing EA condition	Proposed EA condition	Justification for change
G21	*Note conditions within Schedule G have been re-ordered, to facilitate grouping of related conditions.* *This is a proposed new condition.*	**Annual subsidence monitoring inspection** An annual subsidence monitoring inspection must be undertaken (annually, within 12 months of underground longwall mining commencing) to identify any areas of observable or measurable impact that might be associated with subsidence or associated surface disturbance.	To provide a requirement for annual subsidence monitoring inspections and specify appropriate timing for inspections.
G22	*Note conditions within Schedule G have been re-ordered, to facilitate grouping of related conditions.* *This is a proposed new condition.*	Annual subsidence monitoring inspections must continue until subsidence movement in the northern subsidence area is considered to have finalised.	To provide a completion date for the annual subsidence monitoring inspections.
G23	*Note conditions within Schedule G have been re-ordered, to facilitate grouping of related conditions.* *This is a proposed new condition.*	**Annual Subsidence Monitoring Report** An annual subsidence monitoring report must be prepared (annually, within 3 months of the completion of the annual subsidence monitoring inspection) to provide the results and analysis from each monitoring event(s) as well as detail any required repair/rehabilitation activities.	To provide a requirement for the development of annual subsidence monitoring reports and appropriate timing for the delivery of annual reports.
G24	*Note conditions within Schedule G have been re-ordered, to facilitate grouping of related conditions.* *This is a proposed new condition.*	**Subsidence Management Plan review** A review of the Subsidence Management Plan must be conducted every 4 years, and a report made available upon request to the administering authority.	To provide the requirement to review the Subsidence Management Plan every four years and to provide a report to the administering authority.

Table G1: Authorised Impacts to Prescribed Environmental Matters

Matters Environmental Significance		Maximum Extent of Impact (ha)	Significant Impact	Meadowbrook Project stage impact areas				Environmental Offset Required
				Stage 1	Stage 2	Stage 3	Stage 4	
MSES - Regulated Vegetation								
Endangered RE	RE 11.3.1	12.1 ha in Meadowbrook Project (7.3 ha of which is Brigalow TEC under EPBC Act) [2]	Yes	0	1.2	0	3.6	Yes (partly co-located with MNES offsets)
	RE 11.4.8	3.9 ha in Meadowbrook Project (0.6 ha of which is Brigalow TEC under EPBC Act) [2]	Yes	0	0	0	3.3	Yes (Fully co-located with MNES offsets)
Of Concern RE	RE 11.3.2	58.3 ha in Meadowbrook Project (44.4 of which is Poplar Box TEC under EPBC Act) [2]	Yes	0	0	13.9	0	Yes
	RE 11.3.4	4.9 ha in Meadowbrook Project[2]	Yes	0	0	4.9	0	Yes (Fully co-located with MNES offsets)
RE intersecting an area shown as a wetland on the vegetation management wetlands map	RE 11.5.17	4.7 ha in Meadowbrook Project[2]	Yes	0	0	4.7	0	Yes (partly co-located with MNES offsets)
	RE 11.3.1	8.0 ha in Meadowbrook Project[2]	Yes	0.2	7.8	0	0	Yes

Matters Environmental Significance		Maximum Extent of Impact (ha)	Significant Impact	Meadowbrook Project stage impact areas				Environmental Offset Required
REs occurring within the defined distance of defining banks of a vegetation management watercourse	RE 11.3.25	6.1 ha in Meadowbrook Project[2] and 28.4 ha in ML70528	Yes	1.2	0	4.8	0	Yes (Meadowbrook offset fully co-located with MNES offsets)
RE intersecting an area shown as a wetland on the vegetation management wetlands map	RE 11.3.27	3.9ha in ML70528 and 0.48 ha in Meadowbrook	Yes	0.48	0	0	0	Yes
MSES - Protected Wildlife Habitat								
Vulnerable species	Squatter pigeon (*Geophaps scripta scripta)*	39.2ha in ML70528 and 15.8 ha in Meadowbrook	Yes	6.5	0	0	9.3	Yes
MNES[1] - Threatened Ecological Communities								
Brigalow TEC		7.9 ha in Meadowbrook Project[3]	Yes	0.6	6.9	0.1	0.3	Yes
Poplar Box TEC		44.4 ha in Meadowbrook Project[4]	Yes	0	0	44.4	0	Yes

Matters Environmental Significance		Maximum Extent of Impact (ha)	Significant Impact	Meadowbrook Project stage impact areas				Environmental Offset Required
MNES[1] - Protected Wildlife Habitat								
Vulnerable species	Ornamental Snake (*Denisonia maculata*)	211.1 ha in Meadowbrook Project[5]	Yes	41.1	4.6	0.3	165.4	Yes
Vulnerable species	Greater Glider (*Petauroides Volans*)	100.6 ha in Meadowbrook Project[6]	Yes	4.5	0	89.1	7	Yes
Vulnerable species	Koala (*Phascolarctos cinereus)*	109.2 ha in Meadowbrook Project[7]	Yes	4.8	8.2	89.1	7.1	Yes

[1] Offsets will be regulated under the EPBC Act approval conditions

[2] authorised impact extent provided in Attachment 5

[3] authorised impact extent provided in Attachment 6

[4] authorised impact extent provided in Attachment 7

[5] authorised impact extent provided in Attachment 8

[6] authorised impact extent provided in Attachment 9

[6] authorised impact extent provided in Attachment 10

23.9 Schedule H – Waste

Condition	Existing EA condition	Proposed EA condition	Justification for change
H1	Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.	No change proposed.	NA
H2	**Tailings Disposal** Tailings must be managed in accordance with procedures contained within a Tailings Disposal Plan, which must be developed and implemented for all stages of the authorised mining activities. The Tailings Disposal Plan must include provisions for: a) containment of tailings; b) the management of seepage and leachates both during operations and the foreseeable future; c) the control of fugitive emissions to air; d) a program of progressive sampling and characterisation to identify acid producing potential and metal concentrations of tailings; e) maintaining records of the relative locations of any other waste stored within the tailings; f) rehabilitation strategy; and g) monitoring of rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of tailings, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover.	No change proposed.	NA

23.10 Schedule I – Regulated Structures

Condition	Existing EA condition	Proposed EA condition	Justification for change
I1	**Assessment of Consequence Category** The consequence category of any structure must be assessed by a suitably qualified and experience person in accordance with the 'Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)' or its successor at the following times: **a)** prior to the design and construction of the structure, if it is not an existing structure; or **b)** prior to any change in its purpose or the nature of its stored contents.	No change proposed.	NA
I2	A consequence assessment report and certification must be prepared for any structure assessed and the report may include a consequence assessment for more than one structure.	No change proposed.	NA
I3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the most recent version of the 'Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)' or its successor.	No change proposed.	NA
I4	**Design and Construction of a Regulated Structure** **Conditions I5** to **I9** inclusive do not apply to existing structures. *Note: Construction of a dam includes modification of an existing dam – refer to the Definition schedule of this environmental authority.*	No change proposed.	NA
I5	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 most recent version of the 'Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)' or its successor. *Note: Certification of design and construction may be undertaken by different persons.*	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
I6	Construction of a regulated structure is prohibited unless: a) the holder has submitted a consequence category assessment report and certification to the administering authority; and b) certification for the design, design plan and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.	No change proposed.	NA
I7	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 most recent version of the 'Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)' or its successor and must be recorded in the Register of Regulated Structures.	No change proposed.	NA
I8	Regulated structures must: a) be designed and constructed in accordance with and conform to the requirements of the most recent version of the 'Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)' or its successor; b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: i) floodwater from entering the regulated dam from any watercourse or drainage line; and ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line. c) for regulated dams that are dams associated with a 'failure to contain – seepage': have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.		
I9	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and b) construction of the regulated structure is in accordance with the design plan.	No change proposed.	NA
I10	**Operation of a Regulated Structure** Operation of a regulated structure, except for an existing structure, is prohibited unless: a) the holder has submitted to the administering authority: i) one electronic copy of the design plan and certification of the 'design plan' in accordance with condition I6, and ii) a set of 'as constructed' drawings and specifications, and iii) certification of those 'as constructed drawings and specifications' in accordance with **condition I9**, and iv) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the design storage allowance (DSA) volume across the system, a copy of the certified system design plan. v) the requirements of this authority relating to the construction of the regulated structure have been meet;	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	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.		
I11	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 **twelve (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.	No change proposed.	NA
I12	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.	No change proposed.	NA
I13	**Mandatory Reporting Level** **Conditions I14** to **I17** inclusive only apply to regulated structures which have not been certified as low consequence category for 'failure to contain – overtopping'.	No change proposed.	NA
I14	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.	No change proposed.	NA
I15	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.	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
I16	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.	No change proposed.	NA
I17	The holder must record any changes to the MRL in the Register of Regulated Structures.	No change proposed.	NA
I18	**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**.	No change proposed.	NA
I19	By **1 November of each year**, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the DSA volume for the dam (or network of linked containment systems).	No change proposed.	NA
I20	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.	No change proposed.	NA
I21	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.	No change proposed.	NA
I22	**Annual Inspection Report** Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
I23	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experience person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.	No change proposed.	NA
I24	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the most recent version of the 'Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)' or its successor.	No change proposed.	NA
I25	The holder must within **twenty (20) business days** of receipt of the annual inspection report, provide to the administering authority: a) the recommendations section of the annual inspection report; b) if applicable, any actions being taken in response to those recommendations; and c) if, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within **ten (10) business days** of receipt of the request.	No change proposed.	NA
I26	**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.	No change proposed.	NA
I27	**Decommissioning and Rehabilitation** Dams must not be abandoned but be either:	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	a) decommissioned and rehabilitated to achieve compliance with **condition I28**; 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 c) The administering authority, the holder of the environmental authority and the landholder agree in writing that: i) the dam will be used by the landholder following the cessation of the environmentally relevant activity(ies); and ii) landholder is responsible for the dam, on and from an agreed date.		
I28	Before surrendering this environmental authority the site must be rehabilitated to achieve a safe, stable, non-polluting landform and meets the requirement of **conditions G1** and **G6**.	No change proposed.	NA
I29	**Register of Regulated Structures** A Register of Regulated Structures must be established and maintained by the holder for each regulated dam.	No change proposed.	NA
I30	The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.	No change proposed.	NA
I31	The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with **conditions I10** and **I11** has been achieved.	No change proposed.	NA
I32	The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
I33	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.	No change proposed.	NA
I34	The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.	No change proposed.	NA
I35	**Transitional Arrangements** All existing structures that have not been assessed in accordance with either the Manual of the former Manual for Assessing Hazard Categories and Hydraulic Performance of Dams must be assessed and certified in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635) by **20 February 2016**.	No change proposed.	NA
I36	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635) specified in **Table I1: Transitional Requirements for Existing Structures**, depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.	No change proposed.	NA
I37	**Table 18: Transitional Requirements for Existing Structures** 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.	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
I38	Certification of the transitional assessment required by **conditions I35** and **I36** (as applicable) must be provided to the administering authority **20 February 2016**.	No change proposed.	NA

Table I1: Transitional 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 (EM635)			
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 of 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.

23.11 Schedule J – Watercourse Diversions

Condition	Existing EA condition	Proposed EA condition	Justification for change
J1	Permanent watercourse diversions Permanent watercourse diversions, or the re-establishment of a pre-existing watercourse where a temporary watercourse diversion is being replaced, must be designed and constructed to: **a)** incorporate natural features (including geomorphic and vegetation) present at the location of the diversion; **b)** maintain the pre-existing hydrologic characteristics of surface water and groundwater systems for the area in which the watercourse diversion is located; **c)** maintain the hydraulic characteristics of the permanent watercourse diversion that are equivalent to other local watercourses and are suitable for the area in which the diversion is located without using artificial structures that require on-going maintenance; **d)** maintain sediment transport and water quality regimes that allow the diversion to be self-sustaining, while minimising any impacts to upstream and downstream water quality, geomorphology or vegetation; and **e)** maintain equilibrium and functionality in all substrate conditions at the location of the diversion.	No change proposed.	NA
J2	**Temporary watercourse diversions** Temporary watercourse diversions must be designed and constructed to: a) maintain the pre-existing hydrologic characteristics of surface water systems for the area in which the watercourse diversion is located; b) maintain the hydraulic characteristics of the watercourse diversion that are equivalent to other local watercourses and are suitable for the area in which the diversion is located. Where structures that require on-going maintenance are used, they must not	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
	compromise the equilibrium and performance of the temporary watercourse diversion and adjoining watercourses; c) maintain sediment transport and water quality regimes that minimise any impacts to upstream water quality, geomorphology or vegetation; and d) maintain equilibrium and functionality at all substrate conditions at the location of the diversion.		
J3	**Design Plan** A certified Design Plan that achieves **condition J1** for permanent watercourse diversions and **condition J2** for temporary watercourse diversions must be submitted to the administering authority at least **ten (10) business days** before commencing construction of the diversion.	No change proposed.	NA
J4	The certified design plan for any temporary or permanent watercourse diversion must be consistent with the functional design/s that formed a part of the application documents for this authority.	No change proposed.	NA
J5	**Construction and operation – all diversions** A certified set of 'as constructed' drawings and specifications must be submitted to the administering authority within **sixty (60) business days** from the completion of construction of the temporary or permanent watercourse diversion, or re-establishment of the pre-existing watercourse. These drawings and specifications must state: a) that the 'as constructed' drawings and specifications meet the original intent of the design plan for the watercourse diversion; and b) construction of the watercourse diversion is in accordance with the design plan	No change proposed.	NA

Condition	Existing EA condition	Proposed EA condition	Justification for change
J6	**Register – all diversions** The details of watercourse diversions planned and constructed under an environmental authority must be accurately recorded on the Register of Watercourse Diversions kept by the holder of the environmental authority. An electronic copy must be provided to the administering authority on request.	No change proposed.	NA

23.12 Definitions

Key terms and/or phrases used in this document are defined in this section. 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 as defined in the Macquarie Dictionary.

'80th percentile' is not more than one fifth, of the measured values are to exceed the stated release limit for the limit period. For example, no more than eight (8) for any ten (10) consecutive samples for the long term period.

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

'administering authority' is the agency that administers the environmental authority provisionsunder the *Environmental Protection Act 1994*'.

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

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

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

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

a) against recommendations contained in previous annual inspections reports;

b) against recognised dam safety deficiency indicators;

c) for changes in circumstances potentially leading to a change in consequence category;

d) for conformance with the conditions of this authority;

e) for conformance with the 'as constructed' drawings;

f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after **31 May** each year but prior to **1 November** of that year, of accumulated sediment, state of the containment barrier and the level of liquids in thedam (or network of linked containment systems); and

g) for evidence of conformance with the current operational plan.

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

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

a) exactly what has been assessed and the precise nature of that determination;

b) the relevant legislative, regulatory and technical criteria on which the assessment has beenbased;

c) the relevant data and facts on which the assessment has been based, the source of thatmaterial, 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 or regulated structure, means:

a) operations of any kind and all things constructed, erected or installed for that dam; and

b) any land used for those operations.

'authority' means an environmental authority or a development approval.

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

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

a) rock, coal and other minerals for later recovery; or

b) structural components or other items to facilitate removal from a site or for reuse.

'certification' means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the most recent version of the 'Manual for assessing consequence categories and hydraulic performance of structures(ESR/2016/1933)' or sits successor, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs(ID: 1.4 (2A)).

'certified' with respect to watercourse diversions, means assessed and approved by a suitably qualified and experienced person. In relation to 'as constructed' drawings and specifications, the certification must be by the suitably qualified person who supervised the construction of the watercourse diversion, or re-establishment of the watercourse.

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

'chemical' means:

a) an agricultural chemical product or veterinary chemical product within the meaning of the Agricultural and '*Veterinary Chemicals Code Act 1994'* (Commonwealth); or

b) a dangerous good under the Australian Code for the Transport of Dangerous Goods byRoad and Rail approved by the Australian Transport Council; or

c) a lead hazardous substance within the meaning of the '*Workplace Health and SafetyRegulation 1997*'; or

d) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons preparedby 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, foodadditive, bleach, sanitiser, disinfectant, or biocide; or

iv) a fertiliser for agricultural, horticultural or garden use; or

v) a substance used for, or intended for use for mineral processing or treatment ofmetal, pulp and paper, textile, timber, water or wastewater; or

vi) manufacture of plastic or synthetic rubber.

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

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

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

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

'daily peak design capacity' for sewage treatment works, has the meaning in Schedule 2, section63(4) of the Environmental Protection Regulation 2008 as the higher equivalent person (EP) for theworks calculated using each of the formulae found in the definition for EP.

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

'dam crest volume' means the volume of material (liquids and/or solids) that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (eg: via spillway).

'design plan' is a document setting out how all identified consequence scenarios are addressed inthe planned design and operation of a regulated structure.

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

'designer' for the purposes of a regulated structure, means the certifier of the design plan for theregulated dam.

Disturbance of land includes:

a) compacting, removing, covering, exposing or stockpiling of earth;

b) removal or destruction of vegetation or topsoil or both to an extent where the land has beenmade susceptible to erosion;

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

d) the submersion of areas by tailings or hazardous contaminant storage and dam/structurewalls;

e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc)which is to be removed after the mining activity has ceased; or

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

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

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

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

c) by agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mineoperator (such as climatic conditions);

d) areas under permanent infrastructure. Permanent infrastructure includes any infrastructure(roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc.) which is to be left by agreement with the landowner; or

e) disturbance that pre-existed the grant of the tenure.

'document' has the meaning in the *Acts Interpretation Act 1954* and means:

a) any paper or other material on which there is writing; and

b) any paper or other material on which there are marks; and

c) figures, symbols or perforations having a meaning for a person qualified to interpretthem; and

d) any disc, tape or other article or any material from which sounds, images, writings or messages are capable of being produced or reproduced (with or without the aid of anotherarticle or device).

'EC' means electrical conductivity.

'emergency action plan' means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel inthe event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to affected persons and the implementation of protection measures. The planmust require dam owners to annually review and update contact information where required.

'enhanced release' means a release of mine affected water from release points RP4, RP5, RP6,RP7 OR RP10 in accordance with Schedule K.

'environmental authority' means this environmental authority.

'environmental harm' has the meaning in section 14 of the *Environmental Protection Act 1994* andmeans any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value, and includes environmentalnuisance.

'environmental nuisance' has the meaning in section 15 of the *Environmental Protection Act 1994* and means unreasonable interference or likely interference with an environmental value caused by –

a) aerosols, fumes, light, noise, odour, particles or smoke; or

b) an unhealthy, offensive or unsightly condition because of contamination; or

c) another way prescribed by regulation.

'environmental offset' has the meaning of section 7 of the *Environmental Offsets Act 2014*.

'equilibrium': a state where 'balance' is achieved despite changing variables.

'equivalent person or EP' has the meaning under section 3 of the Planning Guidelines For Water Supply and Sewerage, 2005, published by the Queensland Government. It is calculated in accordance with Schedule 2, Section 63(4) of the Environmental Protection Regulation 2008 where:

a) EP = V/200 where V is the volume, in litres, of the average dry weather flow of sewage thatcan be treated at the works in a day; or

b) EP = M/2.5 where M mis the mass, in grams, of phosphorous in the influent that the worksare designed to treat as the inlet load in a day.

'existing authority' has the meaning in section 94 of the *Environmental Offsets Act 2014*.

'existing structure' means a structure that was in existence prior to (insert date of EA the adoption of this schedule of conditions under the authority) meets any or both of the following, a structure:

a) with a design that is in accordance with the version 5.0 of Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933) and that is considerably in progress; and

b) that is under considerable construction or that is constructed.

'extreme storm storage' – means a storm storage allowance determined in accordance with the criteria in the most recent version of the 'Manual for assessing consequence categories and hydraulicperformance of structures (ESR/2016/1933)' or its successor published by the administering authority.

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

'functional design' is a document that contains 'conceptual' information about the design, operationand revegetation criteria of a watercourse diversion that addresses the outcomes stated in the modelconditions an any conditions on the environmental authority relating to the diversion. The document should include, but not be limited to:

a) geomorphic and vegetation assessment of the existing watercourse;

b) hydrologic conditions of the existing watercourse;

c) the proposed watercourse diversion route; and

d) results from hydrologic, hydraulic and sediment transportation modelling used in the design ofthe diversion.

'GDA' means Geocentric Datum of Australia.

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

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

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

'$L_{A1, Adj,15min}$' means the A-weighted sound pressure level, adjusted for tonal character, that which isexceeded for 1% of any 15 minute period.

'L_{A90}' means the A-weighted sound pressure level that has been exceeded for 90% of the sampleperiod.

'$L_{Aeq, Adj\ 15min}$' means the A-weighted sound pressure level of a continuous steady sound, adjusted for tonal character, that within any 15 minute period has the same square sound pressure as a sound level that varies with time.

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

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

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

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

'licensed place' means the mining activities carried out at the mining tenements detailed in page 1 of this environmental authority.

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

'm' means metres.

'mandatory reporting level' or '**MRL'** means a warning and reporting level determined in accordance with the criteria in the most recent version of the 'Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)' or its successor published by the administering authority.

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

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

'mining activity' or **'mining activities'** means exploration, construction, mining operation, rehabilitation and monitoring activities on the mining tenures stated in Environmentally Relevant Activity and location details of this environmental authority.

'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 activitieswhich 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 onlybeen in contact with:

i) land that has been rehabilitated to a stable landform and either capped or revegetatedin 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 relevantpart 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 have been capped and have monitoring data demonstratinghazardous 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 inthis environmental authority, if those parameters had been applicable to the surface water runoff, or

3. both.

'minimise' is to reduce to the smallest possible amount or degree.

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

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

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

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

'operational plan' includes:

a) normal operating procedures and rules (including clear documentation and definition ofprocess inputs in the DSA allowance); and

b) contingency and emergency action plans including operating procedures designed to avoidand/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

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

'permanent watercourse diversion' is a man-made structure that incorporates the geomorphologic, hydraulic, hydrologic and ecological components of a local watercourse and is designed, constructed, operated and maintained according to an engineering standard that ultimately achieves a self- sustaining

watercourse able to function without features or characteristics that rely on ongoing maintenance or that impose a financial or other burden on the proponent, government tor the community.

'pre-existing watercourse' is the section of a watercourse from which the flow of water will bediverted as a result of the construction and operation of a watercourse diversion.

'prescribed environmental matters' has the meaning in section 10 of the *Environmental Offsets Act2014*, limited to Matters of State Environmental Significance listed in schedule 2 of the EnvironmentalOffsets Regulation 2014.

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

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

b) a World Heritage Area.

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

a) a watercourse;

b) groundwater; and

c) an area of land that is not specified in Schedule # - Table # (Authorised activities) of this environmental authority.

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

'regional ecosystem' has the meaning in the Methodology for Surveying and Mapping of RegionalEcosystems and Vegetation Communities in Queensland (Version 3.2 August 2012) and means a vegetation community in a bioregion that is consistently associated with a particular combination of geology, landform and soil. Regional ecosystems of Queensland were originally described in Sattlerand Williams (1999). The Regional Ecosystem Description Database (Queensland Herbarium 2013)is maintained by Queensland Herbarium and contains the current descriptions of regional ecosystems.

'Register of Regulated Structures' includes:

a) date of entry in the register;

b) name of the dam, its purpose and intended/actual contents;

c) the consequence category of the dam as assessed using the *Manual for AssessingConsequence Categories and Hydraulic Performance of Structures* (EM635);

d) date, names, and reference for the design plan plus dates, names, and reference numbers ofall document(s) lodged as part of a design plan for the dam;

e) name and qualifications of the suitably qualified and experienced person who certified thedesign plan and 'as constructed' drawings;

f) for the regulated dam, other than in relation to any levees –

   i) the dimensions (metres) and surface area (hectares) of the dam measured at thefootprint of the dam;

   ii) coordinates (latitude and longitude in GDA94) within five metres at any point from theoutside of the dam including its storage area;

   iii) dam crest volume (megalitres);

iv) spillway crest level (metres AHD);

v) maximum operating levels (metres AHD);

vi) storage rating table of stored volume versus level (metres AHD);

vii) design storage allowance (megalitres) and associated level of the dam (metres AHD); and

viii) mandatory reporting level (metres AHD);

g) the design plan title and reference relevant to the dam;

h) the date construction was certified as compliant with the design plan;

i) the name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;

j) details of the composition and construction of any liner;

k) the system for the detection of any leakage through the floor and sides of the dam;

l) dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;

m) dates when recommendations and actions arising from the annual inspection were providedto the administering authority; and

n) dam water quality as obtained from any monitoring required under this authority as at 1November of each year.

'regulated dam' means any dam in the significant or high hazard category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (EM635)published by the administering authority.

'regulated structure' includes land-based containment structures, levees, bunds and voids, but not atank or container designed and constructed to an Australian Standard that deals with strength and structural integrity.

'rehabilitation' means the process of reshaping and revegetating land to restore it to a stablelandform.

'release event' means a surface water discharge from mine affected water storages or contaminatedareas on the licenced place.

'reporting limit' means the lowest concentration that ban be reliably measured with specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes, the reporting limit is selected as the lowest non-zero standard in the calibration curve. Results that fall below the reporting limit will be reported as "less than" the value of the reporting limit. The reporting limit is also referred to as the practical quantification limit or the limit of quantification. For polycyclic aromatic hydrocarbons, the reporting limit must be based on super-ultra trace methods and, depending on the specific polycyclic aromatic hydrocarbon, will range between 0.005ug/L–0.02µg/L.

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

'revegetation' is the re-establishment of vegetation of a species and density of cover similar to surrounding undisturbed areas or the landform that existed before mining activities on soil surfacesassociated with the construction or rehabilitation of a watercourse diversion.

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

'run of mine ore' refers to mined coal, excluding waste and dilution.

'self-sustaining' means not requiring on-going intervention and maintenance to maintain functionalriverine processes and characteristics.

'sensitive place' means:

a) a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or

b) a motel, hotel or hostel; or

c) an educational institution; or

d) a medical centre or hospital; or

e) a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or aWorld Heritage Area; or

f) a public park or gardens.

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

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

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

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

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

'strategic environmental areas' has the meaning in section 11(1) of the *Regional Planning InterestAct 2014*.

'structure' means dam or levee.

'suitably qualified and experienced person' in relation to regulated structures means a person whois a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:

a) For regulated dams, an RPEQ who is a civil engineer with the required qualifications in damsafety and dam design.

b) For regulated levees, an RPEQ who is a civil engineer with the required qualifications in thedesign of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

'suitably qualified and experienced person' in relation to watercourse diversions means a person who is a RPEQ under the provisions of the *Professional Engineers Act 2002*, who has an **appropriatelevel of expertise** in the structures, geomechanics, hydrology, hydraulics and environmental impact of watercourse diversions.

An **appropriate level of expertise** includes:

a) demonstrable competency, experience and expertise in:

   i) investigation, design or construction of watercourses diversions;

   ii) operation and maintenance of watercourse diversions;

   iii) geomechanics with particular emphasis on channel equilibrium, geology andgeochemistry;

   iv) hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology;

   v) hydraulics with particular reference to sediment transport and deposition and erosioncontrol;

   vi) hydrogeology with particular reference to seepage and groundwater;

   vii) solute transport processes and monitoring thereof; or

b) sufficient knowledge and experience to certify that where the **suitably qualified and experienced person** has relied on advice and information provided by other **persons withrelevant expertise**:

   i) they consider it reasonable to rely on that advice and information; and

   ii) the expert providing the advice and information has knowledge, competency, suitable experience and demonstrated expertise in the matters related to watercourse diversions.

Persons with relevant expertise include:

a) Geomorphologist: person who has demonstrated competency and relevant experience instream geomorphology and watercourse diversions;

b) Geotechnical Expert: person who has demonstrated competency and relevant experience in geotechnical assessment of soil characteristics suitable for watercourse diversions;

c) Vegetation Expert: person who has demonstrated competency and relevant experience inthe identification, role and function of vegetation with watercourses and adjoining floodplains, and has demonstrated competency and relevant experience in revegetation ofwatercourse diversions and adjoining floodplains;

d) Groundwater Expert: person who has demonstrated competency and relevant experience in groundwater systems;

e) Surface Water Expert: person who has demonstrated competency and relevant experiencein hydrology;

f) Engineer: person who is a RPEQ under the provisions of the *Professional Persons Act 2002*or has similar qualifications under a respected professional registration association, and hasdemonstrated competency and relevant experience in design and construction of watercourse diversions; and

g) Soils Expert: person who has demonstrated competency and relevant experience in soilclassification including the physical, chemical and hydrologic analysis of soil.

'system design plan' means a plan that manages an integrated containment system that shares therequired DSA and/or ESS volume across the integrated containment system.

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

'µS/cm' means micro siemens per centimetre.

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

'waste' is defined under section 13 of the *Environmental Protection Act 1994*.

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

'watercourse' has the same meaning given in section 5 of the *Water Act 2000*.

'**watercourse diversion**' is a man-made structure that diverts or interferes with the course of flowwithin a watercourse, but that does not impound water.

'water year' means the **twelve (12) month** period from **1 July** to **30 June**.

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

'**WaTERS'** means the Water Tracking and Electronic Reporting System (WaTERS) used for trackingof regulated activities in Queensland that involve water releases to the environment.

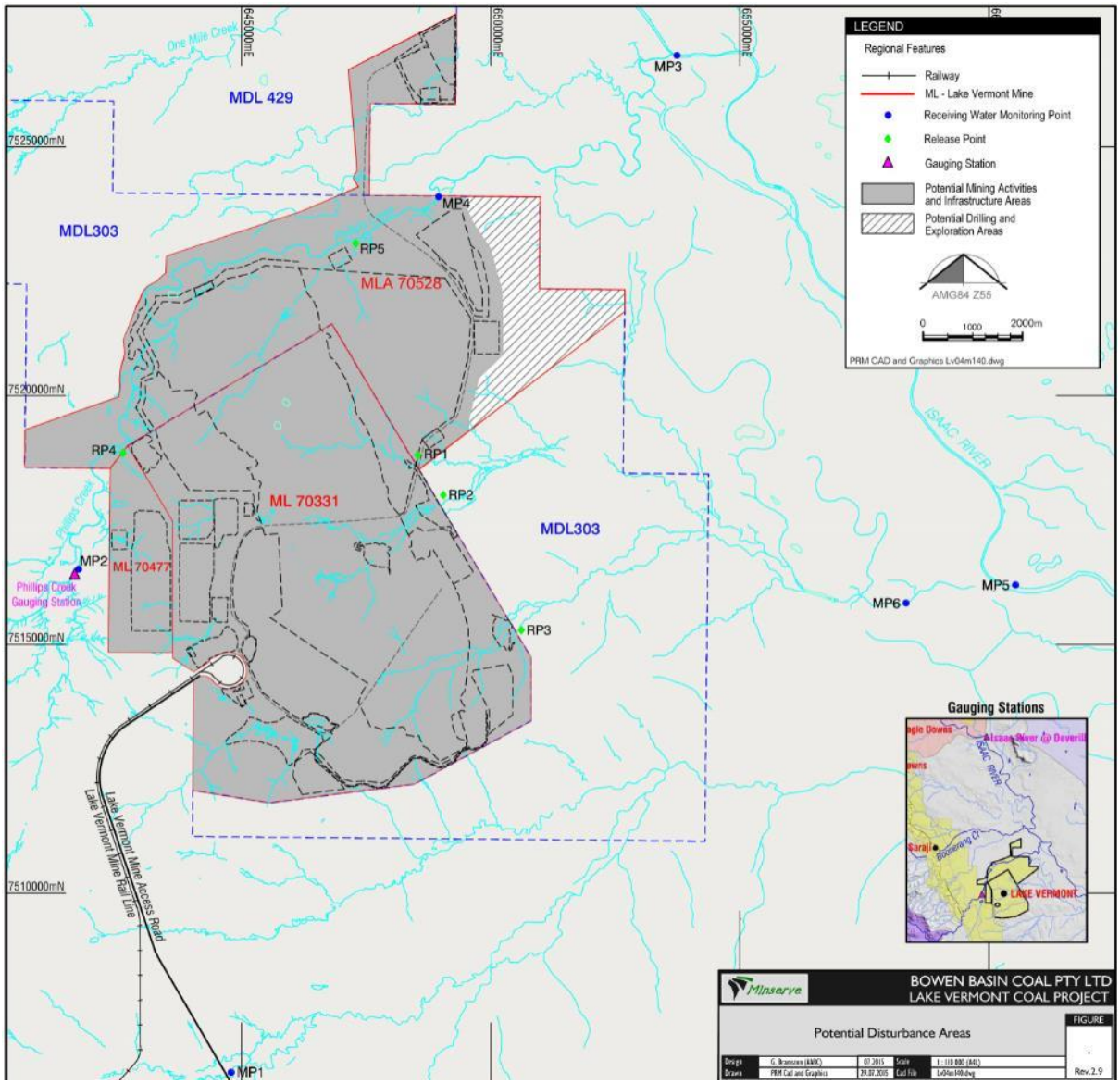
'water quality' means the chemical, physical and biological condition of water.

'wet season' means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemedto extend from **1 November** in one year to **31 May** in the following year inclusive.

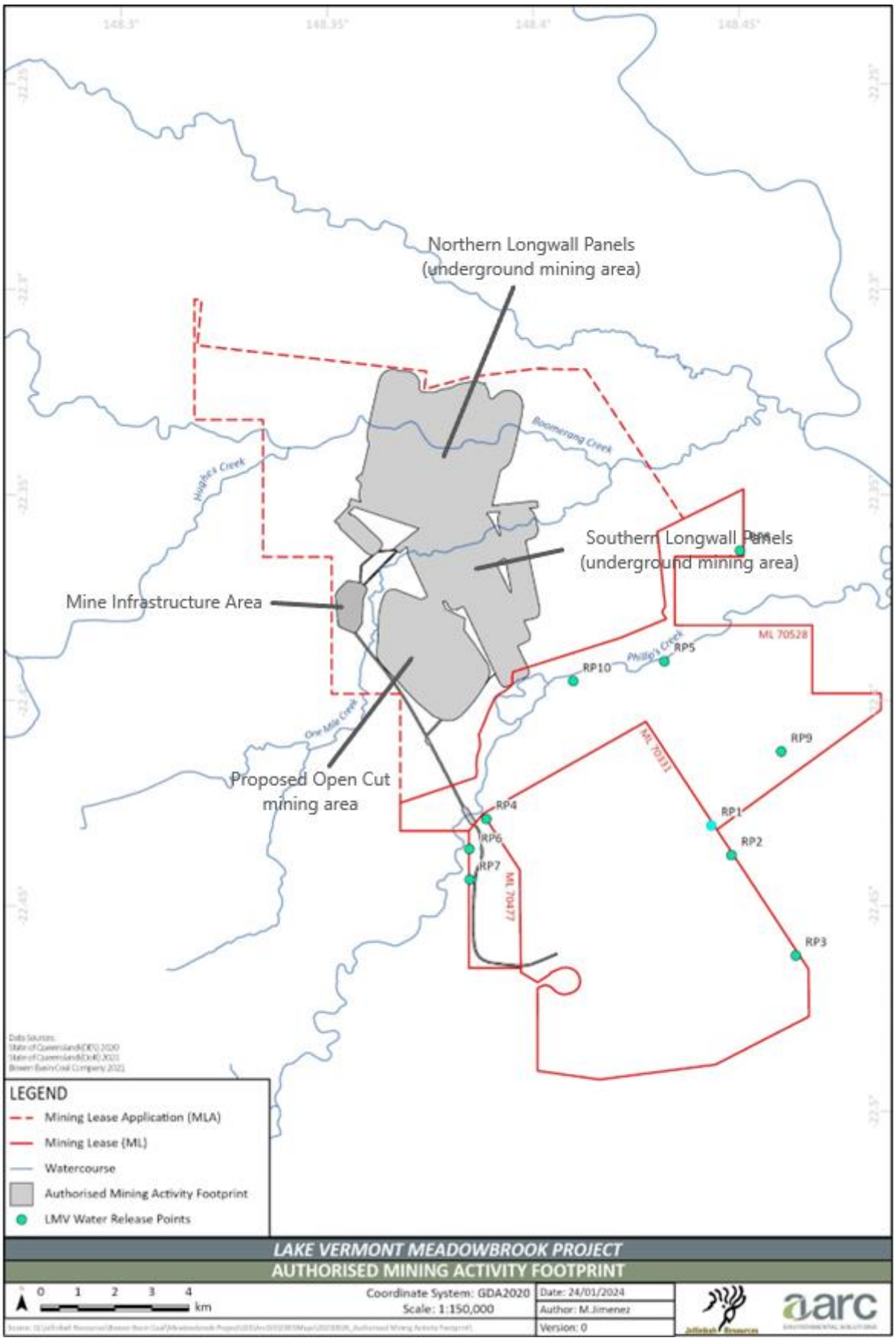
END OF DEFINTIIONS

Attachments

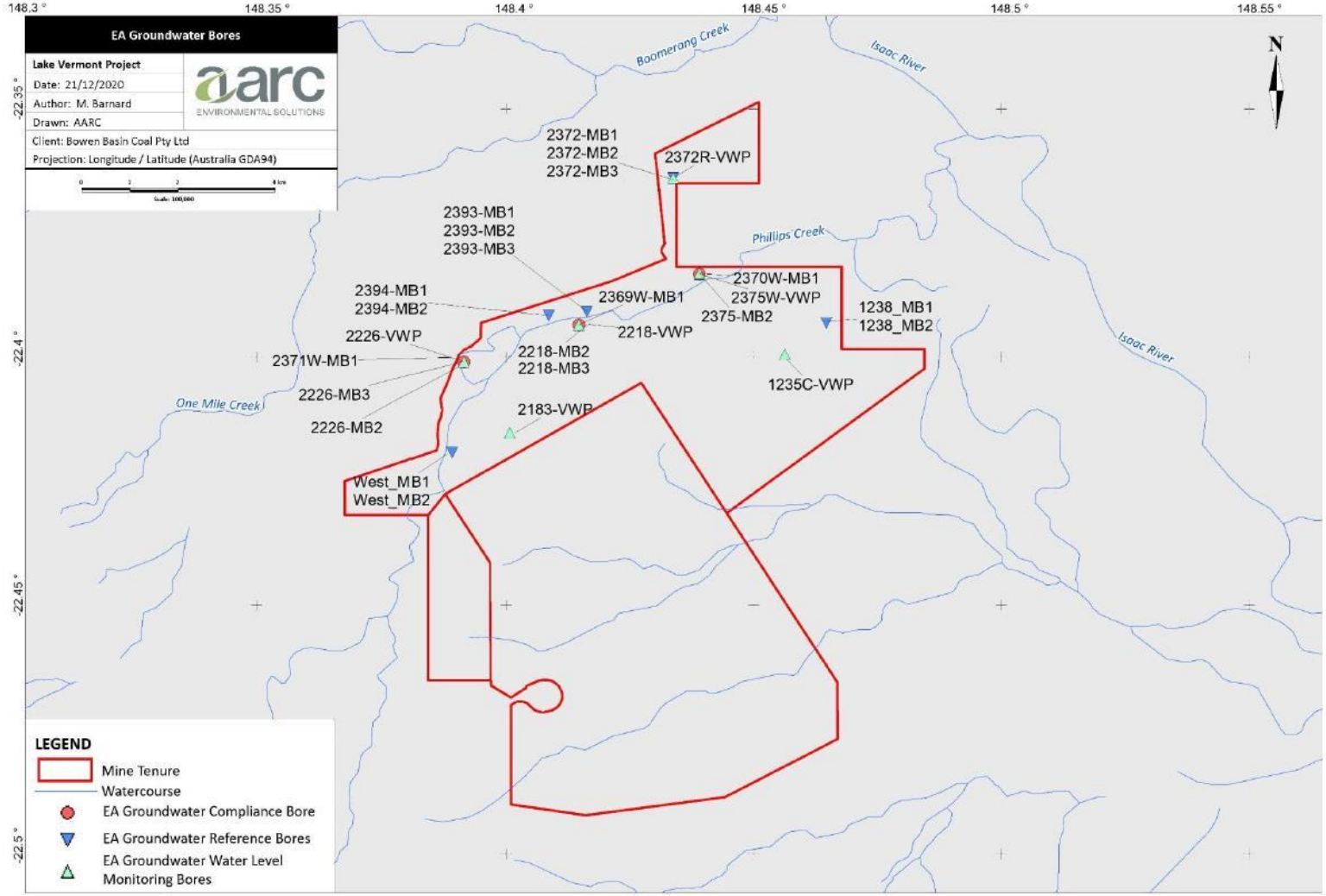
Attachment 1: Authorised Disturbance Footprint (Lake Vermont Coal Mine)



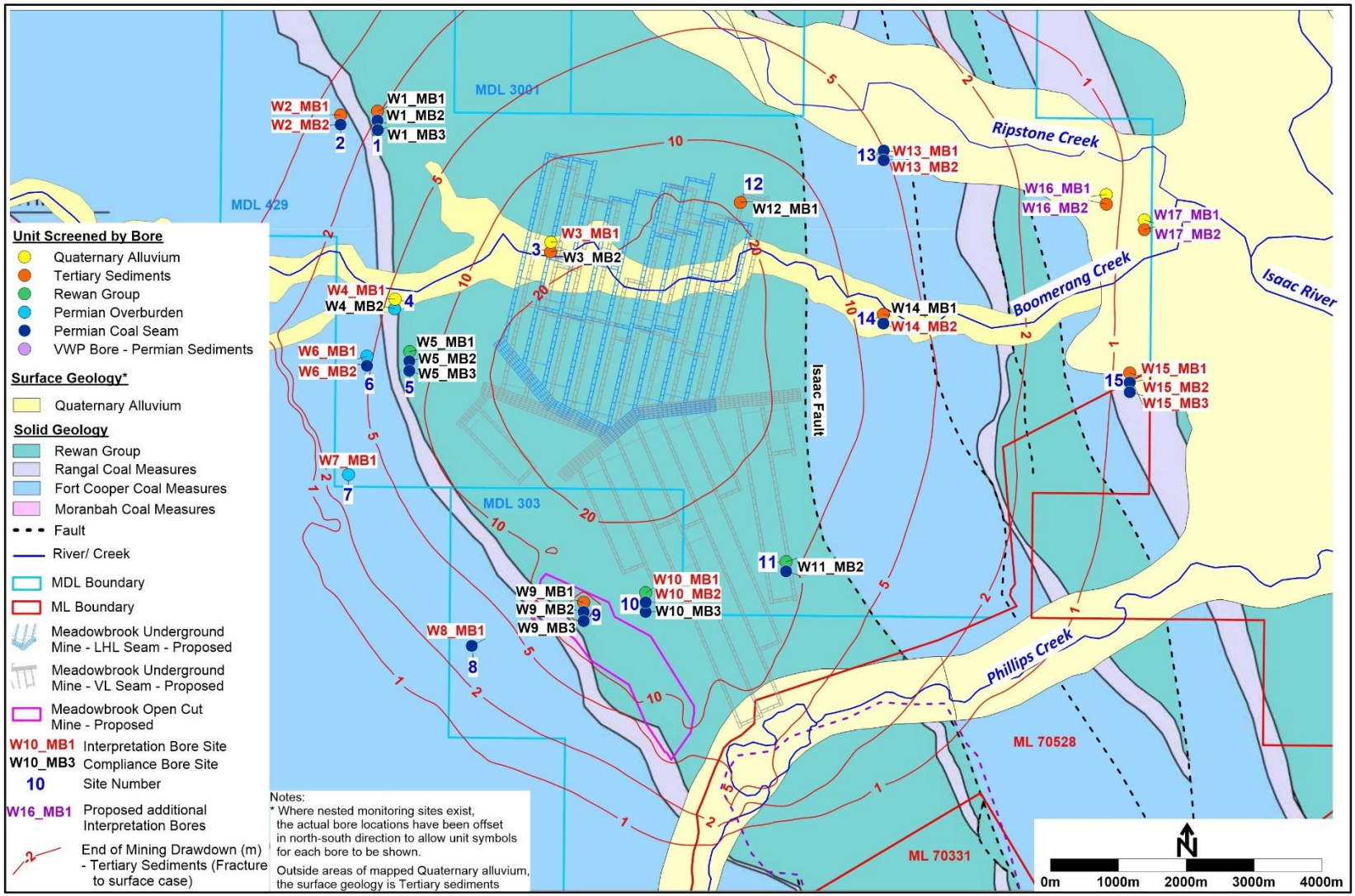
Attachment 2: Authorised Disturbance Footprint (Meadowbrook Project)



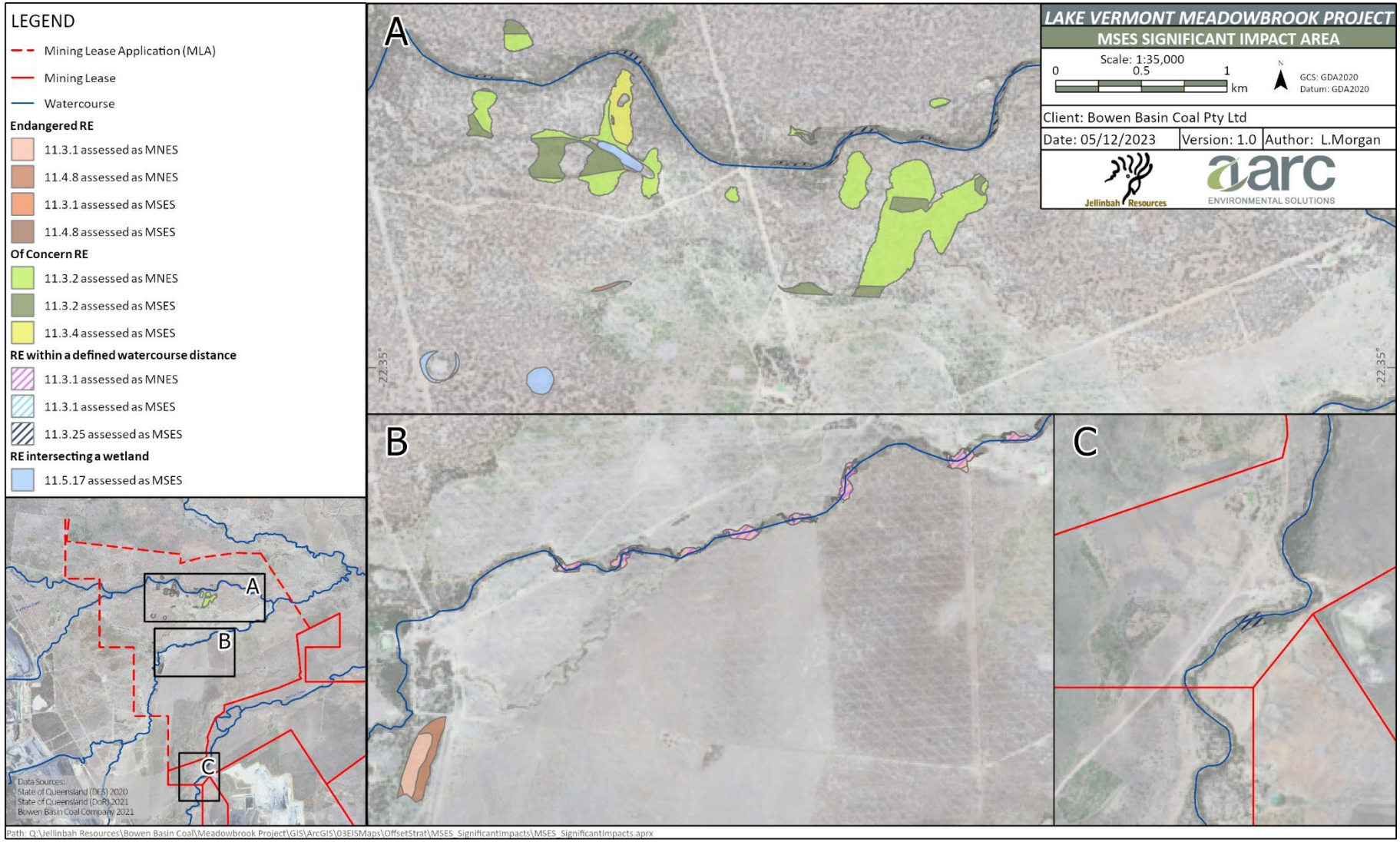
Attachment 3: Groundwater Bore Monitoring Locations (Lake Vermont Coal Mine)



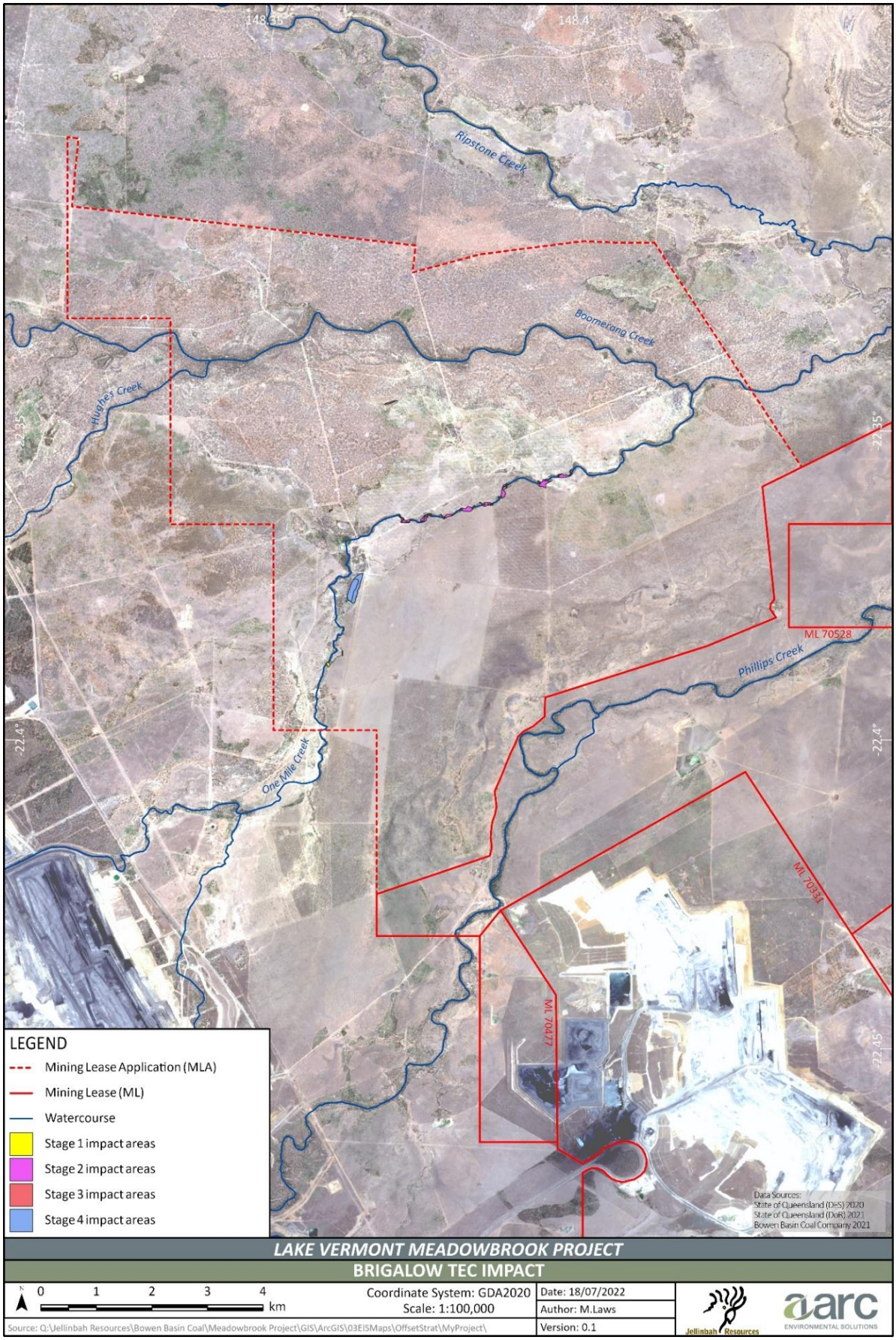
Attachment 4: Groundwater Bore Monitoring Locations (Meadowbrook Project)



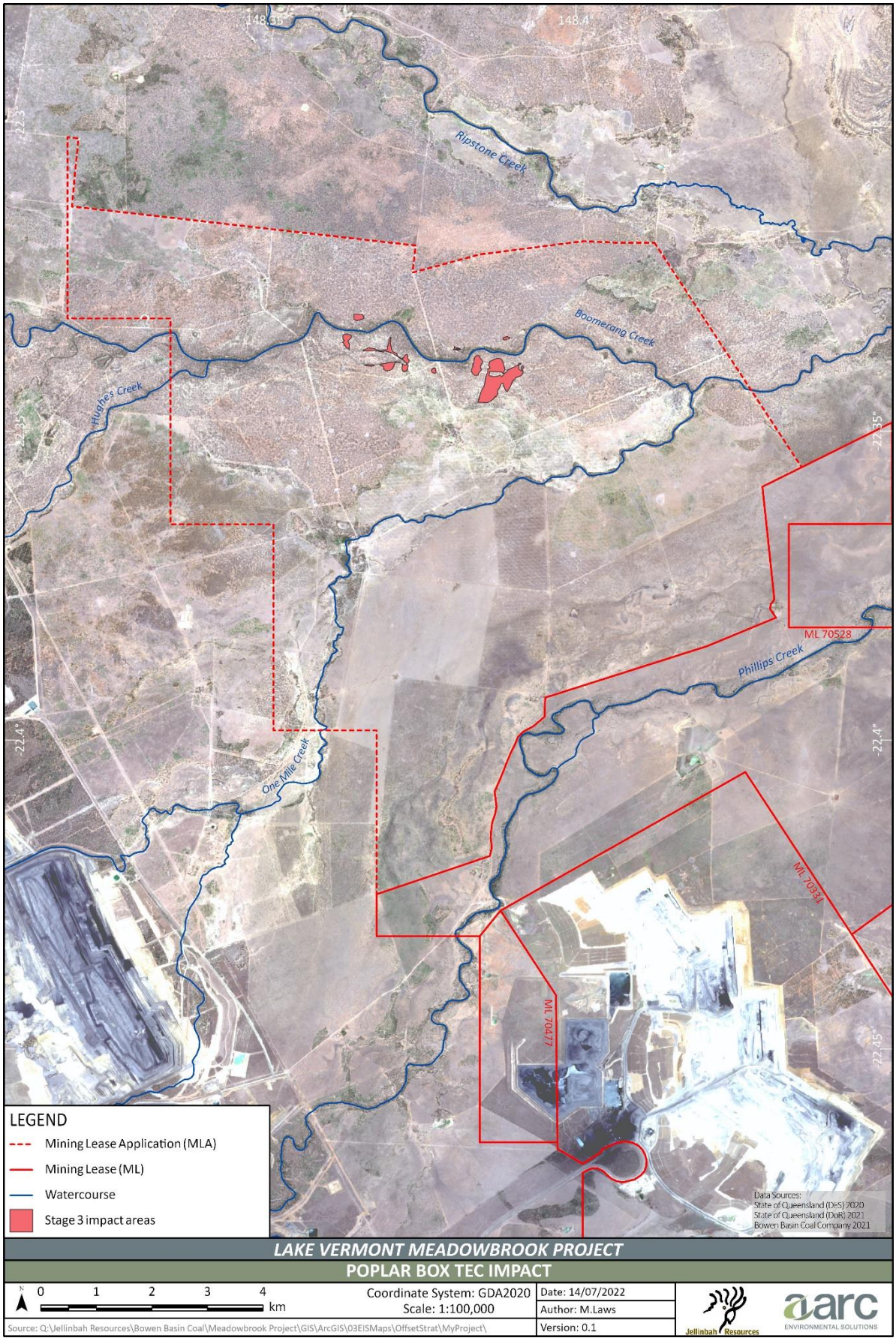
Attachment 5: MSES authorised significant impact areas



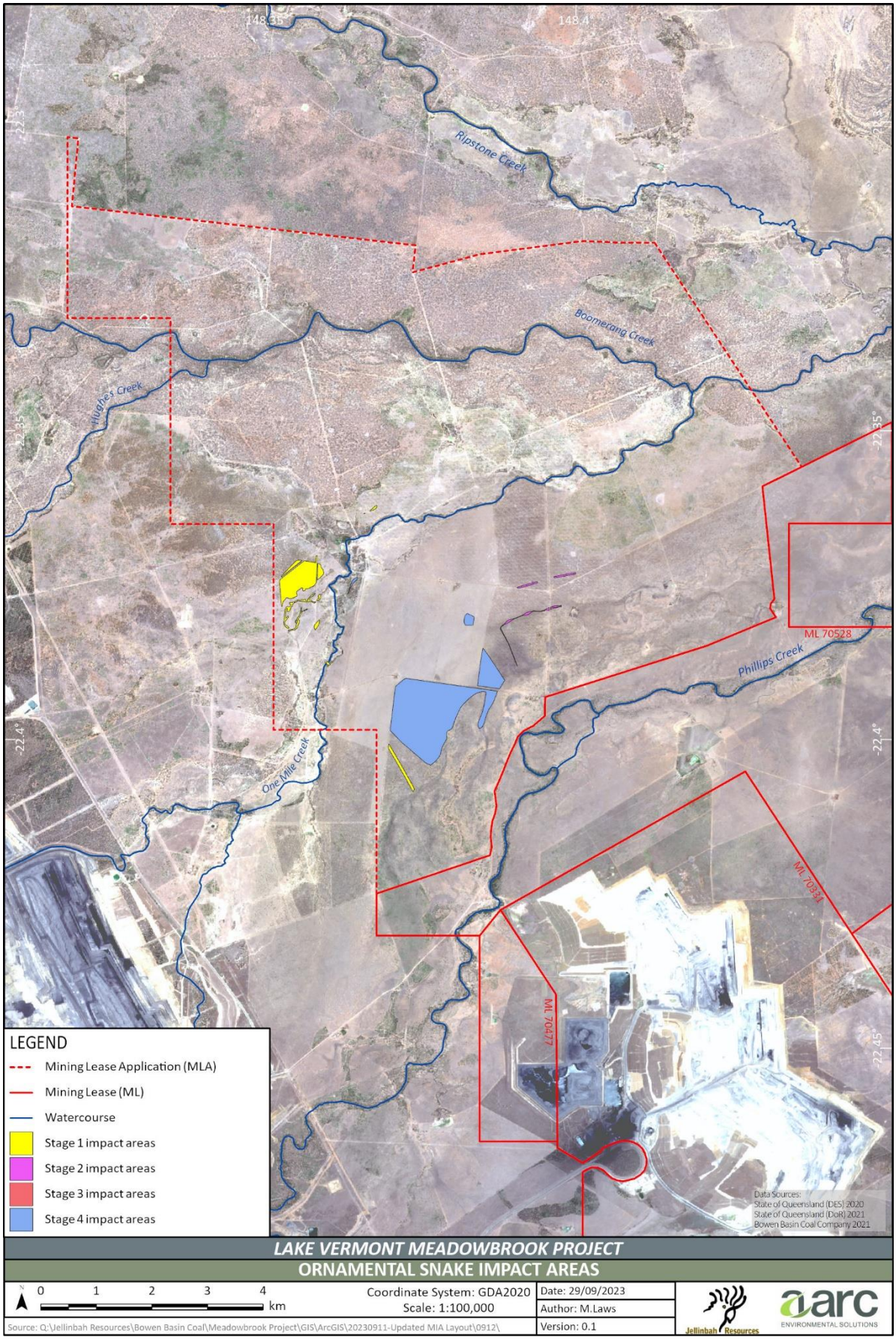
Attachment 6: Brigalow TEC authorised significant impact areas



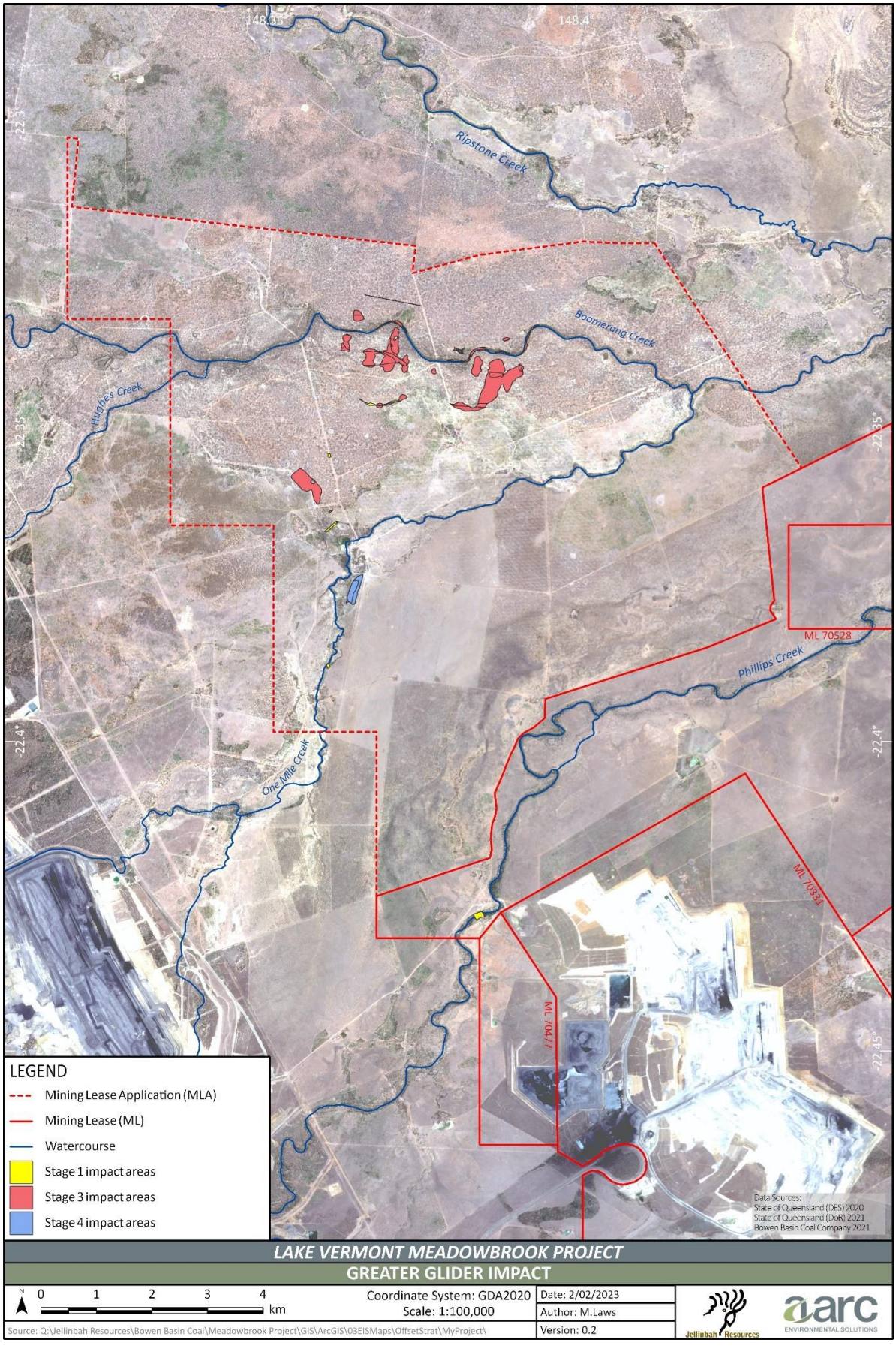
Attachment 7: Poplar Box TEC authorised significant impact areas



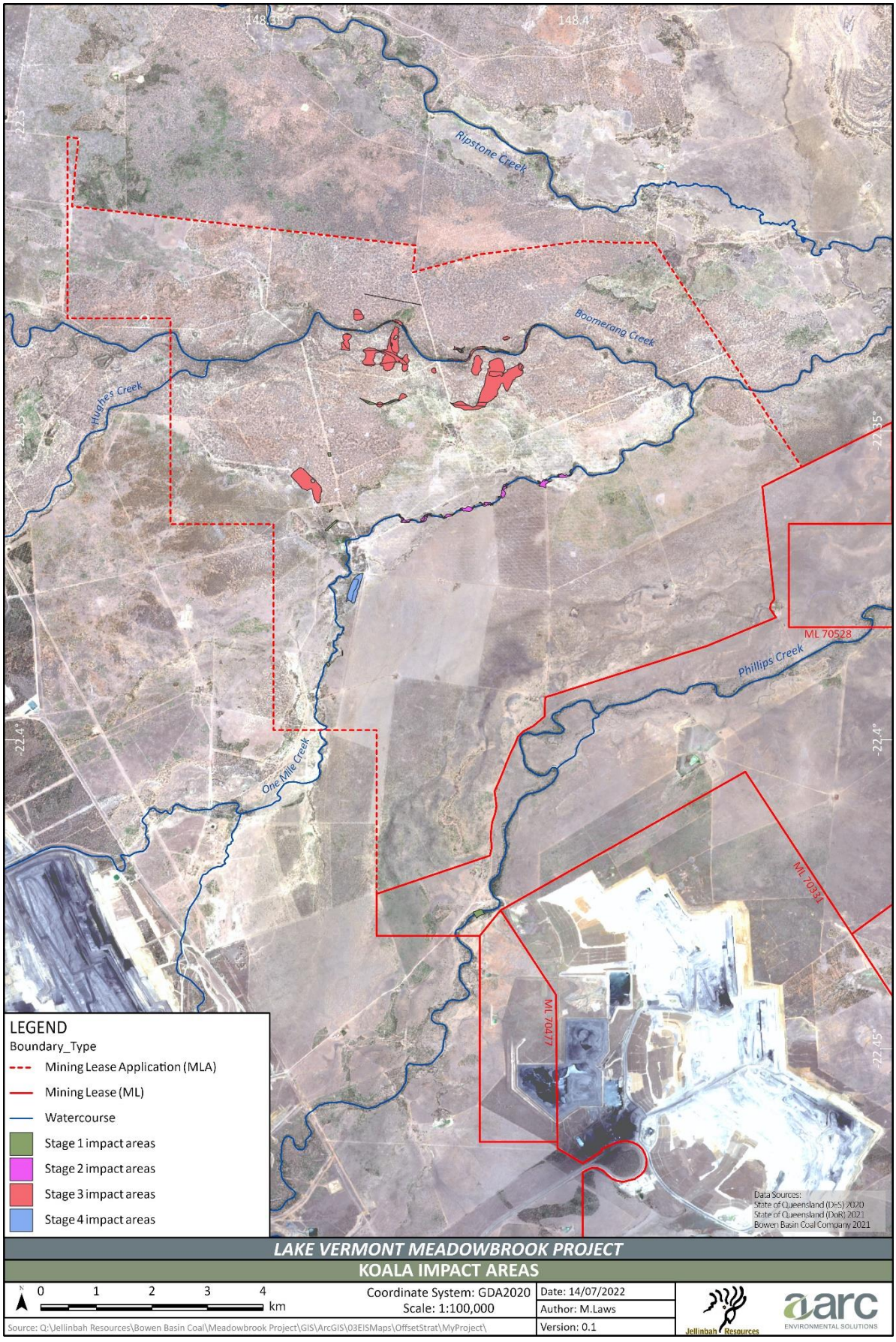
Attachment 8: Ornamental Snake authorised significant impact areas



Attachment 9: Greater Glider authorised significant impact areas



Attachment 10: Koala authorised significant impact areas



Attachment 11: Identified GDE locations (Meadowbrook)