


Clean TeQ Sunrise Project
2019 Annual Review
31 March 2020

CLEAN TEQ SUNRISE PROJECT

2019 Annual Review

Name of Operation/Mine	<i>Clean TeQ Sunrise Project</i>
Name of Operator	<i>Clean TeQ Sunrise Pty Ltd</i>
Development Consent	<i>DA 374-11-00</i>
Name of Holder of Development Consent	<i>Clean TeQ Sunrise Pty Ltd</i>
Mining Leases	<i>ML1770, ML1769</i>
Name of Holder of Mining Lease	<i>Clean TeQ Sunrise Pty Ltd</i>
Environmental Protection Licence (EPL)	<i>21146</i>
Name of Holder of EPL	<i>Clean TeQ Sunrise Pty Ltd</i>
Water Licences	<i>WALs 32068, 39837, 28681, 42370, 1798, 6679</i>
Name of Holder of Water Licences	<i>Clean TeQ Sunrise Pty Ltd</i>
Mining Operations Plan (MOP) Commencement Date	<i>08 February 2018</i>
MOP Completion Date	<i>07 August 2020</i>
Annual Review Start Date	<i>01 January 2019</i>
Annual Review End Date	<i>31 December 2019</i>
<p><i>I, Andrew Jones, certify that this audit report is a true and accurate record of the compliance status of the Clean TeQ Sunrise Project for the period 01 January 2019 – 31 December 2019 and that I am authorised to make this statement on behalf of Clean TeQ Sunrise Pty Ltd.</i></p>	

Name of Authorised Reporting Officer	Andrew Jones
Title of Authorised Reporting Officer	Project Environmental Superintendent
Signature of Authorised Reporting Officer	
Date	31 March 2020

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1 STATEMENT OF COMPLIANCE

The compliance status of the Clean TeQ Sunrise Project (the Project) with its relevant approval conditions as at the end of the reporting period (31 December 2019) is provided in Table 1.

Table 1 Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	
Development Consent DA 374-11-00	YES
Environmental Protection Licence (EPL) 21146	YES
Mining Lease (ML) 1769	YES
ML1770	YES

All of the conditions of the relevant approvals (Table 1) were complied with during the reporting period therefore no non-compliances were identified.

2 INTRODUCTION

This Annual Review (AR) has been prepared by Clean TeQ Sunrise Pty Ltd (Clean TeQ) for the Clean TeQ Sunrise Project (the Project) for the 2019 calendar year from the 1st January 2019 through to 31st December 2019 (the reporting period).

This AR is generally consistent with the *Annual Review Guideline – Post-approval Requirements for State Significant Mining Developments* [1], *AEMR Guidelines for MOPs prepared to EDG03 Requirements* [2] and also meets:

- the Annual Review requirements of the Department of Planning Industry & Environment (DPI&E) (Schedule 5, Condition 5 of the Development Consent DA 374-11-00 granted on 23rd May 2001);
- the Annual Rehabilitation Report (ARR) requirements of the NSW Resources Regulator (NSW RR) under the standard Mining Lease conditions (Condition 3(f)); and
- the routine reporting expectations of the NSW Natural Resources Access Regulator (NRAR).

2.1 Conditions Compliance Table

Table 2 below lists the information requirements in the Development Consent and the corresponding section of this AR where the requirement is addressed.

Table 2 Annual Review Development Consent Information Requirements

Development Consent DA 374-11-00 Schedule 5 Condition 5	Section where addressed in this AR document
Annual Review <i>By the end of March each year, the Applicant must review the environmental performance of the development for the previous calendar year to the satisfaction of the Secretary. This review must:</i>	This review
(a) <i>describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current calendar year;</i>	Sections 4, 8 and 12
(b) <i>include a comprehensive review of the monitoring results and complaints records of the development over the past year, which includes a comparison of these results against the:</i> <ul style="list-style-type: none">• <i>relevant statutory requirements, limits or performance measures/criteria;</i>• <i>monitoring results of previous years; and</i>• <i>relevant predictions in the EIS;</i>	Sections 6 and 9
(c) <i>identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</i>	Section 6
(d) <i>identify any trends in the monitoring data over the life of the development;</i>	Section 6
(e) <i>identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and</i>	Section 6
(f) <i>describe what measures will be implemented over the next year to improve the environmental performance of the development.</i>	Section 6

Table 3 below lists the information requirements in the Mining Lease Conditions and the corresponding section of this AR where the requirement is addressed.

Table 3 Mining Lease Conditions Information Requirements

Mining Lease Conditions Schedule 2 Condition 3 (f)	Section where addressed in this AR document
<i>The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must:</i>	This document
<i>(i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP;</i>	Section 8
<i>(ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and,</i>	This section
<i>(iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at www.resourcesandenergy.nsw.gov.au/miners-and-explorers/rules-and-forms/pgf/environmental-guidelines.</i>	This document

Exemption from the ARR commitment for ML 1769 was granted by the Resources Regulator (letter dated 5 July 2019). The regulator was satisfied that the ARR commitment for ML 1769 is not required until an approved Mining Operations Plan (MOP) is in place. There have been no mining activities undertaken by Clean TeQ within ML 1769 since grant of title.

In addition, a request by Clean TeQ to change the annual submission date of the ARR for ML 1770 from 15 February to 31 March each year to align with the Annual Review was accepted by the Resources Regulator (letter dated 25 March 2020).

2.2 Clean TeQ Sunrise Background

Clean TeQ owns the rights to develop the Project and is a wholly owned subsidiary of Clean TeQ Holdings Limited.

The Project is a nickel-cobalt-scandium deposit located approximately 350 kilometres (km) west-northwest of Sydney, near the village of Fifield, NSW (Figure 1). The Project includes the establishment and operation of the following:

- mine (including the processing facility) on ML 1770;
- limestone quarry on ML 1769;
- rail siding;
- gas pipeline;
- borefields, surface water extraction infrastructure and water pipeline;

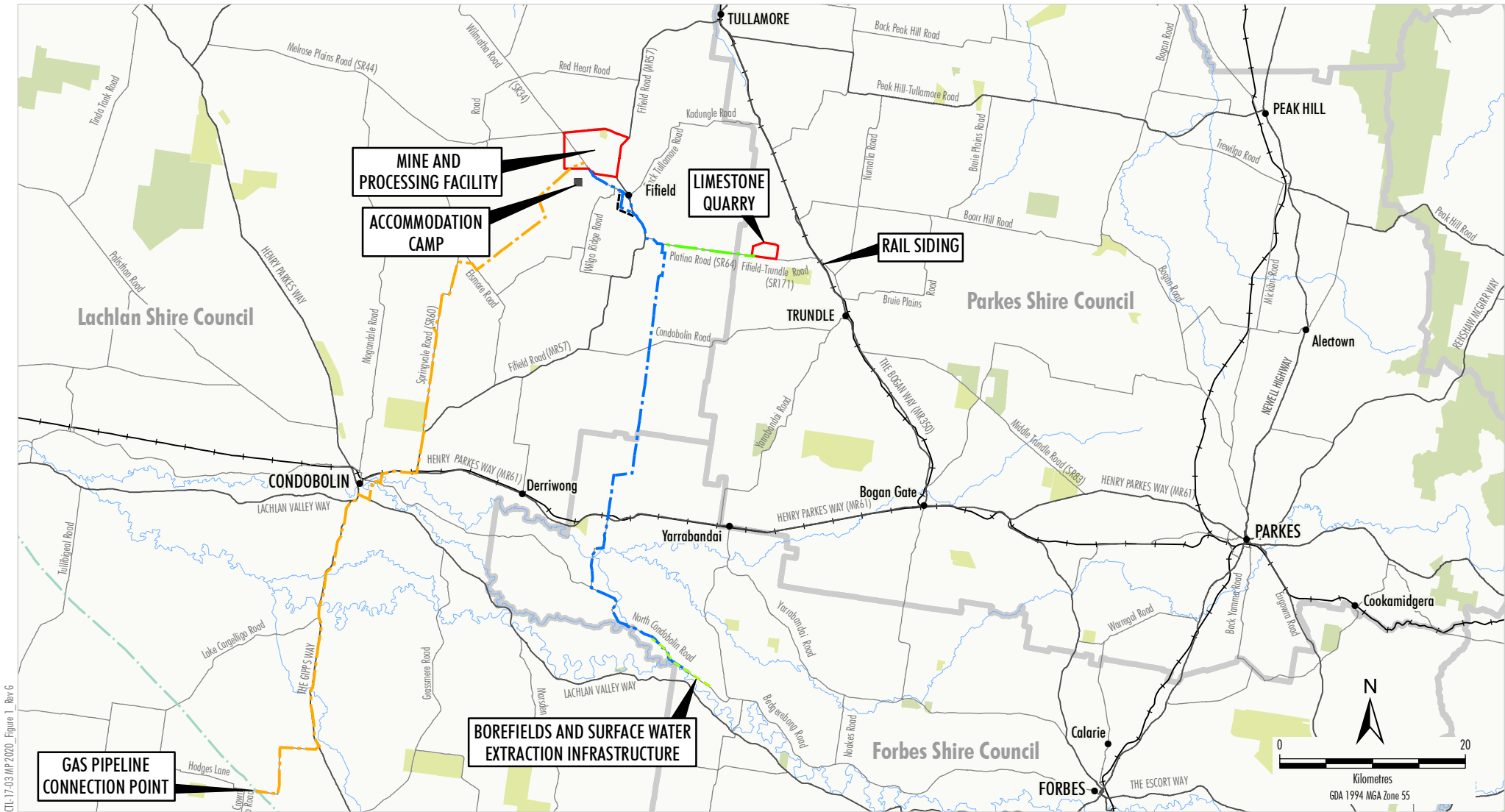
- accommodation camp; and
- associated transport activities and transport infrastructure (e.g. the Fifield Bypass, road and intersection upgrades).

Development Consent DA 374-11-00 (the Development Consent) for the Project was issued under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) in 2001. Six modifications to the Development Consent have since been granted under the EP&A Act:

- 2005 - to allow for an increase of the autoclave feed rate, limestone quarry extraction rate and adjustments to ore processing operations;
- 2006 – to allow for the reconfiguration of the borefields;
- 2017 – to allow for the production of scandium oxide;
- 2017 – to amend hazard study requirements;
- 2018 – to relocate the accommodation camp; and
- 2018 – to implement opportunities to improve the overall efficiency of the Project.

Construction of the Project commenced in 2006 with the construction of components of the borefields (e.g. two production bores and associated monitoring wells), however recommencement of construction activities associated with the Project are yet to be initiated.

The land immediately adjacent to and surrounding the Project (ML 1770) consists of farming land and carbon sequestration offsets.



CLT-17-03 MP 2020 Figure 1 Rev G



- LEGEND**
- National Park/Conservation Area
 - State Forest
 - Local Government Boundary
 - Railway
 - Existing Gas Pipeline
 - Mining Lease Boundary (ML)
 - Fiffeld Bypass
 - Gas Pipeline
 - Water Pipeline
 - Limestone Quarry Water Pipeline
 - Borefield Infrastructure Corridor

Source: Black Range Minerals (2000); Clean TeQ (2017, 2018); NSW Department of Industry (2020); NSW Land & Property Information (2017); Office of Environment and Heritage NSW (2017)

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Regional Location

Figure 1

2.3 Mine Contacts

Contact details for key Clean TeQ employees for the Project are provided below in Table 4:

Table 4 Key mine contacts

Position	Telephone	Email
Mine (Technical) Manager	03 9797 6700	environment@cleanteq.com
Environmental Approvals Lead	03 9797 6700	environment@cleanteq.com
Environmental Superintendent	03 9797 6700	environment@cleanteq.com

The postal address for the Clean TeQ Project is provided below:

Postal Address

PO Box 227

Mulgrave, Victoria, 3170

3 APPROVALS

3.1 Current List of Consents, Leases, Licences and Permits

The key consents, leases, licences and permits current at the end of the reporting period for the Project are listed in Table 5 below. Any applicable changes to these approvals during the reporting period are also described in Table 5.

Table 5 Key Consents, Leases, Licences and Permits

Instrument	Description	Relevant Authority	Date of Grant	Expiry Date or Duration	Changes During AR Period
Project Approval					
DA 374-11-00	Development Consent	DPI&E	23/05/2001	21 years (from commencement of mining operations)	No change
Mining Leases (ML)					
ML 1769	Mining Lease (389.7 ha)	DRG	15/2/2018	21 years	No change
ML 1770	Mining Lease (2676 ha)	DRG	16/2/2018	21 years	Instrument of variation issued (25/10/2019) to substitute Condition 7 with amended security deposit as assessed by the Secretary (to take effect 16/01/2020)
					Instrument of variation issued (20/12/2019) to confer a right in relation to ancillary mining activities over surveyed area M27641 and add this land to ML 1770.
Mining Operations Plan					
MOP	Mining Operations Plan 2018-2020	DRG	08/02/2018	07/08/2020	MOP amended (MOP Amendment A) to include the addition of ML 1770 boundary fencing as an activity that may be undertaken during the MOP term.
Environment Protection Licence					
EPL21146	Environment Protection Licence (EPL)	EPA	09/01/2019	Until surrendered	EPL issued (09/01/2019) to Clean TeQ for the premises [ML 1770] at Wilmatha Road Fifield NSW
Exploration Licences (EL)					
EL8561 (Act 1992)	Exploration Lease (33.6 km ²)	NSW RR	11/05/2017	3 years	EL varied (NSW RR – 02/10/2019) by revoking 'Drilling Notification' condition
EL4573 (Act 1992)	Exploration Lease (22.7 km ²)	NSW RR	17/08/2018	3 years	EL varied (NSW RR – 02/10/2019) by revoking 'Drilling Notification' condition
EL8833 (Act 1992)	Exploration Lease (112.5 km ²)	NSW RR	18/04/2019	3 years	EL granted 18/04/2019
					EL varied (NSW RR – 02/10/2019) by revoking 'Drilling Notification' condition
EL8882 (Act 1992)	Exploration Lease (80.9 km ²)	NSW RR	14/08/2019	3 years	EL granted 14/08/2019
					EL varied (NSW RR – 02/10/2019) by revoking 'Drilling Notification' condition

Table 5 (Cont.) Key Consents, Leases, Licences and Permits

Instrument	Description	Relevant Authority	Date of Grant	Expiry Date or Duration	Changes During AR Period
Exploration Licences (EL) (Cont.)					
EL8883 (Act 1992)	Exploration Lease (138.4 km ²)	NSW RR	14/08/2019	3 years	EL granted 14/08/2019
					EL varied (NSW RR – 02/10/2019) by revoking ‘Drilling Notification’ condition
Exploration Licence Applications (ELAs)					
ELA5860	Exploration Lease Application (57.5 km ²)	NSW RR	-	-	ELA applied for 20/09/2019 (Awaiting approval)
Permits/Agreements/Licences					
AHIP #C0003049	Aboriginal Heritage Impact Permit	BCD	10/10/2017	10 years	No change
AHIP #C0003887	Aboriginal Heritage Impact Permit	BCD	10/08/2018	23 years	No change
	Compensation Agreement	FCNSW	17/01/2019	-	Compensation agreement signed between Clean TeQ and FCNSW
119039 v2	Class 2 - Heavy Vehicle Authorisation Permit	NHVR	02/05/2018	30/01/2021	No change
LN 603648	Crown Lands Licence	DPIE- Crown Lands	06/08/2019	-	Licence granted to use Crown Public Road within Lot 17 DP 752086 for the purposes of a pipeline, transmission line, access, and telephone line (Utilities)
Water Licences					
WAL32068	Water Access Licence	NRAR	18/09/2018	Continuing	No change
WAL28681	Water Access Licence	NRAR	18/09/2018	Continuing	No change
WAL39837	Water Access Licence	NRAR	25/10/2018	Continuing	No change
WAL6679	Water Access Licence	NRAR	13/03/2019	Continuing	General security licence issued to Clean TeQ in the Lachlan Regulated River Water Source
WAL42370	Water Access Licence	NRAR	24/05/2019	Continuing	High security licence issued to Clean TeQ in the Lachlan Regulated River Water Source
WAL1798	Water Access Licence	NRAR	03/06/2019	Continuing	General security licence issued to Clean TeQ in the Lachlan Regulated River Water Source
Water Supply Works Approvals (WSWAs)					
70CA614098	WSWA	NRAR	14/09/2012	12/03/2026	Application submitted to NRAR to amend WSWA (2 August 2019)
Approval	WSWA Application	NRAR	-	-	WSWA application for river pump station, transfer station and water pipeline submitted to NRAR (23 July 2019)

DPI&E: NSW Department of Planning, Industry and Environment.

EPA: NSW Environment Protection Agency – within the Department of Planning, Industry and Environment

NRAR: NSW Natural Resources Access Regulator – within the Department of Planning, Industry and Environment

DRG: Division of Resources and Geoscience – within the Department of Planning, Industry and Environment

BCD: NSW Biodiversity & Conservation Division – within the Department of Planning, Industry and Environment

FCNSW: Forestry Corporation of New South Wales

NHVR: National Heavy Vehicle Regulator

NSW RR: NSW Resources Regulator - within the Department of Planning, Industry and Environment

4 OPERATIONS SUMMARY

4.1 Mining

As mining (or construction) has not commenced, Clean TeQ did not extract or process any ore or limestone for the Project during the reporting period. Furthermore, no off-site product transport was undertaken from the mine. A production summary is shown in Table 6 below.

Table 6 Production Summary

Material		Approved Limit* (tonnes/calendar year)	Actuals		Forecast
			Previous Reporting Period	This Reporting Period	Next Reporting Period
Autoclave feed rate of ore		2.5 million	0	0	0
Off –site Product Transport	Ni and Co metal equivalents as sulphate precipitate products	40,000	0	0	0
	Scandium Oxide	180	0	0	0
	Ammonium Sulphate	100,000	0	0	0
Limestone	Extracted from ML 1769	790,000	0	0	0

*Source: Development Consent DA 374-11-00

4.2 Exploration

During the reporting period a trial passive seismic survey was completed, and an exploration drilling program was initiated.

For completeness, all exploration drilling has been reported in the following reports:

- *Second Annual Exploration Report for ML 1770 “Clean TeQ Sunrise Project” – 16 February 2019 to 15 February 2020 [3]; and*
- *Second Annual Exploration Report for ML 1769 “Westella Limestone Project” – 15 February 2019 to 14 February 2020 [4].*

4.2.1 Seismic Survey

A trial passive (non-intrusive) seismic horizontal-to-vertical spectral ratio (HVSr) survey (Figure 2) was completed on ML 1770 (laterite deposit) in July 2019 using two seismometers. The aim of the passive seismic HVSr surveying was to test the effectiveness of this technique for detecting the depth to the various sub-horizontal zones within the profile of the mineral resource which could then be used for drill planning, targeting favourable horizons and structures, and provide infill information in between drill holes.

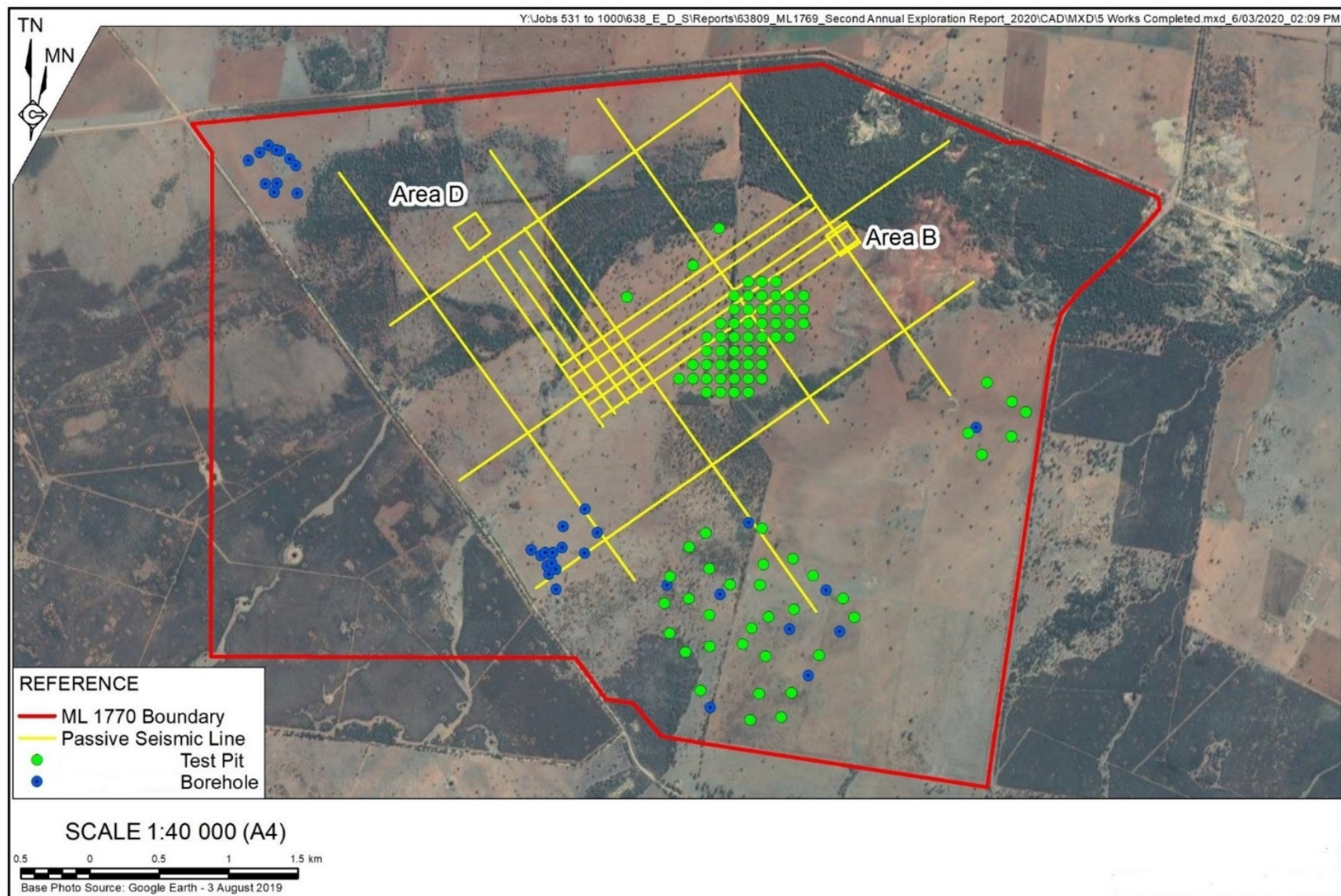


Figure 2 Locations of passive seismic survey and exploration drilling program

4.2.2 Exploration Drilling

Exploration drilling was initiated to further characterise the mineral resource. It included the excavation of 89 test pits and the drilling of 33 boreholes, the locations of which (completed to date) are shown in Figure 2. Samples collected were analysed for a suite of metals using XRF (x-ray fluorescence). The reporting was in progress at the time of writing and a results summary will be reported in the next AR.

4.3 Other Activities

4.3.1 Environmental Protection Works

Environmental protection works were carried out under the provisions of the Lachlan Shire Council Local Environmental Plan (LEP). This included landscaping activities which were undertaken with the planting of (approximately 9,650) native tree and shrub species in early August 2019 on Clean TeQ owned land (including ML 1770). Planting was followed by establishment works (i.e. watering by local contractor). Infill planting will occur (if required) within the next reporting period to replace trees that didn't survive.

The native tree and shrub species planted are listed below in Table 7.

Table 7 Native tree and shrub seedling species

Scientific Name	Common Name
<i>Acacia Hakeoides</i>	Hakea Wattle
<i>Bursaria Spinosa</i>	Blackthorn
<i>Dodonaea Viscosa Cuneata</i>	Wedge-leaf hop-bush, Sticky hopbush
<i>Hardenbergia Violacea Blue</i>	Purple Coral Pea, False Sarsaparilla, Waraburra
<i>Indigofera Australis</i>	Australian indigo
<i>Allocasuarina Luehmannii</i>	Bulloak, Buloke
<i>Brachychiton Populneus</i>	Kurrajong
<i>Callitris Glaucophylla</i>	White Cypress Pine
<i>Callitris Endlicheri</i>	Black Cypress Pine
<i>Casuarina Cristata</i>	Belah
<i>Eucalyptus Albens</i>	White Box
<i>Eucalyptus Camaldulensis</i>	River Red Gum
<i>Eucalyptus Largiflorens</i>	Black Box
<i>Eucalyptus Melliodora</i>	Yellow Box
<i>Eucalyptus Microcarpa</i>	Grey Box
<i>Pittosporum angustifolium</i>	Weeping Pittosporum, Butterbush

4.3.2 Telecommunications

During April – June 2019, Telstra expanded their telecommunications network in the Project area with the laying (burying) of approximately 4.6 kilometres of fibre optic cable originating and running north west from Fifield, adjacent to Wilmatha Road. Segments of the installation occurred on Clean TeQ owned land (including ML 1770). The installation of the “low-impact” facilities was authorised under clause 43 of Schedule 3 of the Telecommunications Act 1997 (Cth). Telstra took steps to ensure the site was restored to a condition similar to its pre-disturbance condition.

5 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

The *2017/2018 Annual Review* was submitted to the DPI&E on the 1st April 2019 noting that the Project had not commenced construction during the reporting period. On the 9th April 2019, the DPI&E responded to the 2017/2018 Annual Review submission noting receipt of the submission and stating an assessment officer would be in contact should further information be required. No further information was required.

6 ENVIRONMENTAL PERFORMANCE

Environmental management at the Project during the reporting period was conducted under the guidance of the approved Mining Operations Plan (MOP). Risks associated with the proposed exploration activities were summarised in section 3.1 of the MOP as follows:

- Adverse noise impacts on surrounding residents;
- Unacceptable dust-related impacts;
- Surface water impacts associated with discharge of produced or other water; and
- Groundwater impacts associated with contamination of aquifers.

Environmental Management Plans (EMPs) and strategies required under the Development Consent prepared (by Clean TeQ) and approved by the DPI&E during the reporting period are shown below in Table 8. Some EMPs were revised (Rev. 2) during the reporting period to reflect the determination of Modification 4 in December 2018 in accordance with the Development Consent (Schedule 5, Condition 6)

Table 8 Environmental management plans and strategies

Description	Current Status		DPI&E Approval Date
	Revision	Dated	
Air Quality Management Plan	2	21/08/2019	29/08/2019
Blast Management Plan	1	29/03/2019	12/04/2019
Biodiversity Management Plan and Revegetation Strategy	2	22/07/2019	15/08/2019
Environmental Management Strategy	1	17/09/2019	27/09/2019
Heritage Management Plan	2	12/06/2019	13/06/2019
Noise Management Plan	2	27/03/2019	19/07/2019
Rehabilitation Management Plan	2	11/07/2019	15/08/2019
Road Upgrade and Maintenance Strategy	1	27/03/2019	13/05/2019
Traffic Management Plan	1	8/07/2019	15/08/2019
Water Management Plan	1	3/09/2019	Not yet approved
- Appendix A Water Balance	1	3/09/2019	Not yet approved
- Appendix B Surface Water Management Plan	1	28/10/2019	Not yet approved
- Appendix C Groundwater Management Plan	1	11/12/2019	Not yet approved

Future planned exploration and construction activities will be undertaken in accordance with the commitments outlined in the approved MOP and relevant approved EMP's. All approved EMPs can be found on the Clean TeQ website at <https://www.cleanteq.com/sunrise-project/management-plans/>.

6.1 Air Quality

The Development Consent (Schedule 3, Condition 23) requires the preparation of an Air Quality Management Plan (AQMP) for the Project. As stated above, a construction phase AQMP was revised during the reporting period (Rev. 2) to reflect the determination of Modification 4 in December 2018. The revised AQMP was submitted to the DPI&E for approval and subsequently approved on the 29 August 2019.

Other than described below, no air quality monitoring was required to be undertaken at other Project areas (e.g. ML 1769) during the reporting period.

6.1.1 Environmental Management

6.1.1.1 Control Strategies

Dust from the exploration activities (test pits and drilling of 33 boreholes) on ML 1770 and vehicle movements on unsealed roads was identified in the MOP as a potential impact to sensitive receivers surrounding the mine site. Therefore, Clean TeQ implemented the following air quality management measures to minimise and mitigate these impacts:

- All drill rigs were fitted with an effective dust suppression and collection system and rigs only operated when that dust suppression system was functional;
- Drilling ceased immediately if dust emissions were visible from more than 250m from the drill rig; and
- Vehicle speeds on-site were limited to 40km/h on formed tracks and 20km/h on unformed tracks.

6.1.1.2 Effectiveness of Control Strategies

The control strategies implemented during the reporting period were considered to be effective.

6.1.1.3 Variations from Proposed Control Strategies

There were no variations from the proposed control strategies during the reporting period.

6.1.2 Environmental Performance

6.1.2.1 Particulate Matter Monitors

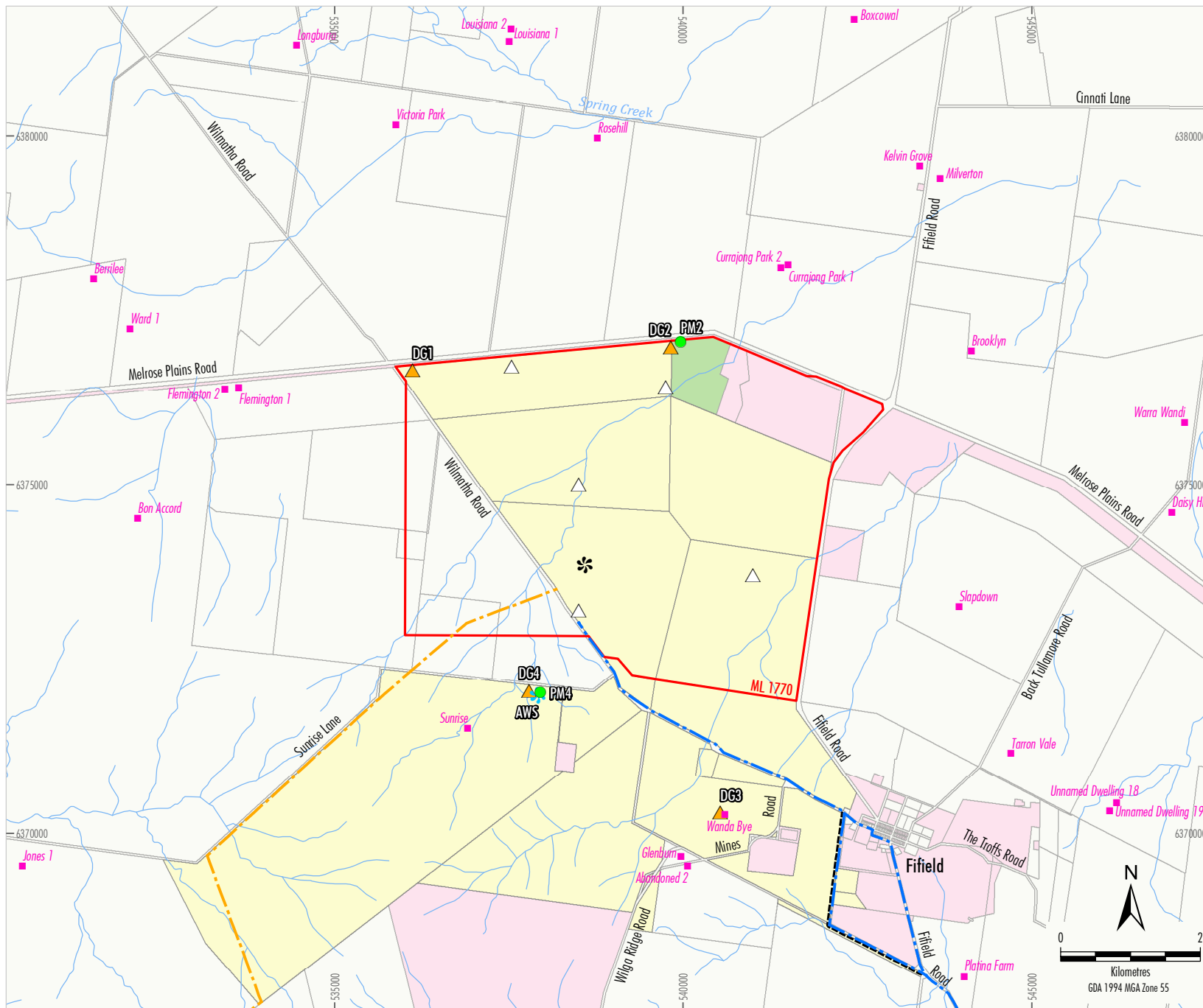
As required by the Development Consent (Schedule 3, Condition 23) and subsequently described in the approved AQMP, the air quality monitoring program for the Project must include real time monitoring.

PM₁₀ (particulate matter with an aerodynamic diameter less than or equal to 10 µm) and PM_{2.5} (particulate matter with an aerodynamic diameter less than or equal to 2.5 µm) will be monitored in real time (continuously) at two locations in the vicinity of the Project and will be in place prior to the commencement of construction activities on ML 1770, in accordance with Condition M2.2 of EPL 21146. Monitoring of PM₁₀ and PM_{2.5} will be conducted using Teledyne API T640x monitors (the T640x monitor). Clean TeQ consulted with the EPA regarding the use of the T640x monitors and the EPA indicated on 5 August 2019 that it “considers the Teledyne API T640x technology as appropriate for monitoring ambient fine particles (PM₁₀ and PM_{2.5}) in NSW”.

Two (solar powered) T640x monitors were installed at two locations in the vicinity of the Project during the reporting period (December 2019). One was installed adjacent to the Automatic Weather Station (AWS) and accommodation camp and the other on the northern boundary of the mine site (Figure 3). Both monitors will be commissioned and operating prior to the commencement of construction activities on ML 1770. Where relevant, monitoring results will be reviewed and described as per Section 11.1 of the approved AQMP in the next AR.

6.1.2.2 Depositional Dust Monitoring

Depositional dust monitoring is undertaken at locations representative of nearby sensitive receivers, via a network of static dust deposition gauges. In accordance with the approved AQMP, four dust deposition gauges were installed in January 2019 (Figure 3), prior to exploration or construction activities being undertaken. Monitoring was undertaken monthly from the four locations during the reporting period. A number of significant dust storms were recorded during February, September, October, November and December which contributed to some high dust deposition rates. Results for each month have been published on the Clean TeQ website at <https://www.cleanteq.com/sunrise-project/reports/> and are presented below in Table 9.



- LEGEND**
- Mining Lease Boundary (ML)
 - Fildfield Bypass
 - Gas Pipeline
 - Water Pipeline
 - Clean TeQ Owned Land
 - Crown Land
 - Fildfield State Forest
 - Private Landholder
 - Dwelling
 - ▲ EIS Monitoring Sites
 - △ Dust Deposition
 - ✱ Meteorological Station
 - ▲ Construction Phase Monitoring Sites
 - ▲ Dust Deposition
 - PM_{2.5} and PM₁₀
 - ✱ Meteorological Station
- Source: Black Range Minerals (2000); Clean TeQ (2017, 2018); NSW Department of Industry (2020); NSW Land & Property Information (2017)

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**Air Quality and Meteorological
Monitoring Sites**

Figure 3

Table 9 Summary of depositional dust monitoring results 2019

Month			Insoluble Solids (g/m ² /month)			
	Start	End	DG1	DG2	DG3	DG4
FEB	29/1/19	1/3/19	9.9	6.6	9.0	6.5
MAR	1/3/19	1/4/19	3.4	3.2	1.7	2.2
APR	1/4/19	29/4/19	0.4	0.4	0.4	0.3
MAY	29/4/19	31/5/19	3.0	3.0	1.5	1.3
JUN	31/5/19	28/6/19	0.8	0.5	0.7	0.3
JUL	28/6/19	29/7/19	1.1	1.7	0.6	1.0
AUG	29/7/19	5/9/19	1.4	0.5	0.8	1.5
SEP	5/9/19	5/10/19	4.6	4.4	4.6	6.5
OCT	5/10/19	4/11/19	10.0	5.9	4.6	8.7
NOV	4/11/19	4/12/19	2.3	3.1	2.6	3.9
DEC	4/12/19	6/1/20	1.0	1.2	0.8	1.3
ANNUAL AVERAGE			3.4	2.8	2.5	3.0

6.1.3 Reportable Incidents

There were no reportable incidents during the reporting period. Furthermore, no community complaints were received regarding air quality from nearby sensitive receivers during the exploration activities undertaken during the reporting period.

6.1.4 Further Improvements

No further improvements are proposed.

6.2 Meteorological Monitoring

The Development Consent (Schedule 3, Condition 25) requires a meteorological station to operate in the vicinity of the mine site for the life of the development (after establishment).

Other than described below, no meteorological monitoring was required to be undertaken at other Project areas (e.g. ML 1769) during the reporting period.

6.2.1 Environmental Management

6.2.1.1 Control Strategies

The AWS [meteorological station] (Figure 3), located on the Sunrise Property (in close proximity to ML 1770), continued to collect meteorological data during the reporting period in accordance with the required parameters listed in Condition M4 of the EPL. The AWS (installed in 2018) measures real time wind speed and direction, standard deviation of wind direction, temperature (at 2m and 10m), barometric pressure, humidity, solar radiation and rainfall.

Real time meteorological data from the AWS can be accessed remotely. The data has been used to assess noise monitoring compliance conditions as well as proactive rainfall runoff predictions and thereby surface water monitoring opportunities.

Six monthly independent maintenance and calibration of the AWS is also undertaken to ensure valid data is being recorded.

6.2.1.2 Effectiveness of Control Strategies

The control strategies implemented during the reporting period were considered to be effective. However, equipment failure of the automatic rain gauge (due to a lightning strike) resulted in erroneous results for the 6th February and three 15 minute intervals on the 5th February. These were flagged by the third party data manager and removed from the data set.

6.2.1.3 Variations from Proposed Control Strategies

There were no variations from the proposed control strategies during the reporting period.

6.2.2 Environmental Performance

6.2.2.1 Temperature

Maximum and minimum temperatures from data recorded (temperature at 10m) by the AWS are shown below in Figure 4. The highest maximum temperature of 43.4 °C was recorded in December and the lowest minimum temperature in June of -1.2 °C.

The highest average monthly maximum temperature (37.3°C) occurred in January and the lowest average monthly minimum temperature (5.0°C) occurred in August. This compares to 33.4°C

(January) and 2.6°C (July) stated in the Project Environmental Impact Statement (EIS) as recorded at the Condobolin Agricultural Research Station (Station #50052) and shown below in Table 10.

As 2019 is the first complete year of temperature monitoring, the results could not be compared to the previous year.

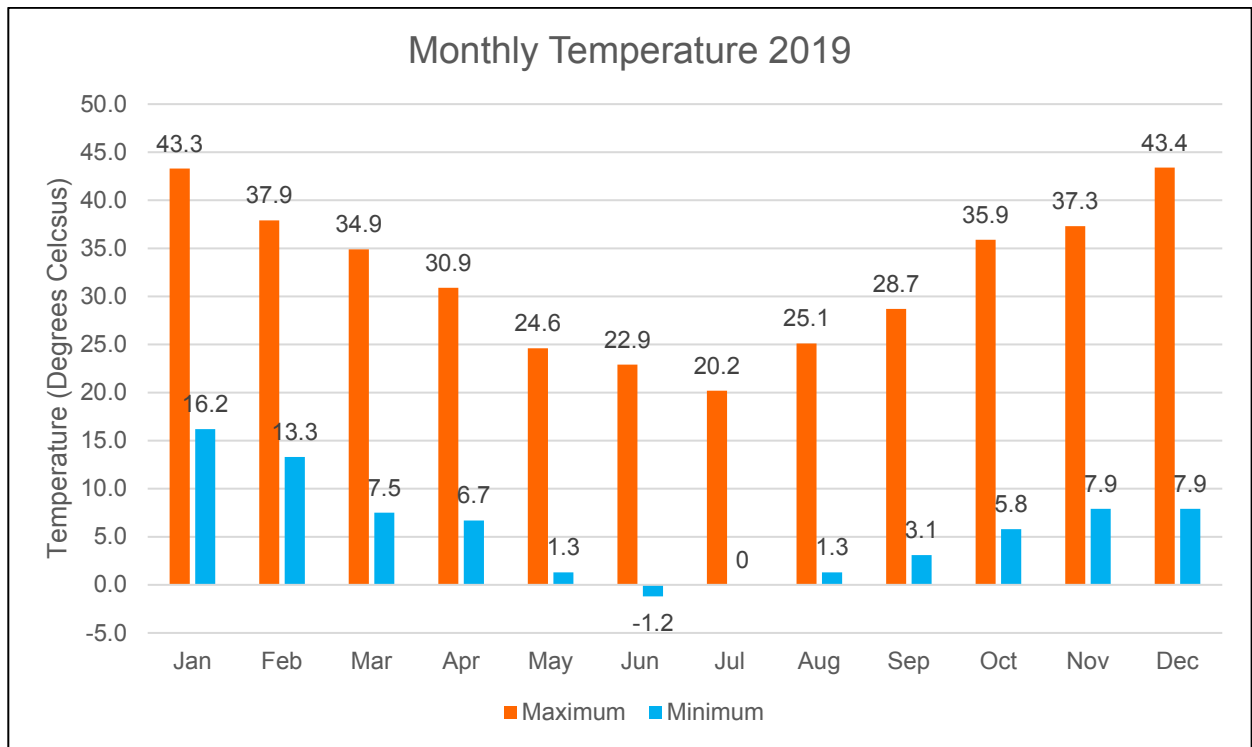


Figure 4 Monthly temperature records for 2019 at the Sunrise AWS

Table 10 Summary of Mean Daily Temperatures

Month	Mean Daily Temperature			
	EIS (Station #50052)		AWS 2019	
	Maximum (°C)	Minimum (°C)	Maximum (°C)	Minimum (°C)
January	33.4	17.6	37.3	24.1
February	32.5	17.8	31.0	19.0
March	29.3	14.8	28.4	17.1
April	24.3	9.7	25.2	14.1
May	19.4	6.8	18.6	8.8
June	15.6	3.8	15.5	6.1
July	14.9	2.6	15.1	5.5
August	16.8	3.4	15.7	5.0
September	19.7	5.4	21.0	8.4
October	24.5	9.2	25.8	12.8
November	28.2	12.6	27.9	14.6
December	31.7	15.5	33.4	19.7

6.2.2.2 Rainfall

Total rainfall of 355 mm was recorded by the AWS during the 2019 reporting period as shown below, along with monthly totals, in Figure 5. This total is below the mean annual rainfall described in the EIS of 480 mm recorded at the Murrumbogie Station at Trundle. Murrumbogie station (#50028) is the nearest long-record daily rainfall station located approximately 30 km south east of the mine site. The 2019 rainfall also reflects drought conditions experienced during the year. The lowest previous record of 166.4 mm was recorded in 1944 at the Murrumbogie Station.

As 2019 is the first complete year of rainfall monitoring, the results could not be compared to the previous year.

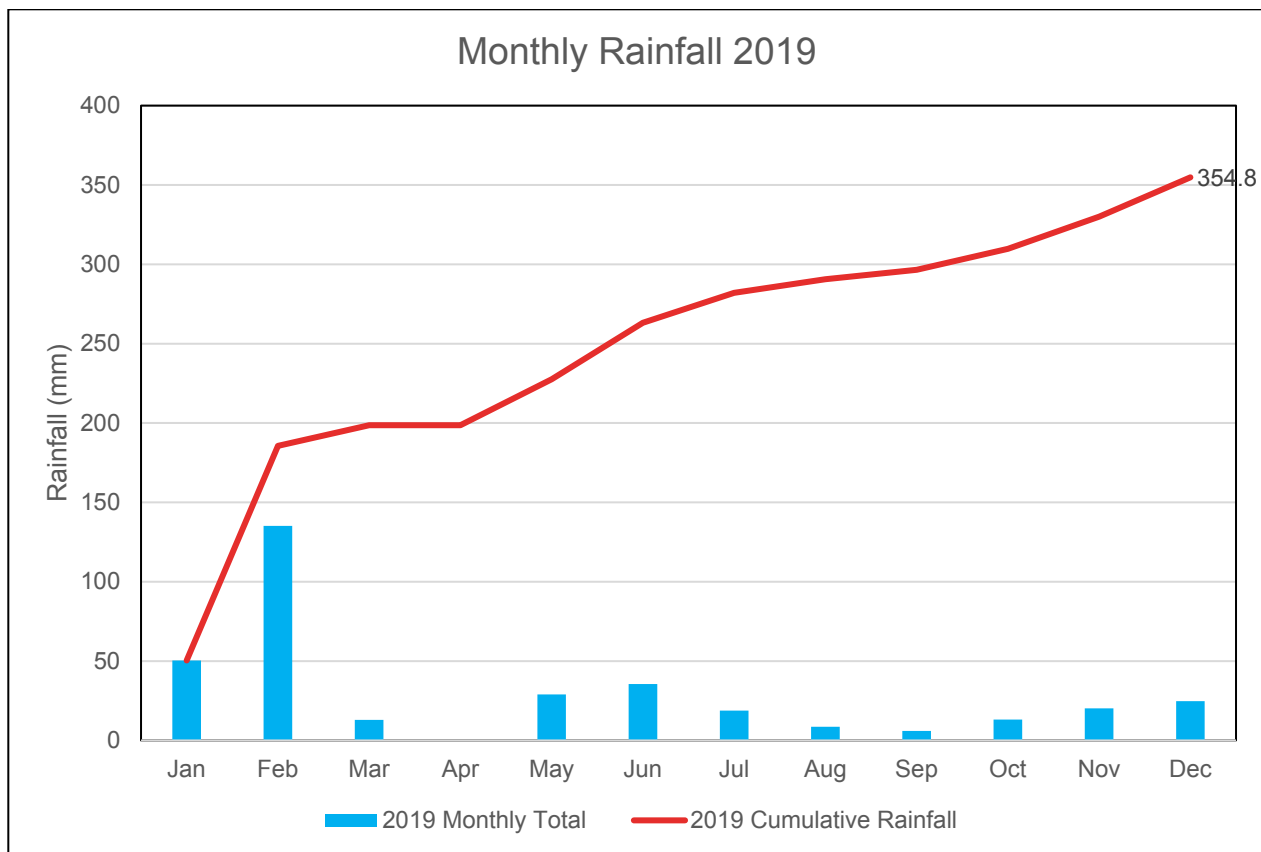


Figure 5 Monthly rainfall records for 2019 at the Sunrise AWS

6.2.2.3 Wind

Wind speed and direction (blowing from) data for the 2019 reporting period are presented in the wind rose below in Figure 6. Wind speed values are displayed as metres per second (m/s).

Analysis of data reveals that winds during the 2019 reporting period were predominantly from the south west (23%) with an overall south-west/north-east prevailing wind direction (38%). An average wind speed of 3.42 m/s was calculated for the period. Calms (wind speed <0.5m/s) were experienced 4.74% of the time.

As 2019 is the first complete year of wind speed and direction monitoring, the results could not be compared to the previous year. However, the prevailing wind conditions during this reporting period were consistent with the historical data as presented in the EIS and with the basis used in subsequent air quality assessments.

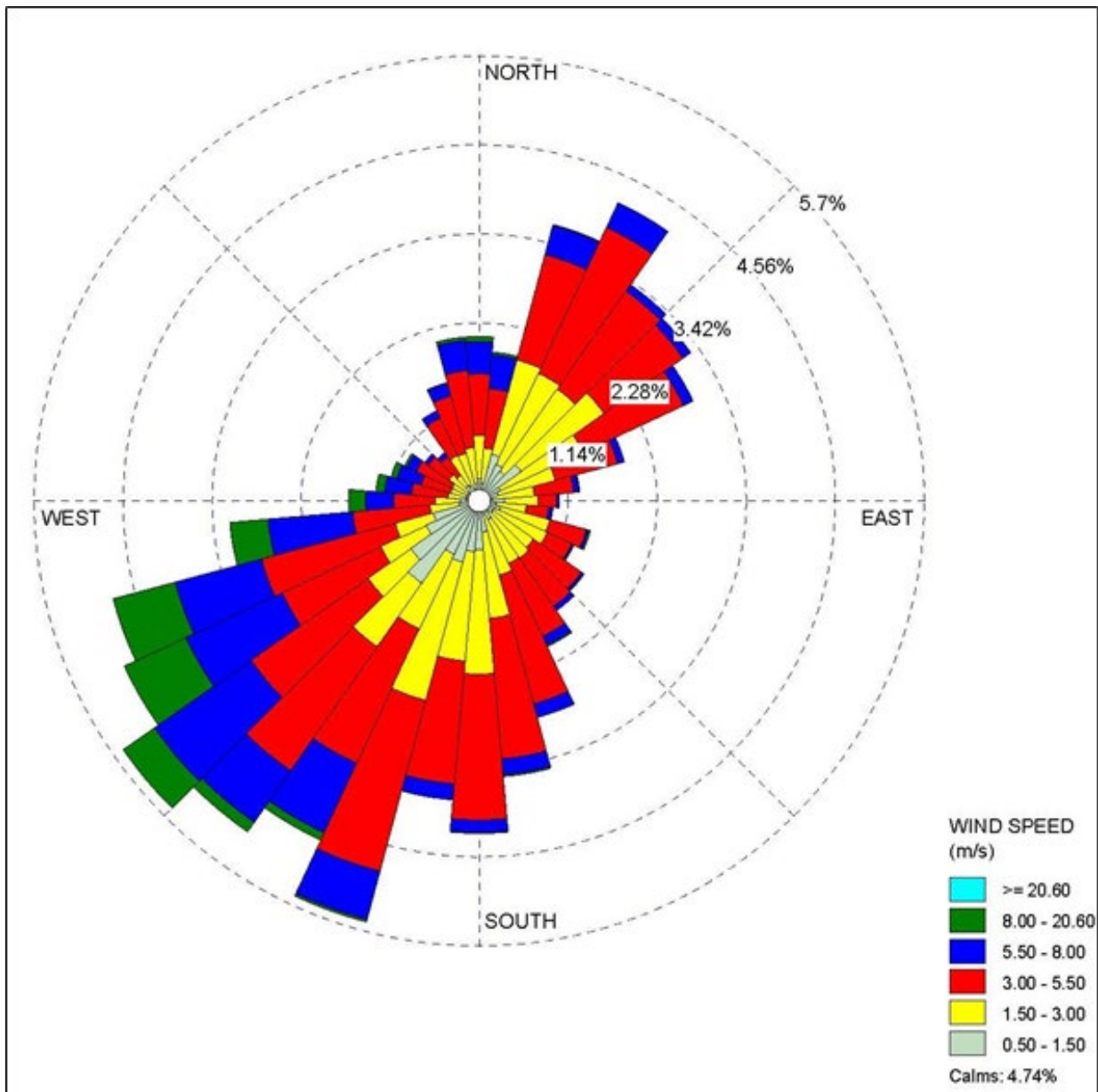


Figure 6 Annual wind rose 2019

6.2.3 Reportable Incidents

There were no reportable incidents during the reporting period.

6.2.4 Further Improvements

During the next AR period, the particulate matter monitoring network will be evaluated against reference method testing as required by Australian Standards.

6.3 Construction Noise

The Development Consent (Schedule 3, Condition 9) requires development of a Noise Management Plan (NMP) for the Project. As stated above, a construction phase NMP was revised (Rev. 2) during the reporting period to reflect the determination of Modification 4 in December 2018. The NMP was submitted to the DPI&E for approval and subsequently approved on the 19 July 2019.

Other than described below, no noise monitoring was required to be undertaken at other Project areas (e.g. ML 1769) during the reporting period.

6.3.1 Environmental Management

6.3.1.1 Control Strategies

Noise from the drilling program was identified in the MOP as a potential impact to sensitive receivers surrounding the mine site. Clean TeQ implemented the following noise-management measures during exploration activities to minimise and mitigate these impacts:

- Strictly enforced the proposed hours of operation;
- Consulted closely (initially daily) with surrounding residents to determine the acceptability or otherwise of the noise emissions from the Mine Site; and
- Implement additional management measures in consultation with surrounding residents in the event that noise emissions are determined to be unacceptable.

The hours of operation during the drilling programs were limited to 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and public holidays as described within the approved MOP.

6.3.1.2 Effectiveness of Control Strategies

The control strategies implemented during the reporting period were considered to be effective.

6.3.1.3 Variations from Proposed Strategies

There were no variations from the proposed control strategies during the reporting period.

6.3.2 Environmental Performance

6.3.2.1 Monitoring

As described in the NMP, attended noise monitoring was undertaken at four nearby sensitive receivers on a quarterly basis. Monitoring commenced in Q1, 2019 and was undertaken in March, June, September and December. Monitoring results have been published on the Clean TeQ website at <https://www.cleanteq.com/sunrise-project/reports/> and reported in this AR.

Construction activities had not commenced at the time monitoring was undertaken and therefore construction noise criterion was not exceeded at any time or at any location throughout the monitoring surveys.

In addition, the sleep disturbance criterion was not exceeded at any monitoring location during the night time monitoring periods.

The results are summarised below in Table 11. The Project was deemed inaudible, as no construction activities occurred during the reporting period.

As there was no construction activity noise from the mine, there was no requirement for the assessment of potential sleep disturbance impacts.

Table 11 Summary of attended noise monitoring results 2019

Construction Noise Criterion dB(A) Leq		Location															
		AN1				AN2				AN3				AN4			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Day Leq (15min)	40	42	40	34	34	36	28	37	25	41	39	35	39	39	27	32	32
Evening Leq (15min)	35	32	38	23	32	25	30	20	26	32	36	30	31	31	20	22	41
Night Leq (15min)	35	33	28	33	33	25	22	30	30	32	26	25	25	29	19	20	20
Night L1 (1min)	45	38	36	38	34	30	32	35	25	35	42	30	27	33	21	22	30

Note: Results exceeding the noise criteria are due to non-Project related noise sources such as birds and insects, traffic, sheep, wind etc., recorded at the time of monitoring.

6.3.3 Reportable Incidents

There were no reportable incidents during the reporting period.

6.3.4 Further Improvements

Clean TeQ may seek approval in the next reporting period to temporarily suspend attended noise monitoring until initial construction activities commence. Clean TeQ would seek approval for the temporary suspension in consultation with the relevant regulatory authorities.

6.4 Erosion and Sediment

The Development Consent (Schedule 3, Condition 30(b)) requires a detailed description of erosion and sediment control strategies in the Surface Water Management Plan (SWMP). A construction phase SWMP for the Project was prepared and under assessment by DPI&E during the reporting period, however had not been finalised or approved by the end of the reporting period.

During the exploration activities described in Section 4.2, it was noted that no surface water run on or runoff occurred from the drill pad sites due to the flat nature of the surrounding landforms and lack of rainfall. No sediment or erosion control measures were required to be implemented during the exploration program and follow up inspections did not identify any erosion or sedimentation issues.

6.4.1 Reportable Incidents

There were no reportable incidents during the reporting period.

6.4.2 Further Improvements

The construction phase SWMP was submitted for approval to the DPI&E during the 2019 reporting period. Following approval and upon the commencement of construction, the erosion control measures outlined in the SWMP will be implemented including the construction of sediment ponds and installation of silt fences and hay bales where necessary to control erosion. Disturbance areas will also be kept to a minimum to minimise erosion and sedimentation issues.

6.5 Flora

The construction phase Biodiversity Management Plan and Revegetation Strategy (BMP-RS) was revised (Rev. 2) during the reporting period to reflect the determination of Modification 4 in December 2018. The revised BMP-RS was submitted to the DPI&E for approval and subsequently approved on the 15 August 2019. No vegetation clearing was undertaken during the reporting period, therefore no control strategies or monitoring of flora was required.

6.5.1 Environmental Management

6.5.1.1 Control Strategies

Vegetation clearance activities associated with construction of the Project will commence during the next reporting period and will be implemented using the Ground Disturbance Permit process and Vegetation Clearance Protocol (VCP) as outlined in the BMP-RS. The VCP involves:

- Clearing restrictions;
- Pre-clearance fauna surveys;
- Applying clearing methods to minimise impact on fauna;
- Salvaging of material for habitat enhancement;
- Installation of artificial bat roosts;
- Rehabilitation following construction of the water pipeline; and
- Reporting.

The outcomes of the VCP process will be reported in the next AR.

The Development Consent (Schedule 3, Condition 35(c)), requires measures to identify and manage significant impacts on threatened fauna species not identified in the EIS. As described in the BMP-RS, no threatened fauna species are likely to be significantly affected by the Project, therefore measures to manage significant impacts are not required and general measures to manage impacts on threatened species will be applied (e.g. implementing the VCP).

6.5.1.2 Effectiveness of Control Strategies

No control strategies were required to be implemented during the reporting period.

6.5.1.1 Variations from proposed Control Strategies

There were no variations from the proposed control strategies during the reporting period.

6.5.2 Reportable Incidents

There were no reportable incidents during the reporting period.

6.6 Fauna

The construction phase BMP-RS was revised (Rev. 2) during the reporting period to reflect the determination of Modification 4 in December 2018. The BMP-RS was submitted to the DPI&E for approval and subsequently approved on the 15 August 2019. No vegetation clearing was undertaken during the reporting period, therefore no control strategies or monitoring of fauna was required.

6.7 Weeds and Pests

Weeds and pests were managed as per the BMP-RS. The construction phase BMP-RS was revised (Rev. 2) during the reporting period to reflect the determination of Modification 4 in December 2018 and was approved by the DPI&E on 15 August 2019.

6.7.1 Environmental Management

6.7.1.1 Control Strategies

In accordance with the BMP-RS, control strategies for weed management on Clean TeQ-owned land include the following:

- identification of weeds by regular site inspections;
- mechanical removal of identified noxious weeds and/or the application of approved herbicides in authorised areas;
- implementing follow-up site inspections to determine the effectiveness of the weed control measures;
- where practicable, prevention of the establishment of new weeds on Clean TeQ-owned land by minimising seed transport of weed species to and from the Project through the use of a vehicle inspection process (primarily for use on agricultural and earthmoving equipment that are likely to carry weed seeds); and
- pest control activities.

The implementation of weed management strategies occur according to seasonal and climatic requirements.

The pest control activities within the Project areas are described in the BMP-RS and include the following measures:

- regular property inspections to assess the status of pest populations within Clean TeQ owned- land;
- implement pest control methods for declared pests (i.e. rabbits, pigs and wild dogs) in accordance with Pest Control Orders under the *NSW Local Land Services Act, 2013*; and
- inspections to assess the effectiveness of control measures implemented and review these if necessary.

6.7.1.2 Effectiveness of Control Strategies

The control strategies implemented during the reporting period were considered to be effective.

As 2019 was in a significant drought, weekly and monthly inspections identified limited weed and vertebrate pest species. Accordingly, one weed (spot spraying) control event was conducted during December 2019. In addition, a coordinated fox control program was conducted with surrounding landholders in early 2019.

6.7.1.3 Variations from Proposed Control Strategies

There were no variations from the proposed control strategies during the reporting period.

6.7.2 Environmental Performance

6.7.2.1 Monitoring

Under the BMP-RS a baseline weed and pest survey was required to be undertaken within the first 12 months following approval of the BMP-RS. The results of the baseline survey would inform a weed and pest strategy for implementation. Survey results, strategy and implementation are summarised below.

The baseline survey [5] was undertaken over a nine (9) day period from 24 June 2019 until 2 July 2019. Survey results provided both a baseline of the presence of weed and pests as well as a strategy for control on ML 1770 and within the approved accommodation camp area of the Sunrise property. The survey findings are listed below:

Weeds

- One state level priority weed was identified, namely African Boxthorn (*Lycium ferocissimum*) and three regional priority weeds, namely Bathurst Burr (*Xanthium spinosum*), St John's Wort (*Hypericum perforatum*) and Bridal Creeper (*Asparagus asparagoides*).
- Overall the study areas exhibited a low abundance of weeds in line with the presence of stock, the time of year surveys were conducted and the drought conditions.

Vertebrate Pests

- Twelve vertebrate pest species were identified during the survey period, namely:
 - Blackbird (*Turdus merula*);
 - Common Pigeon (*Columba livia*);
 - Common starling (*Sturnus vulgaris*);
 - European hare (*Lepus europaeus*);
 - Feral cat (*Felis catus*);
 - House mouse (*Mus musculus*);
 - Rabbit (*Oryctolagus cuniculus*);
 - Rat (*Rattus Rattus*);
 - Red Fox (*Vulpes Vulpes*);
 - Sparrow (*Passer domesticus*);
 - Wild Goat (*Capra aegagrus*); and
 - Feral pig (*Sus scrofa*).
- In general, populations of vertebrate pest species were in low concentrations across the two study sites. This was due mainly to the severe drought conditions experienced translating to meagre food and water available to support significant populations.

Weekly and monthly monitoring of weed and pest control methods and their effectiveness was conducted after the completion of the weed and pest survey. As both study sites (ML 1770 and within the approved accommodation camp area of the Sunrise property) were experiencing drought conditions, the populations of both weed and vertebrate pest species were found to be in low abundance throughout.

6.7.2.2 Performance Outcomes

Weed Management

One weed control event was implemented during the reporting period. This was a spot spray control event of Bathurst Burr in December 2019 following rainfall in November.

Pest Management

A fox baiting program in conjunction with local landholders was undertaken in early 2019. Following the baiting program, visual assessments indicated the fox population had reduced on Clean TeQ owned land.

6.7.3 Reportable Incidents

There were no reportable incidents during the reporting period.

6.7.4 Further Improvements

Assessment against the performance indicators outlined in the BMP-RS will occur during the next reporting period.

6.8 Aboriginal Heritage

The Development Consent (Schedule 3, Condition 40) requires the development of a Heritage Management Plan (HMP) for the Project. As stated above, a construction phase HMP was revised (Rev. 2) during the reporting period to reflect the determination of Modification 4 in December 2018. The HMP was submitted to the DPI&E for approval and subsequently approved on the 13 June 2019.

Monitoring and management of Aboriginal objects and archaeological sites during the reporting period was carried out in accordance with the HMP and relevant Aboriginal Heritage Impact Permits (AHIPs) (#C0003049 and #C0003887) for the Project.

AHIP #C0003049 was issued by the NSW Office of Environment and Heritage (OEH) on the 10th October 2017 for a period of 10 years and covers ML 1770 and other components of the Project (e.g. limestone quarry, rail siding etc). AHIP #C0003887 was issued by the OEH on the 10th August 2018 for a period of 23 years and covers the accommodation camp on the Sunrise property.

6.8.1 Environmental Management

6.8.1.1 Control Strategies

The HMP and AHIPs set out the salvage, excavation, monitoring and other management measures required to be undertaken for each of the registered archaeological sites and other Aboriginal objects within the Project area. In general, the strategies include protection, investigation, collection, excavation, documentation and storage of Aboriginal objects in an on-site temporary “Keeping Place”.

6.8.1.2 Effectiveness of Control Strategies

The control strategies implemented during the reporting period were considered to be effective as demonstrated by the environmental performance indicators.

6.8.1.3 Variations from Proposed Control Strategies

There were no variations from the proposed control strategies during the reporting period.

6.8.2 Environmental Performance

6.8.2.1 Monitoring

Activities undertaken during the reporting period included the following:

1. Archaeological salvage activities within the mining lease (ML 1770) (under AHIP #C0003049) with archaeologists [6] and representatives from the Aboriginal community.
2. Survey and salvage of Quarry site (Syerston Stone Quarry 1; site 35-4-0026 under AHIP #C0003049) with archaeologists [7] and representatives from the Aboriginal community.
3. Due diligence inspections were also undertaken during the reporting period, including within areas not covered by AHIPs (i.e. surface water extraction location on the Lachlan River).

The activities are described below:

1. Salvage of Archaeological Artefacts from ML 1770

Prior to commencement of soil disturbing works, identified artefacts (AHIP #C0003049, Schedule B3) are required to be collected in consultation with the Project Registered Aboriginal Parties (RAPs). RAPs participated in the field recording and collection undertaken on 2 May 2019.

A total of 23 stone artefacts were recorded, with a minimum of one stone artefact and a maximum of ten stone artefacts collected at each site (Table 12). Additionally, some artefacts originally described at AHIMS site numbers 35-4-0024 and 36-4-0132 could not be reidentified, possibly due to subsequent erosion or ploughed cultivation burying or moving the artefacts. The collected artefacts have been stored at the “Keeping Place”.

Table 12 Summary of Aboriginal archaeological sites in the Project area.

AHIMS Site Number	Site Name	GDA94 Zone 55 mE	GDA94 Zone 55 mN	Description
35-4-0014	Syerston 2	538359	6374390	10 silcrete flakes, cores, flaked pieces
35-4-0024	Kingsdale Artefact 1	541601	6373077	2 silcrete flakes, 1 silcrete angular fragment
35-4-0027	Syerston Isolated Artefact 4	537434	6376495	1 chert flake
35-4-0028	Syerston Isolated Artefact 1	538458	6374643	1 silcrete flake
35-4-0031	Kingsdale Isolated Artefact 1	541176	6372773	1 silcrete flake, 1 silcrete flaked piece
35-4-0032	Kingsdale Isolated Artefact 2	540981	6373561	1 sandstone millstone
35-4-0033	Syerston Isolated Artefact 2	538468	6376059	1 sandstone millstone
36-4-0132	Kingsdale Artefact 2	541605	6373200	4 silcrete flakes

Three isolated finds of stone artefacts (AHIMS site numbers 35-4-0015, 35-4-0016 and 35-4-0030) could not be reidentified in the field during the collection program, after a reasonable search with the attending RAPs was completed (Table 13).

In accordance with Section 6.5.2 of the HMP, these sites are therefore considered as salvaged (i.e. no further work is required). In the event a site that could not be reidentified during salvage works is found during monitoring of topsoil stripping activities, these sites will be managed at that time in accordance with procedures in the HMP.

Table 13 Summary of Aboriginal archaeological sites not reidentified in the Project Area

AHIMS Site Number	Site Name	GDA94 Zone 55 mE	GDA94 Zone 55 mN	Description
35-4-0015	Syerston 1	539683	6376134	1 quartz flake
35-4-0016	Syerston 3	538403	6373254	1 volcanic flake
35-4-0030	Syerston Isolated Artefact 3	536567	6375956	1 sandstone muller fragment

In accordance with Condition 31 of AHIP #C0003049, a report [6] was prepared describing the actions relating to the harm of Aboriginal objects. This report was provided to the NSW Biodiversity Conservation Division (BCD, formerly OEH) and RAPs during the reporting period and documents the recording, collection and management of Aboriginal objects within the Project area.

2. Site Recording and Survey of Syerston Stone Quarry 1

In accordance with Condition 13 and Schedule B4 of AHIP #C0003049, the Syerston Stone Quarry 1 (site 35-4-0026) was surveyed, mapped and collected during the reporting period. Copies of this report [7] will be provided to the RAPs for the Project and the BCD, in accordance with Condition 33 of AHIP #C0003049 during the next reporting period. The program was completed by Matt Cupper (Landscape) in consultation with representatives of the RAPs who participated in the field recording and collection completed on the 25 September 2019.

Eight stone artefacts were recorded and collected from Aboriginal cultural heritage site 35-4-0026 (Table 14) and stored in the "Keeping Place".

Table 14 Summary of Aboriginal archaeological site salvaged in the Project area

AHIMS Site Number	Site Name	Dimensions (m)	GDA94 Zone 55 mE	GDA94 Zone 55 mN	Description
35-4-0026	Syerston Quarry 1	250 x 50	537963	6375224	Silcrete outcrops (4), silcrete flakes, cores, flaked pieces, angular fragments

The mitigation measures detailed in AHIP #C0003049 and the HMP were effective in minimizing impacts to Aboriginal cultural heritage in the Project area.

6.8.3 Performance Outcomes

No non-compliance issues were reported.

6.8.4 Reportable Incidents

There were no reportable incidents during the reporting period.

6.8.5 Further Improvements

No further improvements are proposed for the next reporting period.

6.9 European Heritage

The Development Consent (Schedule 3, Condition 40) requires the preparation of a Heritage Management Plan (HMP) for the Project. As stated above, a construction phase HMP was revised (Rev. 2) during the reporting period to reflect the determination of Modification 4 in December 2018. The HMP was submitted to the DPI&E for approval and subsequently approved on the 13 June 2019.

Sites of known and potential historic heritage have been identified within the Project area and are described in the HMP. These sites include the old magnesite mining area on ML 1770; the pastoral outstation on ML 1770; and pine trunk telephone poles and a log hut along the gas pipeline route. All of these sites have been assessed as being significant on the local level, however no sites of State significance have been identified in the Project area.

No impact to any sites of historic heritage occurred during the reporting period. Prior to the commencement of construction activities, sites recommended for avoidance (such as the pastoral outstation) will be temporarily fenced to avoid any inadvertent disturbance.

6.9.1 Reportable Incidents

There were no reportable incidents during the reporting period.

6.9.2 Further Improvements

No further improvements are proposed for the next reporting period.

7 WATER MANAGEMENT

7.1 Water Supply

Clean TeQ did not extract any water for the Project during the previous water year (1 July 2018 – 30 June 2019). A summary of the Water Access Licences (WALs) held by Clean TeQ is shown in Table 15 below.

Table 15 Summary of Project Water Access Licences

Water Licence #	Water Sharing Plan, Source, Management Zone	Entitlement (Share component - Units)	Passive Take/Inflows (ML)	Active Pumping (ML)	TOTAL (ML)
Groundwater					
WAL 32068	<i>Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012.</i> Upper Lachlan Alluvial Groundwater Source. Upper Lachlan Alluvial Zone 5 Management Zone	3,154	-	0	0
WAL 28681 (pit dewatering)	<i>Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011.</i> Lachlan Fold Belt Murray Darling Basin Groundwater Source. Lachlan Fold Belt MDB (Other) Management Zone	243	0	0	0
Surface Water					
WAL 6679	<i>Water Sharing Plan for the Lachlan Regulated River Water Source 2016.</i> Lachlan Regulated River Water Source.	123 ¹	-	0	0
WAL 42370		0 ²	-	0	0
WAL1798		300 ¹	-	0	0

Notes:

ML – megalitre for the previous water year

¹ General Security

² High Security

In addition, Clean TeQ also holds WAL 39837 (766 units) in the Upper Lachlan Alluvial Groundwater Source, Upper Lachlan Alluvial Zone 5 Management Zone but this WAL does not form part of the Project water supply.

7.1.1 Surface Water

During the reporting period, Clean TeQ purchased two surface water WALs and applied for and was issued with a WAL with a zero share component. However, no surface water was extracted or used during the previous water year as shown in Table 15 above.

7.1.2 Groundwater

No water was extracted from the Project borefields during the previous water year (Table 15). As shown in section 7.1 above, Clean TeQ holds three groundwater Water Access Licences:

- WAL 32068 in the Upper Lachlan Alluvial Groundwater Source (Upper Lachlan Alluvial Zone 5 Management Zone) for 3,154 share components under the Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012;
- WAL 39837 in the Upper Lachlan Alluvial Groundwater Source (Upper Lachlan Alluvial Zone 5 Management Zone) for 766 share components under the Water Sharing Plan for the Lachlan Unregulated and Alluvial Water Sources 2012 (does not form part of the Project water supply); and
- WAL 28681 in the Lachlan Fold Belt Murray-Darling Basin (MDB) Groundwater Source (Lachlan Fold Belt MDB [Other] Management Zone), for 243 share components under the Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011.

7.2 Surface Water

The Development Consent (Schedule 3, Condition 30) requires the development of a Water Management Plan (WMP) which must include a Surface Water Management Plan for the Project. The construction phase WMP, including the construction phase Surface Water Management Plan, was submitted to DPI&E for assessment during the 2019 reporting period.

No water was required for drilling operations other than for minor dust suppression. Given the flat nature of the surrounding landforms, no surface water ran on to the drill sites and, as a result, no sedimentation or erosion controls were required.

7.2.1 Environmental Performance

7.2.1.1 Monitoring

No surface water monitoring events resulting from rainfall runoff occurred during the reporting period due to below average rainfall (drought conditions; see Figure 5, monthly rainfall) and subsequent minimal runoff during the reporting period. However, two surface water bodies, Anderson's Pit (located just east and off ML 1770; SW5 in Figure 7) and the Lachlan River at the proposed surface water extraction point, were sampled in July and November which coincided with groundwater monitoring events. Water quality results from the sampling events are shown, along with the groundwater monitoring results, in Appendix 1.

Surface water monitoring locations within and surrounding ML 1770 are shown in Figure 7.

These surface water samples have provided important baseline water quality information for the site and will be used to generate site specific trigger levels for water quality.

7.2.2 Reportable Incidents

There were no reportable incidents during the reporting period.

7.2.3 Further Improvements

No further improvements were implemented during the reporting period.

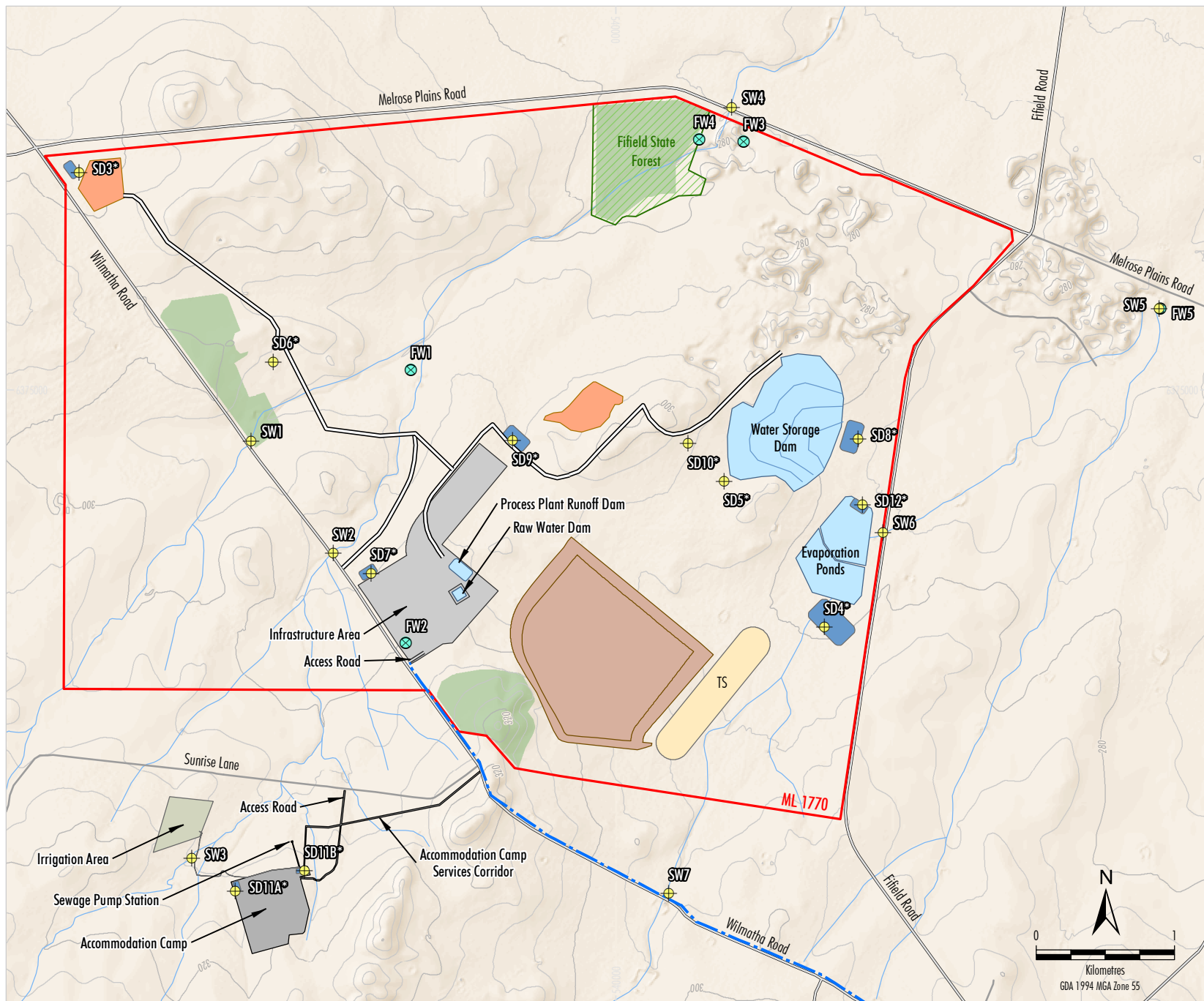
7.3 Groundwater

The Development Consent (Schedule 3, Condition 30) requires the development of a Water Management Plan (WMP) which must include a Groundwater Management Plan for the Project. The construction phase WMP, including the construction phase Groundwater Management Plan, was submitted for approval to the DPI&E during the 2019 reporting period.

7.3.1 Environmental Performance

7.3.1.1 Monitoring – Mining Lease

Two groundwater monitoring events occurred during the reporting period, with standing water levels (SWLs) measured in July and November 2019. Groundwater monitoring locations within and



- LEGEND**
- State Forest
 - Mining Lease Boundary (ML)
 - Tailings Storage Facility
 - Borrow Pit
 - TS Topsoil Stockpile
 - Infrastructure Area
 - Water Storage
 - Sediment Dam
 - Existing Open Woodland to be Maintained
 - Water Pipeline
 - + Proposed Surface Water Quality Monitoring Location
 - + Baseline Surface Water Quality Monitoring Location

NOTE
 * Monitoring to commence once Sediment Dam has been constructed.

Source: Black Range Minerals (2000); Clean Teq (2017, 2019); NSW Department of Industry (2020); NSW Land & Property Information (2017)

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**Surface Water Monitoring Locations
Within and in the Vicinity of ML 1770**

Figure 7

surrounding ML 1770 are shown on Figure 8. Manually gauged and recorded standing water level results are presented in Table 16 while results of continuous measurements recorded by automatic SWL dataloggers are plotted in Chart 2, Appendix 1. Groundwater quality results from the sampling events is shown in Appendix 2.

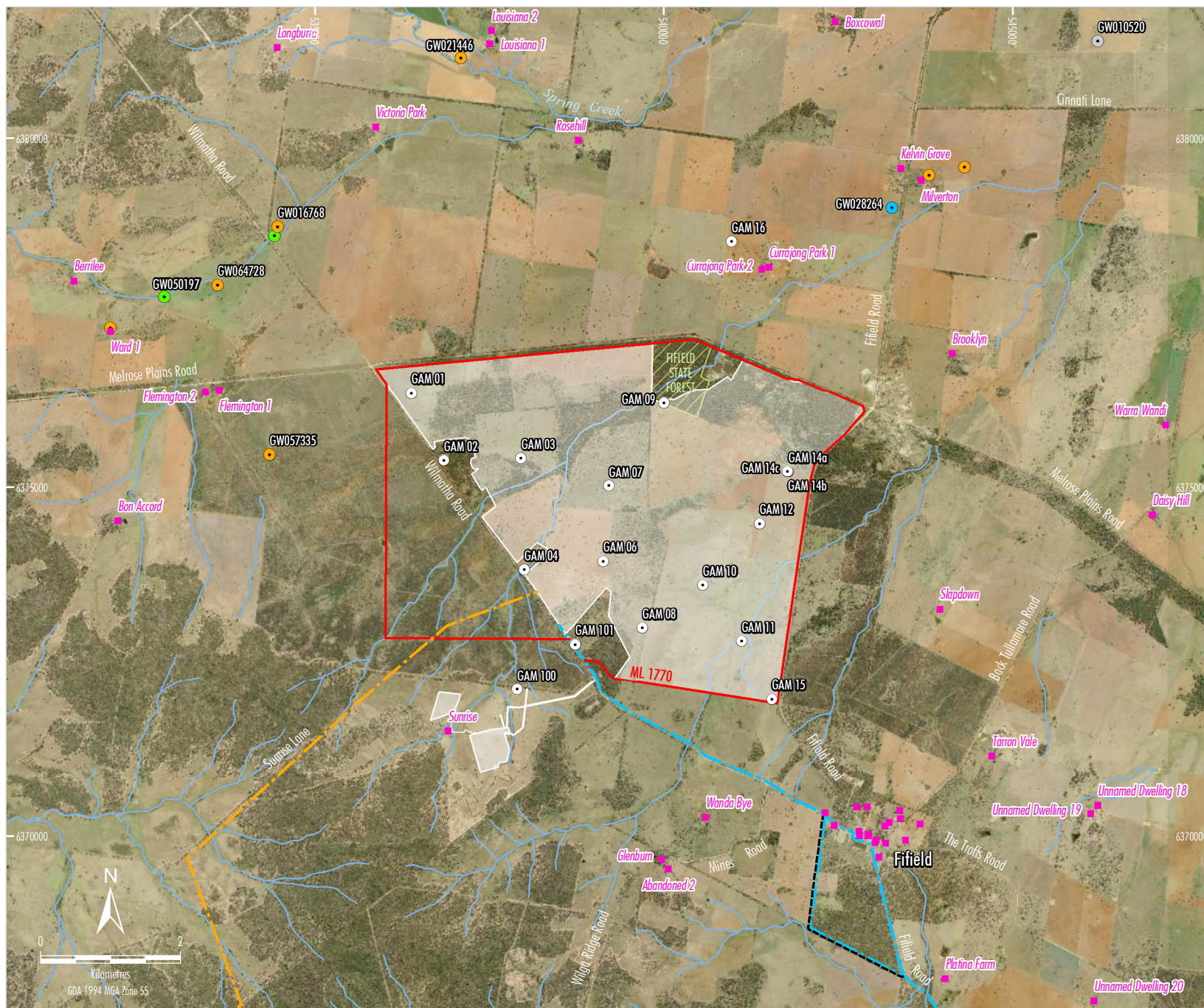
The standing water level measurements and water quality data have provided important baseline information for the site.

Table 16 Mining Lease Area - Groundwater Standing Water Level Results (and previous results) for the reporting period

Standing Water Level (m AHD)					
ID	June 2017	June 2018	Sept 2018	July 2019	Nov 2019
GAM01	276.38	274.33	273.75	272.63	272.34
GAM02	268.97	269.9	269.91	269.96	269.98
GAM03	247.73	248.47	248.54	248.63	248.67
GAM04	264.13	264.03	263.81	263.14	263.07
GAM05	-	-	-	252.67	252.76
GAM06	249.67	250.42	250.37	250.45	250.63
GAM07	242.55	243.32	243.45	243.69	243.93
GAM08	248.58	244.39	244.36	249.47	249.64
GAM09	238.69	239.68	239.67	239.92	240.03
GAM10	249.82	250.78	250.43	250.84	250.90
GAM11	242.32	243.62	243.69	243.70	243.75
GAM12	251.99	252.38	252.15	252.00	251.98
GAM14a	244.59	245.32	244.82	245.37	245.45
GAM14b	232.3	233.71	233.88	234.58	234.81
GAM14c	250.63	249.8	249.46	248.79	248.65
GAM15	239.68	240.57	240.55	240.64	240.71
GAM16	216.79	218.42	218.07	218.24	218.45
GAM100	-	257.15	257.2	257.37	257.40
GAM101	-	257.12	257.12	257.27	257.48

7.3.1.2 Monitoring – Borefields

Two groundwater monitoring events at the borefields occurred during the reporting period, with standing water levels measured in July and November 2019. Manually gauged and recorded SWL results are shown in Table 17 while results of continuous measurements recorded by automatic SWL dataloggers are plotted in Chart 4, Appendix 1. Groundwater monitoring locations within the borefields are shown in Figure 9. Groundwater quality results from both monitoring events are shown in Appendix 1.



LEGEND

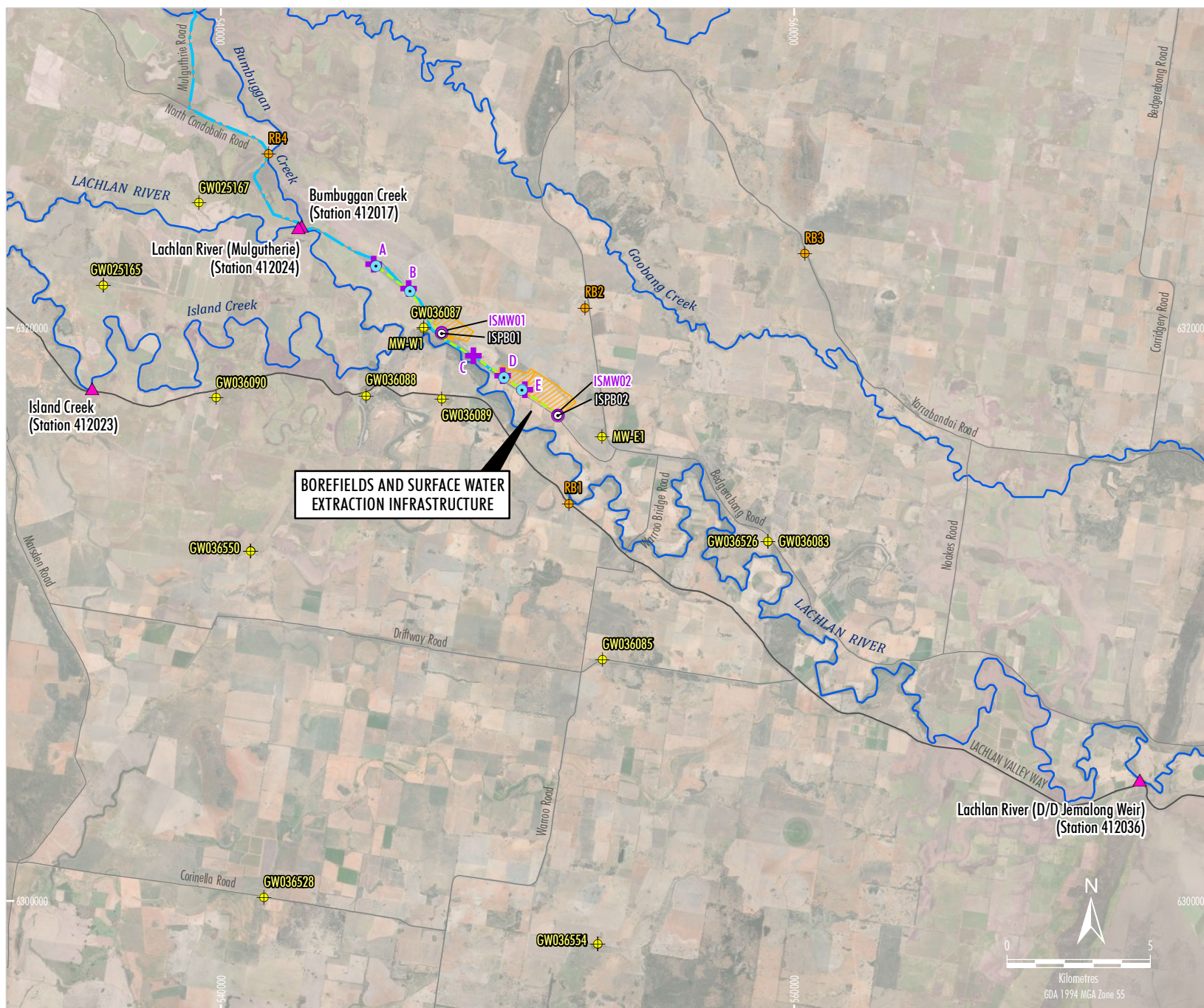
- State Forest
- Mining Lease Boundary (ML)
- Approved Surface Development Area
- Fife Bypass
- Gas Pipeline
- Water Pipeline
- Dwelling
- Project Monitoring Bore
- Private Bores
- Stock
- Stock, Irrigation
- Stock, Domestic
- Unknown Purpose

Source: Black Range Minerals (2005); Clean TeQ (2017, 2018); ENRS (2019); NSW Department of Industry (2020); NSW Land and Property Information (2017); Office of Environment and Heritage NSW (2017)
NSW Imagery: © Department of Finance, Services & Innovation (2018)

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CLEAN TEQ SUNRISE PROJECT
Groundwater Monitoring Locations
Within and in the Vicinity of ML 1770

Figure 8



LEGEND

- Water Pipeline
- Borefield Infrastructure Corridor *
- Borefield Location
- Production Bore (not constructed)
- Production Bore (constructed)
- Existing Borefield Monitoring Piezometer
- Proposed Borefield Monitoring Piezometer
- Regional Monitoring Bore (Existing)
- Regional Monitoring Bore (Proposed) ^
- Surface Water Flow Gauge

* Infrastructure Corridor includes linking pipeline, access road and electricity transmission line.

^ Indicative Location Only — Location to be confirmed in consultation with Natural Resources Access Regulator and relevant landholders.

Source: Ivanplats Syerston (2005); NSW Land & Property Information (2017); NSW DPI - Water (2018)
NSW Imagery: Esri, DigitalGlobe (2017)

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**Groundwater Monitoring Program
- Borefields**

Figure 9

The groundwater standing water level measurements and water quality results have provided important baseline information for the site.

Table 17 Borefields - Groundwater Standing Water Level Results (and previous results) for the reporting period

Standing Water Level (m AHD)				
ID	06/06/2018	20/09/2018	26/07/2019	14/11/2019
ISMW01	193.69	190.69	193.58	189.86
ISMW02	196.65	193.23	196.01	189.79
MWE1	197.06	196.81	197.39	188.99
MWW1	197.57	196.67	198.39	198.22

7.3.2 Reportable Incidents

There were no reportable incidents during the reporting period.

7.3.3 Further Improvements

No further improvements were implemented during the reporting period.

8 REHABILITATION

The Development Consent (Schedule 3, Condition 57), requires the preparation of a Rehabilitation Management Plan (RMP) for the Project. As stated above, the construction phase RMP was revised (Rev. 2) during the reporting period to reflect the determination of Modification 4 in December 2018. The RMP was submitted to the DPI&E for approval and subsequently approved on the 15 August 2019.

8.1 Rehabilitation of Disturbed Land

Exploration drilling operations were undertaken in accordance with the *Exploration Code of Practice: Rehabilitation* [8] to ensure that areas disturbed by drilling activities are returned to a condition that is safe, stable, secure and non-polluting, and that allows the proposed final land uses (secondary domains) to be sustained.

Rehabilitation activities during the reporting period were limited to rehabilitation of all drill holes and test pits. Rehabilitation included the following:

- Removal of all sample bags to a central storage location near the “Syerston” Homestead;
- Capping of all drill holes in preparation for future down-hole geophysical surveys;
- Backfilling of all test pits with topsoil spread uppermost; and
- Removal of all remaining drilling and other equipment.

8.2 Rehabilitation Monitoring

Visual monitoring of rehabilitation resulting from both previous exploration activities and current exploration drilling and test pitting was undertaken during the reporting period. Due to the drought conditions, limited vegetative growth or issues were observed.

8.3 Performance Indicators

Performance indicators and completion/relinquishment criteria for each rehabilitation phase are described in Section 6 of the approved MOP. Rehabilitation of the exploration areas disturbed during the exploration drilling and test pitting works achieved phase 1 (decommissioning) performance indicator. Phase 2 rehabilitation (landform establishment) was not achieved due to drought conditions.

Furthermore, Phase 2 rehabilitation (landform establishment) of the 2018 exploration works was not achieved due to drought conditions.

No further rehabilitation took place on ML 1770 during the reporting period.

During the next reporting period, rehabilitation activities will continue in accordance with the approved MOP, RMP and Mining Lease conditions.

9 COMMUNITY RELATIONS

Clean TeQ communicates with respect and works hard to listen to our communities and achieve constructive dialogue. The company has a [Community Engagement Policy](#), available on its website, that defines the principles guiding the company's interactions with its communities. The policy outlines Clean TeQ's commitment to active engagement, clear communication, community investment, dispute resolution and how it works with its local indigenous communities.

Clean TeQ actively interacts with the community to leverage its combined capabilities and create mutually beneficial outcomes. The company's intention is to work together with communities to achieve long-term shared value.

Clean TeQ also engages with communities early and regularly, listens to their input and aims to communicate with respect and achieve constructive dialogue. Multiple, audience-appropriate communication channels are used to deliver consistent and timely information using clear language.

9.1 Community Complaints

The Development Consent requires Clean TeQ to implement a procedure to receive, handle, respond to and record complaints, and resolve any disputes that may arise. Clean TeQ responds quickly to community dissatisfaction. It aims to resolve complaints at the lowest level, as quickly as possible and to deliver long-term resolutions.

Clean TeQ has a toll-free, 24-hour community complaint line (1800 952 277) in place to receive community concerns. The phone number is publicised on the Clean TeQ Sunrise website and in all community publications. Telephone calls are answered by an operator who records details (date and time of call, name, contact details, details of the complaint and whether an immediate response is required) and emails the record to the Community Relations team via community@cleanteq.com. Calls that require an immediate response outside business hours are sent to the General Manager - Government, External Affairs and Community for immediate response. The community team responds to calls within 24 hours or on the next business day. Clean TeQ investigates all complaints thoroughly, always working towards a mutually agreeable and long-lasting solution.

Complaints may also be submitted through stakeholder interactions that may occur between Clean TeQ personnel and community members from time to time. All employees and contractors receive information about the Clean TeQ Sunrise Complaints Management Process during the general induction process.

Zero community complaints were received during the reporting period.

9.2 Community Liaison

Community Consultative Committee

The Community Consultative Committee (CCC) was re-established in October 2017 and provides a forum for discussion between Clean TeQ and representatives of the local community, stakeholder groups and the local councils on issues directly relating to the Project.

During the reporting period, quarterly meetings (held in March, June, August and November 2019) of the CCC were conducted in accordance with the Development Consent (Schedule 5, Condition 7).

The CCC met in the Project local government areas of Condobolin and Parkes (Parkes, Condobolin and Fifield townships). At the meetings, Clean TeQ provided Project updates, information relating to environmental management and community engagement activities and addressed questions and concerns raised by CCC members. Minutes were taken from each meeting and published on the Clean TeQ webpage (www.cleanteq.com/sunrise-project/community-consultative-committee/), along with copies of all presentations.

Community Consultation

Clean TeQ has a detailed Community Engagement Plan in place, which supports the Community Engagement Policy and provides more detail around the company's commitment to proactive listening, consultation and communication.

Clean TeQ engages through a range of consultation tools including individual stakeholder and public meetings, advertised community events, regular newsletters and the operation of shop fronts in Condobolin and Trundle as required. Clean TeQ policies and guidelines guide interactions with communities affected by Clean TeQ's activities.

During the reporting period, Clean TeQ regularly attended meetings with stakeholders, with meetings consisting of between 3 and 40 people, for example:

- Individual stakeholder meetings;
- Landholder meetings;
- Community groups such as Community Progress Associations;

- Local Government and State agency meetings; and
- Local secondary and primary school meetings.

Clean TeQ also provided Project update presentations and or briefings to various community groups, including:

- Local community and charitable groups;
- Wiradjuri Condobolin Corporation;
- Lachlan, Parkes and Forbes Shire Councils;
- State agencies;
- Central West Shareholders;
- Lachlan Valley Water; and
- Chamber of Commerce in Parkes and Condobolin.

Aboriginal Consultation

Clean TeQ acknowledges the Indigenous people on whose land the company operates. Clean TeQ is committed to working with organisations representing Indigenous people to form partnerships that build capacity and generate long-term value. This commitment is outlined in Clean TeQ's Community Engagement Policy.

In September 2019, a meeting was held on site (ML 1770) with the RAPs to have preliminary discussions regarding the Aboriginal Cultural Heritage Awareness Training Program required under the HMP and also to update them on the progress of the Project. Possible ways the training could be delivered and the capacity and interest of the RAPs to deliver the training were discussed.

Through membership on the CCC, the Wiradjuri Condobolin Corporation is provided with regular updates on the Project. In addition, Clean TeQ has participated in community events hosted by the Wiradjuri Condobolin Corporation and has regular contact with this organisation outside of the CCC meetings.

Community Investment

In December 2018, Clean TeQ Sunrise signed its Voluntary Planning Agreement (VPA) with the Shire Councils of Lachlan, Forbes and Parkes. The VPA represents an important financial commitment to the region that ensures the benefits of Clean TeQ will be shared across the local communities.

The first payment of \$200,000 to Lachlan Shire Council, \$100,000 to Parkes Shire Council and \$100,000 to Forbes Shire Council was made in Q1 2019.

Lachlan Shire Council allocated the funds to upgrades and maintenance undertaken at the Fifield Town Hall. Various parks across the shire, including Fifield, will benefit from the construction or upgrades of shade sails. The remainder of the \$200,000 assisted Lachlan Council with the installation of soft-fall at the Gum Bend Lake playground in Condobolin.

Parkes Shire Council directed the funding to Trundle for the Trundle Main Street Masterplan and associated works. In Forbes, residents will benefit from a shire-wide sports strategy that was commissioned by Forbes Shire Council from the VPA funding.

Clean TeQ's guiding principle for community investment is to achieve meaningful outcomes that benefit as many people as possible in the community. For Clean TeQ, the definition of community investment includes financial and non-financial contributions.

The current pre-construction investment program includes small-scope direct financial contributions, complemented by important non-financial contributions such as time spent supporting schools and community organisations.

Financial and/or non-financial support during the reporting period was provided to:

- Local agricultural shows;
- Primary and secondary schools in Trundle, Condobolin, Parkes and Forbes; and the
- Trundle Bush Tucker Day.

10 INDEPENDENT ENVIRONMENTAL AUDIT

The Development Consent (Schedule 5, Condition 10) requires an Independent Environmental Audit (IEA) to be commissioned within one year of the commencement of the development after 6th May 2017. As the Project has not yet recommenced development, the requirement for an IEA has not been triggered.

11 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

No reportable incidents or non-compliances occurred during the reporting period.

12 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

12.1 Exploration

The following exploration activities are proposed during the next reporting period:

- Downhole geophysical testing of previous exploration drill holes; and
- Commencement of the “Stage 2” infill drill program identified in Section 2.3.2 of the approved MOP.

Other non-exploration activities proposed during the next reporting period include the following and are described in Section 2.3.2 of the approved MOP:

- Geotechnical, soil and other test work to further refine the design parameters for the approved mine infrastructure and mine-related purposes;
- Minor preparatory works, including installation of services and ancillary infrastructure; and
- Works associated with the partial replacement of the ML 1770 boundary fence.

12.2 Project Development

Clean TeQ is proposing to commence initial Project construction activities during the second half of 2020 subject to a final investment decision and completion of a financing package by that time. Initial construction activities associated with ML 1770 include the following:

- Development of the mine, including:
- Site establishment and earthworks;
 - Construction of site access roads and haul roads;
 - Processing facility earthworks;
 - Establishment of temporary facilities required for construction activities (e.g. offices, laydown areas, communications infrastructure);
 - Construction of the mine infrastructure area including the offices, workshops, warehouse, laboratory and amenities buildings, fuel storage areas, potable water treatment plant and car parking facilities;
 - Construction of the tailings storage facility and evaporation pond;

- Construction of water management infrastructure including the raw water dam, water storage dam and sediment dams;
 - Construction and operation of the concrete batch plant;
 - Development of gravel and clay borrow pits (including blasting and crushing);
 - Installation of appropriate fencing and barriers for public safety and security for mining and construction; and
 - Other associated minor infrastructure, plant, equipment and activities.
- Development and operation of the accommodation camp;
 - Installation of the borefields;
 - Installation and operation of the surface water extraction and extraction infrastructure and water pipeline; and
 - Road upgrades.

The above project development activities are not described in the currently approved MOP. However, a new MOP will be prepared and submitted to the Resources Regulator prior to construction activities commencing.

13 REFERENCES

- [1] NSW Government, “Annual Review Guideline – Post-approval Requirements for State Significant Mining Developments,” 2015.
- [2] NSW Department of Primary Industries, “The Annual Environmental Management Report (AEMR),” 2006. [Online]. Available: https://www.resourcesandgeoscience.nsw.gov.au/__data/assets/pdf_file/0003/478461/AEMR-Guidelines-for-MOPs-prepared-to-EDG03-requirements.pdf.
- [3] Corkery RW, “Second Annual Exploration Report for ML 1770 “Clean TeQ Sunrise Project” - 16 February 2019 to 15 February 2020.,” 2020.
- [4] Corkery RW, “Second Annual Exploration Report for ML 1769 “Westella Limestone Project” – 15 February 2019 to 14 February 2020).,” 2020.
- [5] Area Environmental, “Weeds and Vertebrate Pests Baseline Survey Report ML1770 and Sunrise Accommodation Camp,” 2019.
- [6] Landskape, “Analysis of Aboriginal Lithic Assemblages Aboriginal Heritage Impact Permit C0003887,” 2019.
- [7] Landskape , “Analysis of Aboriginal Stone Quarry Aboriginal Heritage Impact Permit C0003049,” 2020.
- [8] NSW Department of Planning and Environment, Division of Resources and Geoscience, “Exploration Code of Practice: Rehabilitation,” 2015.

GLOSSARY OF TERMS

AQMP	Air Quality Management Plan
AR	Annual Review
AWS	Automatic Weather Station
BCD	NSW Biodiversity & Conservation Division (formerly OEH)
BMP-RS	Biodiversity Management Plan and Revegetation Strategy
CCC	Community Consultative Committee
DPI&E	Department of Planning, Industry and Environment
DRG	Division of Resources and Geoscience
EMP	Environmental Management Plan
EPA	NSW Environment Protection Agency
FCNSW	Forestry Corporation of New South Wales
GWMP	Groundwater Management Plan
HMP	Heritage Management Plan
IEA	Independent Environmental Audit
LEP	Local Environmental Plan
ML	Mining Lease
MOP	Mining Operations Plan
NHVR:	National Heavy Vehicle Regulator
NMP	Noise Management Plan
NRAR	NSW Natural Resources Access Regulator
OEH	NSW Office of Environment and Heritage
RAP	Registered Aboriginal Party
RMP	Rehabilitation Management Plan
RR	NSW Resources Regulator
SWL	Standing Water Level
SWMP	Surface Water Management Plan
VCP	Vegetation Clearance Protocol
WMP	Water Management Plan

APPENDIX 1 GROUNDWATER MONITORING BORES - SWL CHARTS

Chart C2
Depth to Water (m AHD) vs Time - Mine Site Monitoring Bores

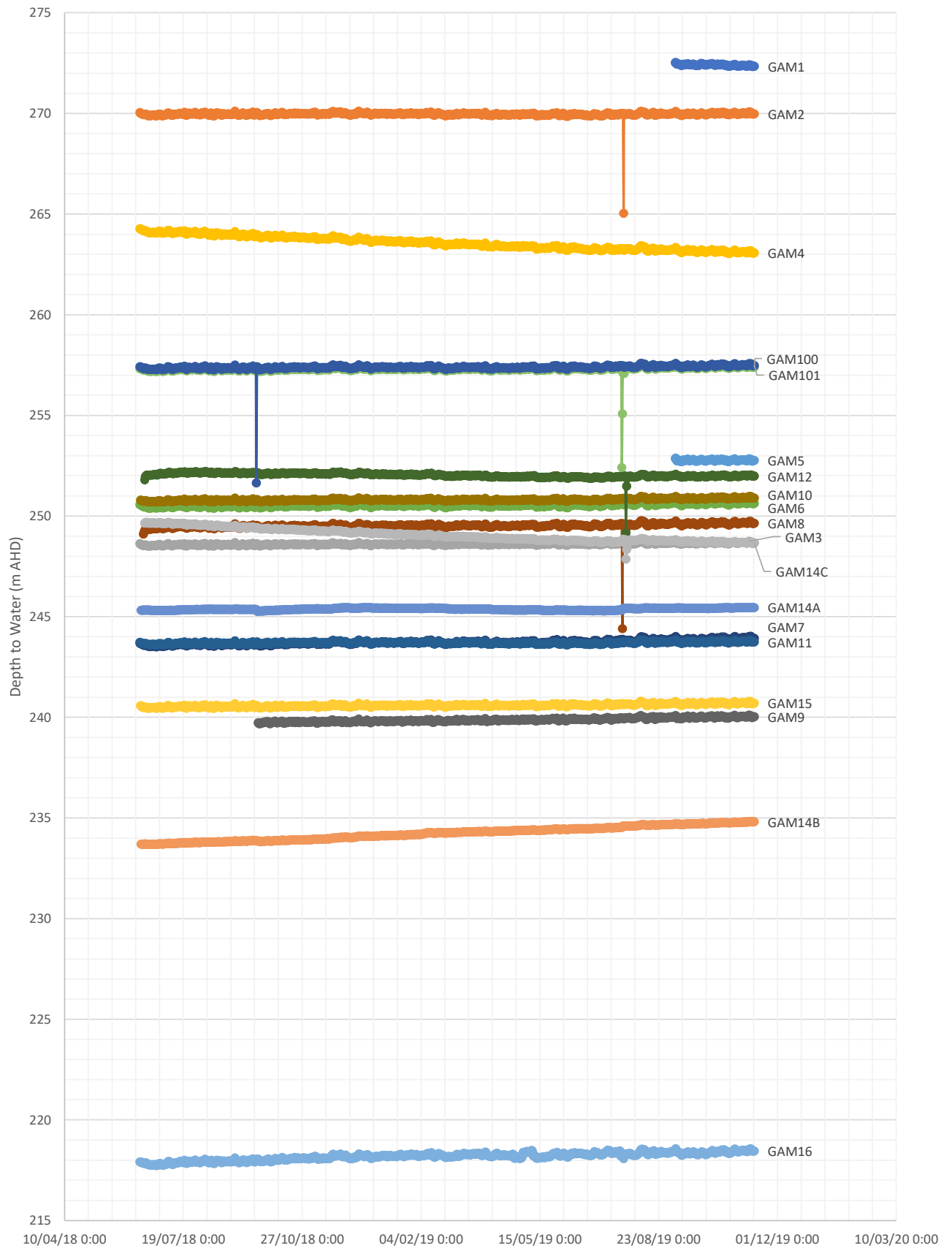
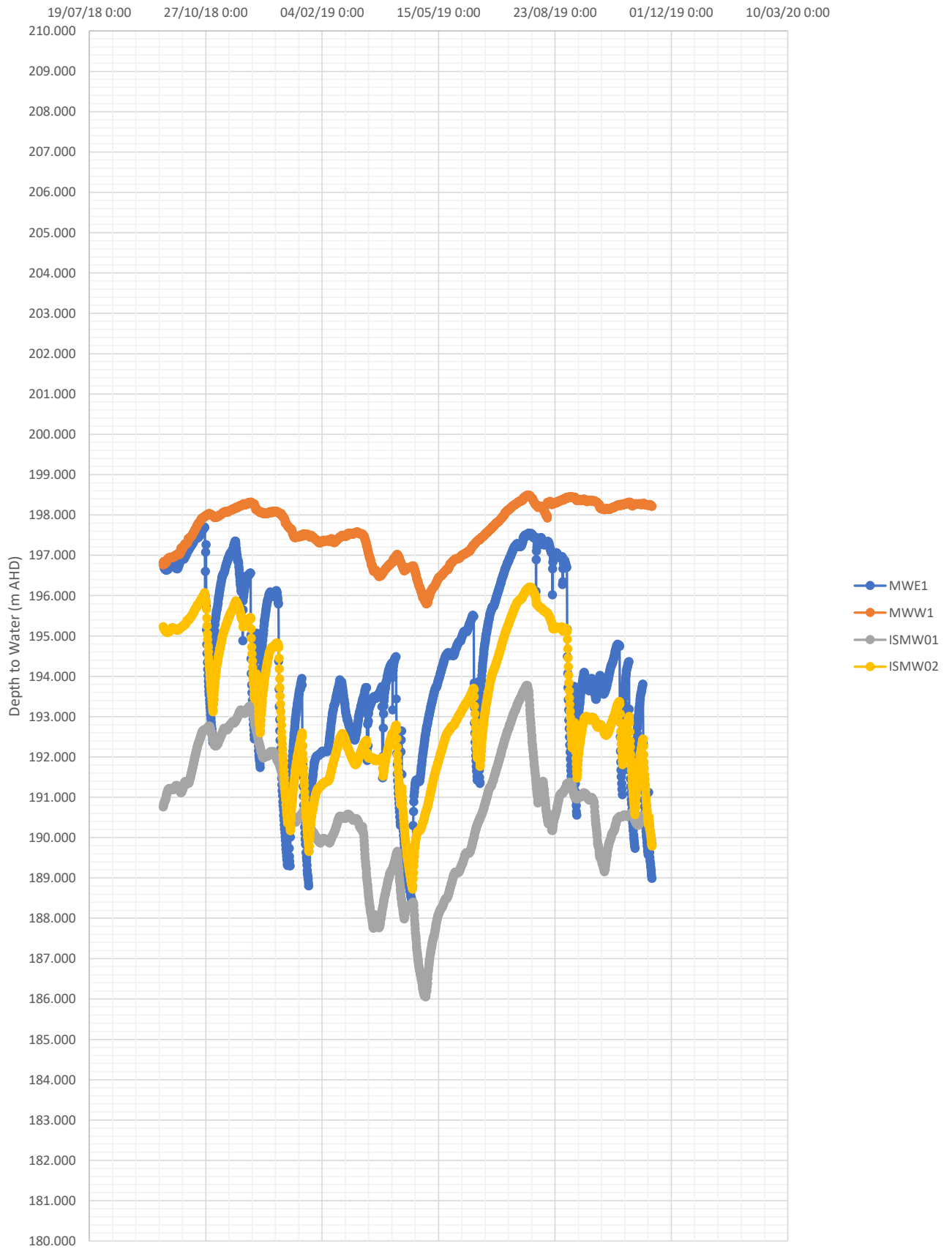


Chart D4
Depth to Water (m AHD) vs Time - Borefields Monitoring Bores



APPENDIX 2 GROUNDWATER MONITORING ANALYTICAL DATA

Baseline Analytical Data Summary - July 2019 Monitoring Round

Bore ID		ANZECC	Aust. Drinking Water	GAM1	GAM2	GAM3	GAM4	GAM5	GAM6	GAM7	GAM8	GAM9A	GAM10	GAM11	GAM12	GAM14C	GAM15	GAM16	GAM100	GAM101	LACHLAN	ANDERSONS PIT	Units
Sampling Date		DGW 2018 (Fresh)	2011	28-Jul-19	24-Jul-19	24-Jul-19	25-Jul-19	28-Jul-19	24-Jul-19	24-Jul-19	25-Jul-19	24-Jul-19	25-Jul-19	28-Jul-19	26-Jul-19	26-Jul-19	25-Jul-19	25-Jul-19	24-Jul-19	25-Jul-19	26-Jul-19	28-Jul-19	
Major Cations (mg/L)	Calcium	-	-	13	62	29	84	56	320	0.9	130	2	200	400	52	55	120	200	12	39	18	2.3	mg/L
	Magnesium	-	-	< 0.5	58	190	95	110	500	46	280	150	350	560	8.7	140	180	440	71	120	16	7.7	mg/L
	Sodium	-	-	1.3	1.5	1.5	3	1.2	12	4.1	27	2.6	16	26	5.3	4.6	8.2	18	27	20	3.1	11	mg/L
	Potassium	-	-	59	44	49	87	33	530	150	2100	77	830	2400	230	160	580	470	1500	1800	33	8.3	mg/L
Major Anions (mg/L)	Sulphate	-	-	40	12	14	30	13	460	9.8	2000	32	500	1500	280	40	560	180	390	650	17	< 5	mg/L
	Chloride	-	-	38	40	42	140	91	1700	260	1900	100	1600	4700	180	250	560	1700	1100	1400	77	22	mg/L
	Carbonate Alkalinity (as CaCO3)	-	-	< 10	< 10	40	< 10	< 10	< 10	48	< 10	11	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	mg/L
	Hydroxide Alkalinity (as CaCO3)	-	-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	mg/L
Heavy Metals (Dissolved) (mg/L)	Total Alkalinity (as CaCO3)	-	-	78	450	960	550	560	820	310	1000	660	840	800	130	690	980	630	1500	1400	90	53	mg/L
	Aluminium	0.055	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.08	mg/L
	Arsenic	0.013	0.01	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001	0.007	0.002	< 0.001	< 0.001	0.001	0.002	< 0.001	< 0.001	mg/L
	Boron	0.37	4	0.08	0.09	0.11	0.13	0.06	0.18	< 0.05	0.14	0.09	0.13	0.16	0.28	0.19	0.15	0.19	0.11	0.15	< 0.05	0.06	mg/L
	Cadmium	0.0002	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0021	< 0.0002	< 0.0002	0.0004	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	mg/L
	Chromium	0.001	0.05	< 0.001	0.02	0.015	0.012	0.064	0.004	0.001	< 0.001	0.052	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	mg/L
	Cobalt	-	-	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.004	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.008	< 0.001	< 0.001	< 0.001	mg/L
	Copper	0.0014	2	< 0.001	< 0.001	< 0.001	0.002	< 0.001	0.013	< 0.001	0.033	< 0.001	0.001	0.024	< 0.001	0.003	< 0.001	0.003	0.005	< 0.001	< 0.001	< 0.001	mg/L
	Iron	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.26	< 0.05	1.2	< 0.05	< 0.05	< 0.05	0.05	0.13	mg/L
	Lead	0.0034	0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	mg/L
	Manganese	1.9	0.5	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.087	< 0.005	< 0.005	0.011	0.097	0.012	0.12	< 0.005	0.27	0.15	0.007	< 0.005	mg/L
	Mercury	0.6	0.001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	mg/L
	Nickel	0.011	0.02	< 0.001	< 0.001	0.007	0.003	0.009	0.027	< 0.001	0.037	0.002	0.053	0.11	0.02	0.016	0.04	0.019	0.014	0.003	< 0.001	< 0.001	mg/L
	Silver	0.00005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	mg/L
	Vanadium	-	-	0.011	0.03	< 0.005	0.023	0.008	0.013	< 0.005	0.017	< 0.005	< 0.005	< 0.005	< 0.005	0.019	< 0.005	0.005	0.049	0.006	< 0.005	< 0.005	mg/L
	Zinc	0.008	-	< 0.005	< 0.005	0.011	0.01	0.013	< 0.005	0.013	< 0.005	0.009	0.018	< 0.005	0.012	0.017	0.025	0.015	< 0.005	< 0.005	< 0.005	< 0.005	mg/L
Nutrients (mg/L)	Nitrate (as N)	10 (as N)	50 (as NO3)	1.8	-	-	-	-	-	-	-	-	-	2.4	-	-	-	-	-	-	0.19	0.03	mg/L
	Nitrite (as N)	None	-	0.02	-	-	-	-	-	-	-	-	-	< 0.02	-	-	-	-	-	-	< 0.02	< 0.02	mg/L
	Ammonia (as N)	0.9	-	< 0.01	-	-	-	-	-	-	-	-	-	< 0.01	-	-	-	-	-	-	< 0.01	0.28	mg/L
	Total Kjeldahl Nitrogen (as N)*	-	-	< 0.2	-	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	0.4	0.9	mg/L
	Total Nitrogen (as N)	-	-	1.9	-	-	-	-	-	-	-	-	-	2.4	-	-	-	-	-	-	0.59	0.9	mg/L
	Phosphate total (as P)	-	-	0.03	-	-	-	-	-	-	-	-	-	0.09	-	-	-	-	-	-	0.03	0.02	mg/L
Others	TDS	-	-	210	510	800	860	650	3700	470	5600	730	3300	8800	880	1100	2200	3000	3600	3900	210	88	mg/L
	Electrical Conductivity (Lab)	-	-	350	830	1500	1400	1100	6300	1000	9800	1200	6400	14000	1400	1900	3600	5800	6400	7600	360	140	uS/cm
	Total Organic Carbon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.1*	-	ug/L

Baseline Analytical Data Summary - November 2019 Monitoring Round

Bore ID	Analyses	ANZECC	Aust. Drinking Water	GAM1	GAM2	GAM3	GAM4	GAM5	GAM6	GAM7	GAM8	GAM9A	GAM10	GAM11	GAM12
Sampling Date		DGV 2018 (Fresh)	2011	13-Nov-19	11-Nov-19	11-Nov-19	12-Nov-19	11-Nov-19	12-Nov-19	12-Nov-19	12-Nov-19	11-Nov-19	13-Nov-19	13-Nov-19	13-Nov-19
Major Cations (mg/L)	Calcium	-	-	13	63	30	82	54	300	1	120	1.3	190	430	54
	Magnesium	-	-	< 0.5	57	200	91	110	460	49	270	130	350	610	10
	Sodium	-	-	57	45	49	86	34	500	160	2000	74	820	2600	230
	Potassium	-	-	1.7	1.6	1.7	3	1.3	11	4.6	24	2.7	14	25	5.7
Major Anions (mg/L)	Sulphate	-	-	38	13	14	31	14	470	9.2	2100	32	490	1600	300
	Chloride	-	-	27	88	77	180	100	2000	190	2300	97	1800	4600	120
	Bicarbonate Alkalinity (as CaCO3)	-	-	77	470	1000	590	600	840	270	1100	530	910	850	120
	Carbonate Alkalinity (as CaCO3)	-	-	< 10	< 10	24	< 10	< 10	< 10	54	< 10	< 10	< 10	< 10	< 10
	Hydroxide Alkalinity (as CaCO3)	-	-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	Total Alkalinity (as CaCO3)	-	-	82	470	1100	590	600	840	320	1100	540	910	850	120
Heavy Metals (Dissolved) (mg/L)	Aluminium	0.055	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Arsenic	0.013	0.01	0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001	0.01
	Boron	0.37	4	0.07	0.1	0.13	0.13	0.09	0.2	< 0.05	0.16	0.11	0.15	0.18	0.33
	Cadmium	0.0002	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.001	< 0.0002	< 0.0002	0.0004	< 0.0002
	Chromium	0.001	0.05	< 0.001	0.022	0.014	0.012	0.055	0.004	< 0.001	< 0.001	0.055	< 0.001	< 0.001	< 0.001
	Cobalt	-	-	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.006	< 0.001	< 0.001	< 0.001	< 0.001
	Copper	0.0014	2	0.002	< 0.001	< 0.001	0.001	< 0.001	0.008	< 0.001	0.004	< 0.001	0.003	0.014	< 0.001
	Iron	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.49
	Lead	0.0034	0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	Manganese	1.9	0.5	< 0.005	< 0.005	< 0.005	< 0.005	0.014	< 0.005	< 0.005	0.19	< 0.005	< 0.005	0.007	0.16
	Mercury	0.6	0.001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	Nickel	0.011	0.02	< 0.001	0.002	0.017	0.008	0.021	0.033	< 0.001	0.033	0.004	0.011	0.049	0.009
	Silver	0.00005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
	Vanadium	-	-	0.011	0.03	< 0.005	0.023	0.007	0.013	< 0.005	0.013	< 0.005	< 0.005	< 0.005	< 0.005
	Zinc	0.008	-	0.02	< 0.005	< 0.005	0.011	0.006	0.019	< 0.005	0.01	0.019	0.014	0.015	< 0.005
Nutrients (mg/L)	Nitrate (as N)	10 (as N)	50 (as NO3)	1.7	0.51	0.58	4.6	1.4	0.14	< 0.02	< 0.02	0.07	0.12	2.4	< 0.02
	Nitrite (as N)	None	-	0.04	-	-	-	-	-	-	-	-	-	< 0.02	-
	Ammonia (as N)	0.9	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.12
	Total Kjeldahl Nitrogen (as N)*	-	-	0.4	-	-	-	-	-	-	-	-	-	0.3	-
	Total Nitrogen (as N)	-	-	2.1	-	-	-	-	-	-	-	-	-	2.7	-
	Phosphate total (as P)	-	-	0.02	-	-	-	-	-	-	-	-	-	0.02	-
Others	TDS	-	-	190	500	980	850	560	4200	520	5900	670	4000	8200	850
	Electrical Conductivity (Lab)	-	-	350	860	1600	1400	1100	6700	1100	10000	1100	6800	15000	1200
	Total Organic Carbon	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Baseline Analytical Data Summary - November 2019 Monitoring Round

Bore ID	Analytes	ANZECC	Aust. Drinking Water	GAM14C	GAM15	GAM16	GAM100	GAM101	ISPB01	LACHLAN RIVER	ANDERSONS PIT	Units	LOR
Sampling Date		DGV 2018 (Fresh)	2011	13-Nov-19	13-Nov-19	13-Nov-19	13-Nov-19	12-Nov-19	14-Nov-19	14-Nov-19	13-Nov-19		
Major Cations (mg/L)	Calcium	-	-	66	110	200	12	38	25	18	2.7	mg/L	0.5
	Magnesium	-	-	160	170	440	78	110	23	15	8.6	mg/L	0.5
	Sodium	-	-	200	540	460	1500	1700	190	31	9.9	mg/L	0.5
	Potassium	-	-	6.2	7.2	17	24	18	3	3.5	13	mg/L	0.5
Major Anions (mg/L)	Sulphate	-	-	39	520	190	450	640	69	19	< 5	mg/L	5
	Chloride	-	-	190	1200	2600	1400	1700	770	110	54	mg/L	1
	Bicarbonate Alkalinity (as CaCO3)	-	-	710	1000	540	1600	1500	210	100	74	mg/L	20
	Carbonate Alkalinity (as CaCO3)	-	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	mg/L	10
	Hydroxide Alkalinity (as CaCO3)	-	-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	mg/L	20
	Total Alkalinity (as CaCO3)	-	-	710	1000	540	1600	1500	210	100	74	mg/L	20
Heavy Metals (Dissolved) (mg/L)	Aluminium	0.055	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	mg/L	0.05
	Arsenic	0.013	0.01	0.002	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001	mg/L	0.001
	Boron	0.37	4	0.24	0.2	0.23	0.16	0.17	0.07	< 0.05	0.12	mg/L	0.05
	Cadmium	0.0002	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	mg/L	0.0002
	Chromium	0.001	0.05	0.002	< 0.001	0.003	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	mg/L	0.001
	Cobalt	-	-	< 0.001	< 0.001	< 0.001	0.007	< 0.001	< 0.001	< 0.001	< 0.001	mg/L	0.001
	Copper	0.0014	2	0.004	< 0.001	0.005	< 0.001	< 0.001	< 0.001	0.003	0.005	mg/L	0.001
	Iron	-	-	< 0.05	2.3	< 0.05	< 0.05	< 0.05	0.97	< 0.05	0.14	mg/L	0.05
	Lead	0.0034	0.01	0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	mg/L	0.001
	Manganese	1.9	0.5	< 0.005	0.17	0.006	0.64	0.18	0.05	0.007	0.007	mg/L	0.005
	Mercury	0.6	0.001	< 0.0001	< 0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	mg/L	0.0001
	Nickel	0.011	0.02	0.004	0.028	0.023	0.008	0.02	0.001	< 0.001	0.001	mg/L	0.001
	Silver	0.00005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	mg/L	0.005
	Vanadium	-	-	0.023	< 0.005	0.007	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	mg/L	0.005
	Zinc	0.008	-	0.012	0.02	0.022	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	mg/L	0.005
Nutrients (mg/L)	Nitrate (as N)	10 (as N)	50 (as NO3)	3.7	< 0.02	0.22	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	mg/L	0.02
	Nitrite (as N)	None	-	-	-	-	-	-	-	< 0.02	< 0.02	mg/L	0.02
	Ammonia (as N)	0.9	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.08	< 0.01	0.06	mg/L	0.01
	Total Kjeldahl Nitrogen (as N)*	-	-	-	-	-	-	-	-	0.5	0.8	mg/L	0.2
	Total Nitrogen (as N)	-	-	-	-	-	-	-	-	0.5	0.8	mg/L	0.2
	Phosphate total (as P)	-	-	-	-	-	-	-	-	0.02	0.02	mg/L	0.01
Others	TDS	-	-	970	2300	3000	3800	4200	640	170	77	mg/L	10
	Electrical Conductivity (Lab)	-	-	1900	3700	5800	6400	7300	1200	360	160	uS/cm	10
	Total Organic Carbon	-	-	-	-	-	-	-	< 5	6.5	-	mg/L	5