REPORT ON

LAKE VERMONT NORTHERN EXTENSION PROJECT

UNDERGROUND WATER MONITORING PROGRAM

For: Bowen Basin Coal Pty Ltd

Project number: 4162

Date: 19/12/2024

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Appendix A Conditions of approval

Lake Vermont Northern Extension Project

Underground Water Monitoring Program

Prepared for

Bowen Basin Coal Pty Ltd

1. Introduction

The Lake Vermont Northern Extension Project (the Project) Underground Water Monitoring Program (UWMP) has been prepared by **hydrogeologist.com.au**, on behalf of the Bowen Basin Coal Pty Ltd to satisfy the Project regulatory conditions. Bowen Basin Coal owns the Lake Vermont Mine on Mining Lease (ML) 70331, ML 70477 and ML 70528 (Figure 1-1). The Project is an extension of the existing Lake Vermont open cut mine located in ML 70528 and includes open-cut pits called Satellite Pit, B Pit and East Pit. Following further resource definition and technical work, the pit referred to as D Pit in the approval documents is not planned to be completed and will not exist.

1.1. Environmental Protection and Biodiversity Conservation Act

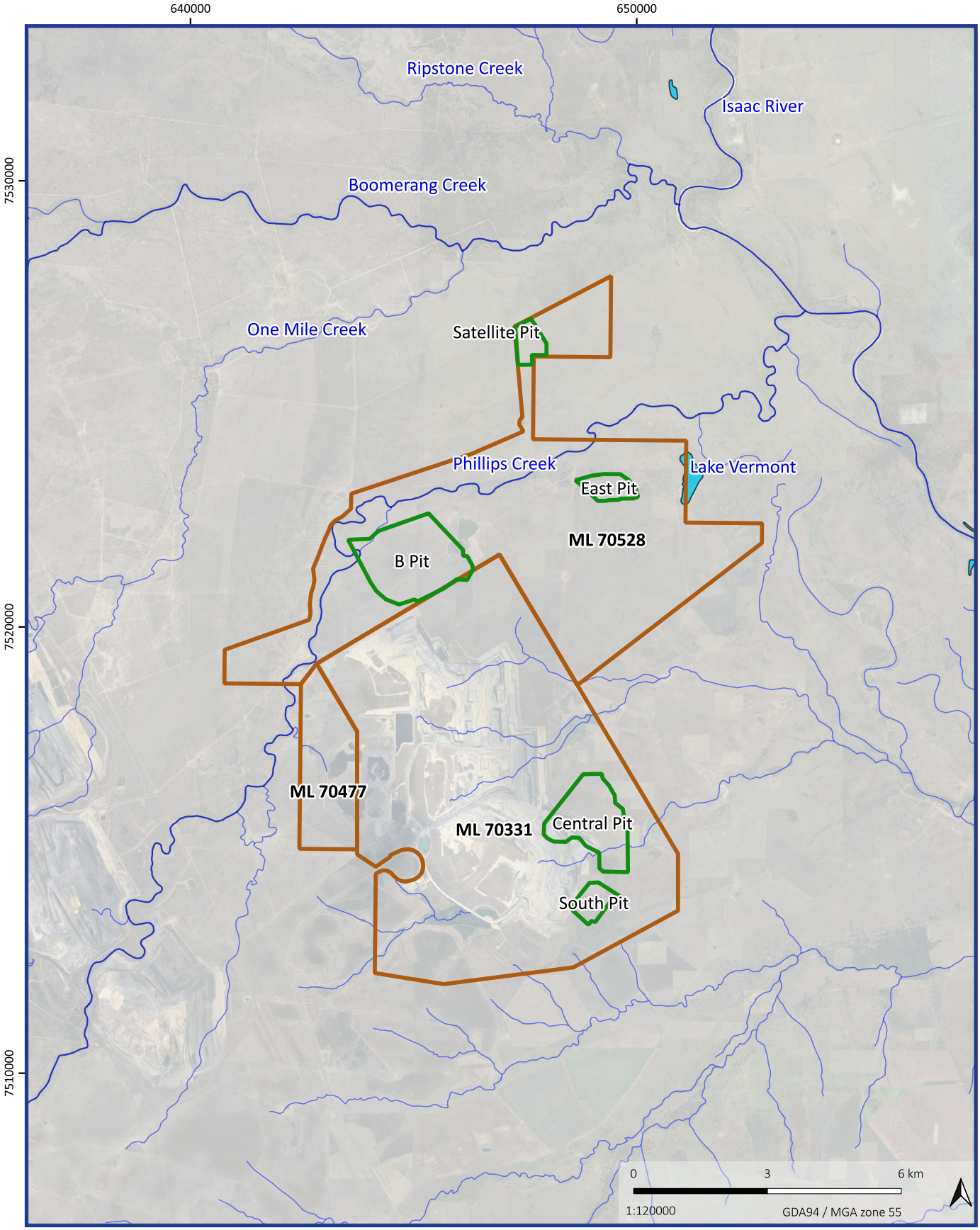
The Australian Government Department of Climate Change, Energy, Environment and Water (DCCEEW) lists the conditions for the Project under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), including:

1. *The approval holder must develop and implement a Groundwater Monitoring Plan. The approval holder must monitor groundwater in accordance with the Groundwater Monitoring Plan for at least two years prior to the commencement of the action and continue monitoring until the end date.*
2. *The Groundwater Monitoring Plan must:*
    a. *Identify a groundwater monitoring network in the project site. The groundwater monitoring network must include at least:*
        i. *One bore location between Lake Vermont and the East Pit to monitor groundwater in Tertiary sediments; and*
        ii. *Three bore locations along Phillips Creek, comprising one between Phillips Creek and the north of B Pit, one adjacent to Phillips Creek and the north of East Pit, and one between Phillips Creek and the Satellite Pit, to monitor groundwater in Quaternary alluvium and Tertiary sediments.*
    b. *Identify the number, locations and types of monitoring bores and groundwater units to be monitored from each bore within the groundwater monitoring network;*
    c. *Include a strategy to monitor groundwater in Quaternary alluvium and Tertiary sediments between the Satellite Pit and the confluence of Boomerang Creek with the Isaac River; and*
    d. *Identify the frequency of monitoring and the parameter that will be monitored.*

1.2. Associated Water Licence

The Queensland Government Associated Water Licence (AWL) 620850 requires the licensee provide to the chief executive a draft UWMP for approval. The AWL does not list specific requirements for the UWMP. The adopted groundwater monitoring program objectives are listed in the *Water Act 2000,* which the AWL is issued under, including:

- *provide for the monitoring of impacts on any springs and watercourses dependent on underground water flow;*
- *provide for the monitoring of impacts on other underground water users;*
- *provide for underground water level monitoring in all identified geological units across and adjacent to the mine site;*
- *estimate underground water inflow to, and take from, mine workings; and*
- *provide for the refinement and validation of the numerical underground water model used to assess impacts.*



Project location

Legend

- Major watercourse
- Minor watercourse
- Lake
- Lake Vermont mining leases
- Pit limits

(4162C) Lake Vermont Northern Extension Project - Underground Water Monitoring Program

Figure 1-1

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1.3. Groundwater monitoring program

A groundwater monitoring program was developed in 2017 as part of the Project environmental authority (EA) EPML00659513 conditions to develop a groundwater monitoring network to assess background groundwater level and quality. The groundwater monitoring program was also developed to support the approval EPBC2016/7011 and the application for the AWL. The monitoring program was developed in consultation with the administering authorities through the approvals process. The AWL refers to the approved underground water report meaning the groundwater monitoring program report developed in 2017 (JBT, 2017).

2. Geology

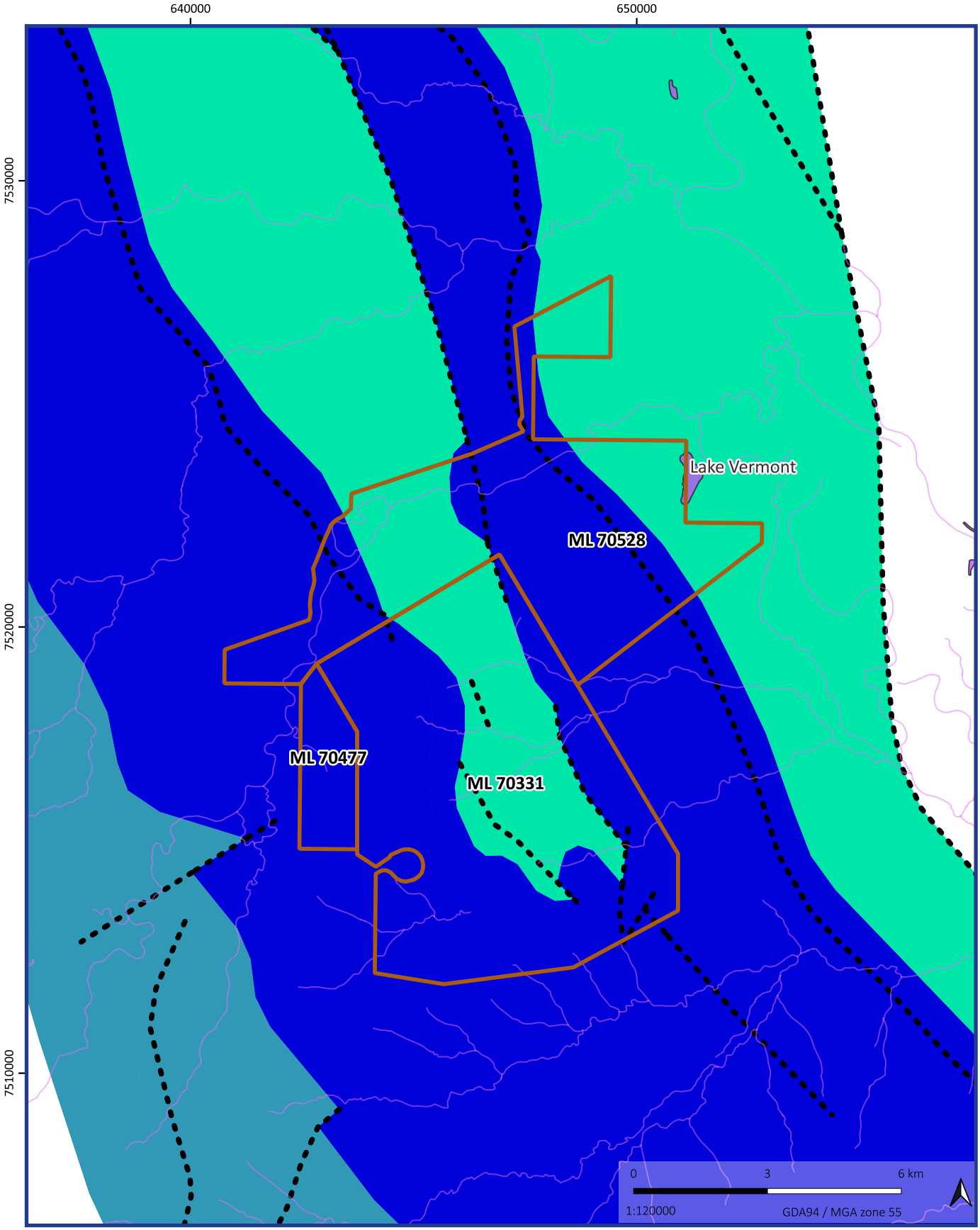
The Project is located within the central part of the Bowen Basin, an early Permian to middle Triassic age basin that covers an area of approximately 160,000 km^2. Table 2-1 shows the stratigraphic relationship and description of strata within the Project area. This includes Bowen Basin strata (Late Permian Rangal Coal Measures and the Triassic Rewan Group) that are overlain by Quaternary / Tertiary sediments. Figure 2-1 shows the Bowen Basin solid geology for the Project area. The area is underlain predominantly by strata of the Rangal Coal Measures, with the underlying Fair Hill Formation and the overlying Rewan Group occurring in the eastern and western area. The Rangal Coal Measures contain the target coal seams for mining. The solid geology map shows the degree of faulting in the project area, with the faults acting to truncate the strata and compartmentalise the groundwater system (JBT, 2020). The Permian and Triassic strata are overlain by unconsolidated Quaternary and Tertiary sediments, with the Quaternary age alluvial sediments associated with the Phillips Creek. In areas beyond the extent of Quaternary alluvium the surficial geology is Tertiary sediments. The surface geology of the project area is shown in Figure 2-2.

Table 2-1 Stratigraphy

Geological age	Group	Formation
Quaternary / Tertiary		Unconsolidated sediments
Triassic	Rewan Group	Arcadia Formation Sagittarius Sandstone
Late Permian	Blackwater Group	Rangal Coal Measures Fair Hill Formation

The groundwater units potentially impacted by mining are described by JBT Consulting (JBT, 2020) and summarised below:

- Quaternary sediments associated with the Phillips Creek system have been dry on all occasions when drilled. The Quaternary sediments may periodically contain water in active areas of Phillips Creek when the sediments become saturated due to prolonged flow events. It is conceptualised that water within the Quaternary sediments will seep downwards to the underlying sediments over time and that the Quaternary sediments will then be dry until the next flow event. Registered bores do not source water from the shallow Quaternary alluvium associated with Phillips Creek and the sediments are likely dry with no permanent groundwater. The Quaternary alluvium is not expected to be impacted by mining and monitoring of the alluvium is not required.
- Tertiary sediments are present over the entire Lake Vermont area and depth ranges from approximately 10 m to more than 60 m. The Tertiary sediments is not continuously saturated, with groundwater occurring in isolated pockets in lower elevation areas.
- Triassic Rewan Group, which overlay the Permian strata or abut Permian strata in areas where faulting has disrupted the strata. The Rewan Group strata is controlled by faulting, with regional scale faults disrupt the normal stratigraphic sequence of Permian and Triassic strata in some areas.
- Permian strata, including the Rangal Coal Measures and the underlying Fair Hill Formation. The Rangal Coal Measures contain the target coal seams for mining at Lake Vermont, including the Vermont seam and the shallower Leichhardt seam.



Legend

- Watercourse
- Lake
- Lake Vermont mining leases

Geology

- Fault
- Rr - Rewan Group

Blackwater Group

- Pwj - Rangal Coal Measures
- Pwt - Fair Hill Formation

Back Creek Group

- Pwb - Moranbah Coal Measures
- Pbd - German Creek Formation

Solid geology

(4162C) Lake Vermont Northern Extension Project - Underground Water Monitoring Program

Figure 2-1

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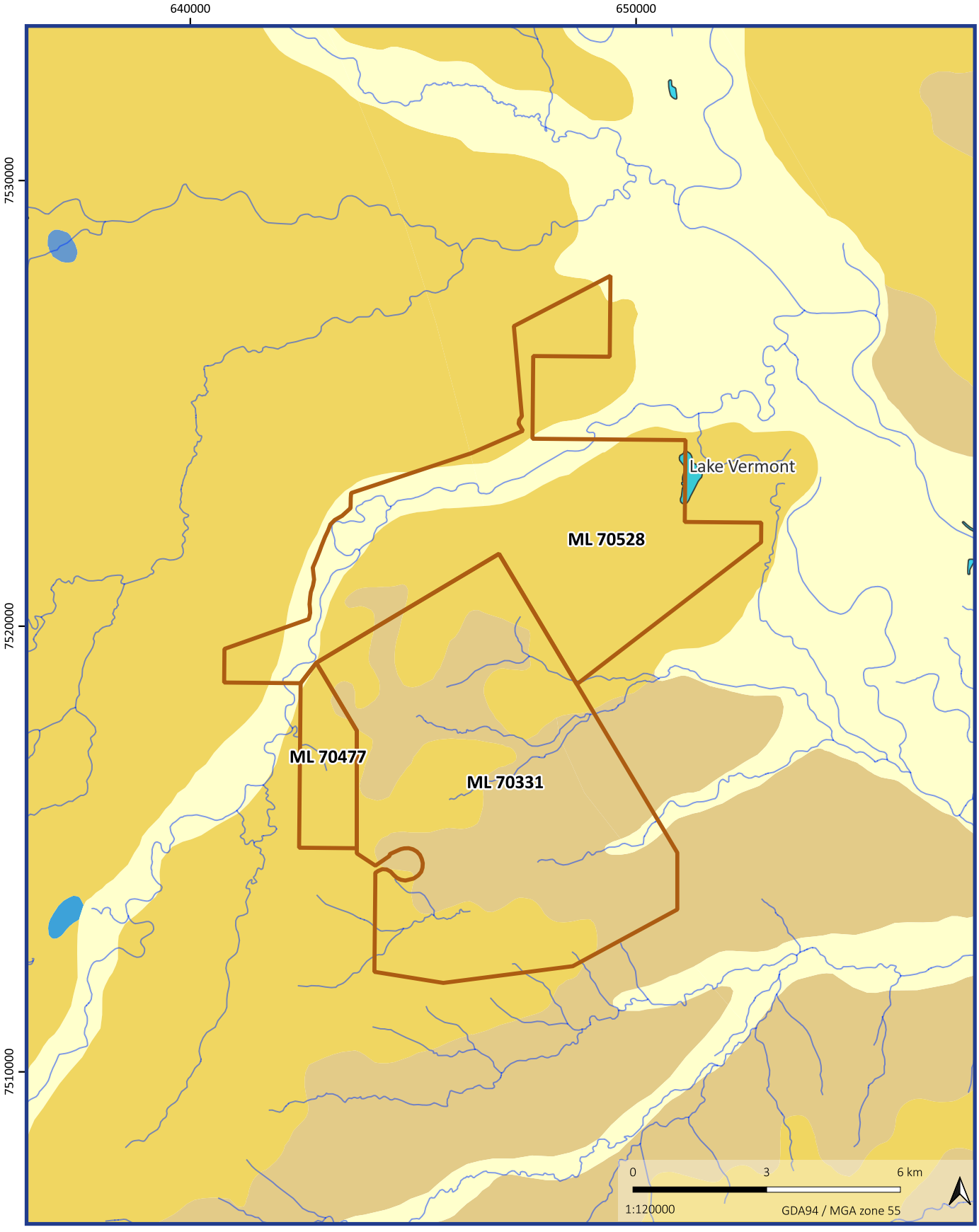

Legend

- Watercourse
- Lake
- Lake Vermont mining leases

Geology

- Qa - Quaternary alluvium
- TQa - Tertiary sediments
- Tu - Duaringa Formation
- Pwb - Moranbah Coal Measures
- Pwt - Fort Cooper Coal Measures

Surface geology

(4162C) Lake Vermont Northern Extension Project - Underground Water Monitoring Program

Figure 2-2

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3. Groundwater monitoring network

The existing groundwater monitoring network is shown in Figure 3-1 and detailed in Table 3-1 and Table 3-2 (JBT, 2017). The monitoring network consists of twenty groundwater monitoring bores and six vibrating wire piezometers (VWPs). The design of the network was based on the following rationale (JBT, 2020):

- The network enables monitoring of groundwater units that are potentially impacted by mining within ML 70528.
- There are no monitoring bores in the Quaternary alluvium, as the alluvium is dry and is not predicted to be impacted by mining.
- The network enables groundwater quality and level monitoring of the coal seams encountered at the Project (including the Vermont seam and Leichhardt seam), the overlying Rewan Group and Tertiary sediments.
- The area is intersected by a number of regional scale faults which potentially influence the groundwater flow. The network enables monitoring of the potentially affected strata within areas that are potentially compartmentalised by faults.
- 2183-VWP will likely be destroyed or mined out within the first few years of mining. If this occurs, there is sufficient monitoring of the Permian coal measures for the VWP location not to be replaced.
- The monitoring program will be amended prior to mining in the area where existing monitoring bores will be destroyed or mined out.

Table 3-1 Groundwater monitoring network – monitoring bore summary

Monitoring bore	Hydrogeological unit	Easting	Northing	Ground elevation (mAHD)	Depth (mbgl)	Screened interval (mbgl)	Drilled date
1238-MB1	Tertiary	650781	7522924	165.5	30	24 - 30	22-Nov-2017
1238-MB2	Permian (Vermont seam)	650781	7522924	165.5	59	53 – 59	22-Nov-2017
2218-MB2	Rewan Group	645640	7522933	173.3	65	59 - 65	24-Nov-2017
2218-MB3	Permian coal measures (Leichhardt seam)	645640	7522933	173.3	88	85 – 88	24-Nov-2017
2226-MB2	Rewan Group	643243	7522131	178.8	38	32 – 38	23-Nov-2017
2226-MB3	Permian (Leichhardt seam)	643243	7522131	178.8	59	53 – 59	23-Nov-2017
2369W-MB1	Tertiary	645638	7522932	173.4	20	14 – 20	28 April 2013
2370W-MB1	Tertiary	648151	7524059	168.3	18.6	12.6 – 18.6	29 April 2013
2371W-MB1	Tertiary	643245	7522127	178.9	22	16 -22	30-Apr-2013
2372-MB1	Tertiary	647628	7526187	166.9	30	24 – 30	21-Nov-2017
2372-MB2	Rewan Group	647628	7526187	166.9	46	40 – 46	21-Nov-2017
2372-MB3	Permian (Vermont seam)	647628	7526187	166.9	129	123 – 129	20-Nov-2017

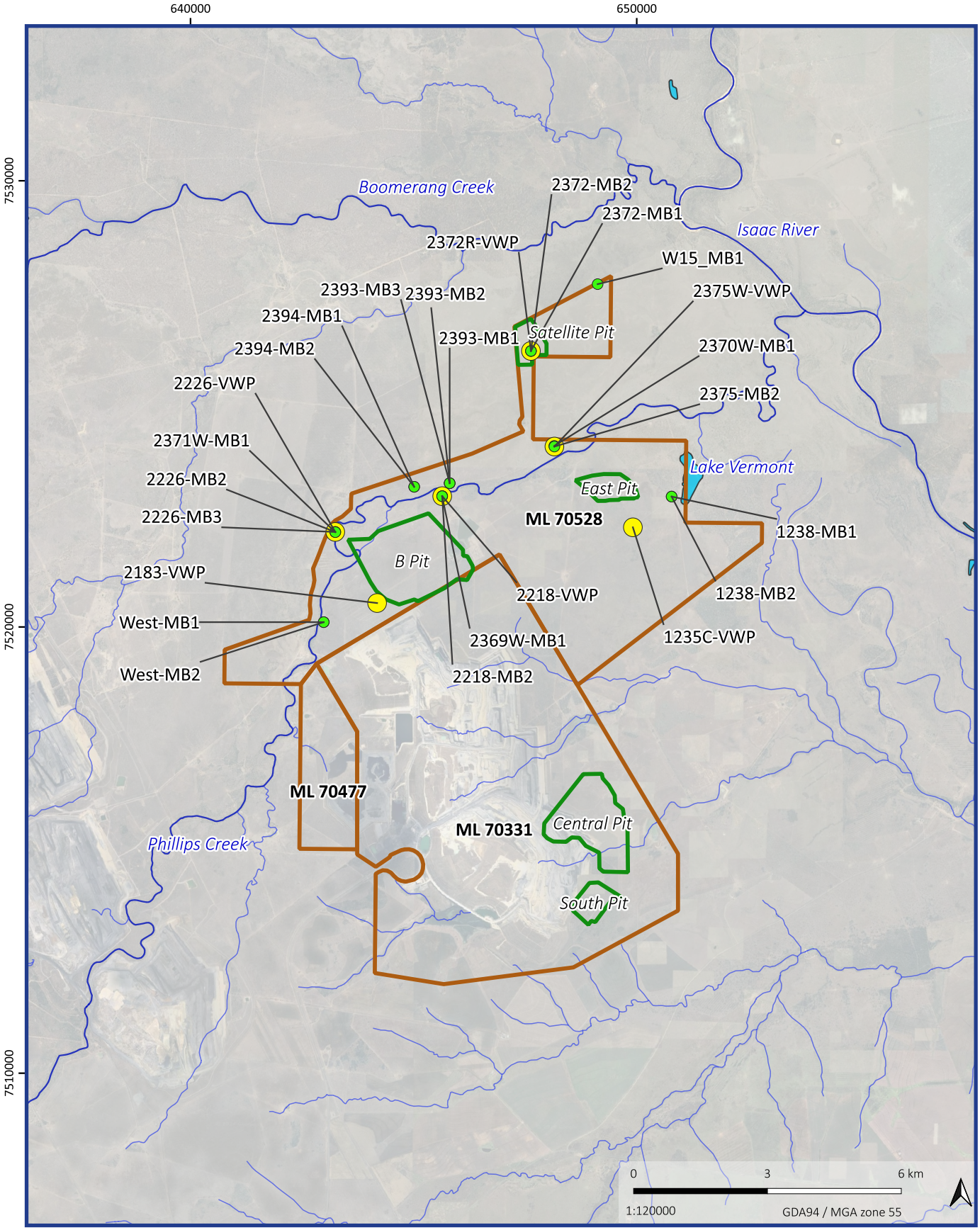
Monitoring bore	Hydrogeological unit	Easting	Northing	Ground elevation (mAHD)	Depth (mbgl)	Screened interval (mbgl)	Drilled date
2375-MB2	Permian (Vermont seam)	648154	7524045	168.4	68	65 – 68	19-Nov-2017
2393-MB1	Tertiary	645807	7523224	173.2	30	24 – 30	19-Nov-2017
2393-MB2	Permian (Leichhardt seam)	645807	7523224	173.2	41	38 – 41	18-Nov-2017
2393-MB3	Permian (Vermont seam)	645807	7523224	173.2	96	90 – 96	18-Nov-2017
2394-MB1	Tertiary	645012	7523143	174.0	30	24 – 30	17-Nov-2017
2394-MB2	Rewan Group	645012	7523143	174.0	123	117 – 123	17-Nov-2017
West-MB1	Tertiary	642984	7520110	184.0	30	27 – 30	17-Nov-2017
West-MB2	Permian coal measures	642984	7520110	184.0	80	74 – 80	17-Nov-2017

Notes: *Coordinates are in GDA94, Zone 55*
mbgl – metres below ground level
mAHD – metres above Australian Height Datum

Table 3-2 Groundwater monitoring network – vibrating wire piezometer summary

Monitoring location	Hydrogeological unit	Easting	Northing	Ground elevation (mAHD)	Depth (mbgl)	VWP depth (mbgl)
2226-VWP	Rewan Group	643243	7522131	102.0	102	38, 56, 74, 94
2183-VWP	Permian coal measures	644181	7520538	96.0	96	40, 61, 71, 83
2218-VWP	Rewan Group / Permian coal measures	645640	7522933	147.0	147	65, 86, 116, 137
2372R-VWP	Permian coal measures	647628	7526187	136.0	136	73, 93.5, 108, 125
2375W-VWP	Permian coal measures	648154	7524045	168.4	82	50, 67.5, 78
1235C-VWP	Permian coal measures	649913	7522235	170.8	115	58,7 2, 90, 107

Notes: *Coordinates are in GDA94, Zone 55*
mbgl – metres below ground level
mAHD – metres above Australian Height Datum



Legend

- Monitoring bore locations
- VWP locations
- Minor watercourse
- Major watercourse
- Lake
- Vermont mining lease
- Pit limits

Monitoring locations

(4162C) Lake Vermont Northern Extension Project - Underground Water Monitoring Program

Figure 3-1

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4. Groundwater monitoring

A groundwater monitoring program will be undertaken, at the monitoring frequency and for the parameters shown below in Table 4-1. Water level monitoring will be undertaken at all sites on a quarterly basis.

Table 4-1 Groundwater monitoring frequency and parameters

Monitoring location	Hydrogeological unit	Frequency water level	Frequency water quality	Parameters

1238-MB1	Tertiary	Quarterly	Quarterly	• pH (field and laboratory)
				• EC (field and laboratory)
				• TDS
				• Major Ions (Calcium, Magnesium, Sodium, Potassium, Chloride, Sulphate, Alkalinity (carbonate, bicarbonate, hydroxide, total))
				• Metals/metalloids (total and dissolved, by ICP-MS/FIMS):
				  ○ Aluminium
				  ○ Arsenic
				  ○ Boron
				  ○ Cadmium
				  ○ Chromium
				  ○ Copper
				  ○ Iron
				  ○ Lead
				  ○ Manganese
				  ○ Mercury
				  Molybdenum
				  ○ Nickel
				  ○ Selenium
				  ○ Silver
				  ○ Uranium
				  ○ Vanadium
				  ○ Zinc
				• Total Petroleum Hydrocarbons (C6-C9, C10-36)

1238-MB2	Permian (Vermont seam)	Quarterly	Quarterly	
2218-MB2	Rewan Group	Quarterly	Quarterly	
2218-MB3	Permian (Leichhardt seam)	Quarterly	Quarterly	
2226-MB2	Rewan Group	Quarterly	Quarterly	
2226-MB3	Permian (Leichhardt seam)	Quarterly	Quarterly	
2369W-MB1	Tertiary	Quarterly	Quarterly	
2370W-MB1	Tertiary	Quarterly	Quarterly	
2371W-MB1	Tertiary	Quarterly	Quarterly	
2372-MB1	Tertiary	Quarterly	Quarterly	
2372-MB2	Rewan Group	Quarterly	Quarterly	
2372-MB3	Permian (Vermont seam)	Quarterly	Quarterly	
2375-MB2	Permian (Vermont seam)	Quarterly	Quarterly	
2393-MB1	Tertiary	Quarterly	Quarterly	
2393-MB2	Permian (Leichhardt seam)	Quarterly	Quarterly	
2393-MB3	Permian (Vermont seam)	Quarterly	Quarterly	
2394-MB1	Tertiary	Quarterly	Quarterly	
2394-MB2	Rewan Group	Quarterly	Quarterly	
West-MB1	Tertiary	Quarterly	Quarterly	
West-MB2	Permian coal measures	Quarterly	Quarterly	
W15_MB1	Tertiary	Quarterly	Quarterly	
2226-VWP	Rewan Group	Quarterly	-	
2183-VWP	Permian coal measures	Quarterly	-	
2218-VWP	Rewan Group / Permian coal measures	Quarterly	-	
2372R-VWP	Permian coal measures	Quarterly	-	
2375W-VWP	Permian coal measures	Quarterly	-	
1235C-VWP	Permian coal measures	Quarterly	-	

The groundwater monitoring network locations satisfy the EPBC conditions listed in Section 1 for monitoring the Tertiary sediments. There are no monitoring bores in the Quaternary alluvium, as the alluvium is dry and not expected to be impacted by mining. The groundwater monitoring network comprises of the following:

- one bore 1238-MB1 is located between Lake Vermont and the East Pit to monitor groundwater in Tertiary sediments;
- three bore locations are along Phillips Creek including, 2369W-MB1 is between Phillips Creek and the north of B Pit called, 2370W-MB1 is adjacent to Phillips Creek and the north of East Pit, and 2370W-MB1 is between Phillips Creek and the Satellite Pit to monitor groundwater in Tertiary sediments; and
- one bore called W15_MB1 is between the Satellite Pit and the confluence of Boomerang Creek with the Isaac River to monitor groundwater in Tertiary sediments.

5. Associated water taken

In accordance with Condition 46 of the AWL, the volume of associated water taken must be measured and reported in accordance with requirements prescribed in Section 334ZP of the *Mineral Resources Act 1989* and Sections 31A and 31B of the Mineral Resources Regulation 2013. The Department of Natural Resources, Mines and Energy guideline should be followed for specific methods for quantifying the volume of associated water taken under a mining lease or mineral development licence (DNRME, 2020). Several methods are available for quantifying the take of associated water, including direct measurement through water meters, or if the installation of water meters is not possible, estimation techniques through water balance, or analytical and numerical modelling methods. The three approved methods that can be used to estimate and quantify associated water taken during mining operations or after mine closure are:

- water balance calculations;
- numerical groundwater models; and
- analytical groundwater models.

6. Monitoring and sample analysis methods

Groundwater sampling will be conducted in accordance with the procedures and practices outlined in the Queensland Government Monitoring and Sampling Manual (DES, 2018) and the Groundwater Sampling and Analysis - A Field Guide 2nd Edition (2024). As per industry standards and guidelines, quality assurance and quality control samples will be collected. Purging or low flow sampling methods are recommended for groundwater sampling. Low flow methods minimise the impact of the sampling method on the aquifer and are likely to obtain a representative sample, while some high flow pumps can sometimes induce water chemistry changes. Sampling bailers should only be used where no other pump can be used. For very deep bores, or bores that are slow to recover, a grab sampling method (e.g. Hydrasleeve) maybe preferred where low flow or purging techniques are technically challenging, or where the sampling methodology affects the long term groundwater levels. The method of sample collection will be selected to ensure sampling of fresh and undisturbed groundwater or water representative of the aquifer. Sampling methodology for each monitoring bore will be determined by a suitably qualified person.

7. Reporting and publishing of monitoring data

7.1. Associated Water Licence

In accordance with Condition 45 of the AWL, monitoring data collected is required to be published under the approved UWMP within 10 business days from measurement. Data must remain published and publicly available.

In accordance with Condition 46 of the AWL, the licensee must publish the volume of associated water taken under this licence, within 20 business days of the end of the water year. This data must remain published and publicly available. The volume of associated water taken under this licence must be measured and reported in accordance with requirements prescribed in section 334ZP of the MR Act and sections 31A and 31B of the Mineral Resources Regulation 2013.

In accordance with Condition 47 of the AWL, an Annual Monitoring Report must include:

a) the underground water levels in the monitoring bores identified in the approved UWMP;

b) any changes in water quality in the monitoring bores, recorded in accordance with the approved UWMP;

c) maps showing the actual water level drawdown contours for each aquifer;

d) details of the numerical underground water model and any review undertaken of the numerical underground water model since the previous Annual Monitoring Report;

e) an assessment of any differences between the actual water level impact and the impact and the impact predicted for the same period by the numerical underground water model;

f) details of any bores which are predicted by the numerical underground water model to be located in the affected area; and

g) raw data provided in a format as requested by the chief executive.

In accordance with Condition 48 of the AWL, the Annual Monitoring Report must be provided to the chief executive within three months of the end of the first water year, and subsequent Annal Monitoring reports must be provided to the chief executive with three months of the end of each relevant water year.

7.2. Environment Protection and Biodiversity Conservation Act

In accordance with EPBC conditions listed in Part A Condition 7, if no impact to surface water assets was predicted by the 3-dimensional groundwater model prior to commencement of the action but, at any time before the end date, any impact to surface water assets is detected (for example, by implementing the Groundwater Monitoring Plan) or predicted by the 3-dimensional groundwater model, the approval holder must, within six months after such an impact is detected or predicted, submit a Groundwater Management Plan to the Minister for approval. The approval holder must implement the approved Groundwater Management Plan.

In accordance with EPBC conditions listed in Part B Condition 12, the approval holder must maintain accurate records substantiating all activities associated with, or relevant to the conditions of approval, including measures taken to implement any action plans.

In accordance with EPBC conditions listed in Part B Condition 13, within three months of every 12 month anniversary of the commencement of the action, the approval holder must publish on the website addressing compliance with each of the condition of the approval including implementation of any action plans. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published.

In accordance with EPBC conditions listed in Part B Condition 17, the approval holder must publish any action plans on its website. Each action plan must be published on the website within 20 business days of being approved by the Minister or being submitted under Condition 15a.

8. References

DES. 2018. Monitoring and Sampling Manual: Environmental Protection (Water) Policy. Brisbane: Department of Environment and Science Government.

DNRME, 2020. Guideline for quantifying the volume of take of associated water under a mining lease or mineral development licence, Department of Natural Resources, Mines and Energy, version 1.6, October 2020.

JBT, 2016. Groundwater Summary – Lake Vermont Northern Extension. 24 February 2016.

JBT, 2017. Groundwater Monitoring Program – Lake Vermont Northern Extension. 11 October 2017.

JBT, 2020. Memorandum Summary of Groundwater Monitoring Data – Lake Vermont North. 19 August 2020.

JBT, 2020. Memorandum Trigger Level Review. 22 December 2020.

JBT, 2023. Lake Vermont Mine Progressive Rehabilitation and Closure Plan Groundwater Assessment. 21 April 2023.

Sundaram, B., Feitz, A., Caritat, P. de, Plazinska, A., Brodie, R., Coram, J. and Ransley, T., 2009. Groundwater Sampling and Analysis – A Field Guide. Geoscience Australia, Record 2009/27 95 pp.

Appendix A Conditions of approval

ASSOCIATED WATER LICENCE

Water Act 2000

Queensland Government

Reference	620850	**Expiry Date** 30/06/2040
Licensee	BOWEN BASIN COAL PTY LTD	
Authorised Activity	The taking of associated water from the Rangal Coal Measures and adjacent formations with the point of take on or under the area of mining lease 70528 (Mining Lease).	
Authorised Purpose	Dewatering during the course of, or resulting from, the carrying out of an authorised activity for the Mining Lease.	

Conditions

This associated water licence is subject to the conditions set out in Annexure A.

This associated water licence is given under the *Water Act 2000*, on this 26 day of July 2019.

Samuel Tarlinton

Regional Manager (Water Services), Central Region, Natural Resources

Delegate of the Chief Executive

Department of Natural Resources, Mines and Energy

Client Ref: 250842 File Ref: TROC-0056
Location: Level 1, 209 Bolsover Street, Rockhampton
Postal: PO Box 1762, ROCKHAMPTON, QLD, 4700
Telephone: +61 1800 822 100

Associated Water Licence
Expiry Date: 30/06/2040

Conditions: Annexure A

1. INTERPRETATION

In this licence:

(a) headings to conditions are for ease of reference only and shall not in any way affect the meaning of the conditions;
(b) a reference to days or months is a reference to business days and calendar months;
(c) words in the singular shall include the plural and vice versa;
(d) a reference to the Department includes the Department's successor;
(e) a reference to a document (including this licence) is to that document as varied, or replaced from time to time;
(f) a reference to a statute includes its delegated legislation and a reference to a statute or delegated legislation or a provision of either includes consolidations, amendments, re-enactments and replacements;
(g) a reference to a schedule, attachment or annexure is a reference to a schedule, attachment or annexure to or of this licence (or, if the reference is to a schedule of an Act, is a reference to a schedule of that Act), and a reference to this licence includes all schedules, attachments and annexures to it;
(h) if a word or phrase is given a defined meaning, any other part of speech or grammatical form of that word or phrase has a corresponding meaning; and
(i) 'includes' in any form is not a word of limitation.

2. NOTICES

(a) Form of Notice

Any notice, consent, document, invoice or other communication ("notice") required or permitted to be given in relation to this licence, other than an Annual Monitoring Report:

(i) must be in writing; and
(ii) may be given by being delivered or sent by prepaid registered post, or by electronic mail, to the chief executive or the licensee, whichever is relevant, at the addresses set out below:

To the chief executive:

The Chief Executive
C/- Manager
Water Management & Use
Department of Natural Resources, Mines and Energy
PO Box 1762
ROCKHAMPTON QLD 4700

Telephone: 1800 822 100
centralwaterservices@dnrme.qld.gov.au

(b) Submission of Annual Monitoring Reports

Annual Monitoring Reports are to be submitted electronically via the online Queensland Digital Exploration (QDEX) Reports System.

(c) Time Service Occurs

A notice is deemed to be served on a party, in the case of post, on the third business day after posting and, in the case of electronic mail, on the day of transmission if the transmission is before 5.00pm on a business day and in all other circumstances on the business day following transmission of the electronic mail.

ADMINISTRATION AND ENFORCEMENT OF THE ACT

3. The licensee must provide any relevant information reasonably required by the chief executive for the administration or enforcement of the Act.

CUMULATIVE IMPACTS

4. If a cumulative management area is declared over the area to which this licence relates, the Act sets out actions that may potentially be taken by the chief executive or the licensee for the purposes of cancelling this licence or amending its conditions.

MAKE GOOD OBLIGATIONS FOR WATER BORES

5. For each water bore located in the tenure area and the affected area for which a make good agreement is not in place as at the date of this licence, the licensee must:
   (a) unless the licensee has a reasonable excuse, undertake a bore assessment of the bore in accordance with Conditions 7 to 10, prior to the take of any associated water under this licence; and
   (b) enter into a make good agreement with the bore owner in accordance with Conditions 11 to 40; and
   (c) comply with the make good agreement.

   If a bore assessment has already been undertaken for a water bore, paragraph (a) does not apply to require a new bore assessment to be undertaken for that bore, but the licensee must give notice of the bore assessment that was previously undertaken (the ***previous assessment***) in accordance with Condition 10.

6. If a new underground water report changes the area or location of an affected area, for each water bore in the affected area that is not already the subject of a make good agreement the licensee must:
   (a) unless the licensee has a reasonable excuse, undertake a bore assessment of the bore in accordance with Conditions 7 to 10 before:
      (i) the day that is 60 business days after the new underground water report is approved; or
      (ii) if the chief executive agrees to a later day - that day;
   (b) enter into a make good agreement with the bore owner in accordance with Conditions 11 to 40; and
   (c) comply with the make good agreement.

   If a bore assessment has already been undertaken for a water bore, paragraph (a) does not apply to require a new bore assessment to be undertaken for that bore, but the licensee must give notice of the bore assessment that was previously undertaken (the ***previous assessment***) in accordance with Condition 10.

BORE ASSESSMENTS

7. The bore assessment undertaken by the licensee must establish, for the relevant bore:
   (a) whether the bore has an impaired capacity; or
   (b) whether the bore is likely to start having an impaired capacity.

8. In undertaking the bore assessment, the licensee must comply with the version of the guidelines about the minimum requirements for undertaking a bore assessment made under section 413 of the Act by the chief executive of the agency responsible for Chapter 3 of the Act and published on that agency's website, on the day the assessment is undertaken.

9. The licensee must, at least 10 business days before undertaking the bore assessment, give the bore owner a notice stating:
   (a) when the bore assessment will be undertaken; and
   (b) who will undertake the bore assessment.

10. The licensee must give notice of the outcome of the bore assessment to the chief executive and the bore owner within:
   (a) if the bore assessment is a previous assessment referred to in Condition 5 - 30 business days after the granting of this licence; or
   (b) if the bore assessment is a previous assessment referred to in Condition 6 - 30 business days after the new underground water report is approved; or
   (c) otherwise - 30 business days after undertaking the bore assessment.

MAKE GOOD AGREEMENTS

11. Where a make good agreement is required under Conditions 5 or 6, the licensee must use the licensee's best endeavor's to enter into a make good agreement for the bore with the bore owner by:
   (a) the day that is 40 business days after the bore assessment is undertaken; or
   (b) if the chief executive agrees to a later day - that day.

12. The make good agreement must provide for each of the following matters:
   (a) the outcome of the bore assessment for the bore;
   (b) whether the bore has or is likely to have an impaired capacity;
   (c) if the bore has or is likely to have an impaired capacity as a result of the take of associated water under this licence - the make good measures for the bore to be taken by the licensee; and
   (d) that the agreement may be terminated by the bore owner at any time during the cooling off period of the agreement.

13. The licensee must reimburse the bore owner for any accounting, hydrogeology, legal or valuation costs the bore owner necessarily and reasonably incurs in negotiating or preparing the make good agreement. However the licensee is not required to reimburse the bore owner for hydrogeology costs incurred for work performed other than by an appropriately qualified hydrogeologist.

14. The licensee must advise the chief executive within 30 business days by written notice if the licensee enters into a make good agreement.

DISPUTE RESOLUTION

15. Conditions 16 to 40 apply if the licensee and the bore owner cannot agree on the terms of a make good agreement within the period provided for under Condition 11.

Parties may seek conference or independent alternative dispute resolution (ADR)

16. Either the licensee or the bore owner (each of whom is a ***party***) may, by a notice (an ***election notice***):
    (a) given to the other party and the chief executive - ask the chief executive to nominate a departmental officer to call a conference to negotiate a resolution of the dispute; or
    (b) given to the other party - call for the other party to agree to an ***ADR*** process to negotiate a resolution of the dispute.

17. The election notice must state:
    (a) details of the matters the subject of the dispute; and
    (b) the contact details of the party giving the notice.

18. If the election notice calls for an ADR, it must identify the ADR and if the party giving the notice is the licensee - state that the licensee bears the costs of the person who will facilitate the ADR.

19. An ADR may be a process of any kind, including, for example, conciliation or mediation.

20. However, the person who facilitates the ADR must be independent of both parties.

21. The licensee must bear the costs of the person who will facilitate the ADR.

Duration of conference or ADR

22. If an election notice is given, the following applies:

    (a) If a conference is requested, the departmental officer nominated under Condition 23 to conduct the conference must take all reasonable steps to ensure it is finished within 30 business days after the election notice is given (the ***usual period***).
    (b) If an ADR is called for, the parties must use their reasonable endeavours to finish it within 30 business days after the election notice is given (also the ***usual period***).
    (c) Either party may, within the usual period, ask the other party to agree to a longer period to finish the conference or ADR.
    (d) If the parties agree to the longer period, that period applies instead of the usual period.
    (e) If an ADR is called for, Conditions 30 and 34 apply to the ADR as if a reference in Conditions 30 and 34 to a conference were a reference to an ADR.

Calling conference

23. If an election notice is given requesting a conference, an approved officer of the Department must nominate an appropriately qualified departmental officer (the ***departmental officer***) to conduct the conference.

24. The departmental officer must, by notice, ask the parties to attend a conference to negotiate a resolution of the dispute.

25. The notice must state what the subject of the conference is and when and where it will be held.

Who may attend the conference

26. The departmental officer directed to conduct the conference under Condition 23 and the parties to the dispute may attend it.

27. A party may be represented by an agent only if the departmental officer agrees.

28. Also, with the departmental officer's approval, someone else may be present to help a party attending the conference.

29. However, a party cannot be represented by a lawyer unless the other party agrees and the departmental officer is satisfied there is no disadvantage to a party.

What happens if a party does not attend

30. If a party is given notice of a conference under Conditions 24 and 25 and does not attend the conference, a party who attended the conference may apply to any expert appointed under Condition 37 for an order for costs requiring the party who did not attend to pay the attending party's reasonable costs of attending. The expert may award the attending party's reasonable costs of attending, if any. If no expert is appointed under Condition 37, then no costs are to be awarded.

Conduct of conference

31. In conducting a conference, the departmental officer must endeavor to help those attending to negotiate an early and inexpensive settlement of the dispute.

32. The departmental officer must decide how the conference is conducted.

33. The departmental officer may only conduct a conference after first obtaining the agreement of the parties that what is said during a conference conducted under Conditions 31 to 32 is confidential between the parties to the conference and that the parties agree that what is said is not admissible during any subsequent proceedings.

34. If, at the conference, the parties negotiate an agreement about the matters which are the subject of the conference, the agreement must be written and signed by or for the parties.

Chief executive's or expert's decision on a dispute

35. If an election notice is given under Condition 16 and:

    (a) if a party asked the chief executive to nominate a departmental officer to conduct a conference - the departmental officer does not finish the conference within the period required under Condition 22 (the **required period**); or
    (b) if a party called for an ADR - the parties do not finish the ADR within the period required under Condition 22 (also the **required period**),

    any party to the dispute may notify the chief executive and request that the chief executive decide the matter the subject of the election notice.

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36. If:

(a) only 1 of the parties attended the conference or ADR; or
(b) both parties attended the conference or ADR and, at the end of the required period, there is no resolution of the dispute,

a party who attended the conference or ADR may notify the chief executive in writing and request that the matter the subject of the election notice be referred to the chief executive.

37. Within 20 business days of the chief executive being notified under Condition 35 or Condition 36, an approved officer of the Department must notify the parties in writing that either:
(a) an appropriately qualified departmental officer (the ***deciding officer)*** will decide the matter the subject of the election notice; or
(b) the parties will be required to submit the matter to expert determination in accordance with the Resolution Institute Expert Determination Rules, 2016 Edition.

38. If Condition 37(a) applies, the deciding officer may require the licensee to provide any information required to assist the deciding officer in deciding the matter the subject of the election notice.

39. Without limiting how the deciding departmental officer may decide the matter the subject of the election notice where Condition 37(a) applies, the deciding departmental officer may decide the terms of the agreement.

40. The deciding officer's decision under Condition 37(a) and the expert's determination under Condition 37(b) is final and binding and the licensee must implement, at the cost of the licensee, all make good measures and associated matters decided by the deciding officer under Condition 39 or decided by the expert in the determination under Condition 37(b) and notified to the licensee.

MONITORING AND ASSESSMENT

41. The licensee must not take associated water under this licence until there is an approved Underground Water Monitoring Program.

The licensee must, through an appropriately qualified person, provide to the chief executive a draft Underground Water Monitoring Program for approval, at least 30 business days prior to the proposed commencement of the take of associated water under this licence.

An approved officer of the Department must, following the receipt of the draft Underground Water Monitoring Program advise the licensee in writing of:
(a) approval of that program; or
(b) why the program is considered inadequate and how it must be modified in order to be approved.

42. The licensee must, through an appropriately qualified person, undertake monitoring in accordance with the relevant approved Underground Water Monitoring Program.

43. Revisions to the approved Underground Water Monitoring Program must be undertaken by an appropriately qualified person, and submitted to the chief executive for approval.

An approved officer of the Department must, following receipt of a proposed revision to the approved Underground Water Monitoring Program, advise the licensee in writing of:

(a) approval of the revised or amended Underground Water Monitoring Program; or

(b) why the revised or amended program is considered inadequate and how it must be modified in order to be approved.

44. An approved officer of the Department may direct the licensee to make amendments to an approved Underground Water Monitoring Program, including (without limitation), installing additional monitoring bores, if the approved officer of the Department is reasonably satisfied that the existing approved Underground Water Monitoring Program is no longer meeting the objectives of an Underground Water Monitoring Program.

If the licensee receives a notice under this condition, the licensee must, through an appropriately qualified person, make the required amendments and submit the amended program to the chief executive for approval under Condition 43.

45. The licensee must publish monitoring data required to be collected under the approved Underground Water Monitoring Program within 10 business days from measurement.

Data must remain published and publicly available.

46. The licensee must publish the volume of associated water taken under this licence, within 20 business days of the end of the water year. This data must remain published and publicly available.

The volume of associated water taken under this licence must be measured and reported in accordance with requirements prescribed in section 334ZP of the MR Act and sections 31A and 31B of the *Mineral Resources Regulation 2013*.

47. The licensee must provide an Annual Monitoring Report to the chief executive. Each Annual Monitoring Report must include:

(a) the underground water levels in the monitoring bores identified in the approved Underground Water Monitoring Program;

(b) any changes in water quality in the monitoring bores, recorded in accordance with the approved Underground Water Monitoring Program;

(c) maps showing the actual water level drawdown contours for each aquifer;

(d) details of the numerical underground water model and any review undertaken of the numerical underground water model since the previous Annual Monitoring Report;

(e) an assessment of any differences between the actual water level impact and the impact predicted for the same period by the numerical underground water model;

(f) details of any bores which are predicted by the numerical underground water model to be located in the affected area; and

(g) raw data provided in a format as requested by the chief executive.

48. The first Annual Monitoring Report must be provided to the chief executive within three months of the end of the first water year, and subsequent Annual Monitoring Reports must be provided to the chief executive within three months of the end of each relevant water year.

49. Prior to the take of associated water under this licence, the licensee, through an appropriate qualified person, must develop a 3-dimensional numerical underground water model to predict impacts from groundwater drawdown.

50. The 3-dimensional numerical underground water model and a report about the assessment of impacts from groundwater drawdown must be peer reviewed by an appropriately qualified person. The licensee must submit the peer reviewed report to the department prior to the take of associated water.

51. The licensee, through an appropriately qualified person, must review the numerical underground water model within two years from the commencement of the take of associated water under this licence and at least every five years thereafter. The review must provide a revised underground water report for approval by the chief executive under Condition 53. The revised underground water report must include:
    (a) information about a revised numerical underground water model based on a transient calibration;
    (b) incorporation of measured mine dewatering volumes and underground water monitoring data;
    (c) any revised hydrogeological conceptualisation and assumptions of the model, including:
        (i) any revised geological interpretation;
        (ii) any revised hydrogeological parameters or assumptions on recharge; and
        (iii) any assumptions of outflows from springs and other water users;
    (d) an update of predicted impacts including:
        (i) any revised predicted impacts on springs and watercourses dependent on underground water flow, and other users, including any changes to the affected area;
        (ii) any revised predicted underground water inflows into mine workings during mining operations and post closure;
        (iii) maps showing the revised prediction of the total water level impact from the commencement of underground extraction to post closure;
        (iv) maps showing the difference between these predicted water level impacts and the water level impacts as predicted at the time of application for this water licence;
        (v) sensitivity analysis; and
    (e) an evaluation of the accuracy of the predicted impacts from the model.

    The first review of the numerical underground water model (the revised model), undertaken within two years of commencement of take, must include a peer review of the revised model.

    An approved officer of the Department may direct the licensee, through an appropriately qualified person, to conduct a peer review of the revised model, for any subsequent reviews of the numerical underground water model, if the approved officer is of the reasonable opinion that the underground water model predictions are not representative of actual monitoring data or impacts.

52. Despite the timeframes specified in Condition 51, an approved officer of the Department may direct the licensee to, through an appropriately qualified person, undertake a review of the numerical underground water model by an earlier date, if the approved officer is of the reasonable opinion that the underground water model predictions are not representative of actual monitoring data or impacts.

The chief executive may direct the licensee to conduct a peer review of the revised model.

If the licensee receives a notice under this condition, the licensee must, through an appropriately qualified person, undertake the required review and submit a revised underground water report to the chief executive for approval under Condition 53.

53. An approved officer of the Department must, following receipt of a revised underground water report under Conditions 51 or 52, advise the licensee in writing of:
(a) approval of the revised underground water report; or
(b) why the revised underground water report is considered inadequate and how it must be modified in order to be approved.

CLOSURE OF MINE OPERATIONS

54. The licensee must provide to the chief executive for approval, a report (***Pre-closure Report***), the earlier of:
(a) the business day that is one year before the expiry date of this licence, or
(b) the business day that is one year before the term of the resource tenure/s, to which this licence applies, ends; or
(c) the business day the licensee makes application under the MR Act for the surrender of the resource tenure/s to which this licence applies.

55. Condition 54(a) does not apply if the licensee makes an application to renew this licence under the Act.

56. Condition 54(b) does not apply if the licensee makes an application to renew the resource tenure/s, to which this licence applies, under the MR Act.

57. The Pre-closure Report required under Condition 54 must contain:

(a) the underground water levels in the monitoring bores identified in the approved Underground Water Monitoring Program;
(b) an assessment of the need for recalibration of the numerical underground water model used to assess water level impact;
(c) if considered necessary, a revised numerical underground water model;
(d) maps, using the revised model, showing:
    (i) the actual water level drawdown contours for each aquifer;
    (ii) the predicted drawdown contours for each aquifer; and
    (iii) the revised predicted affected area for a period to at least 100 after commencement of take of associated water under this licence or such other period as the chief executive may determine; and
(e) identification of any water bores located in the revised predicted affected area.

58. An approved officer of the Department must, following receipt of a Pre-closure Report under Condition 54, advise the licensee in writing of:
a) approval of the Pre-closure Report; or

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b) why the Pre-closure Report is considered inadequate and how it must be modified in order to be approved.

59. Where an approved Pre-closure Report changes the area, or location, of an affected area, for each water bore in the affected area that is not already subject to a make good agreement, the licensee must –

(a) unless the licensee has a reasonable excuse, undertake a bore assessment of the bore in accordance with Conditions 7 to 10 before:
  (i) the day that is 60 business days after the Pre-Closure Report is approved by the chief executive; or
  (ii) if the chief executive agrees to a later day – that day;

(b) enter into a make good agreement with the bore owner in accordance with Conditions 11 to 40; and

(c) comply with the make good agreement.

DEFINITIONS

Terms not otherwise defined in this licence have the same meaning as in the Act, except where a contrary intention appears:

"Act" means the *Water Act 2000* (Qld).

"***ADR***" means alternative dispute resolution.

"affected area" means the area identified by the numerical underground water model, in an underground water report or an approved Pre-Closure Report, whichever is relevant, as the area where the water level is predicted to decline at any time, because of the taking of associated water under this licence, by more than:

(a) for a consolidated aquifer - 5 m; or
(b) for an unconsolidated aquifer - 2 m.

"Annual Monitoring Report" means a report as described in Condition 47 of this licence.

"appropriately qualified departmental officer" (departmental officer) means a person appointed as an authorised officer under section 739 of the Act.

"appropriately qualified hydrogeologist" means an individual who has the minimum experience or qualifications, stated in the guidelines made under section 413 of the Act, for undertaking a bore assessment.

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

"approved officer of the Department" means a delegate of the chief executive, appointed under the *Water Act 2000* via the current Water Act Delegation instrument.

"***associated water***" has the meaning set out in section 839(5) of the *Mineral Resources Act 1989* (Qld).

"***authorised activity***" has the meaning set out in schedule 2 of the *Mineral Resources Act 1989* (Qld).

"authorised officer" means a person appointed as an authorised officer under section 739 of the *Water Act 2000.*

"***bore owner***", of a water bore, means the owner of the land on which the bore is located.

"***business day***" means a day on which trading banks are open for normal banking business in Brisbane.

"***chief executive***" means the Chief Executive to the Department, unless otherwise specified.

"cooling off period" for a make good agreement for a water bore, means a period of 5 business days—

(a) starting on the day the make good agreement is entered into; and
(b) ending at 5 p.m. on the fifth business day.

"cumulative impacts" means the cumulative impacts of the exercise of two or more resource tenure holder's underground water rights.

"cumulative management area" has the meaning set out in section 362 of the Act.

"***Department***" means the Department of Natural Resources, Mines and Energy.

"existing water bore" means any water bore in existence before the original issue date of this licence.

"***expiry date***" means the date this licence expires being 30 June 2040.

"***first water year***" means the period from the commencement of take of underground water under the authority of this licence to 30 June in the following year.

"***impaired capacity***" for an ***existing water bore*** has the meaning set out in subsection 412(1) and (3) of the Act.

"***impaired capacity***" for a ***new water bore*** has the meaning set out in subsections 412(2) and (3) of the Act, except that for the purposes of this definition, the term *relevant report* in subsection 412(2) of the Act is to be read as a reference to the underground water report, or approved Pre-Closure Report, for this licence, whichever is relevant.

"***licensee***" means the entity listed as the "licensee" on page 1 of this water licence.

"***make good agreement***" means an agreement between the licensee and the bore owner of a water bore, about the water bore, if the bore is affected, or is likely to be affected, by the taking of associated water under this licence. The term does not include an agreement between the licensee and the bore owner of a water bore if the agreement was terminated by the bore owner during the agreement's cooling off period.

"make good measure" for a water bore has the meaning set out in section 421 of the Act.

"Mining Lease" has the meaning defined on the front page of this licence.

"***monitoring bores***" means the water monitoring bores identified in the Underground Water Monitoring Program as approved from time to time.

"***MR Act***" means the *Mineral Resources Act 1989* (Qld).

"new water bore" means a water bore other than an existing water bore.

"numerical underground water model" means the numerical model reported in the underground water report or approved Pre-Closure Report, whichever is relevant, and used to predict impacts due to the take of associated water under this licence.

"published" for the purposes of this licence, has the meaning set out section 1009A of the Act, that is, by publishing on the licensee's website.

"tenure area" means the area bounded by the Mining Lease.

"underground water report", means the following report/s:

a) *Groundwater Monitoring Program – Lake Vermont Northern Extension,* JBT Consulting Pty Ltd, 11 October 2017 and includes the numerical underground water model; or

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a new underground water report approved under Condition 50A, whichever is relevant.

"underground water rights" has the meaning set out in section 334ZP of the MR Act.

"***Underground Water Monitoring Program"*** is a monitoring program that must meet the following objectives:

(a) to assess the effects of the take of underground water authorised under this licence, including:
   (i) to provide for the monitoring of impacts on any springs and watercourses dependent on underground water flow;
   (ii) to provide for the monitoring of impacts on other underground water users;
   (iii) to provide for underground water level monitoring in all identified geological units across and adjacent to the mine site;
   (iv) to estimate underground water inflow to, and take from mine workings;

(b) to provide for the refinement and validation of the numerical underground water model used to assess impacts; and

(c) to take into account requirements of any regional underground water monitoring and assessment program developed to address potential cumulative impacts.

Note: the requirements of the Underground Water Monitoring Program may be incorporated within monitoring programs as required under Federal or State Government approvals.

"water bore" means a water bore to which Chapter 3 of the Act applies.

"water quality" means the water quality parameters specified under condition 41 of this licence.

"water year" means the period from 1 July to 30 June the following year.

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VARIATION OF CONDITIONS ATTACHED TO APPROVAL

Lake Vermont Coal Mine Northern Extension Project, Dysart, Queensland (2016/7701)

This decision to vary conditions of approval is made under section 143 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Approved action

Approval holder	**Name:** Bowen Basin Coal Pty. Ltd. **ACN:** 065 321 440
Approved action	To extend the Lake Vermont Coal Mine, an existing open-cut coal mine near Dysart in central Queensland [see EPBC referral 2016/7701].

Variation

Variation of conditions attached to approval	The variation is: Delete conditions 5, 9, 12, 13, 14, 16 and 17 attached to the approval and substitute with the conditions specified in the table below. Revoke conditions 15, 15A, 15B and 15C. Delete the definition of **action plan** and **suitably qualified expert** attached to the approval and substitute with the definition specified in the table below. Add the new definition of **website** specified in the table below. Revoke the definitions of **final void management plan**, **groundwater management plan** and **groundwater monitoring plan**.
Date of effect	This variation has effect on the date this instrument is signed

Person authorised to make decision

Name and position	Anu Datta Acting Branch Head Environment Assessments (Vic, Tas) and Post Approvals Branch
Signature	
Date of decision	6 January 2023

Date of decision	Conditions attached to approval
Part A – Conditions specific to the approval	
Original dated 29/06/2018	1. The **approval holder** must develop and implement a Groundwater Monitoring Plan. The **approval holder** must monitor groundwater in accordance with the Groundwater Monitoring Plan for at least two years prior to the **commencement** of the action and continue monitoring until the **end date**.
Original dated 29/06/2018	2. The Groundwater Monitoring Plan must: a. identify a **groundwater monitoring network** in the **project site**. The **groundwater monitoring network** must include at least: i. one bore location between Lake Vermont and the **East Pit** to monitor groundwater in tertiary sediments; and ii. three bore locations along Phillips Creek, comprising one between Phillips Creek and the north of **B Pit** or **D Pit**, one adjacent to Phillips Creek and north of **East Pit**, and one between Phillips Creek and the **Satellite Pit**, to monitor groundwater in quaternary alluvium and tertiary sediments; b. identify the number, locations and types of monitoring bores, and **groundwater units** to be monitored from each bore within the **groundwater monitoring network**; c. include a strategy to monitor groundwater in quaternary alluvium and tertiary sediments between the **Satellite Pit** and the confluence of Boomerang Creek with the Isaac River; and d. identify the frequency of monitoring and the parameters that will be monitored.
Original dated 29/06/2018	3. Using the data collected by implementing the Groundwater Monitoring Plan prior to the **commencement** of the action, the **approval holder** must develop a 3-dimensional groundwater model, undertake sensitivity analysis and uncertainty analysis, and predict impacts from groundwater drawdown, including impacts on **surface water assets**.
Original dated 29/06/2018	4. The 3-dimensional groundwater model, and a report about the assessment of impacts from groundwater drawdown from the 3-dimensional groundwater model, must be peer reviewed by a **suitably qualified expert**. The **approval holder** must submit the peer reviewed report to the **Department** prior to the **commencement** of the action, together with the **suitably qualified expert**'s comments and a document detailing how the **approval holder** has addressed the **suitably qualified expert**'s comments.
As varied on the date this instrument was signed	5. The 3-dimensional groundwater model must be updated in year 10 and year 20 after the **commencement** of the action, using all data collected up to that time by implementing the Groundwater Monitoring Plan. The **approval holder** must report the findings of each updated model to the **Department** within six months of, respectively, the 10th and 20th anniversary of the **commencement** of the action.
Original dated 29/06/2018	6. If any impact to **surface water assets** is predicted by the 3-dimensional groundwater model, the **approval holder** must submit a Groundwater Management Plan to the **Minister** for approval. The **approval holder** must not **commence** the action unless the

Date of decision	Conditions attached to approval
	Groundwater Management Plan is approved by the **Minister** in writing. The **approval holder** must implement the approved Groundwater Management Plan.
Original dated 29/06/2018	7. If no impact to **surface water assets** was predicted by the 3-dimensional groundwater model prior to **commencement** of the action but, at any time before the **end date**, any impact to **surface water assets** is detected (for example, by implementing the Groundwater Monitoring Plan) or predicted by the 3-dimensional groundwater model, the **approval holder** must, within six months after such an impact is detected or predicted, submit a Groundwater Management Plan to the **Minister** for approval. The **approval holder** must implement the approved Groundwater Management Plan.
Original dated 29/06/2018	8. The Groundwater Management Plan must include: a. relevant details of **surface water assets** potentially impacted; b. a description and quantification of actual and/or predicted impacts to **surface water assets**; c. **threshold triggers**; d. measures and timeframes to report and verify any exceedance of **threshold triggers** to the **Department**; e. a process of implementing appropriate contingency measures in the event a **threshold trigger** is exceeded; f. mechanisms for avoiding, mitigating or managing the predicted or detected impacts; and g. timeframes for when mitigation measures for the predicted or detected impacts will be implemented and timeframes for reporting to the **Department** the effectiveness of the mitigation measures.
As varied on the date this instrument was signed	9. Within 10 years of the **commencement** of the action, the **approval holder** must submit a Final Void Management Plan to the **Minister** for approval. The Final Void Management Plan must be prepared by a **suitably qualified expert**. The **approval holder** must implement the approved Final Void Management Plan.
Original dated 29/06/2018	10. The Final Void Management Plan must include: a. pit lake water balance models based on inflow data gathered during mining; b. revised predictions of final void water levels for each pit using the pit lake water balance models in conjunction with the 3-dimensional groundwater model required under condition 3; c. modelling of potential long-term contaminants (including metals and salinity) within pit lakes of each final void; d. a monitoring network suitable to identify any contaminant seepage from the final voids; e. final void geometries which will be implemented to minimise the risk of voids becoming sources of contaminated or saline water to the surrounding environment;

Date of decision	Conditions attached to approval
	f. evidence about how climate and rainfall variability has been taken into account in the design and management of final voids; and g. a schedule for regular update and review of the Final Void Management Plan.
Part B – Standard administrative conditions	
Original dated 29/06/2018	11. Within 20 **business days** after the **commencement** of the action, the **approval holder** must advise the **Department** in writing of the actual date of the **commencement**.
As varied on the date this instrument was signed	12. The **approval holder** must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement any **action plans**, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of audits may also be publicised through the general media.
As varied on the date this instrument was signed	13. Within three months of every 12 month anniversary of the **commencement** of the action, the **approval holder** must publish a report on the **website** addressing compliance with each of the conditions of this approval, including implementation of any **action plans**. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **Department** at the same time as the compliance report is published. The **Minister** may provide written consent to the **approval holder** to cease reporting under this condition if satisfied additional reports are not warranted.
As varied on the date this instrument was signed	14. Upon the direction of the **Minister**, the **approval holder** must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor and audit criteria must be approved by the **Minister** prior to the commencement of the audit. The audit report must address the audit criteria to the satisfaction of the **Minister**.
As varied on the date this instrument was signed	15. REVOKED
As varied on the date this instrument was signed	15A. REVOKED
As varied on the date this instrument was signed	15B. REVOKED
As varied on the date this instrument was signed	15C. REVOKED
As varied on the date this instrument was signed	16. If, at any time after 10 years from the date of this approval, the **approval holder** has not **commenced** the action, then the **approval holder** must not **commence** the action without the written agreement of the **Minister**.

Date of decision	Conditions attached to approval
As varied on the date this instrument was signed	17. Unless otherwise agreed to in writing by the **Minister**; the **approval holder** must publish any **action plans** on its **website**. Each **action plan** must be published on the **website** within 20 **business days** of being approved by the **Minister**, or being submitted under condition 15.a.

Date of decision	Definitions attached to approval
In these conditions, except where contrary intention is expressed, the following definitions are used:	
As varied on the date this instrument was signed	**Action plan** means any of the documents required to be prepared, approved by the **Minister**, implemented by the **approval holder** and/or published on the **website** in accordance with these conditions.
Original dated 29/06/2018	**Approval holder** means the person to whom the approval is granted or any person acting on their behalf, or to whom the approval is transferred under section 1458 of the **EPBC Act**.
Original dated 29/06/2018	**B Pit** means the coal mining pit named as "B Pit" in Attachment A.
Original dated 29/06/2018	**Business day** means a day that is not a Saturday, a Sunday or a public holiday in Queensland.
Original dated 29/06/2018	**Commence/commencement** means commencement of Phillips Creek diversion or overburden removal in the **project site**.
Original dated 29/06/2018	**D Pit** means the coal mining pit named as "D Pit" in Attachment A.
Original dated 29/06/2018	**Department** means the Australian Government agency administering the **EPBC Act**.
Original dated 29/06/2018	**East Pit** means the coal mining pit named as "East Pit" in Attachment A.
Original dated 29/06/2018	**End date** means the date after which the approval ceases to have effect.
Original dated 29/06/2018	**EPBC Act** means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).
As varied on the date this instrument was signed	**Final void management plan** – REVOKED
As varied on the date this instrument was signed	**Groundwater management plan** – REVOKED
As varied on the date this instrument was signed	**Groundwater monitoring plan** – REVOKED
Original dated 29/06/2018	**Groundwater monitoring network** means a network of bores, including control bores, sufficient to reliably detect and monitor groundwater levels of all relevant water resources and discriminate impacts of the action from other influences on these water resources.

Date of decision	Definitions attached to approval
Original dated 29/06/2018	**Groundwater units** means geological and hydrogeological units within the project site and surrounds, including quaternary alluvium and tertiary sediments.
Original dated 29/06/2018	**Minister** means the Minister administering the **EPBC Act** including any delegate of the **Minister**.
Original dated 29/06/2018	**New or increased impact** means a new or increased environmental impact or risk relating to a water resource, in relation to coal seam gas development and large coal mining development, when compared to the likely impact if implementing an **action plan** that has been approved by the **Minister**.
Original dated 29/06/2018	**Project site** means ML 70528 as shown in Attachment A.
Original dated 29/06/2018	**Satellite Pit** means the coal mining pit named as "Satellite Pit" in Attachment A.
As varied on the date this instrument was signed	**Suitably qualified expert** means a person who has relevant professional qualifications, training and experience regarding groundwater monitoring, management and modelling and can give authoritative assessment, advice and analysis about groundwater monitoring, management and modelling using relevant protocols, standards, methods and/or literature.
Original dated 29/06/2018	**Surface water assets** means Lake Vermont, Phillips Creek and the Isaac River.
Original dated 29/06/2018	**Threshold trigger** means a trigger specified for water monitoring, the achievement or exceedance of which will require the **approval holder** to undertake management responses as detailed in an approved or revised Groundwater Management Plan.
As varied on the date this instrument was signed	**Website** means a set of related web pages located under a single domain name attributed to the **approval holder** and available to the public.

Date of decision	**Attachment A**
Original dated 29/06/2018	Attachment A: Map of the project site

Attachment A: The Project Site (ML 70528)