

Annual Review 2024

Tarrawonga Coal Mine

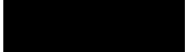
Name of operation	Tarrawonga Coal Mine
Name of operator	Whitehaven Coal Mining Pty Ltd
Development consent/project approval number	MP 11_0047
Name of holder of development consent/project approval	Tarrawonga Coal Pty Ltd
Mining lease number	ML 1579, ML 1685, ML 1693, ML1749
Name of holder of mining lease	Tarrawonga Coal Pty Ltd
Water licence number	WAL 31084
Name of holder of water licence	Whitehaven Coal
FWP start date	1/01/2024
FWP end date	31/12/2024
Annual review start date ¹	1/01/2024
Annual review end date	31/12/2024
I, Craig Sullivan, certify that this audit report is a true and accurate record of the compliance status of the Tarrawonga Coal Mine for the period 1st January 2024 until 31st December 2024, and that I am authorised to make this statement on behalf of Tarrawonga Coal Pty Ltd. <i>Note. a) The Annual Review is an 'environmental audit' for the purposes of section 122B (2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000. b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).</i>	
Name of authorised reporting officer	
Title of authorised reporting officer	Operations Manager – Tarrawonga Coal Mine
Signature of authorised reporting officer	
Date	27 th March 2024
¹ NSW Annual Review Guideline was released in October 2015	

TABLE OF CONTENTS

1	STATEMENT OF COMPLIANCE	5
2	INTRODUCTION	7
2.1	Mine Contacts	7
3	APPROVALS	11
3.1	Tenements, Licences and Approvals	11
4	OPERATIONS SUMMARY	14
4.1	Mining Operations.....	14
4.1.1	Other Operations	14
4.1.2	Coal Haulage	14
4.1.3	Exploration	15
4.2	Next Reporting Period	15
4.2.1	Mine operations.....	15
5	ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW	16
6	ENVIRONMENTAL PERFORMANCE.....	16
6.1	Noise.....	16
6.1.1	Criteria 16	
6.1.2	Environmental Management Measures	17
6.1.3	Key Environmental Performance	19
6.1.4	Proposed Improvements to Environmental Management.....	23
6.2	Blasting	25
6.2.1	Criteria 25	
6.2.2	Key Environmental Performance	25
6.2.3	Proposed Improvements to Environmental Management	26
6.3	Air Quality and Greenhouse Gas	28
6.3.1	Criteria 28	
6.3.2	Environmental Management Measures	28
6.3.3	Key Environmental Performance	30
6.3.4	Proposed Improvements to Environmental Management.....	35
6.4	Biodiversity and Offsets	35
6.4.1	Weather Summary of Willeroi Offset Property	36
6.4.2	Infrastructure Management	36
6.4.3	Seed Management	36
6.4.4	Revegetation Management	37
6.4.5	Flora and Fauna Monitoring Program.....	37
6.4.6	Habitat Management.....	38
6.4.7	Feral Animal Management.....	38
6.4.8	Grazing Management.....	39
6.4.9	Soil & Erosion Management	39
6.4.10	Weed Management	39
6.4.11	Audits and Reviews	40
6.4.12	Clearing	40
6.4.13	Key Environmental Performance	41
6.4.14	Proposed Improvements to Environmental Management.....	41
6.5	Aboriginal Heritage Management	41
6.5.1	Environmental Management Measures	41
6.5.2	Key Environmental Performance	42

6.5.3	Proposed Improvements to Environmental Management	42
6.6	Bushfire Management	42
6.6.1	Environmental Management Measures	42
6.6.2	Key Environmental Performance	42
6.6.3	Proposed Improvements to Environmental Management	43
6.7	Meteorological Data	44
6.8	Waste	45
6.8.1	Environmental Management	45
6.8.2	Key Environmental Performance	46
6.8.3	Proposed Improvements to Environmental Management	46
6.9	Environmental Performance Summary	47
7	WATER MANAGEMENT	48
7.1	Surface Water Performance and Management	48
7.1.1	Surface Water Monitoring	49
7.1.2	Water Discharges	50
7.2	Groundwater Management	52
7.2.1	Environmental Performance and Management	52
7.2.2	Groundwater Monitoring	52
7.2.3	Groundwater Management	54
7.2.4	Water Take	55
7.3	Site Water Balance	56
8	REHABILITATION	58
8.1	Post Rehabilitation Land Uses	58
8.2	Rehabilitation Performance during the Reporting Period	58
8.2.1	Status of Mining and Rehabilitation	58
8.2.2	Rehabilitation Fauna and Flora Monitoring	60
8.2.3	Habitat Management	68
8.2.4	Renovation or Removal of Buildings	74
8.2.5	Other Rehabilitation Undertaken	75
8.2.6	Departmental Sign-off of Rehabilitated Areas	75
8.2.7	Variations in Activities against Forward Program	75
8.2.8	Trials, Research Projects and Initiatives	75
8.2.9	Key challenges to Achieving Successful Rehabilitation	75
8.3	Actions for Next Reporting Period	76
9	COMMUNITY AND COMPLAINTS	77
9.1	Community Contributions	78
10	INDEPENDENT AUDIT	79
10.1	Independent Biodiversity Audit (EPBC)	79
10.2	Independent Environmental Audit (IEA)	79
11	INCIDENTS AND NON-COMPLIANCES FOR THE REPORTING PERIOD	79
11.1	Reportable Incidents	79
11.2	Non-compliances	79
11.3	Regulatory Actions	80
12	ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD	82
TABLES		
Table 1-1 - Statement of Compliance		5
Table 1-2- Compliance status key for Non-Compliances		5

Table 1-3 - Non-Compliance	6
Table 3-1- Tenements, Licences and Approvals.....	11
Table 4-1 - Production Summary	14
Table 6-1- Noise Compliance	16
Table 6-2 - Attended Noise Monitoring results comparison	19
Table 6-3 - Average Sound Power Levels against EA (2011).....	22
Table 6-4 - Comparison of 2024 Attended Noise Monitoring against Year 4 TCM EA Noise Predictions	23
Table 6-5: Comparison of Emissions Compared to Prediction in EA	30
Table 6-6 - Deposited Dust monitoring data summary 2024 [g/month/m ²]	31
Table 6-7 - KPI – 2 Summary of PM10 control factor (TAS, 2023)	35
Table 6-8 - Templemore weather station monitoring data 2024	44
Table 6-9 - Waste management summary.....	45
Table 6-10 - Environmental Performance.....	47
Table 7-1 - Discharge Results 2024	50
Table 7-2 - Water take	56
Table 7-3 - Water Stored and used during the reporting period.....	57
Table 8-1- Rehabilitation Status.....	58
Table 8-2 - Summary of Vertebrate Pest Sighting (2018 - 2023)	71
Table 9-1 - Complaints Summary.....	78
Table 11-1 - Non-compliance Action plan.....	80
Table 12-1 - Summary of activities for 2024.....	82

FIGURES

Figure 1 - Locality Plan	8
Figure 2 - Local Biodiversity Offsets.....	9
Figure 3 - Regional Location of Biobank Site.....	10
Figure 4 - Noise monitoring locations.....	18
Figure 5 - Blast Monitoring Locations	27
Figure 6 - Air quality monitoring locations	29
Figure 7 - HVAS-PM10 24hr average monitoring data (2022-2024).....	32
Figure 8 - Coomalgalah HVAS- calculated TSP Monitoring Trend (2021 - 2024).....	33
Figure 9 - 2024 Surface water monitoring locations.....	51
Figure 10 - Groundwater monitoring locations	53
Figure 11 - Tarrawonga Rehabilitation status as at December 2024.....	59
Figure 12 - Analogue site locations – Rehabilitation monitoring 2024.....	61
Figure 13 - Monitoring locations Northern Rehabilitation – Rehabilitation Monitoring 2024.....	62
Figure 14 - Monitoring Locations Southern Rehabilitation - Rehabilitation Monitoring 2024.....	63
Figure 15 - Photo of 2023 Landform drain and 2024 Ecosystem Establishment on the Northern Rehabilitation area.....	74

No table of figures entries found.APPENDICES

Appendix 1: Blast Monitoring Data.....	83
Appendix 2: HVAS Monitoring Data.....	84
Appendix 3: SW Monitoring Data	85
Appendix 4: GW Monitoring Data.....	86

1 STATEMENT OF COMPLIANCE

The compliance status of the Tarrawonga Coal Mine (TCM) as at 31st December 2024 is summarised in Table 1-1 and Table 1-2 below.

Table 1-3 notes non-compliances that occurred during the reporting period, and non-compliances from previous reporting periods that still require management action. References to the Environment Protection Licence (EPL) are limited to those that relate to the Project Approval conditions, specifically Schedule 3 Condition 22, 28(c), 33 and 39(c)(ii).

Table 1-1 - Statement of Compliance

Were all conditions of the relevant approval(s) complied with (Yes/No)?	
<i>MP 11_0047</i>	No
<i>ML 1579</i>	Yes
<i>ML 1693</i>	Yes
<i>ML 1685</i>	Yes
<i>ML 1749</i>	Yes
<i>WAL 31084</i>	Yes

Table 1-2- Compliance status key for Non-Compliances

Risk Level	Colour Code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	Non-compliance with: - potential for serious environmental consequences, but is unlikely to occur; or - potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	Non-compliance with: - potential for moderate environmental consequences, but is unlikely to occur; or - potential for low environmental consequences, but is likely to occur
Administrative non-compliance	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

Table 1-3 - Non-Compliance

Relevant Approval	Condition Number	Condition Description (summary)	Compliance status	Comment	Where Addressed in Annual Review
MP 11_0047	Schedule 5, Condition 13a	The Proponent shall, within 3 months of the date of this approval: (a) make the following information for the project publicly available on its website, on a daily basis and in a clearly understandable form: • daily weather forecasts for the coming week; • proposed operational responses to these weather forecasts; • real-time noise and air quality monitoring data (subject to any necessary caveats); and • any operational responses that were taken in response to the noise and air quality monitoring data,	Non-compliant	On 28 May 2024, Tarrawonga Coal Mine notified the NSW DPHI it was identified that on some occasions during Weekend and Public Holiday periods the daily updates containing the required information was not uploaded to the Whitehaven Coal website daily As a result of an investigation by the DPHI, TCM was issued a Warning Letter in regards to the breach.	10.2

2 INTRODUCTION

This Annual Review (AR) for Tarrawonga Coal Mine (TCM) has been prepared in accordance with the NSW Government *Annual Review Guideline* (October 2015) and Condition 4 (Schedule 5) of MP 11_0047.

TCM is located approximately 16km east of Boggabri (Refer Figure 1 - Locality Plan). TCM is owned by Tarrawonga Coal Pty Ltd (TCPL) and operated by Whitehaven Coal Mining Pty Ltd (WCMPL). Biodiversity offset locations are shown in Figure 2 and.

Figure 3.

In line with the new standard rehabilitation conditions for all mining leases, TCM has prepared a Rehabilitation Management Plan (RMP) and a Forward Program (FWP) which took effect from 1st January 2023. The AR follows the format required by the NSW Government *Annual Review Guideline* (October 2015). Though primarily covering the period from 1st January 2024 to 31st December 2024 (the reporting period), where relevant the AR provides information on historical aspects of the operations, longer term trends in environmental monitoring results and provides relevant information on activities to be undertaken during the ensuing period, (i.e. from 1st January 2024 to 31st December 2024, or beyond).

2.1 Mine Contacts

The management personnel responsible for operational and environmental performance at the TCM and their relevant contact details are as follows:

- [REDACTED]
[REDACTED]
- [REDACTED]
[REDACTED]
- [REDACTED]
[REDACTED]

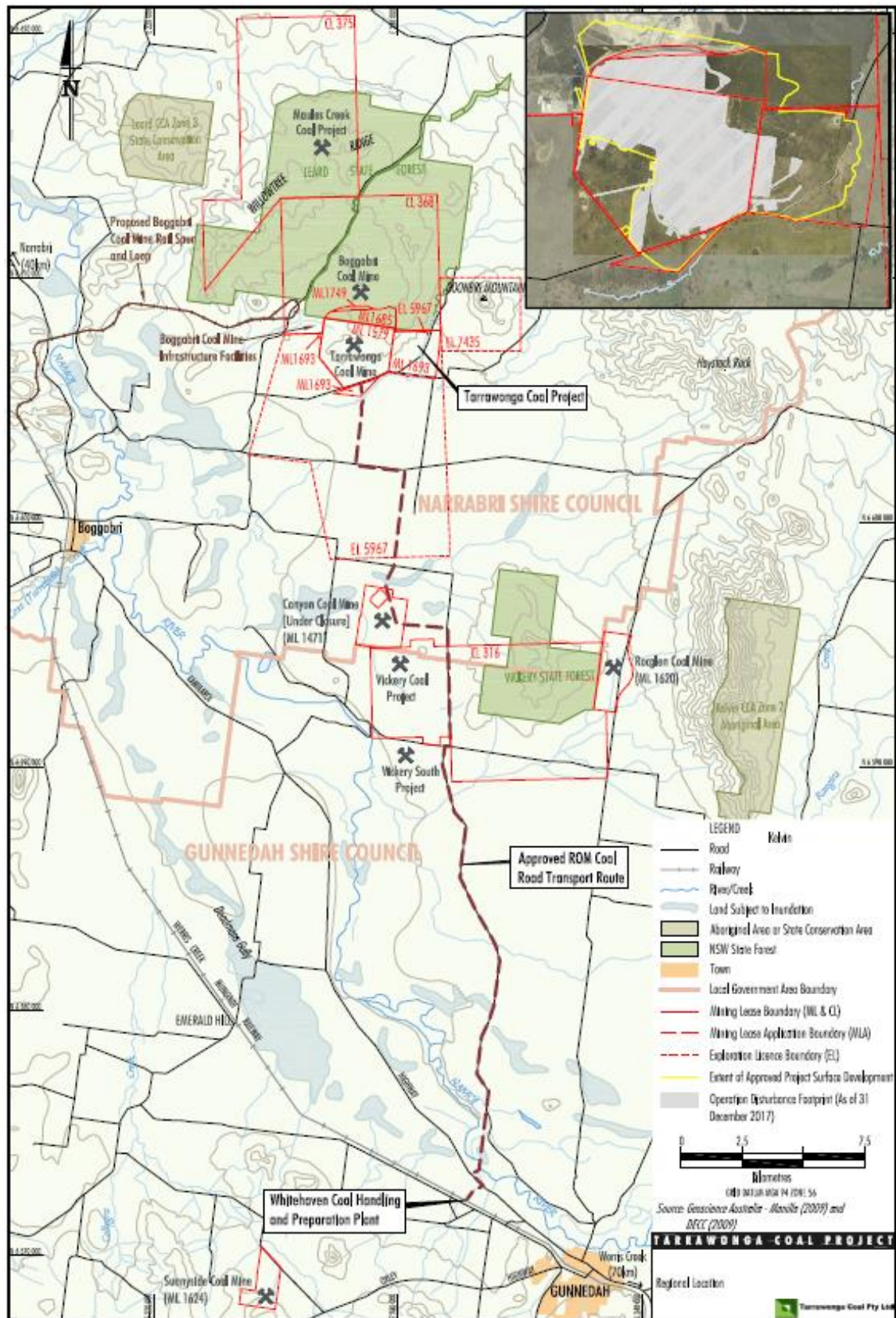


Figure 1 - Locality Plan

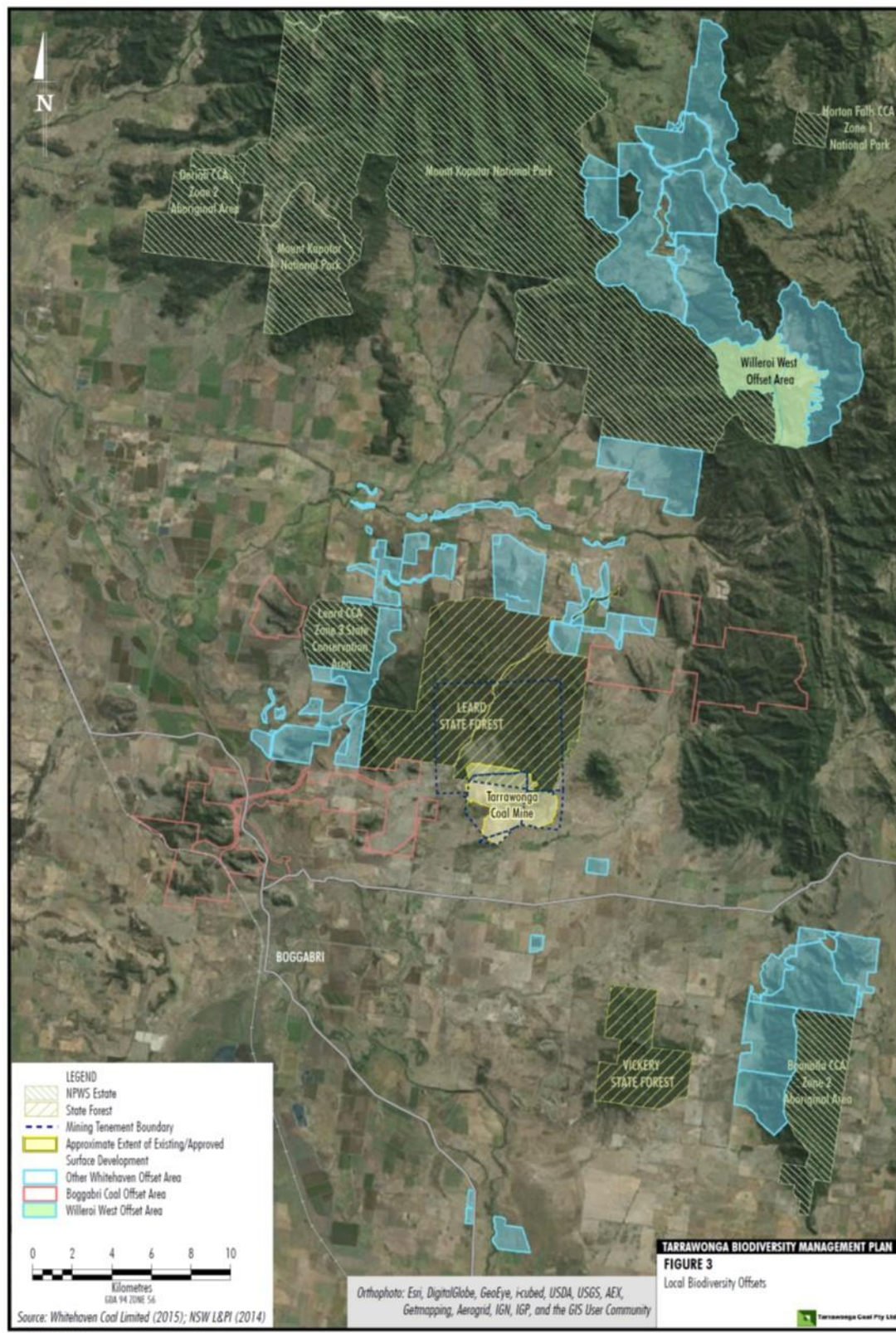


Figure 2 - Local Biodiversity Offsets

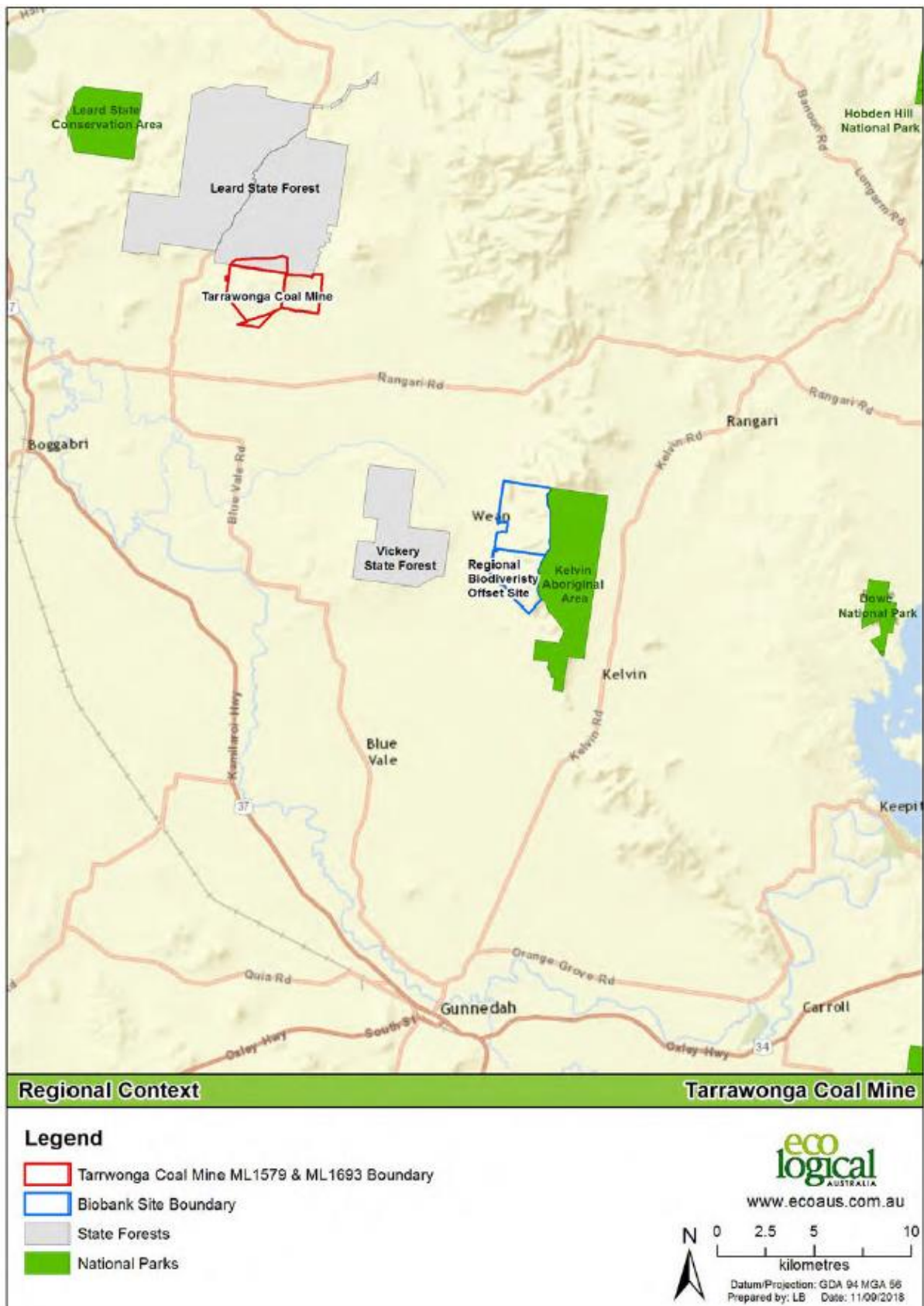


Figure 3 - Regional Location of Biobank Site

3 APPROVALS

3.1 Tenements, Licences and Approvals

Table 3-1 Identifies the approvals in place for the TCM at the end of the reporting period, the issuing/responsible Authority, dates of issue, expiry date and relevant comments.

Table 3-1- Tenements, Licences and Approvals

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
Division of Resources and Energy (DRE)	Exploration Licence (EL 5967)	09/09/2022	24/08/2027	
Environment Protection Authority (EPA)	Environment Protection Licence (EPL) No. 12365	09/01/2006	N/A	EPL12365
Environment Protection Authority (EPA)	Variation- Environment Protection Licence (EPL) No. 12365	13/12/2021	N/A	Variation
NSW Department Primary Industry - Water	90BL253276	18/05/2006	Perpetuity	Monitoring bores 250 units 50 units
	90BL253278	18/05/2006	Perpetuity	
	90BL253279	18/05/2006	Perpetuity	
	90BL253280	18/05/2006	Perpetuity	
	90BL254253	18/05/2006	Perpetuity	
	90BL254254	18/05/2006	Perpetuity	
	90BL254255	24/04/2007	Perpetuity	
	90BL254221	05/04/2007	Perpetuity	
	90BL254214	04/04/2007	Perpetuity	
	90BL255766	19/08/2012	Perpetuity	
	WAL31084	02/08/2013	Perpetuity	
	WAL29548	26/07/2012	Perpetuity	
Department of Planning Infrastructure & Environment (DPIE)	Project Approval MP 11_0047	22/01/2013	31/12/2030	
Department of Planning Infrastructure & Environment (DPIE)	Project Approval MP 11_0047	2014	31/12/2030	MOD1 (continued coal haulage to Gunnedah CHPP)
Department of Planning Infrastructure & Environment (DPIE)	Project Approval MP 11_0047	2016	31/12/2030	MOD2 (allow receipt of all types of coal reject)

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
Department of Planning Infrastructure & Environment (DPIE)	Project Approval MP 11_0047	February 2017	31/12/2030	MOD3 (Traffic Management Plan)
Department of Planning Infrastructure & Environment (DPIE)	Project Approval MP 11_0047	May 2017	31/12/2030	MOD4 (Sound Power Level modification)
Department of Planning Infrastructure & Environment (DPIE)	Project Approval MP 11_0047	August 2017	31/12/2030	MOD5 (Open Cut Augmentation)
Department of Planning Infrastructure & Environment (DPIE)	Project Approval MP 11_0047	October 2018	31/12/2030	MOD6 (Coal Haulage)
Department of Planning Infrastructure & Environment (DPIE)	Project Approval MP 11_0047	June 2020	31/12/2021	MOD8 (Trucking water) for 18 months
Department of Planning Infrastructure & Environment (DPIE)	Project Approval MP 11_0047	February 2021	31/12/2030	MOD7 (Life of Mine)
Department of Planning Infrastructure & Environment (DPIE))	Project Approval MP 11_0047	May 2021	31/12/2030	MOD9 (Disposal of Waste Tyres)
Department of Planning Infrastructure & Environment (DPIE))	Project Approval MP 11_0047	October 2023	31/12/2030	MOD10 (Road Haulage Hours)
Department of Agriculture, Water and Environment (DAWE)	EPBC 2011/5923	11/03/2013	31/12/2053	Conditional Federal Project Approval for LOM Project
Department of Regional NSW – Division of Mining, Exploration and Geoscience (DMEG)	Mining Lease (ML) 1579	03/04/2006	02/04/2027	Expires 21 years from commencement. Varied on 17 October 2022 to include the new standard conditions from <i>Mining Regulation 2016</i> , Schedule 8A,

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
				Part 2.
Department of Regional NSW – Division of Mining, Exploration and Geoscience (DMEG)	Mining Lease (ML) 1685	18/07/2013	14/11/2032	Varied on 17 October 2022 to include the new standard conditions from <i>Mining Regulation 2016</i> , Schedule 8A, Part 2.
Department of Regional NSW – Division of Mining, Exploration and Geoscience (DMEG)	Mining Lease (ML) 1693	14/10/2013	14/10/2034	Expires 21 years from commencement. Varied on 17 October 2022 to include the new standard conditions from <i>Mining Regulation 2016</i> , Schedule 8A, Part 2.
Department of Regional NSW – Division of Mining, Exploration and Geoscience (DMEG)	Mining Lease (ML) 1749	17/11/2017	14/11/2032	Varied on 17 October 2022 to include the new standard conditions from <i>Mining Regulation 2016</i> , Schedule 8A, Part 2.
Division of Department of Regional NSW – Division of Mining, Exploration and Geoscience (DMEG)	Forward Program	1/1/2024	31/12/2024	FWP0001345

4 OPERATIONS SUMMARY

4.1 Mining Operations

Table 4-1 presents the production summary at the end of the reporting period.

Table 4-1 - Production Summary

Material	Approved Limit (Project Approval PA11_0047)	Previous Reporting Period 2023	This Reporting Period 2024 (actual)	Next Reporting Period 2025 (forecast)
<i>Waste Rock/ Overburden (bcm)</i>	<i>n/a</i>	20,769,537	20,455,182	20,976,962
<i>ROM Coal/Ore (t)</i>	<i>3,500,000</i>	1,949,901	1,900,922	1,412,789
<i>Coarse and Fine Reject (t)</i>	<i>700,000</i>	649,809	528,000	700,000
<i>Saleable Product (t)</i>	<i>n/a</i>	1,911,735	1,529,000	1,175,284
<i>Gravel Production (m³)</i>	<i>90,000</i>	0	0	90,000

4.1.1 Other Operations

MP 11_0047 permits 24-hour operation of mining activities. Open cut mining activities, including processing of coal, generally occurred between the hours of 6:30 am and 5:00 pm (day shift) and 4:30 pm and 3:00 am (night shift) from Monday to Friday. Processing of coal on day shift also occurs almost every Saturday whereas mining activity on Saturday day shift has only occurred on an occasional basis to meet production deadlines.

4.1.2 Coal Haulage

For the reporting period 2,015,761 tonnes of coal were hauled along the approved haulage route from TCM to the Whitehaven Gunnedah CHPP. During the same period 34,563 tonnes of coal was distributed from TCM to the domestic market. There was 748,753 tonnes of coal hauled from Vickery, and no coal hauled from Rocglen Coal Mine during the reporting period. The total tonnage of coal rejects received by TCM during 2024 was 528,000 tonnes. Transport of coal from the site or receipt of coal reject from the Whitehaven CHPP by truck has only occurred during the approved hours of:

- (a) 4.00am to 11.15 pm Monday to Friday;
- (b) 5 am to 7.15 pm Saturday; and
- (c) at no time on Sundays or public holidays.

4.1.3 Exploration

Exploration drilling for resource definition and geological investigation purposes was undertaken during the reporting period within the mining footprint. No boreholes were during the reporting period, the exploration drilling that commenced in December 2024 was suspended and will be resumed in January 2025. Full details of exploration activities are included in the Tarrawonga Open Cut Mine group annual reports.

Exploration drilling will continue to be undertaken at the TCM to further assess the coal reserves within the tenements. Exploration license (EL5967) was renewed by the Department of Regional NSW MEG (Exploration and Mining) on the 9th of September, 2022. The current term of this exploration license expires on the 24th of July, 2027.

4.2 Next Reporting Period

4.2.1 Mine operations

The mine production rates planned for 2025 are 1,412,789 tonnes per annum of ROM coal and 20,976,962 bank cubic metres (bcm) of overburden during the next calendar year. TCM may produce gravel up to 90,000m³ for export off site over the next calendar year.

Vegetation clearing activities in mining areas over the next reporting period will be conducted in accordance with the approved Biodiversity Management Plan (BMP) and the updated Forward Program. The clearing program will be undertaken during the annual twelve week clearing campaign from the 15th February to the 30th April, except under exceptional circumstances and with the approval of the Secretary of the DPHI.

5 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

The 2023 Annual Review was considered to satisfy the reporting requirements of the approval and the document was accepted by the Department of Planning and Environment on the 27th of June 2024.

6 ENVIRONMENTAL PERFORMANCE

The following sub-sections document the implementation and effectiveness of the various control strategies adopted at TCM, together with monitoring data for the reporting period. Life of mine monitoring data is included as Appendices in this AR, where relevant, to allow for discussion on longer-term trends.

6.1 Noise

6.1.1 Criteria

The Project Approval (MP 11_0047) and EPL 12365 describe the noise criteria for site operations and coal haulage as seen in Table 6-1.

Table 6-1- Noise Compliance

Noise Criteria dB(A)			
<i>Location</i>	<i>Day, Evening & Night LAeq (15 min)</i>	<i>Night LAeq (1 min)</i>	
All other privately-owned residences	35	45	
Road Traffic Noise Criteria dB(A) LAeq (1 hour)			
<i>Location</i>	<i>Day</i>	<i>Evening</i>	<i>Night</i>
Any residence on privately-owned land	60	60	55

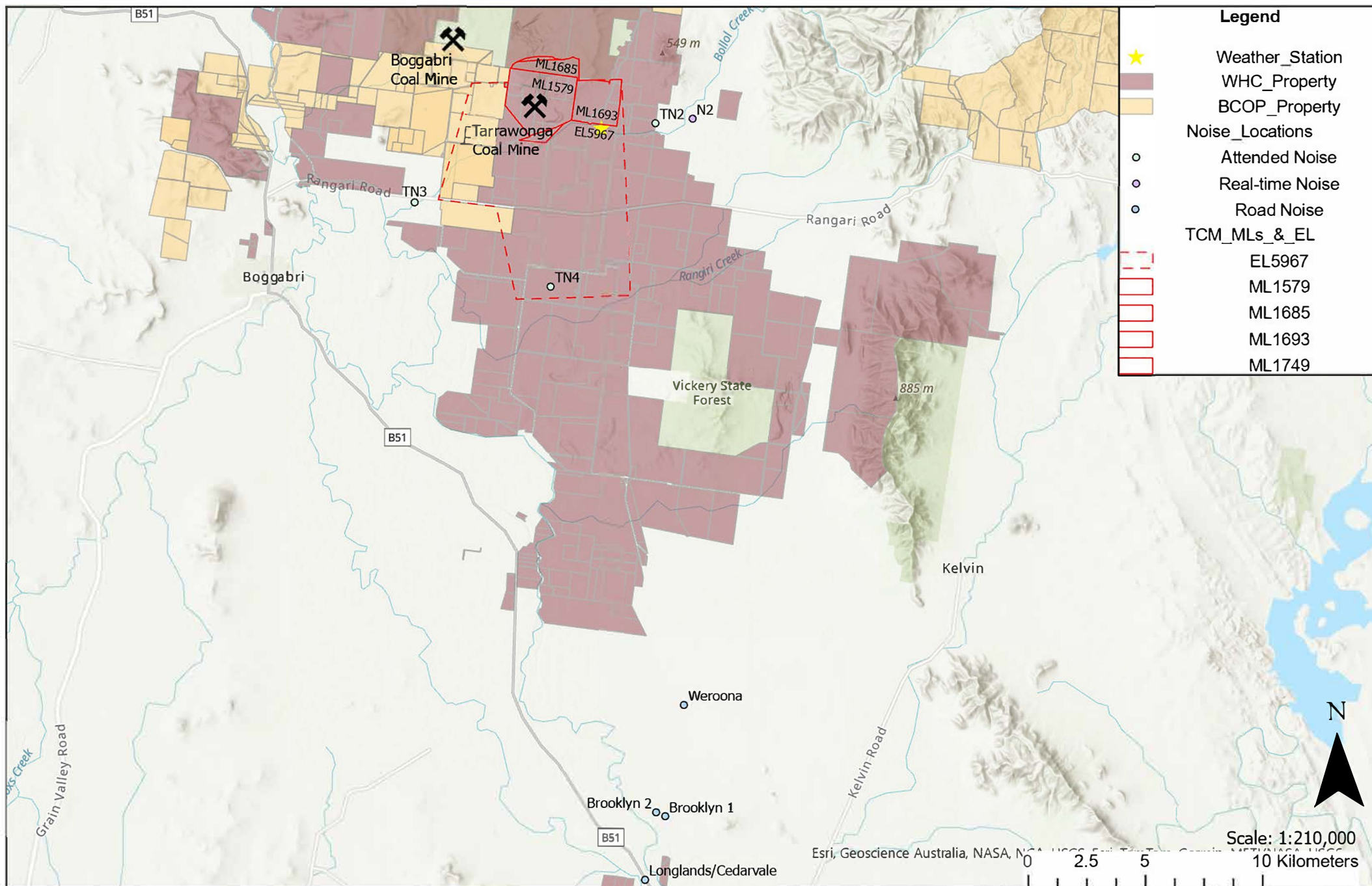
Note: Day = 7:00am –6:00pm; Evening = 6:00pm –10:00pm; Night = 10:00pm –7:00am

A number of other specific conditions (i.e. acquisition, monitoring protocols and cumulative impacts) are listed in the PA and EPL 12365.

6.1.2 Environmental Management Measures

In accordance with the Noise Management Plan, a number of operational measures continue to be implemented on site to maintain compliance with limits. These include but are not limited to:

- Real-time noise monitor and web-based interface;
- Automated SMS alarms notifying site personnel of elevated noise levels approaching noise criteria; and
- Modification of operations where required.



6.1.3 Key Environmental Performance

Attended Noise Monitoring

An independent consultant completed attended noise monitoring programs on a quarterly basis during the reporting period. The noise monitoring sites are identified on Figure 4 and include 3 sites: “Bungalow” (TN4), “Barbers Lagoon” (TN3) and “Matong-Coomalgah” (TN2) properties. Attended noise monitoring results are shown in the table below and show compliance with the criteria specified in the project approval on all occasions during the reporting period.

Table 6-2 - Attended Noise Monitoring results comparison

	TN2 – Coomalgalh*			Limits (day/evening/night/night)
	2022	2023	2024	
Q1	<30 / <30 / <30 / <30	<20 / <20 / <20 / <20	<20 / <21 / <20 / <20	35 / 35 / 35 / 45
Q2	<30 / <30 / <30 / <35	<20 / <20 / 23 / <20	30 / 29 / 22 / 25	
Q3	<20 / <20 / <20 / <20	<20 / <20 / 24 / 31	<20 / <20 / 24 / 27	L_{Aeq}, 15min/L_{Aeq}, 15min/L_{Aeq}, 15min/LA₁, 1min
Q4	<20 / <20 / <20 / <20	21 / 23 / 32 / 36	<20 / 29 / <20 / 32	
TN3 - Barbers Lagoon				
	2022	2023	2024	
Q1	<30 / <31 / <30 / <30	<20 / <20 / <20 / <20	<20 / <25 / <20 / 34	
Q2	I/A	<20 / <20 / 22 / 27	27 / 25 / 27 / 35	
Q3	<20 / <20 / <21 / 25	<20 / 28 / 26 / 30	<20 / 22 / 27 / 32	
Q4	<20 / <20 / <20 / <20	IA / IA / 28 / 32	<20 / <20 / 27 / 33	
TN4 – Bungalow				
	2022	2023	2024	
Q1	<35 / <35 / <35 / <35	<20 / <20 / <20 / <20	24 / <20 / 31 / 35	
Q2	I/A	<20 / 32 / 30 / 40	24 / 30 / 28 / 35	
Q3	<20 / <20 / <23 / 27	<20 / 27 / <20 / <20	<20 / 22 / 27 / 33	
Q4	<20 / <20 / <20 / <20	IA / 26 / IA / <20	<20 / 22 / 27 / 31	

Note: Above values are the maximum or only measurements recorded for the indicated period.

Key:

IA = Mine noise inaudible

** = taken at TN2 monitor, 9dB reduction to nearest private property not added. Reading within compliance levels.*

Attended noise monitoring to date indicates that results are generally consistent with previous reporting year’s results for all other measurements taken.

Road Noise Monitoring

TCM is required to ensure that the noise generated by road transport along public sections of the coal haulage route was in accordance with the Tarrawonga Noise Management Plan and with Schedule 3 condition 12 of MP 11_0047.

Modification 10 to Project Approval MP 11_0047 has been implemented to incorporate an extension of haulage hours. The revised approved hours for haulage operations are now scheduled from 4:00 am to 11:15 pm, Monday through Friday, and from 5:00 am to 7:15 pm on Saturdays.

Road noise monitoring was undertaken in June and December 2024. The monitoring occurred at the privately owned residences on the “Weroona” and “Brooklyn” properties located off Blue Vale Road, and a representative location for the “Longlands/Cedarvale” properties on Kamilaroi Highway. Results showed compliance on both monitoring occasions, which is consistent with the predictions of the Whitehaven ROM Coal Haulage Modification Environmental Assessment for the southern section of the approval transport route.

Real Time Noise Monitoring

In accordance with the requirements of MP 11_0047 and EPL 12365, TCM continued to undertake real time noise monitoring and managed noise according to the Noise Management Plan during the reporting period.

Annual Sound Power Level Testing

In December 2024, Sound Power Level (SPL) testing of all the operating fixed and mobile plant was undertaken. According to MOD 4 (May 2017) of the MP 11_0047, there is no criteria applicable for SPL and levels identified in the Noise and Blasting Environmental Assessment (EA, 2011) are only used for comparison purposes. Each plant item was assessed for different types of activities (i.e. Dynamic and Stationary).

A comparison of SPL levels in Table 6-3 below indicates that the overall average measured values for the reporting period were generally consistent with the assumed and modelled values in the EA (2011), expected levels for the type of equipment and with previous years.

To ensure that all equipment is tested and that Production is not adversely affected, TCM's annual SPL testing continues to be conducted in consistency with other mines throughout NSW, so that all heavy plant is measured on a three yearly basis. The first monitoring program to reflect this was in 2022. Table 6-3 reflects this in that some plant was not available for testing.

Table 6-3 - Average Sound Power Levels against EA (2011)

Type	Average Overall - dB(A)			EA (2011) - Guidance Level
	2022	2023	2024	
Haul Truck - CAT 785C Dump Truck	N/A	N/A	N/A	121
Haul Truck - HITACHI EH4000-AC2	115	115	116	116
Haul Truck - CAT 789 Dump Truck	117	117.5	119	121
Water Carts	114 ¹	114 ¹	114	111
Dozers	116	114	116	116
Frontend Loaders	N/A ²	112	112.5	117
Graders	N/A	106.5	N/A	108
Drills	N/A	N/A	117	117
Excavator – Hitachi EX5600	113	113.5	115	115
Crushing Plant	N/A	N/A	N/A	113

¹ CAT777D tested. EA SPL is for a CAT773C. Maules Creek EA LwA for CAT777 and CAT773 is 115dB

² Note: N/A = Plant was not available for testing due to not being operated, or was tested in previous years.

Acoustic model annual validation

An independent consultant was engaged to assess and validate the noise model prediction developed in 2011 against the monitoring results for 2024. The validation was conducted in accordance with Schedule 3 Condition 12(g) of MP 11_0047 and the Noise Management Plan (NMP) which states:

“In accordance with the requirements of the consent, TCM will seek validation of the tenth percentile methodology used in the noise impact assessment for the Tarrawonga Coal Project. This will be completed on an annual basis by the provision of a report from an appropriately qualified acoustical consultant, utilising the data obtained over a 12-month period from the monitoring program and providing a comparative assessment against the modelled predictions from the tenth percentile methodology.”

Attended monitoring data for 2024 was compared against the 90th percentile (tenth percentile exceedance levels, statistically the 90th percentile) predicted noise contours for the worst case night time Year 4 scenario using the Environmental Noise Model software. Table 6-4 shows a comparison of the 2024 90th percentile operator attended measured noise levels against the corresponding 90th percentile predicted noise levels for each location.

Table 6-4 - Comparison of 2024 Attended Noise Monitoring against Year 4 TCM EA Noise Predictions

Location	2024 90th Percentile Measured Noise Level (dBA)	EA (2011) 90th Percentile Predicted Noise Level (dBA) ¹	Criterion (dBA)
Matong/Coomalgah	28	32	35
Bungalow	26	31	35
Barber's Lagoon	24	34	35

Note 1: 90th percentile predicted noise levels refer to the 10th percentile exceedance levels in accordance with the tenth percentile methodology.

As displayed in Table 6-4, all measured levels were below the modelled level, confirming that the model has not under-predicted noise levels at the receiver location.

6.1.4 Proposed Improvements to Environmental Management

The Introduction to Site (ITS) process is utilised to ensure commissioned new plant items are were tested for sound power levels before use and fitted with noise suppressant technology as required.

A revised NMP was approved by the Department in April 2024. The update includes items such as:

- Noise Policy for Industry (2017)
- Additional road noise monitoring location representative of Cedarvale and Longlands properties as per Modification 10 of MP 11_0047.
- Adaptation to the new WHC Management Plan template

6.2 Blasting

6.2.1 Criteria

Blasting criteria for the TCM are noted in MP 11_0047, and Condition L5 of EPL 12365.

- Blasting must only be carried out between 9.00 am and 5.00 pm, Monday to Saturday inclusive. Blasting is not allowed on Sundays, public holidays or at any other time without the written approval of the Director-General.
- A maximum of one (1) blast per day, unless an additional blast is required following a blast misfire and a maximum of 4 blasts per week averaged over a calendar year for the project:
- For non-project related residences, the overpressure level from blasting operations must not:
 - Exceed 115dB (Lin Peak) for more than 5% of the total number of blasts over a period of 12 months; or
 - Exceed 120dB (Lin Peak) at any time.
- For non-project related residences, ground vibration peak particle velocity from the blasting operations must not:
 - Exceed 5mm/s for more than 5% of the total number of blasts over a period of 12 months; and
 - Exceed 10mm/s at any time, at any residence on privately owned land.

6.2.2 Key Environmental Performance

During the reporting period, 93 blasts were initiated.

There were two instances throughout the reporting period where the regulatory authorities were notified of TCM potentially blasting more than one blast on a single day. These instances were not required to eventuate due to changing weather conditions and/ or technical difficulties and as such there were no instances where two or more blasts were required to be fired on one day.

The maximum ground vibration recorded at the compliance monitor during the reporting period was 0.98mm/s recorded at “Coomalgah” on 24th May 2024 which is below the consent criterion of 5mm/s.

All blasts on non-project related residences during the reporting period were within the ground vibration criteria.

The maximum overpressure recorded at the compliance monitor “Coomalgah” during the reporting period was 111.2dB on the 24th of May 2024. This maintains a rolling average for overpressure for all blasts below the compliance level of 115dB.

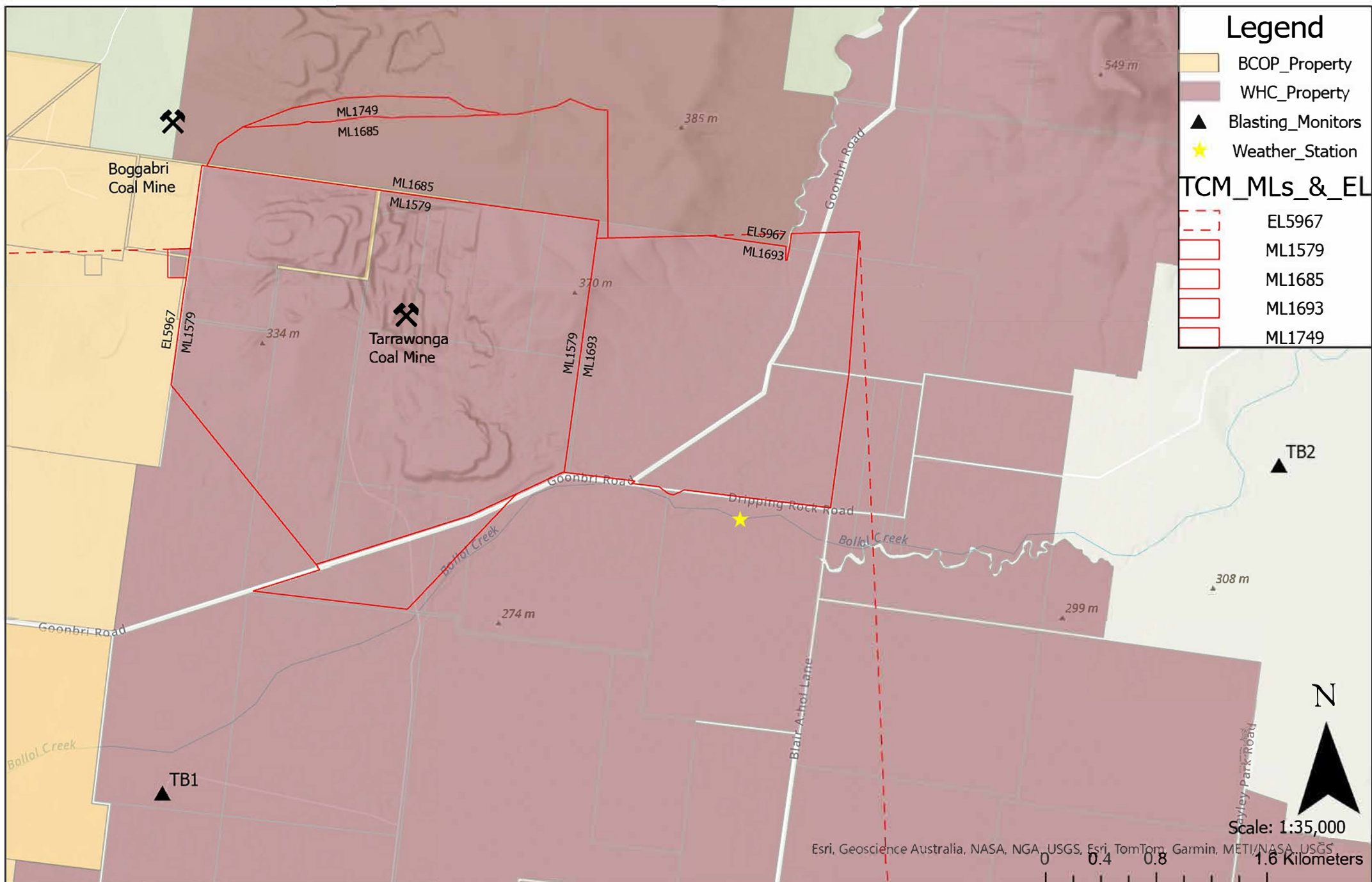
Overpressure at the monitor “Tarrawonga” was recorded as more than 115dB on two occasions, the 24th of May and the 25th of September 2024, with results of 120.7dB and 120.5dB respectively. As this monitor is situated on a project-related property, this was not considered to be non-compliant to overpressure monitoring criteria.

Performance during the reporting period was consistent with the EA prediction for blasting.

The maximum fume rating for the reporting period was classified as a ‘3B’ per the *Australian Explosives Industry And Safety Group Inc. – Code of Practice: Prevention and Management of Blast Generated NOx Gases in Surface Blasting*. No instances of blast fume leaving the premises boundary were recorded during the reporting period.

6.2.3 Proposed Improvements to Environmental Management

TCM updated the Blast Management Plan in October 2022 and a review is required during calendar year 2025. This will be completed during the year, with the main update being the transfer to the new WHC Management Plan template.



6.3 Air Quality and Greenhouse Gas

6.3.1 Criteria

The air quality criteria applicable to the TCM are specified in MP 11_0047 Schedule 3. Air quality criteria is summarised below:

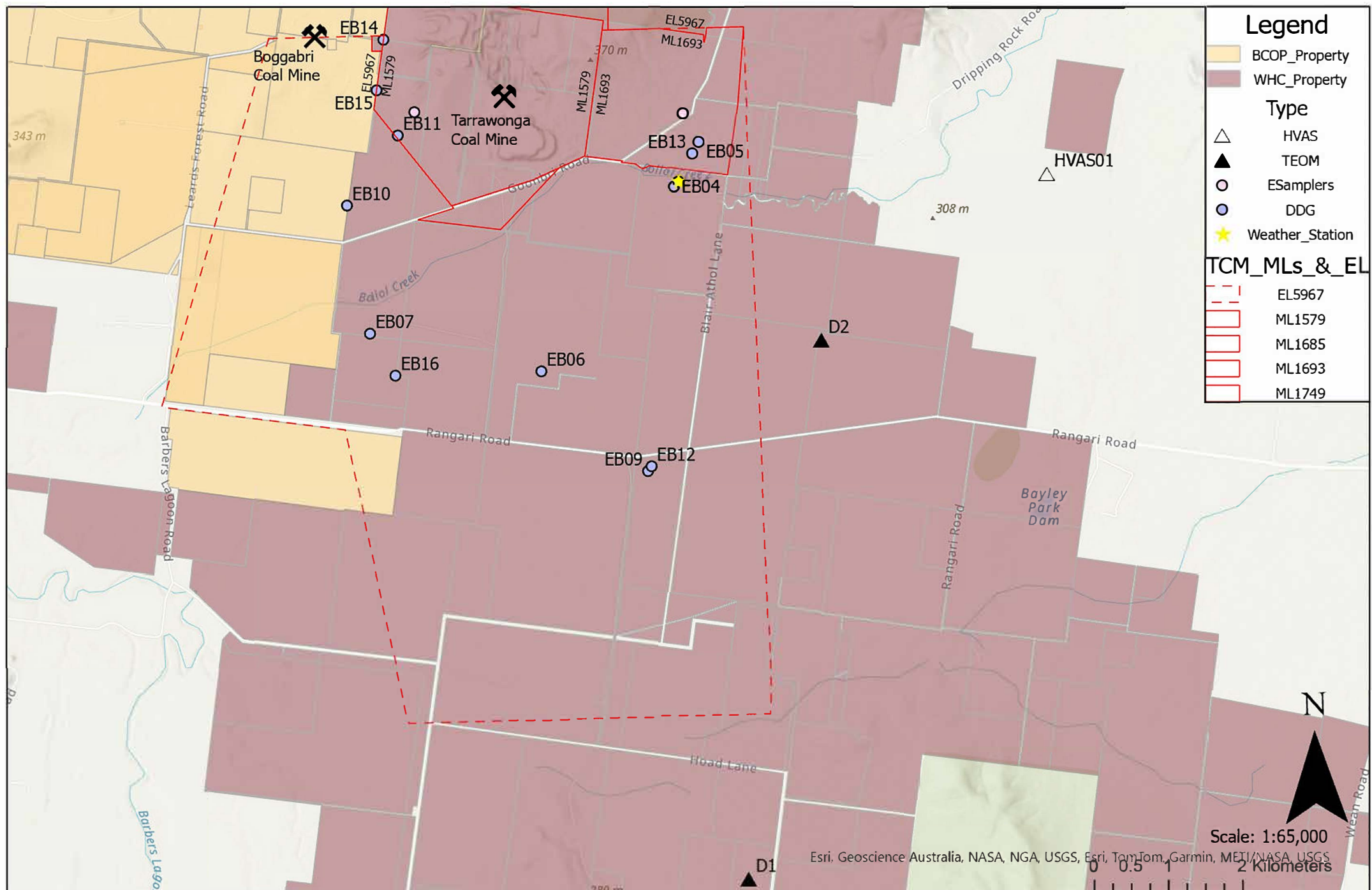
- Acceptable mean annual increase in deposited dust – $2\text{g/m}^2/\text{month}$.
- Mean annual dust deposition (all sources) – $4\text{g/m}^2/\text{month}$.
- Mean annual Total Suspended Particles (TSP) (all sources) – $90\text{ }\mu\text{g/m}^3$.
- Mean annual Particle Matter under 10 microns (PM10) – $30\text{ }\mu\text{g/m}^3$.
- 24-hour average PM10 particulate level – $50\text{ }\mu\text{g/m}^3$.

6.3.2 Environmental Management Measures

TCM employs a range of air pollution control measures specified in the Air Quality and Greenhouse Gas Management Plan (AQGGMP), including:

- Maintaining a real time SMS alarming system to key operational personnel of higher trends in PM10 data at Flixton TEOM;
- Using a prediction and dust forecasting system;
- Modification of work practices where required including changing of excavation and dumping strategies;
- Limiting ground cover removal in advance of mining consistent with operational requirements;
- Dust suppression using water and dust suppressant additive products on haul roads and the use of water while drilling and crushing to reduce airborne dust emissions;
- Progressive shaping and rehabilitation of areas once they are no longer required for mining purposes;
- Speed limit restrictions on all vehicles and equipment on the mine site;
- Use of covers on the trays of all product coal trucks. All coal haulage vehicles (road trucks only), including those operated by sub-contractors, are fitted with roll-over tarpaulins.

Figure 6 displays the air quality monitoring locations including the deposited dust gauges (DDG), two Tapered Element Oscillating Micro balance units (TEOM) installed on project related properties (Flixton and Wil-gai), three mobile real-time dust samplers (E-samplers) installed near the mine boundary and one High Volume Air Sampler (HVAS) on privately owned property (Coomalgah) operating and serviced during the reporting period.



6.3.3 Key Environmental Performance

Greenhouse Gas

GHG emissions are reported through participation in the National Pollutant Inventory (NPI) and as part of the Whitehaven Group in the National Greenhouse and Energy Reporting Scheme (NGERS). The total of Scope 1 and Scope 2 GHG emissions attributed to TCM reported for the NGERS FY2024 reporting year were 76,276 t CO₂-e. The FY2024 EA prediction was 203,203 t CO₂-e.

Fugitive emissions methodology used in FY24 GHG reporting and EA predictions was not comparable. Method 1 was utilised for estimating EA predictions using a default emissions factor and Method 2 was used for FY2024 GHG data reporting utilising an operations emissions model which was created by a comprehensive gas sampling program to determine site specific emission factors for each coal seam. Fugitive emissions have been reported using Method 2 at TCM since 2016.

To allow for a comparison between EA predictions and reported emissions, fugitive emissions for the reporting year have been recalculated using method 1. Method 2 and the running of the emissions model is unable to be retrospectively applied to EA predictions as the gas model relies on coal mined from seams in the reporting period. 27,149kL of diesel (stationary and transport use) was consumed in FY2024 equating to 73,566 tCO₂-e GHG Emissions. The diesel emissions are higher than the EA prediction for FY2024 of 14,269t CO₂-e.

Table 6-6 shows a comparison of the actual and recalculated total and scope 1 emissions using EA comparable methods against the EA 2012 predictions for 2024.

Table 6-5: Comparison of Emissions Compared to Prediction in EA

	Predicted GHG Emissions (EA 2021)	Actual emissions FY23 (Method 2)	Recalculated emissions FY23 (Method 1)
Scope 1	203,203 t CO ₂ -e	76,264 t CO ₂ -e	184,589 t CO ₂ -e
Total Emissions	203,203 t CO ₂ -e	76,276 t CO ₂ -e	184,601 t CO ₂ -e

As displayed in Table 6-5, the actual and recalculated total and scope 1 emissions using an EA comparable method were below EA predictions.

Scope 2 emissions

Approximately 17,416 kWh electricity was purchased by the mine during the FY2024 reporting period equating to 12 t CO₂-e GHG emissions. Tarrawonga is not connected to the electricity grid and relies on generators for power generation. The electricity purchased was from TCM owned properties that contain monitoring equipment. From October 2022 WHC offset Scope 2 emissions by purchasing 100% carbon neutral electricity across all sites.

Dust Deposition Gauges:

Table 6-6 details the monthly dust deposition levels measured at 10 dust deposition gauges (DDG). All monitoring locations, except for EB11, recorded average dust deposition below 4g/m²/month and within compliance with Sch 3 Cn 24 of MP 11_0047. The gauge on Tarrawonga Mine, EB11, was contaminated with insects, vegetation and dust on three occasions through May, June and July. As this DDG is situated on the mining-lease, on mine-owned land, this is not considered to be non-compliant.

Table 6-6 - Deposited Dust monitoring data summary 2024 [g/month/m²]

MONTH	TEMPLEMORE (EB-4) ¹	BOLLOL CREEK STN (EB-5) ¹	AMBARDO (EB-6) ¹	TARRAWONGA (EB-7) ¹	PINE GROVE (EB-9) ¹	TARRAWONGA MINE (EB-10) ¹	TARRAWONGA MINE (EB-11) ¹	TARRAWONGA MINE (EB-14) ¹	TARRAWONGA MINE (EB-15) ¹	JERALONG NORTH (EB-16) ²
Jan-24	0.3	1.2	0.9	1.0	1.2	1.9	2.3	2.1	2.2	1.1
Feb-24	0.8	0.4	0.8	0.6	0.6	1.0	3.4	3.7	1.0	0.7
Mar-24	0.8	2.8	1.0	2.7	0.8	0.6	4.2	5.0	9.0c	1.6
Apr-24	0.4	2.3	0.9	0.4	0.8	2.2	4.4	3.9c	3.1	0.6
May-24	NA	0.9	0.6	0.6	0.4	1.6	5.2c	2.6	1.0	0.8
Jun-24	1.5	0.2	0.4	0.2	0.4	0.5	7.4c	4	0.7	1
Jul-24	1.5	1.2	0.3	0.4	0.7	0.6	5.5c	4.2	1.7	0.5
Aug-24	1.0	1.5	0.2	0.2	0.7	0.3	3.6	3.3	0.2	0.6
Sep-24	1.0	1.0	0.2	0.4	0.2	2.1	4.7	2.8	0.9	0.5
Oct-24	3.1	1.4	0.8	0.7	1.2	1.5	3.3	6.3	1.4	0.5
Nov-24	1.8	0.6	0.4	0.4	0.5	0.8	3.0	2.1	0.7	3.3
Dec-24	2.2	1.5	1.2	2.3	3.3c	4.6	3.0	3.8	3.5c	4.3c
2024 Average	1.3	1.3	0.6	0.8	0.7	1.5	4.2	3.7	1.3	1.0

C= Results contaminated by deposits deemed unrelated to mining activities (bird droppings, insects and vegetation).

High Volume Air Sampler (HVAS)

TCM has one HVAS which is located at the privately-owned property “Coomalgah”. All the results recorded at the HVAS are summarised in Appendix 2.

The PM₁₀ annual average at Coomalgah was 11.6 µg/m³, which is below the 30 µg/m³ criterion specified in Schedule 3 condition 24.

PM₁₀ measurements have been graphitised in Figure 7 and shows the trend from 2022 to December 2024 (excluding the values measured during days of “adverse weather”).

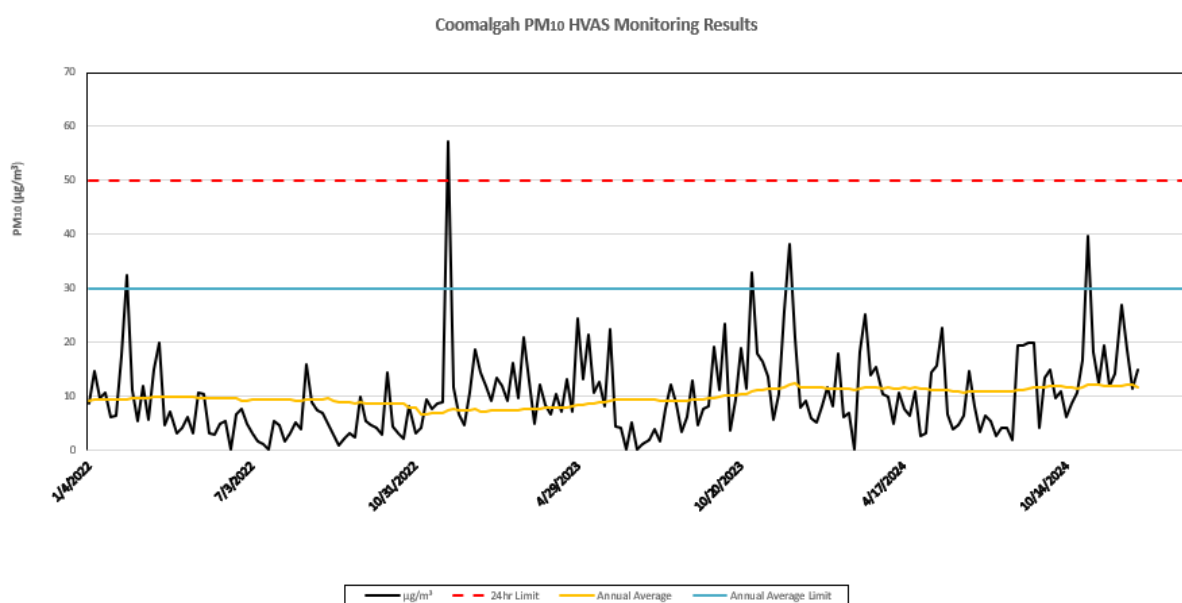


Figure 7 - HVAS-PM₁₀ 24hr average monitoring data (2022-2024)

Total Suspended Particulate (TSP) is calculated from the measured PM₁₀ data using monitoring conducted at the ‘Coomalgah’ HVAS. Results indicated the TSP rolling annual average remained below the applicable criteria of 90 µg/m for the reporting period. These are illustrated in Figure 8.

The EA predicted no exceedance of the annual average TSP criterion. TSP results inferred from PM₁₀ data were consistent with the EA for the reporting period.

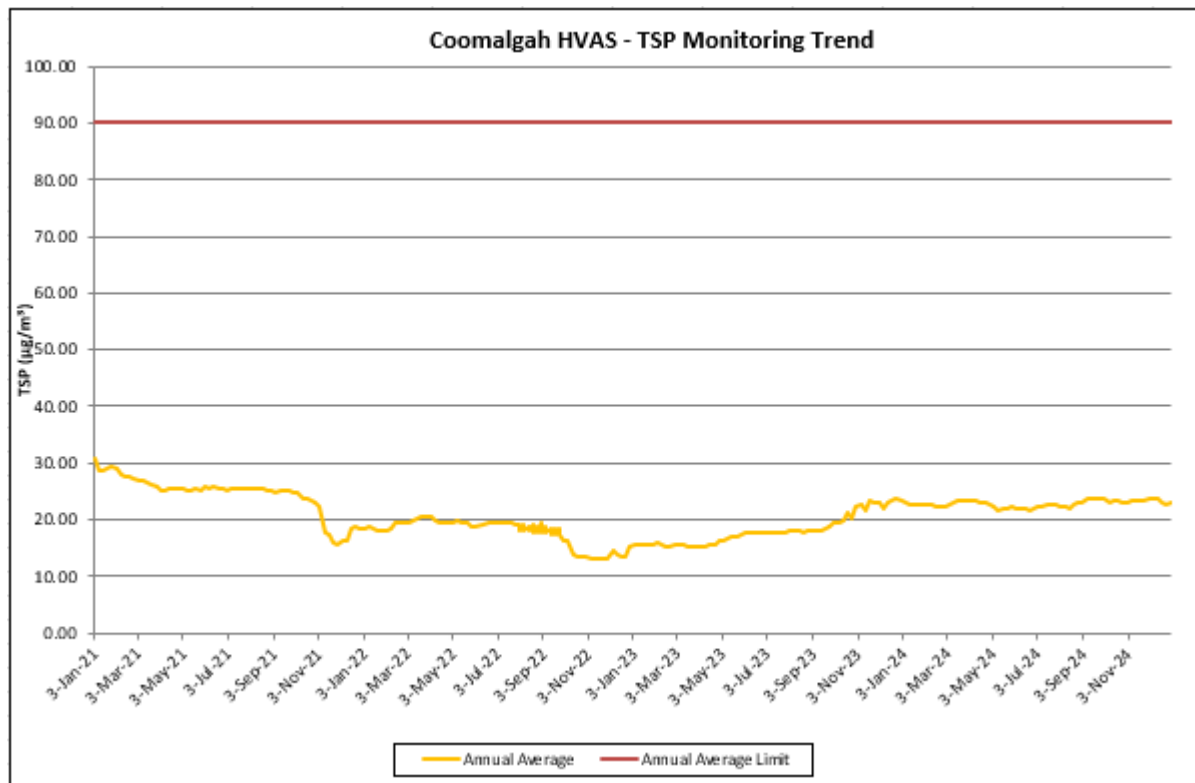


Figure 8 - Coomalgal HVAS- calculated TSP Monitoring Trend (2021 - 2024)

E-samplers

Three (3) E-samplers are installed on mine owned land (no criterion applies) and monitor continuously and real-time PM₁₀ levels. The monitors are used as a management tool to facilitate the day to day mine operations and for investigation purposes.

TEOMs

Throughout the reporting period, the TEOM located on a mine owned property 'Flixton' monitored continuously and real-time PM₁₀ levels. The monitor is used as a management tool to facilitate the day to day mine operations and therefore there is no criterion applicable at that location.

Results recorded at the PM_{2.5} monitor on the project related property 'Wil-gai' remained generally consistent with those recorded during previous reporting periods for most of the year. The Air Quality Greenhouse Gas Management Plan (AQGHGMP) states that whilst no criteria applies, TCM will compare results against PM_{2.5} annual average target level (no levels stipulated within the project approval) of 8.0 µg/m³ and target level of 25µg/m³ for 24hr average. Including all the valid PM_{2.5} 24hr average values measured during the reporting period, the annual average calculated is 7.5 µg /m³.

An air specialist prepared a report to assess TCM performance against the Key Performance Indicators (KPI's) listed in Table 6-5 of *Tarrawonga Coal Mine – Particulate Matter Control Best Practice Pollution Reduction Program (PRP)*. The assessment of KPI-1, KPI-2 and KPI-4 has shown that:

- KPI – 1 (PM₁₀/ROM (kilograms/tonne))

For 2024, calculated PM₁₀ was 475,963kg/year and ROM was 1,900,922t/year giving a PM₁₀/ROM ratio of 0.3 (kg/t) which is a low value and is generally consistent with the baseline required and specified in the PRP.

- KPI – 2 (PM₁₀ Emission Control (%)):

The level of control applied to operations has not changed since the PRP. As the level of dust control applied to activities at TCM has not changed from previous years the KPI-2 value would also be unchanged.

Table 6-7 - KPI – 2 Summary of PM10 control factor (TAS, 2023)

Mining Activity	Current Control Factor	Control Factor with additional best practicable controls.	K2y
<i>Hauling on unsealed roads</i>	75	80	94%
<i>Unloading Coal to hopper</i>	30	79	38%
<i>Wind Erosion and Maintenance – Stockpiles</i>	25	62.5	40%

- KPI – 4 (Water Intensity for Hauling (L/VKT)):

The calculated level of watering for KPI-4 during 2024 (ignoring the additional benefit of dust suppressant) is similar to the value required to achieve an average dust control efficiency of greater than 80% (noting that for the 2013-2014 period a control level of 89-94% was measured).

The mine implemented additional dust controls on the haul roads in the form of dust suppressant in 2018 to increase the control of dust and reduce the amount of water needed, which can affect the utility of the KPI as it stands. It can be seen in 2019, which was a drought year, the use of dust suppressant resulted in significantly less water required to maintain an 80% control level.

It is thus recommended that if a KPI for haul road watering/ dust control is to be used in future, the KPI may need to be modified to account for the use of a dust suppressant (if used throughout the year) and also for any significant anomaly in the annual rainfall. Not accounting for these factors means that the KPI may not be as readily comparable between dry and wet years.

Nevertheless, the current KPI shows that sufficient water was added in 2024 to maintain the required control level (even when ignoring the additional benefit from dust suppressant).

6.3.4 Proposed Improvements to Environmental Management

The predictive air dispersion model system will continue to be implemented in accordance with the BTM Air Quality Management Strategy. The Air Quality and Greenhouse Gas Management plan will be reviewed, updated and submitted as necessary.

6.4 Biodiversity and Offsets

The revised Biodiversity Management Plan (WHC, 2022) was approved by former NSW DPE (now DPHI) on 10 August 2022 and by the former Commonwealth DAWE (now DCCEEW) on 24 June 2022. The BMP outlines a Biodiversity Offset Strategy (BOS) for Willeroi West (the approved Offset Area for the Tarrawonga Coal Mine (TCM)) of maintaining and improving 1,660ha of native woodland and

forest adjacent to the south eastern boundary of Mount Kaputar National Park that is part of the original Willeroi property and collectively known as the Tarrawonga Biodiversity Management Area (BMA).

6.4.1 Weather Summary of Willeroi Offset Property

Regionally central meteorological station to the BMA is the Gunnedah Airport site (BOM 2024) which has recorded highly variable rainfall over the last 5 years; from the driest on record of 233mm in 2019, followed by above average rainfall years in 2020, 2021 and 2022 of 844mm, 990mm and 860mm respectively (resulting in a numerous of major flooding events of the Namoi River). While in 2023 and 2024, the Gunnedah Airport site (BOM 2024) recorded 496mm and 572mm which are closer to the annual average rainfall of 572mm. WHC maintains a meteorological station within the Tarrawonga BMA and a summary of weather conditions experienced during the 2024 reporting period being the maximum monthly average temperature was 32°C in January 2024. Minimum monthly average temperature was 6°C in June 2024. Annual temperature ranges were 2°C to 38°C in 2024. The total annual rainfall in 2024 was 456mm with the maximum in February (63mm) and minimum in September (18mm).

6.4.2 Infrastructure Management

There was no infrastructure or fencing work conducted on the Willeroi West property during the reporting period. Any remaining derelict assets/infrastructure items will continue to be assessed, removed, and remediated as required prior to potential transfer of the Willeroi biodiversity property to National Park Estate.

6.4.3 Seed Management

The routine seed assessments for the Tarrawonga BMA aims to identify on a seasonal basis the life cycle stage and development of native plants to identify what, where, when and how to target appropriate resources to collect seed for future revegetation programs. As there were no revegetation works during the reporting period, there was no seed required to be collected across the Willeroi West biodiversity property.

6.4.4 Revegetation Management

The Tarrawonga BMA revegetation strategy focuses on restoration and revegetation of previously cleared non-native grassland and derived native grasslands and assisting natural regeneration in better quality woodland areas. The revegetation program was successfully completed for the Willeroi West biodiversity property in the 2019 reporting period with good survival achieved to date. There was no additional revegetation works undertaken on the Tarrawonga BMA during this reporting period.

6.4.5 Flora and Fauna Monitoring Program

The 2024 ecological monitoring program of the Willeroi West BOA included winter bird surveys that were undertaken in July and August 2024; annual spring flora monitoring of 25 plots across four vegetation zones (VZs) undertaken during September 2024 and the fauna monitoring program completed surveys at 27 bird survey sites, 4 Harp Trap Sites, 12 echolocation monitoring sites and 6 Motion detection camera sites between January 2024 and November 2024. During the winter bird surveys, four threatened species (Brown Treecreeper, Little Lorikeet, Speckled Warbler and Turquoise Parrot) were recorded. During flora monitoring, two VZs (VZ 14 and VZ 15) were recorded as meeting or exceeding completion criteria for all four biometrics. Native plant species richness (NPS) completion criteria (native species richness benchmark for relevant biometric vegetation communities) was met or exceeded at all four VZs. Native overstorey cover (NOS) completion criteria (minimum overstorey cover benchmark for relevant biometric vegetation communities) was met or exceeded at 2 out of 4 VZs. Native midstorey cover (NMS) completion criteria (minimum midstorey cover benchmark for relevant biometric vegetation communities) was met or exceeded at all four VZs. Native ground cover grass (NGCG) completion criteria (minimum groundcover benchmark for relevant biometric vegetation communities) was met or exceeded at all four VZs. Comparison of individual plot data shows that NPS remained consistent between 2023 and 2024, with 24 out of 25 plots meeting or exceeding completion criteria in both years. Native overstorey cover (NOS) remained consistent between 2023 and 2024, with 18 out of 25 plots meeting or exceeding completion criteria in both years. Native midstorey cover (NMS) decreased from 20 out of 25 plots meeting or exceeding completion criteria in 2023, to 18 out of 25 plots in 2024. Native ground cover grass (NGCG) remained consistent between 2023 and 2024, with 24 out of 25 plots meeting or exceeding completion criteria in both years. Apart of the annual fauna monitoring program were standardised bird surveys across 27 survey sites resulting in 97 bird species were recorded compared to 81 species in 2023. Bird richness across woodland habitats was 74 (average 26; range 19 to 33);

42 species were detected at revegetation sites (average = 10.8; range 8 to 13) and 78 species were recorded at naturally regenerating sites (average 22.9; range 12 to 35). During echolocation and harp trap surveys, a total of 22 microbat species were detected including 7 threatened species listed under the BC Act. Habitat type species richness averaged 16 species detected in remnant woodland (average 9.5, range 9 to 14), 18 species in natural regeneration (average 11.6, range 10 to 14) and 14 species in revegetation sites (average, 10.66, 5 to 14). Fifteen species of fauna were recorded at motion detection camera sites including six species of introduced animals.

6.4.6 Habitat Management

During the reporting period, habitat augmentation was undertaken with 33 new nest boxes targeted for Small Gliders, Microbats, Turquoise Parrots and Pale-headed Snakes installed on the Tarrawonga BMA. This brings the total habitat augmentation constructed since 2021 on Tarrawonga BMA to 137 nest boxes.

6.4.7 Feral Animal Management

WHC aims to apply an even and consistent pest animal management effort by routinely scheduling rolling monitoring and control programs across the Tarrawonga BMA. This standardised approach can also be supplemented with periodic targeted programs that focus on specific areas with high pest animal detection, or, on species which have increasing rates of detection. Both the overall management and targeted programs are planned using data collected from grid based motion detection camera monitoring program, pest animal observations and the results of previous control programs. Monitoring demonstrated that certain animals like Eastern Grey Kangaroos were highly detectable and Feral Pigs were moderately detectable across the year. All other pest animal species had scarce to low detection levels across 2024. The pest animal monitoring ensures that timely and prioritised pest animal control is undertaken on a seasonal basis identifying what, where, when and how to target appropriate resources across the Tarrawonga BMA for pest animal management. During the reporting period, WHC implemented a pest animal control program across the Tarrawonga BMA with routine 1080 canid pest ejectors as well as Hoggone baits and trapping programs as well as Open Range Shooting undertaken throughout 2024. During the reporting period, there were 15 canid pest ejectors triggered from 58 deployed and 36 Hoggone baits consumed from 108 presented across the Tarrawonga BMA. A further 2 Feral Pigs were trapped and removed from the Tarrawonga BMA. Open range shooting programs were implemented in conjunction with the other pest animal programs resulting in an additional 36 Feral Goats and 10 Feral Pigs being

controlled in 2024. Feral Goat mustering continued during the reporting period resulting in 37 Goats being captured with saleable Goats on sold to an abattoir. Only appropriately qualified and experienced feral animal contractors (appropriate feral animal management qualifications, NSW fire arm licence and pesticide accreditation where relevant) were engaged to undertake feral animal control works for WHC.

6.4.8 Grazing Management

Tarrawonga BMA was destocked in 2015 and continued to be destocked with no strategic grazing occurring during the reporting period. There were no instances of stock incursion during the reporting period.

6.4.9 Soil & Erosion Management

Annual inspections were undertaken including unsealed fire break tracks and associated drainage structures across the Tarrawonga BMA to review appropriate erosion and sediment control measures required in accordance with the Blue Book (Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004)). A total of 9 observations were recorded within the Tarrawonga BMA with no locations requiring targeted additional track maintenance. The remaining tracks/drainage structures are maintained during routine WHC Biodiversity fire break track maintenance program. There are also a number of legacy erosion sites inherited from previous owners management regimes that are subject to a separate annual inspection process and updates to the WHC erosion register made. During the reporting period, monitoring or remediation actions and investigations commensurate to the risk were undertaken for the erosion sites identified within Tarrawonga BMA.

6.4.10 Weed Management

WHC coordinated routine weed monitoring and inspections undertaken across Tarrawonga BMA in March, May, June, September, November, and December 2024. The priority weeds identified were Coolatai Grass, Prickly Pear, Velvet Pear, Sweet Briar, Noogoora Burr, Bathurst Burr and Green Cestrum. The weed monitoring/inspections ensure that timely and prioritised weed control is undertaken on a seasonal basis with the information directly given to spraying contractors to identify what, where, when and how to target appropriate resources across the Tarrawonga BMA for weed control. During the reporting period, WHC implemented a weed control program of the Tarrawonga BMA including 158ha being treated between in January, August and November 2024

targeting primarily broadleaf weeds within revegetation areas and along fire break tracks as well as Coolatai Grass, Prickly Pear and St John's Wort weed species as required within the Willeroi West biodiversity property. Only appropriately qualified and experienced weed contractors (AQF3 accreditation or higher for use of herbicide) were engaged to undertake weed control works for WHC.

6.4.11 Audits and Reviews

The previous Tarrawonga Independent Biodiversity Audit 2023 found no non-compliance with the BMP as the revegetation is progressing adequately towards the completion criteria and no non-compliance with the RMP but had two recommendations to improve the Mine Rehabilitation. There was no Leard Forest Regional Biodiversity Strategy Review during the reporting period. Next Independent Biodiversity Audit is due by the end of September 2026.

6.4.12 Clearing

6.4.12.1 Flora

During the 2024 pre-clearing survey, a qualified ecologist tagged 50 habitat features including 12 habitat bearing trees, 16 Habitat bearing stags, and 21 fallen logs recorded within the overall area to be cleared (~20Ha). The ecologist was present during clearing activities in accordance with the Biodiversity Management Plan (BMP).

Tylophora linearis was also detected in the clearing supervisions, and ecologists translocated and potted approximately 50 individual stems/cuttings. Due to the low survivability rate of this species once potted, Tarrawonga has had no success keeping these translocated stems alive during the remainder of the year in a greenhouse environment. However, Tarrawonga will still bury the soil from the translocation project during the next autumn period in the ideal rehabilitation area, it is expected that any remaining root system will regrow.

6.4.12.2 Fauna

During the pre-clearing surveys, three fauna species were recorded in two nights of spotlighting. These include the White-winged triller (*Lalage tricolor*), Burton's Legless Lizard (*Lisilis burtonis*) and Apostlebird (*Struthidea cinerea*).

Over the duration of the clearance, all habitat features were cleared. Fauna found and relocated during the survey included a number of the following species: Bearded dragon (*Pogona barbata*), Common thick-tailed gecko (*Underwoodisaurus milii*), Eastern spiny-tailed gecko (*Strophurus*

williamsi), Nobbi dragon (*Diporiphora nobbi*), Robust velet gecko (*Nebulifera robusta*) and Tree skink (*Egernia striolata*).

6.4.13 Key Environmental Performance

TCM successfully registered a Conservation Agreement on 24 June 2021 over the land titles for the Tarrawonga BMA as required by the BOS including Willeroi West Offset Area. The Conservation Agreement was secured under Part 5 Division 3 of the Biodiversity Conservation Act 2016 and thus completing the in perpetuity legal mechanism required by the Commonwealth EPBC Act Approval 2011/5923 Condition 10 and NSW Project Approval 11_0047 Schedule 3 Condition 46. WHC will reengage with NPWS whom have previously shown interest in the Tarrawonga BMA being transferred to National Park Estate.

6.4.14 Proposed Improvements to Environmental Management

The TCM BMP – Offset Management Plan was reviewed and submitted to the DPHI at the close of 2024.

6.5 Aboriginal Heritage Management

6.5.1 Environmental Management Measures

During the reporting period, annual heritage inspections were completed on the 13 known heritage (aboriginal archaeological) sites within the Tarrawonga BMA. Heritage sites are maintained with 1.3km of demarcation fencing around the heritage site perimeter and signage to mitigate access and inadvertent disturbance. During the reporting period there were no new heritage sites identified.

In accordance with the current HMP, a registered archaeologist and RAPs inspected project-related archaeological fences. They also inspected the area scheduled for clearing prior to the clearing period. The aim of this is to locate and or salvage and artefacts in close proximity of the pit or in areas that were to be cleared in 2024. No artefacts or salvageable items were found in this inspection.

6.5.2 Key Environmental Performance

The HMP was reviewed in 2024 to conform to WHC new template and was submitted and approved by DPHI in August.

6.5.3 Proposed Improvements to Environmental Management

No specific management procedures are required.

6.6 Bushfire Management

6.6.1 Environmental Management Measures

The Tarrawonga BMA annual fuel load monitoring was undertaken between September and November 2023 as part of planning and assessment of bushfire hazard and ecological burn program for 2023; with the results indicating moderate to high overall fuel loads present. During the reporting period there was a bushfire of low to moderate intensity caused by lighting resulting in 129.3ha burnt on the Willeroi West biodiversity property. Other fire management implemented by WHC during the reporting period was fire break track maintenance carried out over 27.9km to a zero-fuel barrier standard across the Tarrawonga BMA. WHC maintains regular communications throughout the reporting period with both the Liverpool Range and Namoi-Gwydir Zone RFS teams around planning of WHC Biodiversity's ecological burn programs as well as maintaining contact points in case of emergency. WHC maintains a specialist firefighting contractor for an oncall engagement during the fire season to respond in the event of a bushfire on WHC Biodiversity and non-mining lands.

6.6.2 Key Environmental Performance

No instances occurred where TCM was required to assist to the RFS team or any other landholder or body.

During the 2024 reporting period, TCM reviewed and installed the Bushfire Management Plan into the new WHC format, and is currently awaiting tabling at the Narrabri Local Emergency Council Meetings.

6.6.3 Proposed Improvements to Environmental Management

TCM will continue to engage with the local RFS and with the community via CCC meetings and their members. TCM will continue to conduct mowing and slashing activities along access roads and tracks to keep grass at acceptable levels.

6.7 Meteorological Data

Meteorological monitoring is conducted onsite in accordance with Schedule 3 Condition 30 of the MP 11_0047. Table 6-8 summarises the monthly meteorological conditions at TCM for the 2024 reporting period.

The total annual rainfall for the reporting period was 697.2mm and the maximum monthly rainfall was recorded during April with 107mm.

A minimum temperature (10m) of -0.5°C was recorded in July and a maximum temperature of 40.1°C in February. Prevailing winds were mostly Easterly through the summer months and Northerly through the winter months.

Table 6-8 - Templemore weather station monitoring data 2024

Month	2m Temperature (°C)			10m Temperature (°C)			Average Wind Speed (m/s)	Prevailing Wind Direction	Monthly Rainfall (mm)
	Min	Mean	Max	Min	Mean	Max			
January	11.2	26	39.6	15.4	27.5	39.6	2.82	115 (ESE)	71.4
February	14	25.1	39.6	16.9	26.7	40.1	2.64	107 (E)	57.2
March	9.4	22.5	37.7	13.1	24.3	37.2	2.5	119 (ESE)	26
April	2.9	15.9	30.4	6.6	18.2	30.7	2.01	85.6 (ENE)	107
May	-2.4	12	22.9	1.4	14.6	23.6	1.99	110 (E)	39.2
June	-4.4	7.86	20.2	0.9	10.5	20.9	1.79	352.92 (NNW)	54.2
July	-5.2	8.17	19.8	-0.5	10.5	20.5	2.37	328.4 (NW)	45.2
August	-3.8	11.6	27.8	1	14.3	29.9	1.99	340.8 (NNW)	62.4
September	-3	12.6	27.6	2	15.5	27.7	2.37	16 (N)	53.4
October	2.6	17.1	31.2	7.6	19.3	31.6	2.56	180 (S)	46
November	7.8	23	38.3	13.4	24.7	38	2.59	78.1(ENE)	74
December	5.6	24.7	37.4	10.9	26.5	37.4	2.72	335.7 (NW)	61.2
Total									697.2

6.8 Waste

6.8.1 Environmental Management

During 2024, TCM continued its engagement with the contractor (Namoi Waste Corporation) that is responsible for the collection and management of the entire waste streams generated at the mine.

All waste removed from site for disposal or recycling during the reporting period is summarised in Table 6-9.

Table 6-9 - Waste management summary

Waste Stream	Container size	Unit of Measure	2024	2023	2022	2021
<i>General Waste</i>	3m ³	Kg	45,116	48,615	275,675	290,485
<i>Tyres*</i>	n/a	each	171	-	69	53
<i>Batteries**</i>	As listed	Kg/ each	4 pallets	-	84 Batteries	12 pallets
<i>Waste Oil</i>	IBC	L	261,700	263,800	209,700	244,200
<i>Oil Filters</i>	3m ³	Kg	13,070	7,850	9,455	8,170
<i>Hydraulic Hoses</i>	3m ³	Kg	5,340	5,900	2,410	2,535
<i>Coolant</i>	IBC	L	9,000	1000	0	7,500
<i>Grease</i>	N/A	L	-	-	1000	140
<i>RimTreat</i>	IBC	L	4,000	8000	3000	6000
<i>Scrap Metal***</i>	15m ³	Kg	54,420	19,755	33,000	65,500
<i>Cardboard</i>	10m ³	Kg	13,005	13,620	9,485	5,985
<i>Timber</i>	15m ³	Kg	5,160	2,940	1,020	7,000
<i>Septic Waste</i>	Pumped out	L	229,500	243,300	223,158	73,300
<i>Paper/Plastic/ Aluminium Can</i>	240Lts	Kg	60.9	-	2,410	0

Heavy machine Tyres were reused onsite for traffic management, dispose dof in pit as per EPL12365 licence, or are in a storage area pending disposal; **Battery Type N200, N150 & N70 donation to Westpac helicopter; *Major clean-up of the yard; n/a not applicable or data not available; #to be able to assess performance over the years, TCM has extrapolated using values provided by the Waste contractor from August to December 2018. ## coolant is stored onsite in a 10kL tank that is emptied by the waste contractor before it reaches 100% capacity*

In July 2024, TCM disposed of 94 OTR tyres that had been historically stockpiled on site. TCM disposed of these in pit in accordance with EPL 12365.

480kg of archived documents were also shredded through the contractor during the reporting period.

6.8.2 Key Environmental Performance

During the reporting period no incidents relating to waste management occurred.

TCM began a recycling program of bottles and cans on site, utilising staff within the organisation to take the items to local Return and Earn facilities. A total of 4,063 units were recycled. All funds were donated directly to employee-run fundraising programs such as Mates in Mining, Cancer Councils Biggest Morning Tea and Salvation Army Christmas Food Donation (through buying of food items). This program will continue into the next reporting period.

6.8.3 Proposed Improvements to Environmental Management

Tarrawonga continually aims to reduce waste via continual improvement of initiatives including recycling (oils, greases, scrap steel and domestic recyclables) and increasing tyre life through education and training of machine operators.

6.9 Environmental Performance Summary

An environmental performance summary for TCM is presented in Table 6-10:

Table 6-10 - Environmental Performance

Aspect	Approval Criteria or EIS/EA Prediction	Performance during the reporting period	Trend / Key Management Implications	Implemented / proposed management actions
Noise	Refer s6.1	Administrative non-compliance	Nil	Implementation of corrective actions including website automation was implemented. See Table 1.3 and Section 11.3 for more details.
Blast	Refer s6.2	Approval criteria met.	Nil	Nil
Air Quality	Refer s6.3	Administrative non-compliance	Nil	Implementation of corrective actions including website automation was implemented. See Table 1.3 and Section 11.3 for more details.
Biodiversity	Refer s6.4	Approval criteria met.	Nil	Nil
Heritage	Refer s6.5; s6.6	Approval criteria met.	Nil	Nil
Spontaneous Combustion	Refer s6.7	Approval criteria met.	Nil	Nil
Bushfire Management	Refer s6.8	Approval criteria met.	Nil	Nil
Waste Management	Refer s6.10	Approval criteria met	Nil	Nil
Water management	Refer s7	Approval criteria met	Nil	Nil

7 WATER MANAGEMENT

The mine lies within the catchment of the Namoi River. Locally and within proximity of the project site, Goonbri Creek, Bollol Creek and Nagero Creek all provide flows to the Namoi River during runoff events. The design of sediment basins within the disturbed area of the mine aims to limit the opportunity of discharge of runoff from mine-disturbed area, i.e. after appropriate detention time to satisfy licensed discharge criteria.

Detailed Surface Water and Groundwater monitoring results are provided in Appendix 3 and Appendix 4 respectively.

7.1 Surface Water Performance and Management

Sediment basins, storage dams and associated banks and drains have been designed by an engineering consultant in accordance with the Managing Urban Stormwater: Soils and Construction Vol 2E Mines and Quarries (DECC, 2008) in conjunction with the references to Volume 1 (Landcom, 2004). Water within the Project Approval area is nominally classified either as “clean”, “dirty”, “contaminated” or “pit water” depending on the source of the flow and it’s potential for physical or chemical contamination. The definition of these classifications follows:-

- “Clean Water” comprises water that has not come in contact with mine disturbance and does not have potential to contain hydrocarbons.
- “Dirty Water” comprises water that has come into contact with mine disturbance and does not have potential to contain hydrocarbons.
- “Pit Water” comprises water contained within the open cut sump or pumped to the void water dam for containment and use for dust suppression across the site.
- “Contaminated Water” comprises runoff water, which could potentially contain hydrocarbons.

There are five wet weather discharge points nominated in the current EPL12365 (relevant to MP 11_0047 Schedule 3 Conditions 33 and 39). These are SD9 (LDP2), SD28 (LDP3), SD17 (LDP1), SB23B (LDP26) and SB24B (LDP27).

7.1.1 Surface Water Monitoring

TCM has a requirement to undertake surface water monitoring on a quarterly basis in addition to the monitoring of any wet weather discharge event. Historical data is available in Appendix 3. Surface water monitoring locations are shown in Appendix 3.

Whilst there are no criteria or concentration limits specified for the quarterly surface water samples, the results do provide an indication as to the quality of water on-site. The assessment of sediment load, salinity, pH, oil and grease and other monitoring parameters during these quarterly water monitoring events was consistent with previous reporting years and summarised in Appendix 3.

In summary, levels of oil and grease were low overall, with levels below the discharge limits. Level of Total Suspended Solids (TSS) fluctuated between 5 and 1,300 mg/L with approximately 60% of the measurements below the 50mg/L.

Overall pH values showed that water samples were generally between neutral and alkaline. Concentration levels of antimony, arsenic, molybdenum and selenium were monitored throughout the period. Results remained consistently low and below thresholds outlined in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC, 2000).

Surface water monitoring results showed generally similar trends with previous reporting periods.

Commitments with regard to the surface water-monitoring program are detailed in the Water Management Plan which was approved in September 2023.

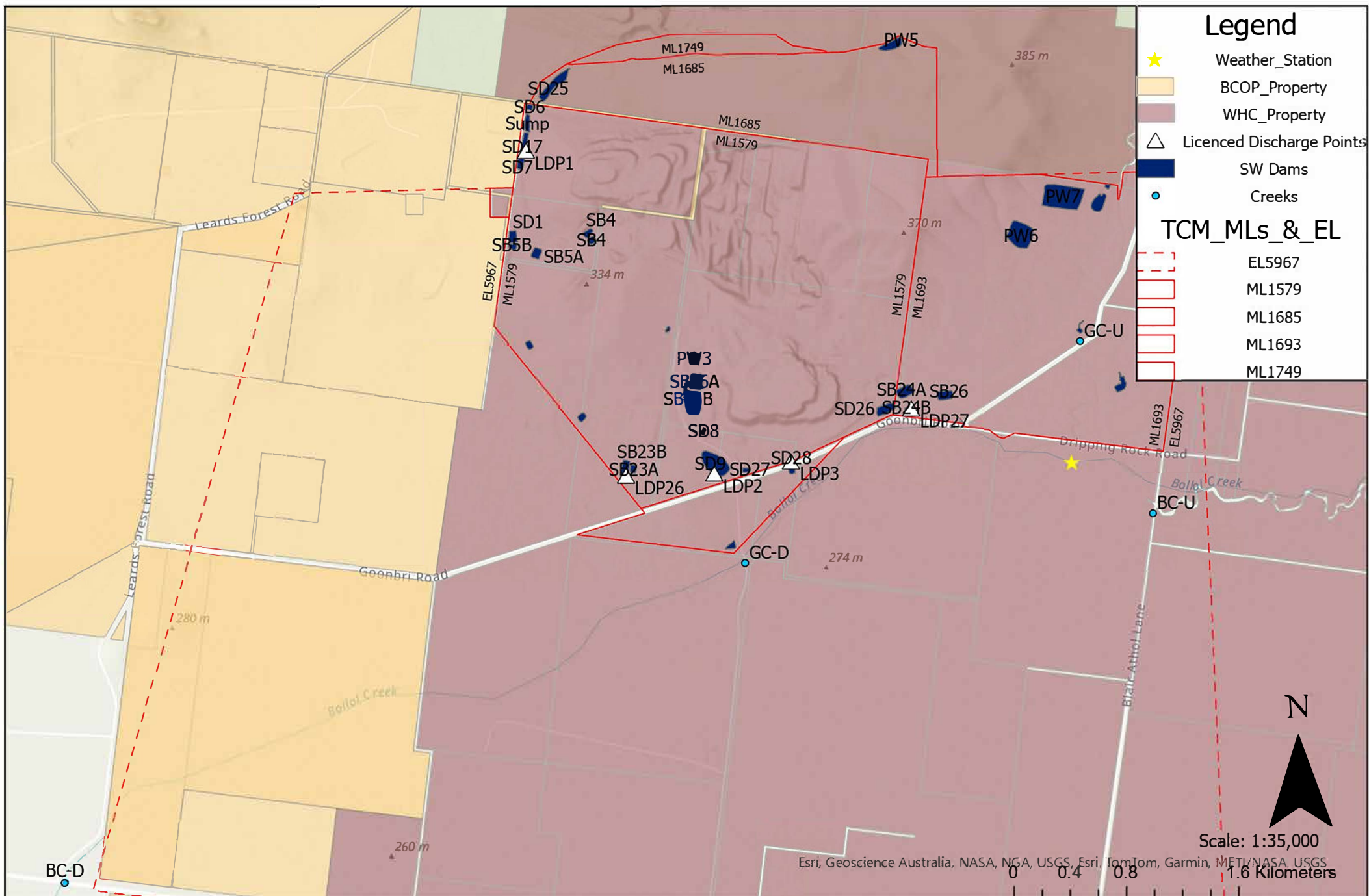
7.1.2 Water Discharges

Throughout the 2024 reporting period, there was 1 wet weather discharges and 1 controlled water release from two separate LDP's.

In accordance with relevant EPL12365 conditions, water samples were collected after discharge and results can be found in Appendix 3.

Table 7-1 - Discharge Results 2024

LDP #	No. of discharges	pH		EC (uS/cm)		TSS (mg/L)		Oil and Grease (mg/L)	
		Mean	Max/only	Mean	Max/only	Mean	Max/only	Mean	Max/only
LDP1	0	-	-	-	-	-	-	-	-
LDP2	2	8.19	8.43	461	638	117	229	<5	<5
LDP3	0	-	-	-	-	-	-	-	-
LDP26	0	-	-	-	-	-	-	-	-
LDP27	1	-	7.42	-	274	-	1,100	-	<5



7.2 Groundwater Management

7.2.1 Environmental Performance and Management

The mine's performance with respect to groundwater performance and management, the prevention of pollution, and the assessment of impacts on groundwater availability to other surrounding users, has been assessed through groundwater level and chemistry monitoring undertaken at a series of piezometers and bores within the Project Area and adjacent properties.

7.2.2 Groundwater Monitoring

Groundwater monitoring was undertaken by a contracted company, accountable for water level measurement, collection of samples and laboratory analysis. Two data loggers monitored water levels at MW1 and MW2 to the South and one Vibrating Wire Piezometers (VWP) sites (TA65) was operating to the East of the mine.

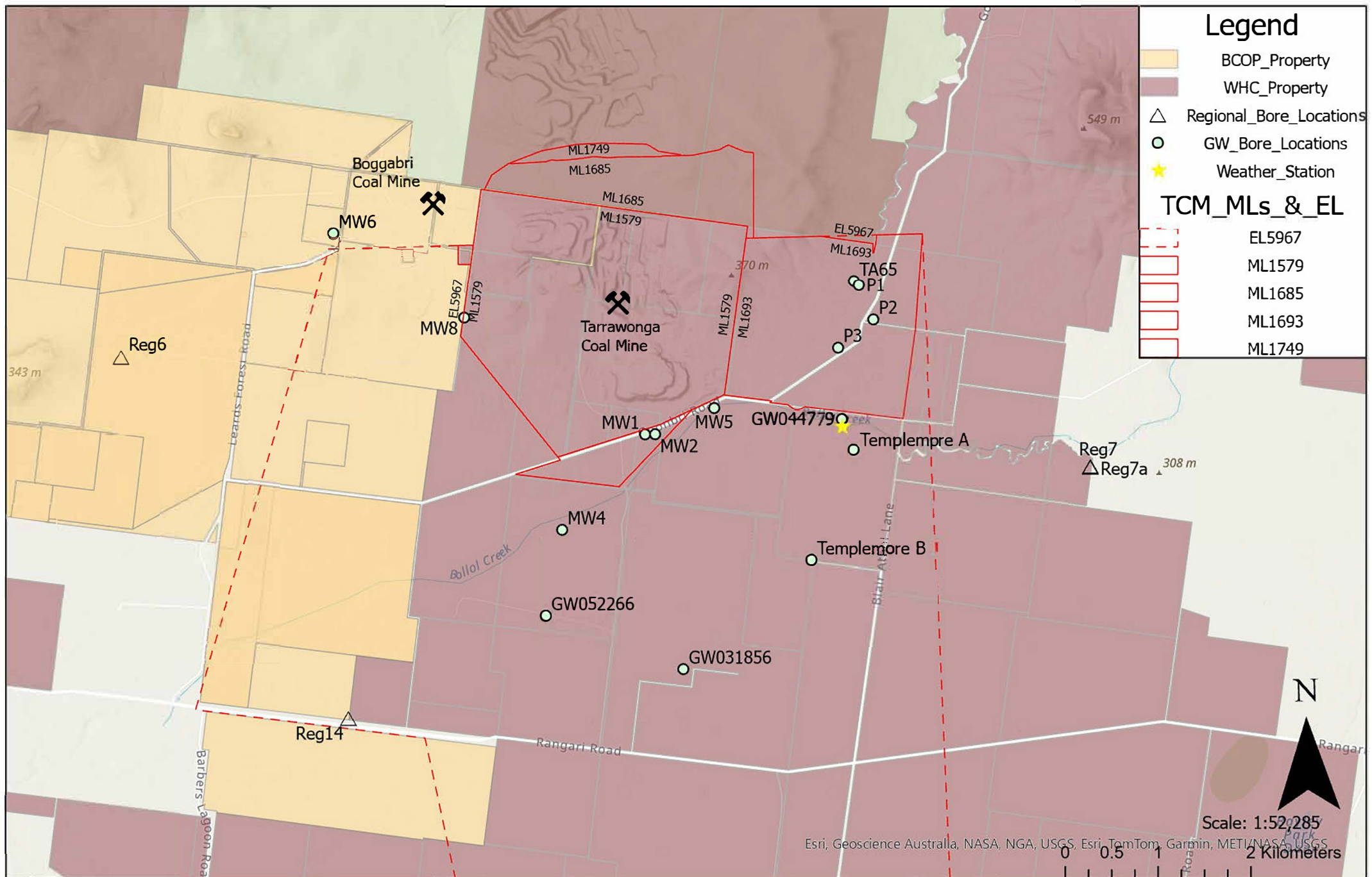
The groundwater monitoring sites are shown in Figure 10. Historical groundwater quality data and standing water level plots are available in Appendix 4.

During 2023, three new alluvium bores were installed on the eastern side of the mining lease. These had groundwater loggers installed. These bores were installed and tested, and will continue to be monitored within TCM's monitoring program.

Groundwater levels

Graphs available in Appendix 4 show that groundwater levels at the majority of nominated monitoring bores maintained a steady trend throughout the reporting period. Most of the bore levels show a significant increase at the beginning of 2020, likely related to rainfall recorded over that year. Sampling and water levels have not been monitored at MW6 since the beginning of 2019, due to a broken casing as well as this bore being located on Boggabri Coal Mine property. Samples could not be collected at MW8 due to a damaged casing however, water level could regularly be checked at that site.

Depressurisation continues to be observed in the 97m, 136m and 153m intakes from approximately March 2017. During 2024 depressurisation remained relatively stable in the 30m, 35m, 47m and 56m, ranging from 0.16m in the 56m intake to -0.38m in the 47m intake. During 2024, a significant depressurisation of some 26.72m was recorded in the 110m intake. This follows the pressurisation (13.86m) which occurred in this intake in 2023. This is likely as the VWP is located in close proximity to current mining operations. The deeper sensors are modelled in the BTM Groundwater Model to be below the deepest seams that are being mined. As TCM has now mined the deepest Nagero seam, this is to be expected.



Groundwater quality

Analysis of samples taken during the reporting period showed that groundwater quality remained generally in line with historical data at all locations monitored. Water quality was compared to the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC, 2000) guidelines for stock watering (cattle). There were no recorded instances of groundwater quality exceeding the limits prescribed by those guidelines during the reporting period.

Water quality has also been compared to the National Environment Protection Council (NEPC) Agricultural and Livestock Guidelines. The following instances occurred where water quality did not meet the parameters identified in the guidelines:

- Since there are no Iron limits for livestock in the ANZECC, the agricultural irrigation guidelines for iron (0.2mg/L) was used for comparison. Most of the monitoring sites were above the 0.2mg/l limit on at least one occasion during the reporting period. Throughout historical data (back to 2009), iron has been seen to fluctuate with high peaks (up to 47mg/L) at most bores on more than one occasion.
- All bores except for GW052266 were above the agricultural irrigation guideline for TDS (600mg/L) when sampled throughout 2024. GW044997 was above the 2,400mg/L NEPC livestock guideline limit, with values ~ 3,500mg/L for both monitoring occasions. No sites measured above the ANZECC guideline for stock drinking water (4,000mg/L) value, though GW044997 is becoming close to that.

7.2.3 Groundwater Management

Pit water inflow is a result of combination of rainfall and groundwater seepage:

- Direct rainfall runoff and infiltration through the emplaced overburden which flows down-dip to the open cut sump(s); and
- Inflows from the exposed coal seam.

To prevent any potential risk of contamination with chemical and hydrocarbon, TCM implemented control measures such as:

- Vehicle maintenance carried out in designated areas;
- Any spills being cleaned up; and
- Hydrocarbon products being stored within a bunded area, constructed in accordance with AS 1940-2004 and/or EPA requirements.

Monitoring occurs in surrounding groundwater bores on a regular basis to detect and assess any changes in quality or level that may be mine attributed.

The Tarrawonga Coal Project EA identified that there would be a reduction in the potentiometric head in the aquifers of the porous rock systems to the east and the north. In the past, the Vibrating Wire Piezometers installed in TA60 and TA65 have demonstrated depressurisation as predicted as the mine moves toward the east. Due to pit progression, site TA60 was decommissioned in 2019.

Regional Bores (Reg. 6, 7a and 14) maintained a steady trend during the period for all parameters including Electrical conductivity (EC). EC was compared to the performance indicators outlined in TCM's Groundwater Response Plan within the WMP, and none of these bores were above performance indicators (the 95th percentile of historical data) at the time of this report. Water levels at each of the regional bores maintained steady levels, and therefore none were below performance indicators (5th percentile of historical data) during the reporting period.

The BTM Complex finalised the updated BTM Ground Water model and submitted and approved by DPE during the 2022 reporting period. This model was prepared in consultation with groundwater experts and regulatory agencies. The BTM Ground Water model is to be updated in 2024.

During the reporting period, no complaints have been received in relation to impacts upon any other groundwater users. This is consistent with the predictions of the EA; that no significant impact would therefore affect beneficial use of groundwater of other groundwater users.

7.2.4 Water Take

During the water year 2024, no water was extracted from the licenced groundwater bores. Instead, TCM used rainfall and runoff captured in the sediment dams and pit to provide operational water requirements. Any water in the pit occurred through passive take and is in accordance with Water licences as listed in Table 7-2 that give units of entitlement per water annum.

In accordance with respective sites approvals and principles of the BTM Water Management Strategy, water sharing opportunities were discussed.

Table 7-2 - Water take

Passive Take Licenses						
Water Licence #	Water Sharing Plan	Water Source and Management Zone	Share units (ML)	Available Water (ML)	Passive take (ML)	Take deducted (ML)
WAL 12716	Upper and Lower Namoi Groundwater Sources 2003	Upper Namoi Zone 4 Namoi Valley (Keepit Dam to Gin's Leap) Groundwater Source	43	86	39	19
WAL 36548	Upper and Lower Namoi Groundwater Sources 2003	Upper Namoi Zone 4 Namoi Valley (Keepit Dam to Gin's Leap) Groundwater Source	36	36*		20
WAL 12479	Upper and Lower Namoi Groundwater Sources	Upper Namoi Zone 11 Maules Creek Groundwater Source	78	78*	1	1
WAL 29548	NSW Darling Murray Basin Porous Rock Groundwater Sources	Gunnedah - Oxley Mdb Basin Groundwater Source	50	62.5	303	30
WAL 31084	NSW Darling Murray Basin Porous Rock Groundwater Sources	Gunnedah - Oxley Mdb Basin Groundwater Source	250	312.5		181
WAL 29461	NSW Darling Murray Basin Porous Rock Groundwater Sources	Gunnedah - Oxley Mdb Basin Groundwater Source	120	150		92

* WAL is shared with Maules Creek Coal Mine so available water has been shared between the two mines.

7.3 Site Water Balance

According to the site water balance developed by a water consultant, the water management system for 2024 had the capacity to be operated and meet operational objectives in normal average weather conditions;

- Wet weather releases and controlled water releases occurred on two occasions throughout August/September of 2024. This allowed excess water release from site and this is discussed in Section 7.1
- Rainfall and runoff captured in the sediment and pit water dams provided for the majority of water demand in the dry, median and wet years;

These predictions were consistent with the actual outcomes observed during this monitoring period.

Table 7-3 provides an overview of water stored and used on site during the reporting period.

Table 7-3 - Water Stored and used during the reporting period

	Table 2-3 EA values (2012) (ML)						
	Jan 2024 – Dec 2024 (ML)	Jan 2023 – Dec 2023 (ML)	Jan 2022 – Dec 2022 (ML)	Jan 2021 – Dec 2021 (ML)	Dry Year- 25%-ile (17 years)	Average Year (17 years)	Wet Year -75%ile (17 years)
Total Runoff	535	488	1,983	2,273	325	402	480
Groundwater inflow	67	61	62	58	255	255	255
External Source	0	0	0	0	n/a	n/a	n/a
TOTAL INPUT	602	549	2,045	2,544	580	657	735
Evaporation (from storages)	174	208	284	241	118	130	141
Evaporator fans	-	55	-	-	-	-	-
Crusher Dust suppression	36	57	35	35	8	8	8
Haul Road and ROM pad dust suppression	496	658	374	378	389	394	399
Offsite release/discharge	12	32	423	146	0	0	0
Water contained in spoil/ Other	n/a	n/a	2 (Vehicle Washdown)	900 (Water Contained in Spoil)	n/a	n/a	n/a
TOTAL OUTPUT	718	1010	1,118	1,914	515	532	548
Change in inventory	-116	-460	927	630	64	125	193

Note: For Jan-Dec (annual) period, values must be compared with caution as the EA value is based on 17 year annual average with changing catchment and land uses over time.

8 REHABILITATION

8.1 Post Rehabilitation Land Uses

According to the Mine Site Rehabilitation Management Plan and the rehabilitation Management Plan, woodland areas will be established on slopes and upper terraces of the Northern and Southern Emplacement Areas.

Rehabilitation on the Southern Emplacement is still immature while it is further advanced on the Northern Emplacement (including in ML1685 adjacent to Boggabri Coal Mine) with some older sections close to achieving open woodland land use target. However, no rehabilitation to Box Gum Endangered Ecological Community (EEC) woodland was undertaken nor has rehabilitation to agricultural land occurred during the reporting period.

8.2 Rehabilitation Performance during the Reporting Period

8.2.1 Status of Mining and Rehabilitation

Integration with Boggabri Coal's waste emplacement has started with rehabilitation activities to follow as per the FWP and RMP. The EA Total disturbance Area generally aligns with the most recent total disturbance Areas.

At the close of 2024, Tarrawonga achieved 32ha of ecosystem establishment, and 30.1ha of landform prepared for rehabilitation.

The status of mining and rehabilitation at the completion of the reporting period is summarised in Table 8-1 and Figure 11.

Table 8-1- Rehabilitation Status

Mine Area Type 1 [Ha]	2018	2019	2020	2021	2022	2023	2024
0 Total Mine Footprint	627.6	687.5	741.8	772.2	786.3	828.4	852.73
1 Total Active Disturbance	540.7	579.4	607.8	625.6	607.6	638.6	790.64
2 Land Being Prepared for Rehabilitation	12.9	29.6	27.6	11.7	26.2	26.1	30.1
3 Land Under Active Rehabilitation	74.1	78.5	106.4	146.7	152.4	194.4	226.4
4 Completed Rehabilitation	0.0	0.0	0.0	0.0	0	0	0

¹ Refer Annual Review Guideline (p.11) for description of mine area types.

*Forecast for 2022 based on MOPG. All numbers in years beyond 2022 are as per the Annual Rehabilitation Report and Forward Plans.

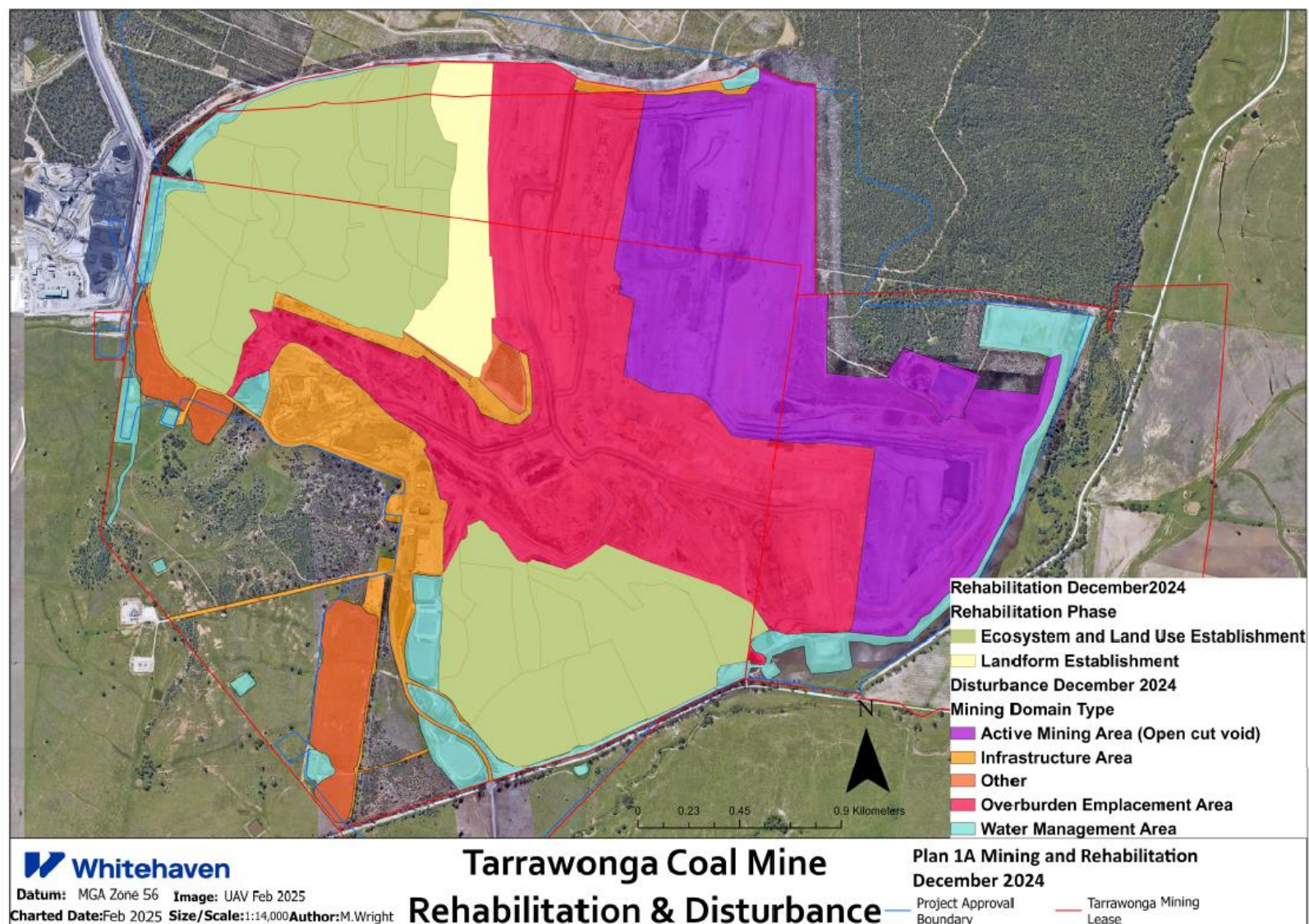


Figure 11 - Tarrawonga Rehabilitation status as at December 2024

8.2.2 Rehabilitation Fauna and Flora Monitoring

Investigations undertaken by Geoff Cunningham Natural Resource Consultants Pty Ltd as part of the original Mine EIS identified no significant impact on threatened flora species, endangered ecological communities, endangered flora populations or critical habitat as a consequence of the development. Establishment of monitoring plots commenced in April 2007 and has continued as required. Over the life of the mine, quadrats are to be established across rehabilitation sites and control sites. Potential impacts noted in the EA included the clearing of Box-Gum Woodland EEC/CEEC and the groundwater dependent ecosystem - Bracteates Honey myrtle low riparian forest. However, these areas had not yet been disturbed or cleared for mining purposes.

The annual flora and fauna monitoring program has been developed progressively over the life of the project, and is now a finalised methodology for WHC Gunnedah Open Cut sites. This is now known as the Annual Rehabilitation Monitoring Method (ARMM: Aspect Ecology, 2024). Qualified ecologists completed the 2024 annual monitoring program in accordance with the abovementioned ARMM, which was compiled in accordance with the Rehabilitation Management Plan, the Mine Site Rehabilitation Management Plan, the Biodiversity Management Plan and the recommendations from previous reports.

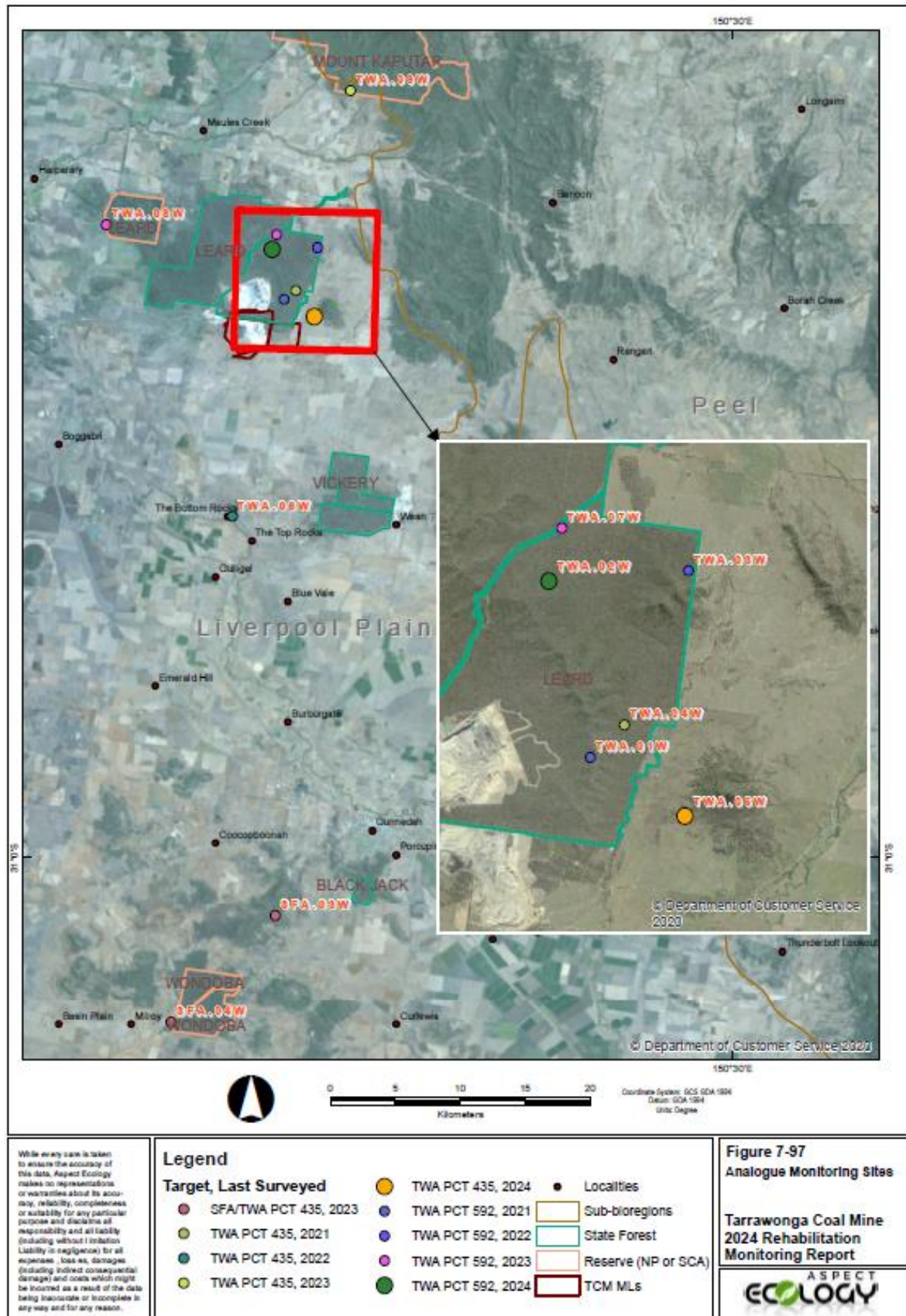


Figure 12 - Analogue site locations – Rehabilitation monitoring 2024

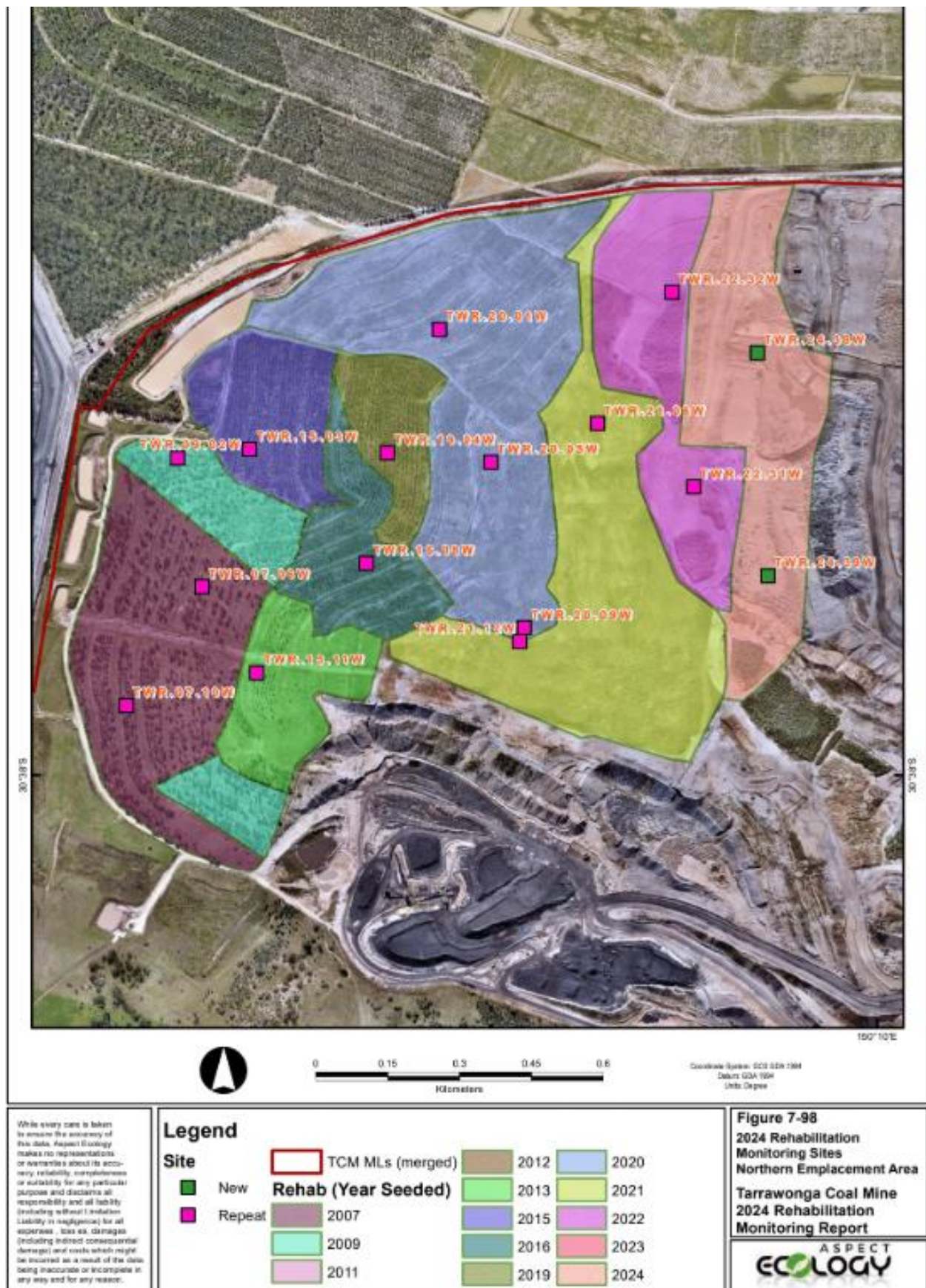
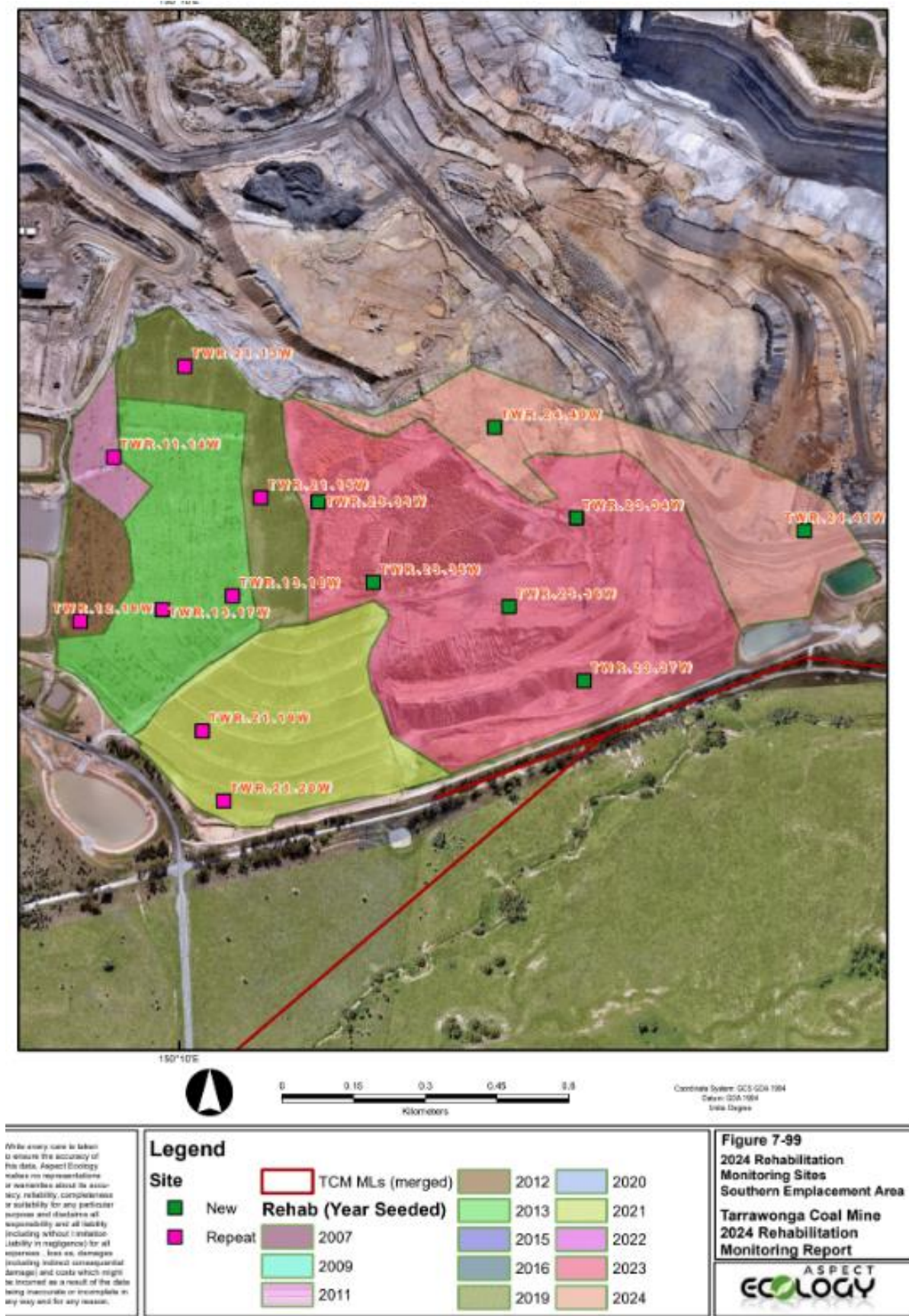


Figure 13 - Monitoring locations Northern Rehabilitation – Rehabilitation Monitoring 2024



A detailed ecological field assessment of rehabilitated areas and analogue sites was undertaken during November 2024. Monitoring was undertaken using the ARMM. Monitoring comprised:

- Twenty-two repeat monitoring woodland rehabilitation sites;
- nine newly established woodland rehabilitation sites;
- two repeat monitoring analogue woodland sites; and,
- twenty-nine categorical point assessments at notable locations within the Woodland rehabilitation.

Groundcover

Surface Cover

Surface cover, which includes vegetation, mulch, and litter, improved by 14.8% in 2024. The 2011 rehabilitation area has maintained strong surface cover for four years, consistently meeting targets. The 2021 rehabilitation area met the target for the first time this year. The 2013 area, which previously met targets, declined slightly in 2024. Older areas like 2007 and 2009 showed slow but steady improvement, though they are still below target levels.

Native Vegetation Groundcover

Overall, native groundcover increased slightly in 2024. The 2019 and 2020 sites were very close to meeting targets, showing positive growth. Older sites, especially 2012 and 2013, had less groundcover than expected, demonstrating a need additional support.

Native Grass Cover

The 2020 rehabilitation area was the only one to fully meet its grass cover target. The 2019 site was close but just under the required level. Nine out of thirteen sites had less than 10% grass cover, which is significantly below target.

Mid-Storey

None of the rehabilitation areas met the target for mid-storey vegetation (shrubs and small trees). However, sites from 2015 to 2019 showed gradual improvement. These areas could meet targets in the coming years if the trend continues.

Overstorey

The 2007, 2009, and 2012 sites met their required tree cover levels, while the 2013 site was slightly below target. The 2011 site had no overstorey cover, indicating that tree growth has been poor in that area.

Richness

Native Species Richness

Most rehabilitation areas had an increase in native species diversity in 2024. The 2012 and 2013 areas remained below target. The 2019 and 2020 areas had higher-than-expected species diversity, suggesting good progress in those locations.

Native Shrub Species Richness

Seven out of twelve rehabilitation areas met their targets for shrub diversity. The 2009, 2012, and 2013 areas had fewer shrub species than expected.

Native Tree Species Richness

Only three out of twelve areas met their targets for tree species variety. Some areas actually had too many tree species compared to the natural benchmark, which suggests an imbalance.

Density

Native Shrub Density

Shrub density results were mixed:

- Some newer sites showed positive growth trends.
- Older areas had lower-than-expected shrub density, which may need intervention.

Native Tree Density

- Tree density remained stable across all rehabilitation areas.
- There were no significant increases or decreases in tree numbers compared to previous years.

Species Composition

Some important native species that should be present were still missing from rehabilitation areas. Key species like *Callitris glaucophylla* (White Cypress Pine) were mostly absent, which indicates the ecosystem is still not fully developed.

Weed Presence

Weed levels increased in all rehabilitation areas in 2024. No sites met the target for weed control. The 2009 and 2016 sites had the least weed presence, while the 2011 site had the highest level of weed invasion, requiring immediate attention.

It was recommended that:

- Stronger weed control efforts are needed, especially in the 2021 area where weed issues are the worst.
- Increasing native ground cover could help improve overall rehabilitation success.
- Additional planting of key missing species like *Callitris glaucophylla* should be considered.

Soil pits

Soil profile and condition assessments were recommended every three years. Two soil pits were established in 2011, one in the rehabilitation zone, and one in each control zone. Soil pits are described using standard field measures with particular notice of horizon boundaries and ecological functionality (e.g. root establishment, evidence of soil fauna). Soil pits are analysed every three years. As soil pits were analysed in 2018, this parameter was due in the 2021 reporting period. Due to outward impacts such as flooding and overall site access issues due to saturated ground, soil pits were unable to be dug in 2022, but done during 2023.

In the summer 2023 survey, the soil pit in the rehabilitation zone (Rehabilitation Zone 2) showed a profile reconstruction with topsoil depth at 15 cm and depth to overburden at 30 cm. The control

zone showed a similar profile reconstruction with topsoil depth at 10 cm and depth to compact clays at 30 cm. The rehabilitation zone exhibited good establishment of grass. The control zone also showed good establishment of grass and other plant roots including larger tree roots, which were present in all horizons. Soil fauna were not identified in any pits.

An extensive soil testing program was conducted in 2020 to obtain representative soil samples within each rehabilitation area. This program is discussed further in section 8.2.3.2. Another such program is planned for 2025 and will explore locations within the rehabilitation which is displaying low growth records for the PCT type, and areas with erosion that requires maintenance. This program will support and feed a potential maintenance infill planting or seeding program within the rehabilitation.

Revegetation Management

Topsoil throughout all rehabilitated areas was mixed with mulch from previous tree clearing campaigns, spread in 200 to 300mm layers and ameliorated with gypsum and manure. The topsoil was then seeded with cover crop (oats) and native seed mix consisting of (but not limited to) the following species: *Eucalyptus albens*, *Eucalyptus Mellidora*, *Eucalyptus crebra* *Acacia buxifolia*, *Acacia paradoxa*, *Geijera parviflora*, *Indigofera adesmiifolia*, *Indigofera australis*, *Clematis spp.*, *Desmodium spp.*, *Dianella revoluta*, *Vittadinia spp.*, *Austrodanthonia spp.*, *Austrostipa aristiglumis*, and *Digitaria spp.* A large scale tree planting program occurred throughout 2024, covering some areas that were unable to be accessed during the wet periods in 2022/2023. This consisted of planting more than 11,000 trees.

8.2.2.2 Fauna Monitoring

Fauna habitat broadly consisted of stag trees, rocks of mixed size, coarse woody debris, emerging tree canopies, and pondage areas, yet some sites had minimal habitat features. Native fauna observations included a variety of birds, including wrens and ravens, and skinks. Macropod scats were present at several sites. Feral pigs and goats were also observed.

Woodland birds monitoring was undertaken during Winter 2024 and Spring 2024. Birds were recorded whilst walking in a meandering path in the area surrounding each monitoring point, with all birds recorded either through direct observation or calls. Monitoring sites were surveyed for 20 minutes by one observer, once in the morning and again in the afternoon to cover peak activity hours for bird species.

Winter Bird Survey

A total of 28 bird species were recorded during the 2024 winter monitoring surveys, including one threatened species, the Speckled Warbler, observed at a rehabilitation site (R01). Species richness increased across all sites from 2023, with rehabilitation site R02 recording the highest richness (18 species). Notably, rehabilitation sites recorded higher species richness than control sites for the second consecutive year, indicating progress toward resembling established woodland habitats. The proportion of woodland species increased to 89% in 2024, up from 77% in 2023 and 67% in 2022. However, the presence of Noisy Miners at sites R01 and R02 may impact bird diversity and requires monitoring.

Spring Bird Survey

A total of 43 bird species were recorded during the 2024 spring monitoring surveys, including two threatened species: Speckled Warbler and Grey-crowned Babbler. The Eastern Koel and Channel-billed Cuckoo were observed at rehabilitation sites, indicating potential use as migratory habitat. The average species richness for the five survey sites in 2024 was 16 species, consistent with recent years but lower than in 2021. Control site C06 recorded the highest richness (21 species), while C05 had the lowest (10 species). All three rehabilitation sites showed increased species richness from 2023, suggesting habitat improvement. However, the presence of Noisy Miners at site R01 may impact diversity and requires monitoring.

AusRIVAS Micro and Macro invertebrate monitoring

During the 2024 reporting period, TCM conducted its first AUSRIVAS monitoring program. This assessed water quality, macroinvertebrate communities, and riparian vegetation across multiple sites in autumn and spring. Many control sites were dry, limiting the ability to compare upstream and downstream conditions. Water quality results indicated that turbidity exceeded ANZG guidelines at all sites, and dissolved oxygen levels varied, likely influenced by natural drying patterns and historical land use rather than direct mining impacts. Macroinvertebrate diversity was low, with communities dominated by species tolerant of variable conditions, which is expected in ephemeral waterways. Riparian vegetation condition varied, with some sites displaying moderate health while others were more impacted, likely due to historical agricultural practices rather than recent disturbances. The report highlights the challenges of monitoring intermittent waterways and suggests that future assessments include control sites with more stable water presence to better evaluate potential impacts.

8.2.3 Habitat Management

During the Ecosystem Establishment phase, cover crop was sown during the seeding process to establish vegetation cover, weed suppression and erosion control while native species germinate.

8.2.3.1 Weeds Management

Management of targeted weed species within the mine leases was undertaken at opportune times following suitable weather and with consideration to the NIWAC Weed Management Guide for North West NSW (NSW DPI).

During 2024, a weed monitoring program was conducted at TCM by site personnel. These inspections noted an increase in Patersons Curse (*Echium plantagineum*) on the Southern OEA. This resulted in a large targeted spraying program in July.

Topsoil and Subsoil stockpiles are periodically sprayed for weeds, with prickly pear being the main target. 320 individuals were sprayed during one particular program on the western most topsoil storage area.

Prickly pear, Nagoora burr, Bathurst Burr and Nightshade was also targeted prior to the clearing period in the areas scheduled to be cleared in the February-April window. Approx. 450 prickly pear individuals were sprayed in this time. Pre-clearing weed management is undertaken in order to reduce the weed load in the topsoil prior to rehabilitation.

Slashing works were also undertaken in the Winter period, to reduce the weed load and increase native grasses on the outside of the active pit and rehabilitation. This also aids in bushfire management practices. Regular slashing and weed spraying of general weeds occurred on the entrance road to the mine and around administration, maintenance and ROM areas.

8.2.3.2 Feral Animal Management

TCM coordinated the implementation of the Vertebrate Pest Management Plan using infra-red motion cameras installed at strategic locations around the Mining Leases. Findings indicate overall vertebrate pest sighting onsite has significantly dropped since 2018.

Table 8-2) showed there were no sightings of foxes, goats, cats, dogs or hares/rabbits. While goats were not captured on these cameras, they were seen throughout the pit and cleared areas in 2024. When spotted and in numbers large enough to warrant, they were rounded up on site by a contractor and sold on.

Feral pig sightings continued to decrease from 34 in 2018 to 9 total sightings for this reporting period. In response to an increase in sightings of feral pigs by site personnel, a baiting program was conducted within the Mining Lease in 2024 using Hoggone bait by a licenced contractor. This resulted in more than 10 pigs being removed. TCM will continue to monitor and manage feral animals according to the BMP and MSRMP.

Table 8-2 - Summary of Vertebrae Pest Sighting (2018 - 2023)

	Feral Pig (descendant of various breeds of <i>Sus scrofa</i>)	Fox (<i>Vulpes vulpes</i>)	Feral Cat (<i>Felis catus</i>)	Rabbit/Hare (<i>Oryctolagus cuniculus</i>) / (<i>Lepus capensis</i>)	Wild Dog (<i>Canis familiaris</i>)	Other
Quarter 1	8	0	0	0	0	0
Quarter 2	0	0	0	0	0	0
Quarter 3	1	0	0	0	0	0
Quarter 4	0	0	0	0	0	0
Total 2024	9	0	0	0	0	0
Total 2023	8	0	0	1	0	1
Total 2022	34	2	0	1	0	2
Total 2021	6	1	0	1	0	0
Total 2020	17	4	0	22	0	0
Total 2019	54	73	2	140	0	2
Total 2018	159	168	1	163	0	2

8.2.3.3 Soil & Erosion Management

During 2024, efforts were made to improve soil management and minimise erosion on site.

Soil Management

A soil specialist conducted an extensive soil testing program in 2020. The objective was to provide a soil inventory of rehabilitated areas through field soil assessment and laboratory testing aimed at improving the growth medium for future revegetation.

The field program was designed to obtain representative samples within each rehabilitation area. Sampling points were irregularly located according to the survey team judgement to enable the delineation of potential soil boundaries based on year of rehabilitation or change in soil type used as growth medium. Soil test sites were excavated by hand to 0.3-0.5m. The number of survey points totalled 35 sites in the Northern Rehabilitation Area and 20 sites in the Southern Rehabilitation Area. This survey density fulfilled the requirement of a 1:10,000 soil survey. Sampling consisted of one bulked topsoil sample at each site with typical sample depth 0-10cm, with occasional 'subsoil' samples taken at 30-40cm for assessment of erosion tunnelling risks.

The laboratory testing suite for these sites included pH and EC (1:5 water); pH (1:5 CaCl); Available (Ammonium, Nitrate, Sulfur); Exchangeable Sodium, Potassium, Calcium, Magnesium, Hydrogen, Aluminium, Cation Exchange Capacity; Colwell Phosphorus; Available Micronutrients Zinc, Manganese, Iron, Copper, Boron, Silicon; Total Carbon (TC), Total Nitrogen (TN), TC/TN Ratio, Organic Matter; Basic Colour, Basic Texture.

The findings indicate that the soil resources used on the rehabilitated areas at TCM, depth and characteristic of the top soil layer provide an adequate growth medium to establish the desired vegetation species. Following recommendations of the soil specialist, gypsum was used to improve characteristics of top soil spread on the Southern Emplacement area prior to the start of revegetation activities.

Topsoil was stripped from areas cleared of vegetation in accordance with the stripping ratio recommended by a soil consultant. In one area of rehabilitation, topsoil was direct placed. All other areas, topsoil was spread from pre-existing stockpiles that were showing significant signs of regeneration.

Erosion and Sediment control

Erosion was recorded at multiple sites through the rehabilitation monitoring program:

- The 2021 rehabilitation areas had gully and tunnel erosion.

- The 2024 areas had moderate rill erosion (small channels forming due to water runoff).
- 2007 and 2013 sites also showed some ongoing erosion problems.

A rehabilitation erosion maintenance program is scheduled to occur in 2025 and will ensure the most prominent erosion areas are remediated.

Water infrastructure including diversion drains were designed and sized in accordance with the *Managing-urban-stormwater-soils and construction guide* (volume-2E-fourth-edition). TCM continued the construction of drains at the top and north-east of the Southern Rehabilitation area, and began construction on the centre drain for the 2024 landform area in the Northern Rehabilitation area.

The 2023 Landform on the Northern Rehabilitation area established the drain through the centre, which acts as a break between traditionally contoured landform and the newly adapted geofluvial landform (See Figure 15). This was progressed to the Ecosystem Establishment phase during 2024 and shows minimal to no erosion.



Figure 15 - Photo of 2023 Landform drain/ 2024 Ecosystem Establishment on the Northern Rehabilitation area.

In accordance with RMP requirement and TARPs, TCM will continue to implement erosion control measures and remediate affected areas to meet the completion criteria for mine landform stability.

8.2.4 Renovation or Removal of Buildings

During the reporting period the Tarrawonga North (TN) Crib hut was moved to the East as the landform progressed. This will likely occur again throughout the next reporting period as the landform continues to the East.

An in-pit fuel station/ fuel farm was erected during the reporting period in the TN pit infrastructure area adjacent to the TN crib hut. This will be utilised by Haul Truck operators during shifts in order to reduce the overall travel time for Haul Trucks to fill their tanks. All operators are trained in the correct way to fill their trucks as per the WHC-PRO-OC-Servicing and Refuelling Equipment.

No other buildings have been moved or erected in the reporting period.

8.2.5 Other Rehabilitation Undertaken

No additional rehabilitation of exploration areas, infrastructure, shafts, dams, fence lines or bunds occurred during the reporting period.

8.2.6 Departmental Sign-off of Rehabilitated Areas

Departmental sign-off has not been requested for any rehabilitated areas during the reporting period.

8.2.7 Variations in Activities against Forward Program

No variations were made to the Forward Program during the reporting period. TCM achieved the targeted amounts for both Landform Prepared for Rehabilitation and Ecosystem Establishment.

8.2.8 Trials, Research Projects and Initiatives

In 2021 TCM engaged Aspect Ecology to undertake a Ground Flora Rehabilitation Study. The overall study aims were to:

1. Identify and evaluate management methods to reduce exotic ground flora, and
2. Identify and evaluate methods to enhance groundcover diversity and cover/abundance
3. Apply findings from aims 1 and 2 to produce management recommendations for Whitehaven Coal.

In 2022, project activities focussed on:

- database searches;
- review of abstracts against article inclusion criteria; and
- research article compilation and evaluation.

The interim report evaluated the existing literature and concluded that control of exotic species is crucial in the first few years following seeding. This Ground Flora Rehabilitation Study will continue into 2025. TCM will continue to implement weed spraying controls in rehabilitated areas as vegetation establishes.

The nearby Whitehaven Coal mine, Maules Creek coal mine has a requirement to undertake a \$1M research program into rehabilitation of Box Gum Grassy Woodland upon mine rehabilitation, the findings from which has been considered by TCM and will be integrated into the Rehabilitation Management Plan as appropriate.

8.2.9 Key challenges to Achieving Successful Rehabilitation

The key issues to achieving successful rehabilitation include:

- Improved landform design and site water modelling to reduce erosion and sedimentation (e.g. gullying and sedimentation resulting in land stability and vegetation growth issues);
- weed and feral animal control;
- Native vegetation establishment corresponding to identified PCT (Plant Community types);
- landform stability; and
- climate/ and extreme weather conditions

In cases where the performance is sub-optimal, additional management measures will be implemented (e.g. replanting, repairing landforms and water management features, application of mulch/fertilisers, feral animal and weed control etc.). A Trigger Action Response Plan (TARP) for rehabilitation at the TCM has been included in the RMP, which outlines appropriate actions and varied responses that will be implemented as required.

8.3 Actions for Next Reporting Period

Vegetation clearing will be undertaken during the approved window from 15th Feb to 30th April 2025. Approximately 12ha of vegetation is proposed to be cleared in the 2025 clearing program. Improvement measures identified following the investigation of the clearing incident in March 2022 will continue to be implemented as described in the updated Biodiversity Management Plan. These include:

- Updated Boundary Marking Protocol utilising continuous demarcation along external boundaries;
- Provision of spatial data on field tablets for the contractors undertaking clearing in the field to allow real time location to be ascertained in relation to habitat features; and
- Mining lease boundary fencing upgraded during 2023, will be maintained as required.

9 COMMUNITY AND COMPLAINTS

In accordance with MP 11_0047, a Community Consultative Committee (CCC) meeting was held on a quarterly basis at TCM. The committee comprised representatives of Gunnedah Shire Council, Narrabri Shire Council, TCM and the community including landholders.

TCM maintained a designated community complaints line. In the event of a complaint, details pertaining to the complainant, complaint and action taken are recorded. Each complaint is investigated and documented with individual complaint records maintained. Complaints are reported and findings discussed with CCC members during meetings. These meetings give an opportunity to provide an update of the environmental and operational performance.

TCM recorded two complaints during 2024 regarding Blasting and Traffic.

1. The complaint was made to the community complaints line in January of 2024. This was in relation to a local Boggabri community member returning to their residence to find that a shower screen was shattered. They had received reports from other community members of a blast from Tarrawonga in the days previous. TCM staff contacted the community member and verified the complaint results from that and all blasting occurrences surrounding the date in question.
2. The complaint was made to the community complaints line regarding an impact to the community members windscreen during travel on Tarrawonga's haulage route. The community complainant was contacted and the issue resolved to the satisfaction of the complainant.

The number of complaints has significantly decreased in recent years. Table 9-1 provides a comparison of complaints received since 2016 annual reporting period.

Table 9-1 - Complaints Summary

Category	2016	2017	2018	2019	2020	2021	2022	2023	2024
<i>Air Quality</i>	1	3	1	0	0	0	0	0	0
<i>Traffic</i>	1	0	0	0	0	0	0	0	0
<i>Surface Water</i>	1	0	0	0	0	0	0	0	0
<i>Visual Amenity</i>	0	0	0	0	0	0	0	0	0
<i>Noise / Vibration</i>	1	0	0	0	1	0	1	0	0
<i>Blast</i>	2	0	0	0	1	1	0	1	1
<i>Other</i>	0	0	0	0	0	0	0	0	1
TOTAL	5	3	1	0	1	1	1	1	2

Note: Some complaints may relate to more than one category.

9.1 Community Contributions

Community contributions continued to be managed in accordance with the Whitehaven Coal Donations and Sponsorship Policy. Whitehaven supports a range of not-for-profit organisations and charities, and in 2024, our NSW community investment contributions of over \$1.2m were spread across:

- long-term community partnerships
- donations and sponsorships administered by a community-based committee
- land and environmental trusts
- other discretionary donations and assistance to local and regional organisations

More than \$800,000 of this was spent in the local community in Gunnedah, Narrabri and Tamworth LGA's with donations going to organisations such as, but not limited to, Gunnedah and Narrabri Show Societies, Gunnedah PCYC, Narrabri District Health Service, Tamworth Aboriginal Medical Health Service, local sporting groups and events.

10 INDEPENDENT AUDIT

In 2023, TCM was required to complete both an Independent Environmental Audits (IEA) and Independent Biodiversity Audit (IBA). Details of previous audits and a brief outcome of these audits conducted in 2023 are discussed below.

10.1 Independent Biodiversity Audit (EPBC)

The Commonwealth Department of Agriculture, Water and Environment (DAWE) directed TCM to undertake an Independent Compliance Audit of the EPBC Approval 2011/5923 including site inspections of the mine site and Willeroi BOA. An audit was required during the reporting period.

The Tarrawonga Independent Biodiversity Audit was completed by 11 August 2023 and submitted to NSW DPE and accepted on 22 November 2023 as satisfying NSW Project Approval 11_0047 Schedule 3 Condition 50. The Tarrawonga Independent Biodiversity Audit 2023 identified two additional management measures for the Mine Rehabilitation than those identified in the RMP and BMP recommended to be implemented to improve rehabilitation outcomes. The Audit also found for the BOS that the revegetation is progressing adequately towards the completion criteria and no additional measures are required to augment the TCM BOS. The Tarrawonga Independent Biodiversity Audit identified no non-compliance. There was no Leard Forest Regional Biodiversity Strategy Review during the reporting period. Next Independent Biodiversity Audit is due by the end of September 2026.

10.2 Independent Environmental Audit (IEA)

In accordance with Sch 5, cn 10 of MP 11_0047, a 3 yearly Independent Environmental Audit (IEA) and Biodiversity component was conducted between July and August 2023.

Comments regarding the 2023 IEA's can be found in the 2023 Annual Review and can be found on Tarrawonga's website, as well as the full audit reports.

The next IEA is due to be completed in 2026. Incidents and non-compliances for the reporting period

10.3 Reportable Incidents

No reportable incidents occurred in the reporting period.

10.4 Non-compliances

Tarrawonga had one non-compliance during the reporting period which is discussed in Section 10.2.

Table 10-1 - Non-compliance Action plan

Non - Compliance	Date / Location	Cause	Action Plan	Status/Estimated Completion Date
TCM became aware that they were not complying with PA11_0047 Schedule 5 Cond 13(a) to make daily weather, proposed operational responses, real time noise and air quality monitoring data and any associated operational response to the monitoring data, available on their website on a daily basis.	28 th of May 2024	TCM became aware that on some weekends and public holidays, this condition was not being appropriately complied to due to the mine only operating Monday to Friday and Site Staff Rostering being generally the same, and all information uploaded on the following working day.	1. The introduction of a weekend roster for TCM Environmental Staff to manually generate reports for weekend and public holiday periods. 2. Implementation of an automated system and process to generate monitoring reports and upload to the website. This will replace the interim weekend roster and remove the reliance on people for this task.	Complete.
TCM received an Official Warning in relation to the Rehabilitation Management Plan and the plans consistency with the published Form and Way as provided by the NSW Resource Regulator (RR)	24 th of January 2025	Following on from a Targeted Assessment Program conducted by the NSW RR on the 24th October 2024, an Official Warning was issued for 'Failure to prepare a Rehabilitation Management Plan in the form approved by the Secretary Clause 10(1) of Schedule 8A of the Regulation requires the lease holder to prepare a 'Rehabilitation Management Plan' (RMP). Clause 9 (a) and (b) of Schedule 8A of the Regulation requires the RMP to be prepared be in the 'form' approved by the Secretary, and include any matter required to be included by the form.'	Upon receiving the Official Warning, TCM immediately made the required updates to the Rehabilitation Management Plan including the removal of additional sections not required by the Form and Way and the reformatting of the Table of Contents to comply with the Form and Way template.	Complete.

10.5 Regulatory Actions

A Warning Letter and Official Warning was issued by the DPHI and the NSW RR respectively in response to the Non-Compliances reported in Section 11.2. No further formal action was taken.

11 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

The following measures will be continued or implemented in the next reporting period:

Table 11-1 - Summary of activities for 2024

	Activity Description	Timing
1	Update and review Environmental management plans as required by the MP 11_0047.	Ongoing throughout the year
2	Undertake rehabilitation and mining activities in accordance with the most recent Forward Program.	Ongoing throughout the year
3	Continue environmental monitoring and management.	Ongoing throughout the year
4	Continue implementation of approved Leard State Forest Mining Precinct Strategies.	Ongoing throughout the year
5	Continue community liaison and engagement with local stakeholders	Ongoing throughout the year

Appendix 1: Blast Monitoring Data

BLAST MONITORING DATA

Environmental Blast Monitoring



Tarrawonga Coal Pty Ltd ACRN 100 742 185

SHOT NO	LOCATION I.D	DATE	MONITOR LOCATION	PEAK OVERPRESSURE (dBL)	PEAK GROUND PRESSURE (mm/s)	TIME	Fume Rating
1250	TC33_01_MN_B / TC33_0102_MN / TC33_0111_VY_PS	3-Jan	Coomalgah	95.60	0.34	4:04pm	
			Tarrawonga	94.50	0.39		
1251 & 1252	TN29_0305_JE	16-Jan	Coomalgah	106.30	0.43	9:40am	1a
	Tarrawonga		100.20	0.28			
	Coomalgah		107.80	0.42	3:59pm	1a	
	Tarrawonga		108.80	0.28			
1253	TN30_03_280RL	19-Jan	Coomalgah	95.20	0.14	9:03am	
			Tarrawonga	104.60	0.12		
1254	TN29_0611_280RL	25-Jan	Coomalgah	96.00	0.14	4:21pm	
			Tarrawonga	100.50	0.16		
1255	TC52_1317_VY_A, TC52_1321_NG_PS_A	1-Feb	Coomalgah	99.50	0.59	9:13am	
			Tarrawonga	101.50	0.24		
1256	TN34_0812_BC, TN30_0406_280RL,	12-Feb	Coomalgah	101.70	0.14	11:36am	2b
			Tarrawonga	101.40	0.13		
1257	TN28_0406_NG, TN28_0710_NG	17-Feb	Coomalgah	90.00	0.06	10:18am	
			Tarrawonga	92.10	0.06		
1258	TN34_08_BC	24-Feb	Coomalgah	90.80	0.01	9:12am	
			Tarrawonga	97.60	0.03		
1259	TN29_0611_280RL / TN30_1011_280RL / TN30_0709_280RL / TN29_10_JE_PS /	1-Mar	Coomalgah	92.40	0.31	10:18am	
			Tarrawonga	100.40	0.34		
1260	TC52_1821_VY / TC53_1321_NG_PS	5-Mar	Coomalgah	99.20	0.47	3:16pm	1a
			Tarrawonga	97.10	0.19		
1261	TC34_0306_320RL/ TN34_01_320RL_TOE - TN30_0711_280RL/ TN30_0711_280RL_PS	11-Mar	Coomalgah	96.30	0.19	4:13pm	
			Tarrawonga	95.90	0.29		
1262	TN34_01_310RL_TOE	16-Mar	Coomalgah	99.60	0.02	11:06 AM	
			Tarrawonga	96.90	0.04		
1263	TC34_0307_320RL	22-Mar	Coomalgah	96.40	0.17	10:02AM	3b
			Tarrawonga	100.20	0.18		
1264	TN29_0607_JE / TN29_0809_JE	23-Mar	Coomalgah	110.10	0.31	9:00AM	1a
			Tarrawonga	109.20	0.26		
1265	TC52_1317_NG	27-Mar	Coomalgah	102.70	0.2	9:01AM	
			Tarrawonga	97.60	0.13		
1266	TC33_0107_VY	2-Apr	Coomalgah	97.00	0.14	3:40PM	
			Tarrawonga	96.60	0.18		
1267	TC52_1317_NG_B	12-Apr	Coomalgah	86.50	0.18	3:59PM	1a
			Tarrawonga	110.90	0.11		
1268	TN30_0811_JE / TN30_0811_MNL_PS	15-Apr	Coomalgah	106.20	0.51	4:38pm	2b
			Tarrawonga	103.50	0.47		
1269	TC33_0107_C	19-Apr	Coomalgah	87.90	0.32	9:13am	
			Tarrawonga	98.20	0.29		
1270	TN32_0405_274RL TN34_12_274RL	22-Apr	Coomalgah	96.10	0.09	4:02 PM	
			Tarrawonga	98.90	0.14		
1271	TN34_12_274RL_PS	24-Apr	Coomalgah	92.00	0.04	12:01pm	
			Tarrawonga	94.50	0.05		
1272	TC52_1821_NG	27-Apr	Coomalgah	100.30	0.12	9:01am	
			Tarrawonga	96.30	0.11		
1273	TC33_0107_VY_D	2-May	Coomalgah	88.70	0.18	11:12 AM	
			Tarrawonga	98.60	0.16		
1274	TN32_0608__274RL	3-May	Coomalgah	101.40	0.19	3:54pm	
			Tarrawonga	95.40	0.15		
1275	TN29_0204_MN	9-May	Coomalgah	96.50	0.13	11:06am	
			Tarrawonga	97.60	0.14		
1276	TC53_1317_NG_PS_A	10-May	Coomalgah	100.50	0.45	1:08pm	
			Tarrawonga	96.90	0.34		
1277	TC34_0809_350RL	16-May	Coomalgah	98.20	0.14	9:08am	
			Tarrawonga	104.70	0.15		
	TN34_03_BB		Coomalgah	88.90	0.03	4:12PM	

1278 & 1279	TN33_0811_NG	17-May	Tarrawonga	90.50	0.03	4.27PM	
	TC33_0811_NG		Coomalgah	83.50	0.05		
1280	TC33_0307_NG	23-May	Tarrawonga	90.40	0.05	4:06pm	
			Coomalgah	83.10	0.16		
1281	TC53_1317_VY_A - TC53_1317_NG_PS_B	24-May	Tarrawonga	89.30	0.17	9am	
			Coomalgah	111.20	0.98		
1282	TN34_02_BC	27-May	Tarrawonga	120.70	0.46	3:59pm	
			Coomalgah	89.40	0.05		
1283	TC53_1317_VY_B_C	28-May	Tarrawonga	90.40	0.05	3.59pm	
			Coomalgah	92.60	0.49		
1284	TN32_0912_274RL	31-May	Tarrawonga	96.80	0.35	9.15am	
			Coomalgah	106.80	0.18		
1285	TN35_0608_274RL/ TN29_0204_NG_PS	5-Jun	Tarrawonga	104.00	0.2	9.21am	
			Coomalgah	103.20	0.22		
1286	TN29_0506_MN_TN29_0708_MN	8-Jun	Tarrawonga	104.00	0.28	11.02am	
			Coomalgah	93.40	0.05		
1287	TN29_0204_VY	12-Jun	Tarrawonga	99.60	0.08	9.13am	
			Coomalgah	102.90	0.31		
1288	TC 36_0102_320RL	15-Jun	Tarrawonga	99.50	0.56	11.02am	
			Coomalgah	94.60	0.16		
1289	TN36_0103_320RL / TN36_0406_320RL / TN30_0207_MN_PS	20-Jun	Tarrawonga	96.40	0.26	1:02pm	
			Coomalgah	94.80	0.29		
1290	TN30_0207_MN_PS_BN	25-Jun	Tarrawonga	110.10	0.35	4:14pm	
			Coomalgah	96.00	0.01		
1291	TN30_0910_MN_A	26-Jun	Tarrawonga	102.80	0.12	3:54pm	
			Coomalgah	96.10	0.31		
1292	TC34_0809_350RL_B	29-Jun	Tarrawonga	90.20	0.58	11:21am	
			Coomalgah	102.10	0.12		
1293	TC53_1315_NG	3-Jul	Tarrawonga	103.50	0.11	4:24pm	
			Coomalgah	104.70	0.21		
1294	TN35_0912_240RL	5-Jul	Tarrawonga	100.80	0.17	10:02am	1a
			Coomalgah	89.5	0.15		
1295	TN29_0708_MN_B / TN30_0809_MN	6-Jul	Tarrawonga	95.6	0.15	2:02pm	
			Coomalgah	96.5	0.02		
1296	TC53_1315_NG_B	9-Jul	Tarrawonga	108.1	0.02	12:58pm	
			Coomalgah	92.5	0.12		
1297	TN29_0509_NG-PS	10-Jul	Tarrawonga	89.1	0.09	4:03pm	1b
			Coomalgah	83.5	0.17		
1298	TC53_1819_NG_B	11-Jul	Tarrawonga	79.2	0.42	3.52PM	
			Coomalgah	93	0.13		
1299	TN29_0506_VY	13-Jul	Tarrawonga	92.4	0.11	9.59am	
			Coomalgah	95	0.22		
1300	TC_0809_353_RL	15-Jul	Tarrawonga	98.6	0.28	1.03pm	
			Coomalgah	103.4	0.04		
1301	TN30_0204_JE	17-Jul	Tarrawonga	92.4	0.04	3.54pm	
			Coomalgah	98.9	0.27		
1302	TC34_0809_RL353	20-Jul	Tarrawonga	98.4	0.37	3.01PM	
			Coomalgah	104.6	0.03		
1303	TN30_0507_JE, TC37_0102_320RL	25-Jul	Tarrawonga	101.9	0.05	1.39pm	
			Coomalgah	101.1	0.24		
1304	TC54_1317_NG_PS, TC55_1317_NG_PS_A	26-Jul	Tarrawonga	102.8	0.28	10.51am	
			Coomalgah	95.3	0.37		
1305	TC54_1317_VY, TC54_1317VY_PS, TC55_1317_NG_PS-A	2-Aug	Tarrawonga	92	0.16	9.21am	1a
			Coomalgah	95.7	0.42		
1306	TN34_0912_274RL	8-Aug	Tarrawonga	119.7	0.25	11:10am	2b
			Coomalgah	90.1	0.14		
1307	TC34_0711_320RL	13-Aug	Tarrawonga	100.3	0.14	11.21am	1a
			Coomalgah	105.3	0.18		
1308	TN29_10_VY, TN30_10_242RL	14-Aug	Tarrawonga	108.9	0.14	11.01am	
			Coomalgah	83.7	0.16		
1309	TN29_0708_VY, TN29_0709_NG_PS	21-Aug	Tarrawonga	101.6	0.3	1.26pm	
			Coomalgah	106.3	0.31		
1310	TN35_274RL, TN 32, TN32_1011_MN_PS,	24-Aug	Tarrawonga	109.9	0.38		
			Coomalgah	93.3	0.21	1.24am	

1310	TN32_11_MN_PS	27-Aug	Tarrawonga	97.1	0.26		
1311	TN29_0204_NG	27-Aug	Coomalgah	98.6	0.08	9:05am	
			Tarrawonga	100.9	0.1		
1312	TN30_0207_MN	3-Sep	Coomalgah	90.8	0.18	12.59pm	
			Tarrawonga	97	0.2		
1313	TC55_1317_VY_PS	4-Sep	Coomalgah	90.3	0.3	2:11pm	1a
			Tarrawonga	86.1	0.28		
1314	TN37_0713_320RL/TN37_13_320RL_PS	5-Sep	Coomalgah	99.3	0.31	1.32pm	
			Tarrawonga	106.9	0.25		
1315	TC34_0406_BR	11-Sep	Coomalgah	95.6	0.15	1.08pm	
			Tarrawonga	99.1	0.33		
1316	TN30_0207_MN_B/ TC34_0406_BR	19-Sep	Coomalgah	99.5	0.23	9.25am	
			Tarrawonga	114.3	0.22		
1317	TC54_1317_NG	20-Sep	Coomalgah	93	0.3	11:53am	
			Tarrawonga	92.4	0.2		
1318	TC55_1317_VY	25-Sep	Coomalgah	98.8	0.39	12.55pm	
			Tarrawonga	120.50	0.24		
1319	TN29_0308NG-A	1-Oct	Coomalgah	99.5	0.06	11.01am	
			Tarrawonga	91.3	0.06		
1320	TC34_0408_325RL	3-Oct	Coomalgah	81.4	0.03	11.36AM	
			Tarrawonga	96.3	0.03		
1321	TN32_0709_MN_PS	5-Oct	Coomalgah	98.2	0.5	2:01pm	
			Tarrawonga	90.9	0.9		
1322	TN29 0308 NG	8-Oct	Coomalgah	98.9	0.09	11.20AM	
			Tarrawonga	92.4	0.07		
1323	TC34_06_BR_TRIM	9-Oct	Coomalgah	98.2	0.03	12:12pm	
			Tarrawonga	104.6	0.05		
1324	TN32_0209_MN_PS	10-Oct	Coomalgah	80.8	0.28	1.00pm	
			Tarrawonga	89.3	0.29		
1325	TN32_0911_JE_Part1	14-Oct	Coomalgah	91.4	0.22	4:25pm	1A
			Tarrawonga	104.2	0.42		
1326	TN32_0911_JE_Part2	17-Oct	Coomalgah	92.9	0.16	4:01PM	
			Tarrawonga	97.7	0.24		
1327	TN32_0911_JE_Part2	22-Oct	Coomalgah	89	0.14	4:04PM	
			Tarrawonga	100.3	0.25		
1328	TC55_0317_NG	28-Oct	Coomalgah	97.4	0.23	4:47PM	
			Tarrawonga	96.9	0.18		
1329	TC34 0610 BR + RL325 Trim	29-Oct	Coomalgah	92.8	0.2	11:54	
			Tarrawonga	101.3	0.25		
1330	TN_30_0108_VY_A	2-Nov	Coomalgah	94.7	0.36	14:44	
			Tarrawonga	101.2	0.6		
1331	TN 37_0913_352 RL	4-Nov	Coomalgah	103.6	0.05	16:15	
			Tarrawonga	83.3	0.03		
1332	TC34_0106_BC/TC34_0102_BR_TRIM	7-Nov	Coomalgah	102	0.04	9.58	
			Tarrawonga	102.8	0.06		
1333	TN30_0108_VY_B/TN30_0509_NG_PS/TN32_0911_JE_TOE	13-Nov	Coomalgah	107.1	0.25	3.54pm	
			Tarrawonga	100.1	0.55		
1334	TN32_0608_JE-TOE	16-Nov	Coomalgah	84	0.02	3.01pm	
			Tarrawonga	90.5	0.03		
1335	TN32_0305_JE_TOE_LN	19-Nov	Coomalgah	85.8	0.01	12.56pm	
			Tarrawonga	86.1	0.02		
1336	TC37_0306_325RL / TC36_0203_325RL_TRIM	25-Nov	Coomalgah	95.7	0.39	3:54pm	
			Tarrawonga	99.9	0.43		
1337	TC55_1317_NG_TOE	27-Nov	Coomalgah	101.6	0.2	12.54pm	
			Tarrawonga	108.2	0.14		
1338	TC35_01_BC	29-Nov	Coomalgah	86.1	0.03	12.51pm	
			Tarrawonga	92.4	0.04		
1339	TN32_0810_MN	2-Dec	Coomalgah	102.2	0.03	11.59am	
			Tarrawonga	106	0.03		
1340	TN32_0306_MN	12-Dec	Coomalgah	87.4	0.19	4.34pm	
			Tarrawonga	97.2	0.16		
1341	TN37_0208_320RL / TN37_11_BR_PS / TC34 BC	16-Dec	Coomalgah	108.3	0.17	4.10pm	
			Tarrawonga	99.7	0.23		
1342	Tn37_0910_RL320	20-Dec	Coomalgah	105.9	0.2	13:10pm	
			Tarrawonga	92.2	0.26		

1343	TN30_0610_VY + TN30_0710_NG_PS	27-Dec	Coomalgah	99.1	0.18	15:50pm	
			Tarrawonga	100.3	0.2		
1344	TN34_0610_MN_PS, TN34_11_MN_PS	30-Dec	Coomalgah	88.8	0.18	11:28am	
			Tarrawonga	87.7	0.34		
1343	TN30_0610_VY + TN30_0710_NG_PS	27-Dec	Coomalgah	99.1	0.18	15:50pm	
			Tarrawonga	100.3	0.2		
1344	TN34_0610_MN_PS, TN34_11_MN_PS	30-Dec	Coomalgah	88.8	0.18	11:28am	
			Tarrawonga	87.7	0.34		

Appendix 2: HVAS Monitoring Data

HVAS MONITORING DATA

COOMALGAH PM₁₀ 24Hrs average at HIGH VOLUME AIR SAMPLER

Date	µg/m ³	Comments
1/6/2024	5.8	
1/12/2024	5.2	
1/18/2024	8	
1/24/2024	11.7	
1/30/2024	8.2	
2/5/2024	17.8	
2/11/2024	6.2	
2/17/2024	6.8	
2/29/2024	18.1	
3/6/2024	25.1	
3/12/2024	14	
3/18/2024	15.5	
3/24/2024	10.4	
3/30/2024	9.9	
4/5/2024	4.8	
4/11/2024	10.6	
4/17/2024	7.6	
4/23/2024	6.4	
4/29/2024	11.0	
5/5/2024	2.5	
5/11/2024	3.1	
5/17/2024	14.4	
5/23/2024	15.7	
5/29/2024	22.7	
6/4/2024	6.5	
6/10/2024	3.9	
6/16/2024	4.5	
6/22/2024	6.3	
6/28/2024	14.6	
7/4/2024	8.0	
7/10/2024	3.4	
7/16/2024	6.4	
7/22/2024	5.3	
7/28/2024	2.5	
8/3/2024	4.0	
8/9/2024	4.2	
8/15/2024	1.9	
8/21/2024	19.3	
8/27/2024	19.5	
9/2/2024	20	
9/8/2024	19.9	
9/14/2024	4.2	
9/20/2024	13.4	
9/26/2024	14.8	

10/2/2024	9.6	
10/8/2024	11.0	
10/14/2024	6.0	
10/20/2024	8.7	
10/26/2024	10.7	
11/1/2024	16.6	
11/7/2024	39.6	
11/13/2024	18.2	
11/19/2024	12.4	
11/25/2024	19.5	
12/1/2024	11.9	
12/7/2024	14.2	
12/13/2024	27.0	
12/19/2024	18.6	
12/25/2024	11.4	
12/31/2024	14.9	
12/31/2024	14.9	

Appendix 3: SW Monitoring Data

SURFACE WATER MONITORING DATA

Date	Time	Sample Location	pH	EC (µS/cm)	Total Suspended Solids (mg/L)	Total Organic Carbon (mg/L)	Grease & Oil (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Molybdenum (mg/L)	Selenium (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Total Hardness as CaCO3	Comments
8 September 2006		SD5	6.5	930	144		<2										
8 September 2006		SD6	7.5	310	104		<2										
8 September 2006		SD8	8.9	190	25		<6										
8 September 2006		SD9	9	285	1940		<2										
2007																	
11 January 2007		SD5	8.4	3750	20		<2										
11 January 2007		SD8	8.2	420	84												
11 January 2007		SD9	8.6	440	15		<2										
11 January 2007		MV1	7.7	3970	293		<2										
18 April 2007		SD1	8.6	605	86		<2										
18 April 2007		SD2	8.5	395	102		<2										
18 April 2007		SD8	8.6	270	36		<2										
18 April 2007		SD9	8.4	310	133		<2										
18 April 2007		SD20	9.1	520	80		<2										
18 April 2007		MV	7.8	4260	<2		<2										
25 July 2007	1510	SD1	7.5	990	23		<2										
25 July 2007	1525	SB5	8	1150	17		<2										
25 July 2007	1540	MV1	7.6	3130	15		30										
25 July 2007	1550	SD8	8.1	260	25		<2										
25 July 2007	1600	SD9	7.7	290	22		<2										
25 July 2007	1605	SD5	8.4	3370	8		<2										
31 October 2007	1545	SD9	7.8	310	16		<2										
31 October 2007	1555	SD8	8.8	780	32		<2										
31 October 2007	1610	SB5	8.9	1200	60		<2										
31 October 2007	1620	SB8*	9	2000	110		<2										
31 October 2007	1630	SB7	8.4	560	27		<2										
31 October 2007	1640	MV	8.1	2780	45		<2										
31 October 2007	1650	SD5	8.3	2620	44		<2										
2008																	
18 March 2008	1035	SD9	6.9	245	27		<2										
18 March 2008	1050	SD8	8.4	1340	19		<2										
18 March 2008	1110	SD5															
18 March 2008	1120	SD20	7.4	385	44		<2										
18 March 2008	1130	Pit Water Dam	8.4	1620	14		<2										
18 March 2008	1145	MV	7.8	3110	10		<2										
18 March 2008	1155	SB5	7.8	870	54		<2										
18 March 2008	1200	SB7	7.5	365	387		<2										
18 March 2008	1205	SD17	7.4	460	58		<2										
22 August 2008	1350	SD9	7.9	275	35		<2										
22 August 2008	1355	SD8	8.9	1450	20		<2										

22 August 2008	1405	SB16	8.8	1440	16		<2										
22 August 2008	1425	SD5	8.7	1310	35		<2										
22 August 2008	1430	SB4	8.7	1980	31		<2										
22 August 2008	1440	SB5	8.5	955	13		<2										
22 August 2008	1455	Pit Water Dam	8.7	2420	17		<2										
5 September 2008	1600	BCD	7.2	75	150		<2										
5 September 2008	1025	DAM1	7.4	185	4930		<2										
23 September 2008	1400	BCU	6.8	95	92		<2										
23 September 2008	1545	BCD	6.7	115	107		<2										
23 September 2008	1516	SD8	8.9	995	24		<2										
23 September 2008	1450	SD17	8.3	720	456		<2										
7 October 2008	930	SD17	8.2	735	75		<2										
7 October 2008	950	SD8	8.9	775	22		<2										
7 October 2008	1015	SB14	8.5	255	43		<2										
15 December 2008	1114	SD17	7.4	435	152		<2										
15 December 2008	1140	SD9	7.3	245	24		3										
15 December 2008	1130	SD8	8.2	635	22		<2										
15 December 2008	1207	BCD	6.9	135	30		<2										
2009																	
10 February 2009	0620	MV	8.2	3370	13		<2										
10 February 2009	0638	SD8	8.9	790	11		<2										
10 February 2009	0655	SD9	8.5	330	16		<2										
10 February 2009	0646	SB14	8	380	32		<2										
10 February 2009	0604	SB5	8.8	1070	7		<2										
10 February 2009	0631	SB16	9	1200	6		<2										
24 June 2009	0910	SB7	8.21	401	90	6	<5										
24 June 2009	0925	SB5	8.62	1180	12	8	<5										
24 June 2009	0935	Pit water	8.87	2330	148	5	<5										
24 June 2009	0950	SD9	8.33	335	5	8	<5										
24 June 2009	1010	SD16	8.16	550	20	5	<5										
24 June 2009	1040	SB14	7.71	351	29	9	<5										
27 August 2009	1035	SB7	8.1	418	62	5	<10										
27 August 2009	1050	SB5	8.64	1210	29	8	<10										
27 August 2009	1145	Pit water	8.2	2580	264	6	<10										
27 August 2009	1105	SD9	8.36	389	12	8	<10										
31 August 2009	0905	SB14	8.73	342	56	10	<10										
31 August 2009	0915	SD16	8.3	547	158	5	<10										
22 December 2009	1030	NCD	7.8	137	164	16	19										
22 December 2009	1100	BCU	7.32	150	220	25	-										
22 December 2009	1125	BCD	7.04	146	32	43	-										
29 December 2009	1300	BCD	6.88	75	47	15											
29 December 2009	1310	NCD	6.73	143	32	10											
29 December 2009	1320	NCU	6.79	95	34	18											
29 December 2009	1350	SD14	8.12	1080	65	4											
29 December 2009	1405	SB14	7.41	374	128	19											

29 December 2009	1410	Goonbri Creek	7.02	60	38	12											
2010																	
25 February 2010	1400	SB7	8.14	197	194	3	5										
25 February 2010	1415	SB5	8.06	681	77	4	<5										
25 February 2010	1505	SD9	7.95	123	18	8	5										
25 February 2010	1445	SD16	8.49	734	257	3	<5										
25 February 2010	1455	SB14	8.03	232	40	6	<5										
25 February 2010	1530	SD2	8.37	276	15	<5	<5										
24 May 2010	1030	SB7	8.41	291	17	4	13										
24 May 2010	1045	SB5	8.59	531	48	5	13										
24 May 2010	1110	SD9	8.62	148	10	8	6										
24 May 2010	1125	SD16	8.93	810	9	4	8										
24 May 2010	1205	SB14	7.76	251	538	8	6										
6 July 2010	1130	SB14	8.09	245	95	5	<5										
9 August 2010	1245	SB16	8.39	1170	10	3	<5										
9 August 2010	1320	Pit water	7.07	1940	37	2	<5										
9 August 2010	1150	SD9	7.72	147	24	9	<5										
9 August 2010	1210	SD16	8.29	793	40	5	<5										
9 August 2010	1220	SB14	7.69	260	1300	6	<5										
2 November 2010	1610	SB7 (pre flocc)	8.33	332	38	4	<5										
4 November 2010	1530	SB7 (post flocc)	8.72	339	10	3	<5										
10 November 2010	940	SB16	9.19	1140	14	3	<5										
10 November 2010	1020	SD9	7.94	168	16	11	<5										
10 November 2010	1000	SD16	9.49	831	11	5	<5										
10 November 2010	1010	SB14	7.72	323	56	5	<5										
2011																	
9 March 2011	1120	SD17	8.38	393	42	6	<5										
9 March 2011	0915	SB16	7.17	968	20	6	<5										
9 March 2011	1200	VOID	7.95	2540	78	6	<5										
9 March 2011	1050	SD9	7.98	186	30	11	<5										
9 March 2011	1110	SD16	8.71	762	27	5	<5										
9 March 2011	1015	SB14	8.17	361	43	6	<5										
3 May 2011	11:00	SD16	8.58	1020	22	6	<5	<0.001	0.002	0.014	<0.01						
3 May 2011	11:20	SB14	7.9	434	24	6	<5	<0.001	0.002	0.004	<0.01						
3 May 2011	10:40	SD17	8.92	2040	20	6	<5	<0.001	0.004	0.014	<0.01						
3 May 2011	10:50	SB16	8.58	1030	13	4	<5	0.003	0.2	0.029	<0.01						
3 May 2011	-	VOID	Dry														
4 August 2011	14:10	SD16	8.64	975	32	8	<5	<0.001	0.002	0.011	<0.01						
4 August 2011	14:25	SB14	8.33	414	24	6	<5	<0.001	0.001	0.003	<0.01						
4 August 2011	13:40	SD17	8.53	925	10	8	<5	<0.001	0.002	0.006	<0.01						
4 August 2011	13:10	SB16	8.52	891	24	4	<5	0.004	0.002	0.028	<0.01						
4 August 2011	13:10	VOID	8.52	2890	49	5	<5		0.015								
9 November 2011	13:00	SD16	9.03	791	20	7	<5	<0.001	0.003	0.010	<0.01						
9 November 2011	12:30	SB14	7.84	431	20	5	<5	<0.001	0.002	0.004	<0.01						

9 November 2011	13:20	SD17	8.39	448	56	6	<5	<0.001	0.002	0.003	<0.01						
9 November 2011	11:10	SB16	8.39	646	6	3	<5	0.003	0.002	0.026	<0.01						
9 November 2011	14:00	VOID	8.08	1790	158	3	<5										
2012																	
29 February 2012	1240	SD16	7.96	365	34	2	<5	<0.001	0.001	0.009	<0.01						
29 February 2012	1220	SB14	8.15	443	174	5	<5	<0.001	0.002	0.003	<0.01						
29 February 2012	1145	SD17	8.23	434	18	7	<5	<0.001	0.003	0.004	<0.01						
29 February 2012	1200	SB16	8.17	433	23	1	<5	0.001	0.001	0.012	<0.01						
29 February 2012	1115	VOID	8.3	727	1620	2	<5		0.008								
9 March 2012	10:05	SB23 Pre-floc	7.84	148	70	4	<5										
10 March 2012	10:00	SB23 24hrs post floc	7.82	159	60	16	<5										
11 March 2012	9:30	SB23 48hrs post floc	7.75	158	61	16	<5										
2 March 2012	10:05	SD16 Pre-floc	8.17	351	16	2	<5										
2 March 2012	10:25	SB14 Pre-floc	8.13	452	50	5	<5										
2 May 2012	11:40	SD16	8.37	388	14	2	<5	<0.001	<0.001	0.008	<0.01						
2 May 2012	12:00	SB14	9.08	1060	57	5	<5	<0.001	0.002	0.004	<0.01						
2 May 2012	10:30	SD17	8.74	602	8	6	<5	<0.001	0.001	0.006	<0.01						
2 May 2012	10:45	SB16	7.87	456	6	1	<5	0.001	0.001	0.013	<0.01						
2 May 2012	10:00	VOID	8.26	2080	10	1	<5	0.002	0.009	0.048	<0.01						
2 May 2012	11:15	GCR1	7.99	689	104	35	<5	<0.001	0.003	0.002	<0.01						
11 May 2012	16:00	SB23		246	18	8	<5										
22 May 2012	1:50	SB24		373	42	11	<5										
22 May 2012	2:30	SB14		980	42	5	<5										
22 May 2012	2:55	SD16		400	35	2	<5										
22 May 2012	3:05	SD9		133	36	8	<5										
22 May 2012	3:25	SD17		618	20	6	<5										
28 May 2012	7:45	SD17	8.58	558	16	7	<5										
28 May 2012	8:05	SD9	7.97	136	37	8	<5										
28 May 2012	8:25	SB14	8.21	661	53	5	<5										
28 May 2012	8:40	SB24	8.21	351	42	11	<5										
18 June 2012	9:30	SB14	8.05	513	92	5	<5										
18 June 2012	9:30	SD16	8.13	445	25	4	<5										
18 June 2012	9:30	SD9	7.95	137	23	8	<5										
18 June 2012	9:30	SD17	8.54	533	14	6	<5										
18 June 2012	9:30	Canyon SD	8.13	304	87	9	<5										
11 July 2012	4:33	NCD	7.19	174	150	19	<5										
20 July 2012	11:30	SB23-After Floc	7.92	254	16	3	<5										

23 July 2012	11:00	SD16- Backgroun d info water	8.02	450	25	3	<5										
23 July 2012	11:15	SD14-After floc	7.94	590	35	3	<5										
14 August 2012	10:40	SD16	8.1	454	<5	3	<5	<0.001	0.001	0.008	<0.01						
14 August 2012	11:00	SB14	8.11	646	<5	7	<5	<0.001	0.002	0.007	<0.01						
14 August 2012	10:00	SD17	8.08	465	<5	5	<5	<0.001	0.001	0.004	<0.01						
14 August 2012	10:15	SB16	7.96	561	<5	2	<5	0.003	0.002	0.02	<0.01						
14 August 2012	9:40	VOID	8.39	2220	<5	2	<5										
14 August 2012	11:40	GCR1	7.82	190	16	19	<5	<0.001	0.002	<0.001	<0.01						
14 August 2012	11:20	GCR2	7.72	182	12	17	<5	<0.001	0.002	<0.001	<0.01						
14 November 2012	11:10	SD16	9.84	679	100	6	<5	<0.001	0.004	0.01	<0.01						
14 November 2012	10:40	SB14	8.85	890	24	3	<5	<0.001	<0.001	0.006	<0.01						
14 November 2012	10:15	SD17	8.7	700	14	4	<5	<0.001	<0.001	0.006	<0.01						
14 November 2012	10:00	SB16	8.69	707	76	1	<5	0.004	0.002	0.026	<0.01						
14 November 2012	9:30	VOID	8.62	2870	10	<1	<5										
2013																	
1 February 2013	15:10	SD9 pre floc	7.44	262	43	7	<5										
1 February 2013	13:10	SD9 post floc	7.39	267	82	8	<5										
20 February 2013	15:00	SD9-Pre Discharge	7.89	275	18	8	<5										
6 March 2013	10:40	SD16	7.69	252	288	5	<5	<0.001	0.005	0.001	<0.01						
6 March 2013	11:00	SB14	7.81	378	99	4	<5	<0.001	0.001	0.002	<0.01						
6 March 2013	10:20	SD17	8	229	91	4	<5	<0.001	<0.001	0.002	<0.01						
6 March 2013	9:30	SB16A	8.01	365	240	4	<5	0.002	0.004	0.013	<0.01						
6 March 2013	9:50	VOID	8.23	1620	16	2	<5										
6 March 2013	11:20	GCR1	7.43	126	106	5	<5	<0.001	<0.001	<0.001	<0.01						
6 March 2013	11:40	GCR2	7.42	173	48	16	<5	<0.001	0.002	<0.001	<0.01						
30 May 2013	11:20	SD16	8.16	341	100	7	<5	<0.001	0.003	0.003	<0.01						
30 May 2013	11:00	SB14	8.42	538	38	6	<5	<0.001	0.002	0.003	<0.01						
30 May 2013	10:00	SD17	8.47	334	49	6	<5	<0.001	0.002	0.003	<0.01						
30 May 2013	10:30	SB16A	8.25	530	108	10	<5	0.004	0.004	0.018	<0.01						
30 May 2013	9:30	VOID	8.51	3120	45	4	<5										
7 August 2013	10:20	SD16	8.49	390	7	6	<5	<0.001	0.001	0.003	<0.01						
7 August 2013	10:40	SB14	8.96	570	8	7	<5	<0.001	<0.001	0.002	<0.01						
7 August 2013	10:00	SD17	8.59	371	9	4	<5	<0.001	<0.001	0.003	<0.01						
7 August 2013	9:30	SB16A	8.05	585	20	7	<5	0.005	0.003	0.022	<0.01						
7 August 2013	11:30	VOID	8.35	2660	29	6	<5										
7 August 2013	11:00	TAR-GCD	7.4	155	52	16	<5	<0.001	0.002	<0.001	<0.01						
7 August 2013	11:15	TAR-GCU	7.42	208	14	20	<5	<0.001	0.003	<0.001	<0.01						
5 November 2013	9:35	SD16	9.42	538	29	15	<5	<0.001	0.004	0.004	<0.01						
5 November 2013	9:35	SB14	8.55	1070	172	17	<5	<0.001	0.002	0.005	<0.01						
5 November 2013	8:45	SD17	8.87	573	21	9	<5	<0.001	0.002	0.005	<0.01						
5 November 2013	9:10	SB16A	8.8	918	38	8	<5	0.008	0.005	0.04	<0.01						

5 November 2013	11:00	VOID	8.25	2530	11	29	<5		0.01								
2014																	
20 February 2014	11:05	TAR-SD16	8.35	432	65	6	<5	<0.001	0.006	0.003	<0.01						
20 February 2014	11:25	TAR-SB14	8.09	393	1280	8	<5	<0.001	0.005	<0.001	0.01						
20 February 2014	10:45	TAR-SD17	8.79	712	46	8	<5	<0.001	0.002	0.007	<0.01						
20 February 2014	9:10	TAR-SB16A	8.61	713	330	8	<5	0.004	0.01	0.023	<0.01						
20 February 2014	10:15	TAR-VOID	8.63	1350	22	1	<5	0.007	0.026	0.101	<0.01						
20 February 2014	11:45	TAR-GCU	6.69	115	433	23	<5	<0.001	0.005	0.001	<0.01						
6 May 2014	10:15	TAR-SD16	8.12	404	19	3	21	<0.001	0.004	0.003	<0.01						
6 May 2014	10:30	TAR-SB14	8.92	1980	10	4	5	<0.001	0.002	0.008	<0.01						
6 May 2014	9:55	TAR-SD17	8.26	351	25	3	<5	<0.001	0.002	0.0002	<0.01						
6 May 2014	10:50	TAR-SB16A	8.2	483	134	1	<5	0.003	0.008	0.02	<0.01						
6 May 2014	11:10	TAR-VOID	8.31	3280	213	<1	<5		0.006								
6 May 2014	12:05	TAR-GCU	7.89	318	<5	14	<5	<0.001	0.002	0.001	<0.01						
6 May 2014	11:45	TAR-GCD	7.88	301	<5	17	<5	<0.001	0.001	<0.001	<0.01						
6 August 2014	10:45	TAR-SD16	8.7	439	5	6	<5	<0.001	0.002	0.002	<0.01						
6 August 2014	11:10	TAR-SB14	8.67	1450	22	7	<5	<0.001	0.001	0.004	<0.01						
6 August 2014	9:40	TAR-SD17	8.44	397	48	7	<5	<0.001	0.002	0.003	<0.01						
6 August 2014	10:30	TAR-SB16A	8.25	609	63	8	<5	0.005	0.004	0.024	<0.01						
6 August 2014	10:10	TAR-VOID	8.5	3260	515	16	<5										
6 August 2014	11:40	TAR-GCU	8.31	392	42	14	<5	<0.001	0.002	<0.001	<0.01						
11 November 2014	11:15	TAR-SD16	8.7	507	14	6	<5	<0.001	0.002	0.004	<0.01						
11 November 2014	11:35	TAR-SB14	8.85	1480	50	14	<5	<0.001	0.003	0.012	<0.01						
11 November 2014	10:30	TAR-SD17	8.7	539	34	7	<5	<0.001	<0.001	0.005	<0.01						
11 November 2014	10:50	TAR-SB16A	8.51	740	18	5	<5	0.006	0.003	0.032	<0.01						
11 November 2014	9:40	TAR-GCU	7.7	549	1230	57	<5	<0.001	0.022	0.006	<0.01						
11 November 2014	9:10	TAR-GCD	7.64	751	62	50	<5	<0.001	0.011	0.004	<0.01						
8 December 2014	0:45	TAR-VOID	8.04	3060	170	<1	<5										
2015																	
18 February 2015	10:10	TAR-SD16	8.19	451	16	4	<5	<0.001	0.004	0.006	<0.01						
18 February 2015	10:30	TAR-SB14	8	626	12	4	<5	<0.001	0.004	0.005	<0.01						
18 February 2015	9:30	TAR-SD17	8.13	313	123	5	<5	<0.001	0.007	0.006	<0.01						
18 February 2015	9:50	TAR-SB16A	8.29	574	71	2	<5	0.003	0.007	0.025	<0.01						
18 February 2015	11:40	TAR-GCU	7.43	242	86	6	<5	<0.001	0.01	0.02	<0.01						
18 February 2015	12:00	TAR-GCD	7.22	444	748	26	<5	<0.001	0.016	0.002	<0.01						
18 February 2015	10:45	TAR-VOID	8.72	3170	10	<1	<5										
7 May 2015	10:40	TAR-SD16	8.27	409	16	6	<5	<0.001	0.003	<0.001	<0.01						
7 May 2015	10:55	TAR-SB14	8.85	1300	17	8	<5	<0.001	0.002	0.002	<0.01						
7 May 2015	10:05	TAR-SD17	8.3	539	44	5	<5	0.001	0.003	0.007	<0.01						
7 May 2015	10:20	TAR-SB16A	8.19	571	44	2	<5	0.005	0.003	0.008	<0.01						
7 May 2015	9:45	TAR-VOID	8.62	2910	5	5	<5										
7 May 2015	11:15	TAR-GCD	7.35	147	29	8	<5	<0.001	0.003	<0.001	<0.01						

17 August 2015	11:10	TAR-SD16	8.43	426	19	4	8	<0.001	0.003	0.011	<0.01						
17 August 2015	11:30	TAR-SB14	8.91	1070	7	5	<5	0.001	0.001	0.02	<0.01						
17 August 2015	10:35	TAR-SD17	8.81	902	192	8	7	<0.001	0.002	0.043	<0.01						
17 August 2015	10:55	TAR-SB16A	7.95	658	65	2	7	0.007	0.004	0.05	<0.01						
17 August 2015	9:45	TAR-GCU	7.67	161	96	6	6	<0.001	0.004	0.001	<0.01						
17 August 2015	10:10	TAR-GCD	7.59	202	35	7	<5	<0.001	0.007	<0.001	<0.01						
27 August 2015	10:35	TAR-VOID	8.41	1020	49200	<20	6										
17 November 2015	13:20	TAR-SD16	8.9	440	10	6	<5	<0.001	0.004	0.004	<0.01						
17 November 2015	13:05	TAR-SB14	8.21	455	100	9	<5	<0.001	0.003	0.005	<0.01						
17 November 2015	12:25	TAR-SD17	7.98	361	191	10	<5	<0.001	0.004	0.004	<0.01						
17 November 2015	12:45	TAR-SB16A	8.08	550	64	6	<5	0.001	0.002	0.048	<0.01						
17 November 2015	10:30	TAR-VOID	8.36	1350	43	4	<5										
17 November 2015	9:30	TAR-GCU	7.47	157	33	15	<5	<0.001	0.006	<0.001	<0.01						
2016																	
11 February 2016	11:45	TAR-SD16	8.2	289	95	5	<5	<0.001	0.006	0.004	<0.01						
11 February 2016	11:30	TAR-SB14	8.29	722	21	4	<5	<0.001	0.004	0.007	<0.01						
11 February 2016	12:15	TAR-SD17	8.26	698	174	2	<5	0.002	0.007	0.014	<0.01						
11 February 2016	11:10	TAR-SB16A	7.99	622	84	1	<5	0.002	0.003	0.035	<0.01						
11 February 2016	10:50	TAR-VOID	8.28	882	53	<1	<5										
11 February 2016	10:00	TAR-GCD	7.45	159	129	10	<5	<0.001	0.01	0.002	<0.01						
10 May 2016	9:36	TAR-VOID	8.33	3270	<5	2	<5		0.011		<0.01						
10 May 2016	10:15	TAR-SD16	8.04	340	66	5	<5	<0.001	0.004	0.003	<0.01						
10 May 2016	10:30	TAR-SB14	8.45	535	108	8	<5	<0.001	0.005	0.004	<0.01						
10 May 2016	11:00	TAR-SD17	8.45	774	25	9	<5	<0.001	0.003	0.016	<0.01						
10 May 2016	10:00	TAR-SB16A	8.42	847	21	4	<5	<0.001	0.002	0.03	<0.01						
10 May 2016	11:45	TAR-GCD	7.25	170	119	14	<5	<0.001	0.005	<0.001	<0.01						
10 August 2016	11:30	TAR-SD16	8.13	427	19	6	<5	<0.001	0.004	0.003	<0.01						
10 August 2016	11:40	TAR-SD14	8.13	644	154	6	<5	<0.001	0.004	0.003	<0.01						
10 August 2016	11:00	TAR-SD17	7.85	267	87	5	<5	<0.001	0.005	0.003	<0.01						
10 August 2016	11:15	TAR-SB16A	8.13	474	45	3	<5	<0.001	0.002	0.017	<0.01						
10 August 2016	8:45	TAR-GCU	7.29	136	18	16	<5	<0.001	0.003	<0.001	<0.01						
10 August 2016	9:20	TAR-GCD	7.08	95	33	12	<5	<0.001	0.002	<0.001	<0.01						
10 August 2016	9:55	TAR-VOID	8.55	3010	6	1	<5										
15 November 2016	11:30	TAR-SD16	8.72	712	7	5	<5	<0.001	0.005	0.004	<0.01						
15 November 2016	10:45	TAR-SD17	8.77	557	37	10	<5	<0.001	0.003	0.01	<0.01						
15 November 2016	11:10	TAR-SB16A	8.36	603	14	6	<5	<0.001	0.003	0.025	<0.01						
15 November 2016	11:15	TAR-VOID	8.6	3000	26	2	<5										
15 November 2016	12:15	TAR-GCU	7.89	242	26	16	<5	<0.001	0.004	0.002	<0.01						
15 November 2016	12:45	TAR-GCD	8.15	526	12	12	<5	<0.001	0.004	<0.001	<0.01						
2017																	
2 August 2017		SD14	7.9	459	28	12	<5	<0.001	0.008	0.002	<0.01						
2 August 2017		SD17	8.1	528	202	22	<5	<0.001	0.009	0.006	<0.01						

2 August 2017		SB16a	8.4	551	93	8	<5	<0.001	0.003	0.017	<0.01						
2 August 2017		GCU	7.3	208	70	29	<5	<0.001	0.009	0.001	<0.01						
2 August 2017		GCD	8.1	489	169	33	<5	<0.001	0.026	0.002	<0.01						
2 August 2017		VOID	8.1	3360	8	2	<5	----	----	----	----						
5 September 2017		SB14	8.9	757	67	5	5	<0.001	0.008	0.004	<0.01						
5 September 2017		SD17	9.1	1300	170	12	12	<0.001	0.005	0.023	<0.01						
5 September 2017		SB16a	8.4	957	41	1	1	<0.001	0.003	0.03	<0.01						
5 September 2017		QCU	8.3	15	878	7	7	<0.001	0.006	<0.001	<0.01						
5 September 2017		QCD	7.4	678	225	37	37	<0.001	0.006	0.003	<0.01						
5 September 2017		VOID	8.6	3100	12	1	<5	----	0.006	----	----						
8 September 2017		SD16	9.4	463	19	9	<5	<0.01	<0.01	<0.01	<0.01						
8 September 2017		SD14	9.7	580	47	11	<5	<0.01	<0.01	<0.01	<0.01						
8 September 2017		SD17	8.2	416	120	10	<5	<0.01	<0.01	<0.01	<0.01						
8 September 2017		SB16a	8.1	703	62	6	<5	<0.01	<0.01	0.02	<0.01						
8 September 2017		GCU	7.5	114	121	8	<5	<0.01	<0.01	<0.01	<0.01						
8 September 2017		GCD	7.9	280	161	12	<5	<0.01	<0.01	<0.01	<0.01						
9 May 2017		VOID	8.5	3050	21	1	<5	---	---	---	---						
13 November 2017		SB14	8.1	440	130	11	<5	<0.001	0.007	0.002	<0.01						
13 November 2017		SD17	9.1	958	122	29	<5	<0.001	0.006	0.017	<0.01						
13 November 2017		SB16A	8.6	901	85	7	<5	<0.001	0.004	0.026	<0.01						
13 November 2017		VOID	8.6	2970	19	2	<5	----	----	----	----						
13 November 2017		GCU	6.5	175	22	14	<5	<0.001	0.007	0.001	<0.01						
13 November 2017		GCD	6.7	234	125	14	<5	<0.001	0.005	0.001	<0.01						
2018																	
22 February 2018		SD16	9.2	1400	216	34	<5	<0.001	0.018	0.015	<0.01						
22 February 2018		SB14	8.9	823	60	11	<5	<0.001	0.01	0.007	<0.01						
22 February 2018		SB16a	9.4	1330	280	36	<5	<0.001	0.012	0.028	<0.01						
22 February 2018		Void	8.7	3600	15	1	<5	----	----	----	----						
22 February 2018		GCU	7.0	170	166	25	<5	<0.001	0.004	<0.001	<0.01						
22 May 2018		Void	8.9	3340	14	1	6	----	----	----	----						
21 August 2018		SB16A	9.3	5300	54	51	<5	0.002	0.022	0.192	<0.01						
21 August 2018	VOID	Void	8.9	3590	<5	2	<5	----	----	----	----						
13 November 2018		SD16	8.5	407	634	4	<5	<0.001	0.014	0.001	0.01						
13 November 2018		SD14	8.9	2020	26	10	5	<0.001	0.004	0.006	<0.01						
13 November 2018		SD17	8.1	439	898	10	<5	<0.001	0.01	0.002	<0.01						
13 November 2018		SB16A	8.4	1090	436	20	<5	<0.001	0.014	0.011	<0.01						
13 November 2018		GCU	7.1	253	14	18	<5	<0.001	0.005	0.001	<0.01						
13 November 2018		GCD	7.2	260	65	18	<5	<0.001	0.011	0.001	<0.01						
13 November 2018		Void	8.2	2880	18	5	<5	----	----	----	----						
2019																	
22 February 2019		SB14	8.8	2410	536	24	<5	<0.001	0.016	0.007	<0.01						
22 February 2019		SB16A	10	6840	47	126	<5	0.002	0.058	0.238	<0.01						
22 February 2019		Void	8.6	3720	19	3	<5	----	----	----	----						
Other sites were not flowing- no sample taken																	
23 May 2019		Void	8	3070	<5	<1	<5	----	----	----	----						
5 September 2019		SD16	7.6	169	83	5	<5	<0.001	0.01	<0.001	0.01						

5 September 2019		SD14	8.4	971	20	5	<5	<0.001	0.002	0.003	<0.01						
5 September 2019		SD17	7.4	435	141	10	<5	<0.001	0.003	0.004	<0.01						
5 September 2019		SD16A	8.2	509	276	11	<5	<0.001	0.006	0.005	<0.01						
5 September 2019		GCU	6.8	90	16	10	<5	<0.001	0.002	<0.001	<0.01						
5 September 2019		GCD	6.7	101	39	8	<5	<0.001	0.002	<0.001	<0.01						
23 May 2019		Void	8	3070	<5	<1	<5	----	0.046	----	----						
13 August 2019		SD16	7.8	297	434	4	<5	<0.001	0.012	0.001	0.01						
13 August 2019		SD17	7.9	393	181	6	<5	<0.001	0.002	0.002	<0.01						
13 August 2019		VOID	8.6	3000	15	<1	<5	----	----	----	----						
Other sites were dry- no sample taken																	
11 August 2019		VOID	8.6	3700	13	4	<5	----	----	----	----						
Other sites were dry- no sample taken - See photos																	
2020																	
13 February 2020		SD16	7.9	421	262	8	<5	<0.001	0.004	0.002	<0.01						Approx. 180mm of rain that week from Saturday 8th to Thurs 13th
13 February 2020		SB14	8.2	938	37	7	<5	<0.001	0.004	0.005	<0.01						
13 February 2020		SD17	8	166	1170	4	<5	<0.001	0.004	<0.001	<0.01						
13 February 2020		SB16A	8.2	493	282	7	<5	<0.001	0.004	0.004	<0.01						
13 February 2020		GCU	7.3	147	95	14	<5	<0.001	0.002	<0.001	<0.01						
13 February 2020		GCD	7.2	269	64	14	<5	<0.001	0.002	<0.001	<0.01						
5 March 2020		VOID	8.17	2420	380	4	<5	0.001	0.001	0.001	0.01						
6 May 2020		SD16	8.8	397	21	10	<5	<0.001	0.001	0.005	<0.01						
6 May 2020		SB14	8.7	2250	92	12	<5	<0.001	0.003	0.005	<0.01						
6 May 2020		SD17	8.4	293	120	8	<5	<0.001	0.001	0.002	<0.01						
6 May 2020		SB16a	8.8	543	33	9	<5	<0.001	0.002	0.013	<0.01						
6 May 2020		VOID	7.8	3290	34	<1	<5	----	0.012	----	----						
19 August 2020	10:40	SD17	8.27	367	42	6	<5	<0.001	0.001	0.002	<0.01						
19 August 2020	11:10	SD16	7.75	444	37	5	<5	<0.001	0.001	0.004	<0.01						
19 August 2020	11:35	SB14	8.97	1320	32	9	<5	<0.001	0.003	0.004	<0.01						
28 August 2020	0.52083333	VOID	8.36	3600	25	30	<5	----	----	----	----						
12 November 2020	0.46875	SB16A	8.44	967	78	8	6	0.001	0.003	0.021	0.01						
12 November 2020	0.44444444	SD17	8.53	645	62	4	6	0.001	0.001	0.003	0.01						
12 November 2020	0.42708333	VOID	8.58	1700	40	2	5	----	----	----	----						
2021																	
12 February 2021		VOID	8.5	2040	42	<1	<5	0.03	0.008	0.06	<0.01	17	24	447	14	141	
12 February 2021		SD17	8.15	342	322	5	<5	0.001	0.003	0.002	<0.01	21	9	45	6	89	
12 February 2021		SD16A	8.41	430	4600	3	<5	<0.001	0.01	0.002	<0.01	6	4	85	6	31	
17 May 2021		SD17	7.88	236	212	-	<5	-	0.005	0.001	<0.01						
17 May 2021		SD27	7.96	256	257	-	<5	-	0.003	0.001	<0.01						
17 May 2021		SB16A	8.23	391	220	-	<5	-	0.005	0.007	<0.01						
17 May 2021		Void	8.72	1540	17	-	<5	-	0.004								

17 May 2021		GCU	7.78	160	62	-	<5	-	0.002	<0.001	<0.01						
17 May 2021		GCD	7.53	210	68	-	<5	-	0.002	<0.001	<0.01						
17 May 2021		SB23B	8.12	224	22	-	<5	-	0.002	<0.001	<0.01						
16 August 2021		SD17	7.64	213	185	-	<5	-	0.006	0.001	0.01						
16 August 2021		SD27	8.15	320	124	-	<5	-	0.003	0.003	0.01						
16 August 2021		SB16A	8.2	406	48	-	<5	-	0.006	0.006	0.01						
16 August 2021		Void	8.84	1240	11	-	<5	-	0.006								
16 August 2021		GCU	7.95	196	35	-	<5	-	0.002	0.001	0.01						
16 August 2021		GCD	7.84	493	24	-	<5	-	0.002	0.001	0.01						
17 November 2021		GCU	7.57	164	12	-	<5	-	0.003	0.001	0.01						
17 November 2021		GCD	7.38	234	79	-	<5	-	0.005	0.002	0.01						
17 November 2021		SD17	8.15	255	143	-	<5	-	0.002	0.006	0.01						
17 November 2021		SD27	8.61	384	15	-	<5	-	0.001	0.006	0.01						
17 November 2021		SB16A	8.38	406	31	-	<5	-	0.006	0.006	0.01						
19 November 2021		Void	8.78	1970	64	-	<5	-	0.014		0.01						
19 November 2021		SB16B	8.94	408	20	-	<5	-	0.002	0.007	0.01						
2022																	
16 February 2022		SD17	8.35	213	22	-	<5	-	0.001	0.001	<0.01						
16 February 2022		SB25	7.85	190	140	-	<5	-	<0.001	<0.001	<0.01						
16 February 2022		SB6	7.92	205	46	-	<5	-	<0.001	0.002	<0.01						
16 February 2022		SB7	8.99	236	0	-	<5	-	0.003	<0.001	<0.01						
16 February 2022		SD1	8.81	260	9	-	<5	-	0.003	0.002	<0.01						
16 February 2022		SD2	8.81	293	48	-	<5	-	0.002	0.001	<0.01						
16 February 2022		SB5A	8.44	455	325	-	<5	-	0.001	<0.001	<0.01						
16 February 2022		SB5B	0.94	284	22	-	<5	-	<0.001	0.002	<0.01						
16 February 2022		SB4	8.27	433	71	-	<5	-	0.002	0.012	<0.01						
16 February 2022		PW3	9	329	30	-	<5	-	<0.001	0.005	<0.01						
16 February 2022		SB16B	8.51	354	22	-	<5	-	0.002	0.004	<0.01						
16 February 2022		SD8	8.36	356	33	-	<5	-	0.002	0.005	<0.01						
16 February 2022		SB23A	8.52	152	16	-	<5	-	0.002	<0.001	<0.01						
16 February 2022		SB23B	8.88	205	18	-	<5	-	0.002	<0.001	<0.01						
16 February 2022		SD9	8.43	329	17	-	<5	-	0.001	0.005	<0.01						
16 February 2022		SD28	8.96	683	136	-	<5	-	0.005	0.006	<0.01						
16 February 2022		SD26	8.68	616	14	-	<5	-	0.002	0.003	<0.01						
16 February 2022		SB26	9.1	409	80	-	<5	-	0.003	0.002	<0.01						
16 February 2022		SB24A	8.8	1340	17	-	<5	-	0.003	0.031	<0.01						
16 February 2022		SB24B	8.16	174	392	-	<5	-	0.002	<0.001	<0.01						
16 February 2022		PW5	8.51	333	21	-	<5	-	0.001	<0.001	<0.01						
16 February 2022		PW6	8.69	1830	8	-	6	-	0.002	0.045	<0.01						
14 March 2022		VOID	8.36	3060	8	2	<5	0.003	0.002	0.058	<0.01						
6 June 2022		SD17	8.08	255	36	-	<5	-	<0.001	0.003	<0.01						
6 June 2022		SD27	7.59	234	152	-	<5	-	0.003	0.004	<0.01						
6 June 2022		SB16A	8.24	526	191	-	<5	-	0.002	0.01	<0.01						
6 June 2022		SB23B	8.29	303	50	-	<5	-	0.001	0.002	<0.01						
6 June 2022		SD9	8.17	413	52	-	<5	-	<0.001	0.001	<0.01						
6 June 2022		SB24B	7.84	232	141	-	<5	-	0.001	0.005	<0.01						

4 July 2022		VOID	8.52	2730	31	4	<5	-	0.02	0.064	<0.01						
18 August 2022		SD17	7.83	275	286	-	<5	-	0.003	0.002	<0.01						
18 August 2022		SD27	7.79	220	45	-	<5	-	0.004	<0.001	<0.01						
18 August 2022		SB16A	8.11	464	48	-	<5	-	0.003	0.009	<0.01						
18 August 2022		VOID	8.59	1050	18	-	<5	-	0.004	-	-						
18 August 2022		GC-U	7.19	190	18	-	<5	-	0.001	<0.001	<0.01						
18 August 2022		GC-D	7.3	185	46	-	<5	-	0.003	<0.001	<0.01						
18 August 2022		BC-D	7	152	10	-	<5	-	0.002	<0.001	<0.01						
18 August 2022		SB6	7.62	186	58	-	<5	-	<0.001	<0.001	<0.01						
18 August 2022		SB7	7.81	190	104	-	<5	-	0.002	<0.001	<0.01						
18 August 2022		SD1	8.07	319	28	-	<5	-	0.002	0.002	<0.01						
18 August 2022		SD2	8.25	288	71	-	<5	-	<0.001	0.002	<0.01						
18 August 2022		SB5A	8.12	374	433	-	<5	-	0.001	0.003	<0.01						
18 August 2022		SB5B	8.26	248	15	-	<5	-	<0.001	0.002	<0.01						
18 August 2022		SB4	8.09	472	45	-	<5	-	0.002	0.014	<0.01						
18 August 2022		PW3	7.38	543	21	-	<5	-	0.002	0.018	<0.01						
18 August 2022		SB16B	7.87	402	73	-	<5	-	0.002	0.006	<0.01						
18 August 2022		SD8	7.67	283	161	-	<5	-	0.002	0.002	<0.01						
18 August 2022		SB23A	7.57	183	8	-	<5	-	<0.001	<0.001	<0.01						
18 August 2022		SB23B	7.75	197	39	-	<5	-	<0.001	<0.001	<0.01						
18 August 2022		SD9	8.11	387	64	-	<5	-	0.001	0.006	<0.01						
18 August 2022		SD28	8.12	367	21	-	<5	-	0.001	0.002	<0.01						
18 August 2022		SD26	8.2	449	270	-	<5	-	0.008	0.002	<0.01						
18 August 2022		SB26	8.17	481	1880	-	<5	-	0.004	0.004	<0.01						
18 August 2022		SB24A	8.94	1340	13	-	<5	-	0.002	0.03	<0.01						
18 August 2022		SB24B	7.74	197	268	-	<5	-	0.002	<0.001	<0.01						
18 August 2022		PW5	7.74	388	42	-	<5	-	0.002	0.003	<0.01						
18 August 2022		PW6	8.8	1990	5	-	<5	-	0.003	0.048	<0.01						
18 November 2023		SD17	7.45	165	54	0.001	0.014	0.001	0.002	0.001	<0.01						
18 November 2023		SD27	7.4	126	267	0.001	0.002	0.001	0.001	<0.001	<0.01						
18 November 2023		SB16A	8.27	372	60	0.007	0.004	0.001	0.002	0.006	<0.01						
18 November 2023		Void	8.5	1850	7	0.024	<0.001	0.004	0.003	0.025	<0.01						
18 November 2023		GC-U	7.45	416	14	<0.001	0.049	0.004	0.002	<0.001	<0.01						
18 November 2023		GC-U	7.45	416	14	<0.001	0.049	0.004	0.002	<0.001	<0.01						
18 November 2023		GC-D	7.87	375	26	<0.001	0.025	<0.001	0.002	<0.001	<0.01						
18 November 2023		BC-U	7.94	379	20	<0.001	0.017	0.001	0.002	<0.001	<0.01						
18 November 2023		BC-D	7.52	286	6	<0.001	0.026	0.001	0.002	<0.001	<0.01						
18 November 2023		SB23B	7.65	163	24	<0.001	0.047	0.003	0.002	<0.001	<0.01						
18 November 2023		SD9	8.21	305	51	0.005	<0.001	<0.001	0.002	0.005	<0.01						
18 November 2023		SB24B	7.2	141	66	0.003	<0.001	0.001	0.004	<0.001	<0.01						
18 November 2023		Blank	6.62	<1	<5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01						
18 November 2023		Duplicate	7.43	412	16	<0.001	0.048	0.004	0.002	<0.001	<0.01						
2023																	
13 February 2023		SD17	8.21	233	29	-	<5	-	0.002	0.002	<0.01						
13 February 2023		SD27	7.98	286	122	-	<5	-	0.004	0.005	<0.01						
14 February 2023		Void	8.63	2900	22	-	<5	-									

13 February 2023		SB25	8.28	322	36	-	<5	-	<0.001	0.004	<0.01						
13 February 2023		SB6	7.94	271	26	-	<5	-	<0.001	0.001	<0.01						
13 February 2023		SD7	9.33	306	52	-	<5	-	0.002	0.002	<0.01						
13 February 2023		SD1	8.53	384	36	-	<5	-	0.002	0.002	<0.01						
13 February 2023		SD2	8.09	399	246	-	<5	-	0.001	0.002	<0.01						
13 February 2023		SB5A	8.9	511	51	-	<5	-	0.001	0.005	<0.01						
13 February 2023		SB5B	8.65	288	22	-	<5	-	<0.001	0.002	<0.01						
13 February 2023		SB4	8.56	614	29	-	<5	-	<0.001	0.01	<0.01						
13 February 2023		PW3	9.08	521	32	-	<5	-	0.002	0.013	<0.01						
13 February 2023		SB16B	8.39	540	104	-	<5	-	0.002	0.012	<0.01						
13 February 2023		SD8	8.29	533	112	-	<5	-	0.002	0.014	<0.01						
13 February 2023		SB23A	8.13	330	48	-	<5	-	0.002	0.002	<0.01						
13 February 2023		SB23B	8.11	320	182	-	<5	-	0.002	0.002	<0.01						
13 February 2023		SD9	8.58	461	20	-	<5	-	0.001	0.008	<0.01						
13 February 2023		SD28	8.13	386	173	-	<5	-	0.002	0.002	<0.01						
13 February 2023		SD26	9.06	1250	54	-	<5	-	0.006	0.008	<0.01						
13 February 2023		SB26	8.17	469	697	-	<5	-	0.002	0.007	<0.01						
13 February 2023		SB24A	8.69	2260	26	-	<5	-	0.009	0.088	<0.01						
13 February 2023		SB24B	7.92	327	202	-	<5	-	0.004	0.003	<0.01						
14 February 2023		PW5	8.55	607	23	-	<5	-	0.002	0.005	<0.01						
14 February 2023		PW6	8.6	2330	12	-	<5	-	0.009	0.065	<0.01						
13 February 2023		SW Blank	6.64	<1	<5	-	<5	-	<0.001	0.004	<0.01						
13 February 2023		SW Duplicate	8.69	2290	25	-	<5	-	0.008	0.067	<0.01						
17 May 2023		SD17	8.74	339	12	-	<5	-	0.001	0.002	<0.01						
17 May 2023		SB16A	9.27	1740	12	-	<5	-	0.002	0.045	<0.01						
17 May 2023		Void	8.66	2700	7	-	<5	-									
17 May 2023		SB23B	8.06	217	10	-	<5	-	0.001	0.001	<0.01						
17 May 2023		SD9	8.85	448	100	-	<5	-	0.001	0.004	<0.01						
17 May 2023		SB24B	9.34	586	23	-	<5	-	0.002	0.01	<0.01						
18 August 2023		SD17	8.16	590	89	-	<5	-	<0.001	0.001	<0.01						
21 August 2023		Void	8.22	2920	1080	-	<5	-									
18 August 2023		SB25	8.1	430	5	-	<5	-	<0.001	0.006	<0.01						
18 August 2023		SB6	7.76	250	48	-	<5	-	<0.001	<0.001	<0.01						
18 August 2023		SD1	8.54	442	30	-	<5	-	0.002	0.002	<0.01						
18 August 2023		SB5A	8.71	318	14	-	<5	-	<0.001	0.002	<0.01						
18 August 2023		SB5B	8.51	353	12	-	<5	-	<0.001	0.001	<0.01						
18 August 2023		SB4	8.79	2210	8	-	<5	-	0.013	0.049	<0.01						
17 August 2023		PW3	8.84	2320	5	-	<5	-	0.01	0.051	<0.01						
17 August 2023		SB16B	8.6	604	34	-	<5	-	0.002	0.01	<0.01						
18 August 2023		SD8	8.58	677	25	-	<5	-	0.001	0.015	<0.01						
17 August 2023		SB23A	8.39	258	<5	-	<5	-	<0.001	0.002	<0.01						
17 August 2023		SB23B	9.1	271	12	-	<5	-	<0.001	0.001	<0.01						
17 August 2023		SD9	9.43	1330	122	-	<5	-	0.002	0.022	<0.01						
17 August 2023		SD26	8.72	1280	34	-	<5	-	<0.001	0.01	<0.01						
17 August 2023		SB26	8.9	1270	95	-	<5	-	0.001	0.02	<0.01						
17 August 2023		SB24A	8.82	2460	12	-	<5	-	0.02	0.058	<0.01						

17 August 2023		SB24B	8.7	1470	99	-	<5	-	0.001	0.022	<0.01						
17 August 2023		SW Blank	7.63	<1	<5	-	<5	-	<0.001	<0.001	<0.01						
18 August 2023		SW Duplicate	8.48	356	<5	-	<5	-	<0.001	0.002	<0.01						
23 November 2023		SD17	8.16	362	106	-	<5	-	<0.001	0.006	<0.01						
23 November 2023		SD27	7.99	136	382	-	<5	-	0.003	0.002	<0.01						
23 November 2023		SB16A	8.57	762	57	-	<5	-	0.003	0.03	<0.01						
12 December 2023		Void	8.92	3300	51	-	<5	-									
23 November 2023		SB23B	9.09	281	22	-	<5	-	0.002	0.002	<0.01						
23 November 2023		SD9	8.01	584	1300	-	<5	-	0.003	0.004	<0.01						
23 November 2023		SB24B	8.41	1010	70	-	<5	-	0.003	0.022	<0.01						
23 November 2023		SW Blank	7.67	<1	<5	-	<5	-	<0.001	0.001	<0.01						
23 November 2023		SW Duplicate	8.42	1020	72	-	<5	-	0.003	0.022	<0.01						
2024																	
7-Feb-2024		SD17	9.24	967	74	-	<5	-	0.004	0.018	<0.01						
8-Feb-2024		SD27	7.82	255	27	-	<5	-	0.006	0.003	<0.01						
9-Feb-2024		SB16A				-		-									
10-Feb-2024		Void	9.26	3750	22	-	<5	-									
11-Feb-2024		GC-U				-		-									
12-Feb-2024		GC-D				-		-									
13-Feb-2024		BC-U				-		-									
14-Feb-2024		BC-D				-		-									
15-Feb-2024		SB25	8.5	1361	140	-	<5	-	0.004	0.049	<0.01						
16-Feb-2024		SB6	7.76	343	15	-	<5	-	0.002	0.003	<0.01						
17-Feb-2024		SB7				-		-									
18-Feb-2024		SD1	7.96	578	56	-	<5	-	0.002	0.006	<0.01						
19-Feb-2024		SB5A	8.49	1104	20	-	<5	-	0.004	0.023	<0.01						
20-Feb-2024		SB5B	8.55	519	124	-	<5	-	0.002	0.004	<0.01						
21-Feb-2024		SB4	8.81	2650	28	-	<5	-	0.016	0.067	<0.01						
22-Feb-2024		PW3	8.91	2750	16	-	<5	-	0.018	0.072	<0.01						
23-Feb-2024		SB16B	8.1	689	26	-	<5	-	0.003	0.018	<0.01						
24-Feb-2024		SD8	8.04	666	27	-	<5	-	0.003	0.017	<0.01						
25-Feb-2024		SB23A	8.07	299	8	-	<5	-	0.002	0.003	<0.01						
26-Feb-2024		SB23B	7.31	392	18	-	<5	-	0.003	0.001	<0.01						
27-Feb-2024		SD9	8.62	529	105	-	<5	-	0.002	0.006	<0.01						
28-Feb-2024		SD28				-		-									
29-Feb-2024		SD26				-		-									
1-Mar-2024		SB26	8.43	441	63	-	<5	-	0.003	0.008	<0.01						
2-Mar-2024		SB24A	8.57	1165	37	-	<5	-	0.007	0.024	<0.01						
3-Mar-2024		SB24B	8.05	576	21	-	<5	-	0.003	0.011	<0.01						
4-Mar-2024		PW5	8.99	2740	94	-	<5	-	0.017	0.059	<0.01						
5-Mar-2024		PW6	8.87	2740	13	-	<5	-	0.018	0.058	<0.01						
6-Mar-2024		SW Blank	8.18	3.2	<5	-	<5	-	<0.001	<0.001	<0.01						
7-Mar-2024		SW Duplicate	8.53	1166	42	-	<5	-	0.007	0.024	<0.01						
8-Mar-2024		SD17	7.86	550	51	-	<5	-	0.002	0.013	<0.01						
9-Mar-2024		SD27	7.2	132.5	509	-	<5	-	0.002	<0.001	<0.01						
10-Mar-2024		SB16A	8.63	614	687	-	<5	-	0.003	0.009	<0.01						

26-Apr-2024	SB23B	8.47	382	26	-	<5	-	0.003	0.002	<0.01						
27-Apr-2024	SD9	9.06	987	24	-	<5	-	0.004	0.026	<0.01						
28-Apr-2024	SB24A	8.66	2660	28	-	<5	-	0.014	0.084	<0.01						
29-Apr-2024	SD28				-		-									
30-Apr-2024	Reload Dam	7.84	268	<5	-	<5	-	<0.001	0.002	<0.01						
1-May-2024	SW Blank	8.28	-1.6	<5	-	<5	-	<0.001	<0.001	<0.01						
2-May-2024	SW Duplicate	9.12	995	16	-	<5	-	0.004	0.026	<0.01						
7-Aug-2024	SD17	6.82	328	98	-	6	-	<0.001	0.003	<0.01						
7-Aug-2024	SD27	6.93	128	116	-	<5	-	0.002	0.002	<0.01						
7-Aug-2024	SB16A	8.57	485	347	-	<5	-	0.003	0.004	<0.01						
7-Aug-2024	Void	8.70	461	1520	-	<5	-									
7-Aug-2024	GC-U	7.14	165	46	-	<5	-	<0.001	<0.001	<0.01						
7-Aug-2024	GC-D	4.41	141	200	-	<5	-	0.001	<0.001	<0.01						
7-Aug-2024	BC-U				-		-									
7-Aug-2024	BC-D	4.65	163	51	-	<5	-	<0.001	<0.001	<0.01						
7-Aug-2024	SB25	5.29	346	20	-	<5	-	<0.001	0.004	<0.01						
7-Aug-2024	SB6	5.85	217	25	-	<5	-	<0.001	<0.001	<0.01						
7-Aug-2024	SB7	6.96	147	68	-	<5	-	<0.001	<0.001	<0.01						
7-Aug-2024	SD1	6.29	178	89	-	<5	-	<0.001	0.003	<0.01						
7-Aug-2024	SB5A	7.36	894	60	-	<5	-	0.003	0.026	<0.01						
7-Aug-2024	SB5B	7.01	208	127	-	<5	-	<0.001	0.002	<0.01						
7-Aug-2024	SB4	7.23	529	223	-	<5	-	0.005	0.019	<0.01						
7-Aug-2024	PW3	6.19	1373	<5	-	<5	-	0.006	0.031	<0.01						
7-Aug-2024	SB16B	7.53	685	47	-	<5	-	0.003	0.005	<0.01						
7-Aug-2024	SD8	7.25	928	69	-	<5	-	0.006	0.025	<0.01						
7-Aug-2024	SB23A	6.20	151	130	-	<5	-	<0.001	0.002	<0.01						
7-Aug-2024	SB23B	7.09	192	54	-	<5	-	<0.001	0.001	<0.01						
7-Aug-2024	SD9	7.29	365	264	-	<5	-	0.002	0.007	<0.01						
7-Aug-2024	SD28	7.78	371	211	-	<5	-	0.004	0.002	<0.01						
7-Aug-2024	SB26	6.66	165	1310	-	<5	-	0.002	0.002	<0.01						
7-Aug-2024	SD26	6.83	468	317	-	<5	-	<0.001	0.003	<0.01						
7-Aug-2024	SB24A	7.47	142	34	-	<5	-	0.009	0.041	<0.01						
7-Aug-2024	SB24B	7.76	468	54	-	<5	-	0.004	0.008	<0.01						
7-Aug-2024	PW5	8.38	1540	36	-	<5	-	0.008	0.040	<0.01						
7-Aug-2024	PW6	6.65	2480	<5	-	<5	-	0.024	0.065	<0.01						
7-Aug-2024	Reload Dam	7.32	163	<5	-	<5	-	<0.001	0.001	<0.01						
7-Aug-2024	SW Blank	5.12	5.6	<5	-	<5	-	<0.001	<0.001	<0.01						
7-Aug-2024	SW Duplicate	5.11	157	50	-	<5	-	<0.001	<0.001	<0.01						
27-Nov-2024	SD17	7.70	825	50	-	<5	-	0.002	0.005	<0.01						
28-Nov-2024	Void	8.44	3430	84	-	<5	-	0.032	0.072	<0.01						
27-Nov-2024	GC-U				-		-									
27-Nov-2024	BC-U				-		-									
27-Nov-2024	BC-D				-		-									
27-Nov-2024	SB23B	8.47	382	26	-	<5	-	0.003	0.002	<0.01						
27-Nov-2024	SD9	9.06	987	24	-	<5	-	0.004	0.026	<0.01						
27-Nov-2024	SB24A	8.66	2660	28	-	<5	-	0.014	0.084	<0.01						

27-Nov-2024
27-Nov-2024
27-Nov-2024
27-Nov-2024

SD28				-		-									
Reload Dam	7.84	268	<5	-	<5	-	<0.001	0.002	<0.01						
SW Blank	8.28	-1.6	<5	-	<5	-	<0.001	<0.001	<0.01						
SW Duplicate	9.12	995	16	-	<5	-	0.004	0.026	<0.01						

Appendix 4: GW Monitoring Data

GROUNDWATER MONITORING DATA

[illegible]

[illegible]

[illegible]

Sample Location	Date	Depth to Ground - m/gf	Depth to Stand - m/boc	Field Parameters		EC - uS/cm	pH - Lab	Total Dissolved Solids	Major Anions				Major Cations				Total Metals																Micro (mg/L)		Ammonia & Nitrogen (N)		Nitrate as N - mg/L		Nitrite as N - mg/L		Total Anions - mg/L		Total Cations - mg/L		Ionic Balance		TPH (G/G)		TPH (D-50)		TPH (G-50)		TPH (D-50)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
				pH - field	EC - field - uS/cm				Temp - field - °C	Alkalinity as CaCO3 - mg/L	Sulfate as SO4 - mg/L	Chloride as Cl - mg/L	Carbonate as CaCO3 - mg/L	Bicarbonate as CaCO3 - mg/L	Nitrate as NO3 - mg/L	Sulfate as SO4 - mg/L	Calcium as Ca - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Magnesium (Mg) - mg/L	Aluminum (Al) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg/L	Molybdenum (Mo) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Lead (Pb) - mg/L	Silver (Ag) - mg/L	Vanadium (V) - mg/L	Molybdenum (Mo) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Lithium (Li) - mg/L	Selenium (Se) - mg/L	Antimony (Sb) - mg/L	Tellurium (Te) - mg/L	Bismuth (Bi) - mg

Sample location	Date	Field Parameters				pH	EC - $\mu\text{S/cm}$	Temp. - $^{\circ}\text{C}$	Total Dissolved Solids	Major Anions										Major Cations										Total Metals										Total As - mg/L	Total Pb - mg/L	Total Cd - mg/L	Total Cr - mg/L	Total Cu - mg/L	Total Fe - mg/L	Total Mn - mg/L	Total Ni - mg/L	Total Zn - mg/L	Total Al - mg/L	Total Ca - mg/L	Total Mg - mg/L	Total K - mg/L	Total Na - mg/L	Total Cl - mg/L	Total S - mg/L	Total N - mg/L	Total P - mg/L	Total Si - mg/L	Total B - mg/L	Total I - mg/L	Total Br - mg/L	Total F - mg/L	Total O - mg/L	Total H - mg/L	Total C - mg/L	Total H ₂ O - mg/L	Total CO ₂ - mg/L	Total SO ₂ - mg/L	Total NO ₂ - mg/L	Total NO ₃ - mg/L	Total NH ₄ - mg/L	Total PO ₄ - mg/L	Total PO ₃ - mg/L	Total PO ₂ - mg/L	Total PO ₁ - mg/L	Total PO ₀ - mg/L	Total PO ₋₁ - mg/L	Total PO ₋₂ - mg/L	Total PO ₋₃ - mg/L	Total PO ₋₄ - mg/L	Total PO ₋₅ - mg/L	Total PO ₋₆ - mg/L	Total PO ₋₇ - mg/L	Total PO ₋₈ - mg/L	Total PO ₋₉ - mg/L	Total PO ₋₁₀ - mg/L	Total PO ₋₁₁ - mg/L	Total PO ₋₁₂ - mg/L	Total PO ₋₁₃ - mg/L	Total PO ₋₁₄ - mg/L	Total PO ₋₁₅ - mg/L	Total PO ₋₁₆ - mg/L	Total PO ₋₁₇ - mg/L	Total PO ₋₁₈ - mg/L	Total PO ₋₁₉ - mg/L	Total PO ₋₂₀ - mg/L	Total PO ₋₂₁ - mg/L	Total PO ₋₂₂ - mg/L	Total PO ₋₂₃ - mg/L	Total PO ₋₂₄ - mg/L	Total PO ₋₂₅ - mg/L	Total PO ₋₂₆ - mg/L	Total PO ₋₂₇ - mg/L	Total PO ₋₂₈ - mg/L	Total PO ₋₂₉ - mg/L	Total PO ₋₃₀ - mg/L	Total PO ₋₃₁ - mg/L	Total PO ₋₃₂ - mg/L	Total PO ₋₃₃ - mg/L	Total PO ₋₃₄ - mg/L	Total PO ₋₃₅ - mg/L	Total PO ₋₃₆ - mg/L	Total PO ₋₃₇ - mg/L	Total PO ₋₃₈ - mg/L	Total PO ₋₃₉ - mg/L	Total PO ₋₄₀ - mg/L	Total PO ₋₄₁ - mg/L	Total PO ₋₄₂ - mg/L	Total PO ₋₄₃ - mg/L	Total PO ₋₄₄ - mg/L	Total PO ₋₄₅ - mg/L	Total PO ₋₄₆ - mg/L	Total PO ₋₄₇ - mg/L	Total PO ₋₄₈ - mg/L	Total PO ₋₄₉ - mg/L	Total PO ₋₅₀ - mg/L	Total PO ₋₅₁ - mg/L	Total PO ₋₅₂ - mg/L	Total PO ₋₅₃ - mg/L	Total PO ₋₅₄ - mg/L	Total PO ₋₅₅ - mg/L	Total PO ₋₅₆ - mg/L	Total PO ₋₅₇ - mg/L	Total PO ₋₅₈ - mg/L	Total PO ₋₅₉ - mg/L	Total PO ₋₆₀ - mg/L	Total PO ₋₆₁ - mg/L	Total PO ₋₆₂ - mg/L	Total PO ₋₆₃ - mg/L	Total PO ₋₆₄ - mg/L	Total PO ₋₆₅ - mg/L	Total PO ₋₆₆ - mg/L	Total PO ₋₆₇ - mg/L	Total PO ₋₆₈ - mg/L	Total PO ₋₆₉ - mg/L	Total PO ₋₇₀ - mg/L	Total PO ₋₇₁ - mg/L	Total PO ₋₇₂ - mg/L	Total PO ₋₇₃ - mg/L	Total PO ₋₇₄ - mg/L	Total PO ₋₇₅ - mg/L	Total PO ₋₇₆ - mg/L	Total PO ₋₇₇ - mg/L	Total PO ₋₇₈ - mg/L	Total PO ₋₇₉ - mg/L	Total PO ₋₈₀ - mg/L	Total PO ₋₈₁ - mg/L	Total PO ₋₈₂ - mg/L	Total PO ₋₈₃ - mg/L	Total PO ₋₈₄ - mg/L	Total PO ₋₈₅ - mg/L	Total PO ₋₈₆ - mg/L	Total PO ₋₈₇ - mg/L	Total PO ₋₈₈ - mg/L	Total PO ₋₈₉ - mg/L	Total PO ₋₉₀ - mg/L	Total PO ₋₉₁ - mg/L	Total PO ₋₉₂ - mg/L	Total PO ₋₉₃ - mg/L	Total PO ₋₉₄ - mg/L	Total PO ₋₉₅ - mg/L	Total PO ₋₉₆ - mg/L	Total PO ₋₉₇ - mg/L	Total PO ₋₉₈ - mg/L	Total PO ₋₉₉ - mg/L	Total PO ₋₁₀₀ - mg/L	Total PO ₋₁₀₁ - mg/L	Total PO ₋₁₀₂ - mg/L	Total PO ₋₁₀₃ - mg/L	Total PO ₋₁₀₄ - mg/L	Total PO ₋₁₀₅ - mg/L	Total PO ₋₁₀₆ - mg/L	Total PO ₋₁₀₇ - mg/L	Total PO ₋₁₀₈ - mg/L	Total PO ₋₁₀₉ - mg/L	Total PO ₋₁₁₀ - mg/L	Total PO ₋₁₁₁ - mg/L	Total PO ₋₁₁₂ - mg/L																																																																																																																																					
		Depth to Ground - m	Depth to Water - m	EC - $\mu\text{S/cm}$	Temp. - $^{\circ}\text{C}$					Hydroxide (OH ⁻) - mg/L	Carbonate (CO ₃ ²⁻) - mg/L	Bicarbonate (HCO ₃ ⁻) - mg/L	Sulfate (SO ₄ ²⁻) - mg/L	Chloride (Cl ⁻) - mg/L	Calcium (Ca ²⁺) - mg/L	Magnesium (Mg ²⁺) - mg/L	Sodium (Na ⁺) - mg/L	Potassium (K ⁺) - mg/L	Ammonium (NH ₄ ⁺) - mg/L	Iron (Fe ²⁺) - mg/L	Boron (B) - mg/L	Strontium (Sr) - mg/L	Barium (Ba) - mg/L	Vanadium (V) - mg/L	Cadmium (Cd) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Chromium (Cr) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Zinc (Zn) - mg/L	Selenium (Se) - mg/L	Fluoride (F) - mg/L	Antimony (Sb) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L																																																																																																																																																						Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr) - mg/L	Mercury (Hg) - mg/L	Lead (Pb) - mg/L	Chromium (Cr

[illegible]

[illegible]

[illegible]

[illegible]

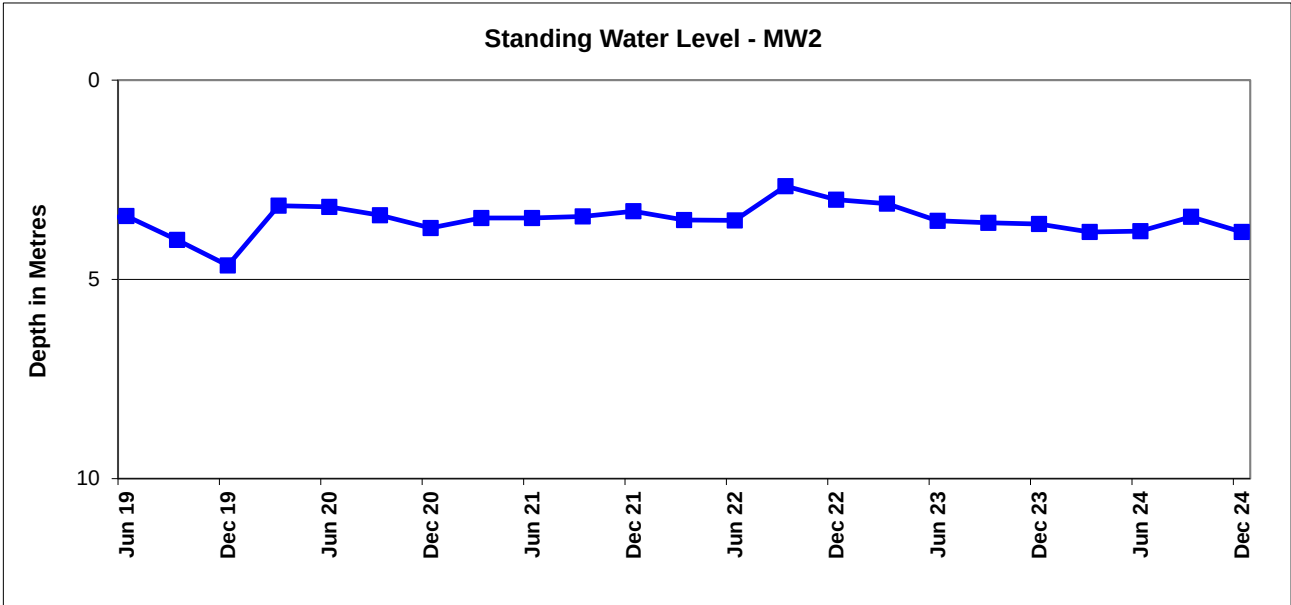
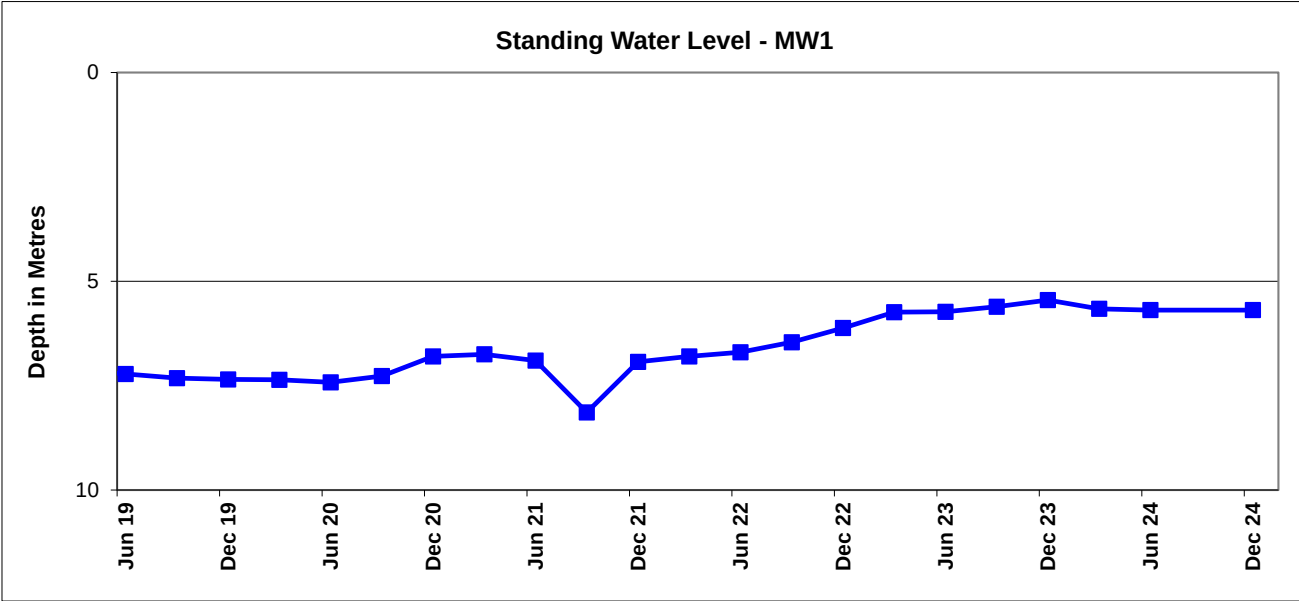
[illegible]

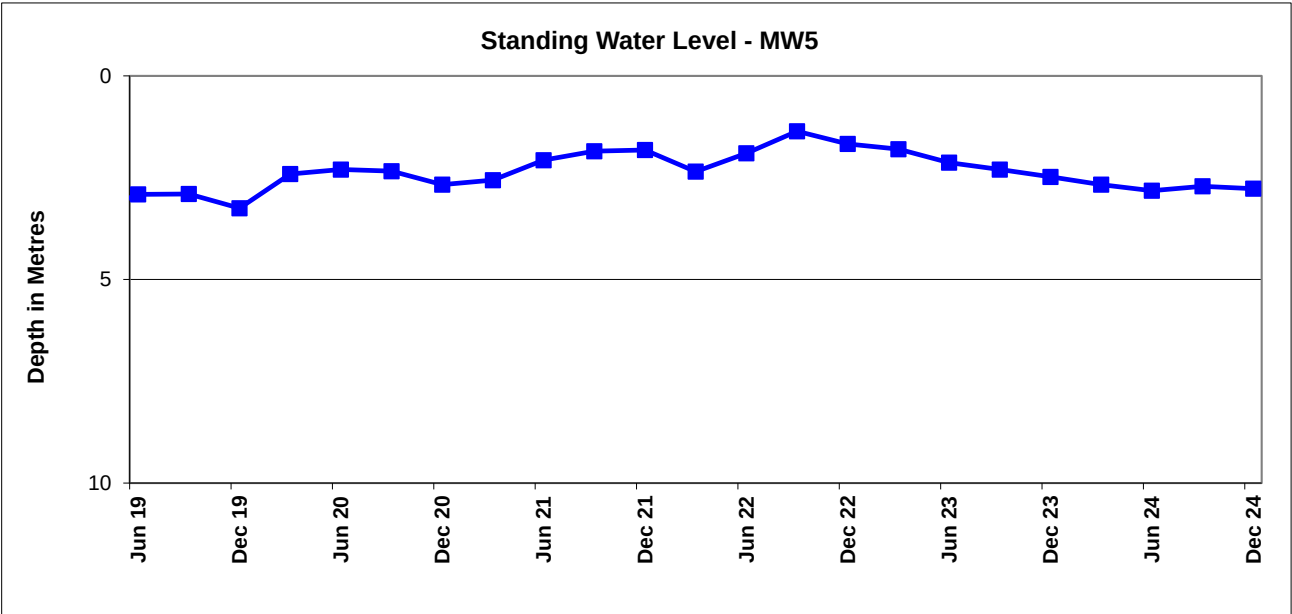
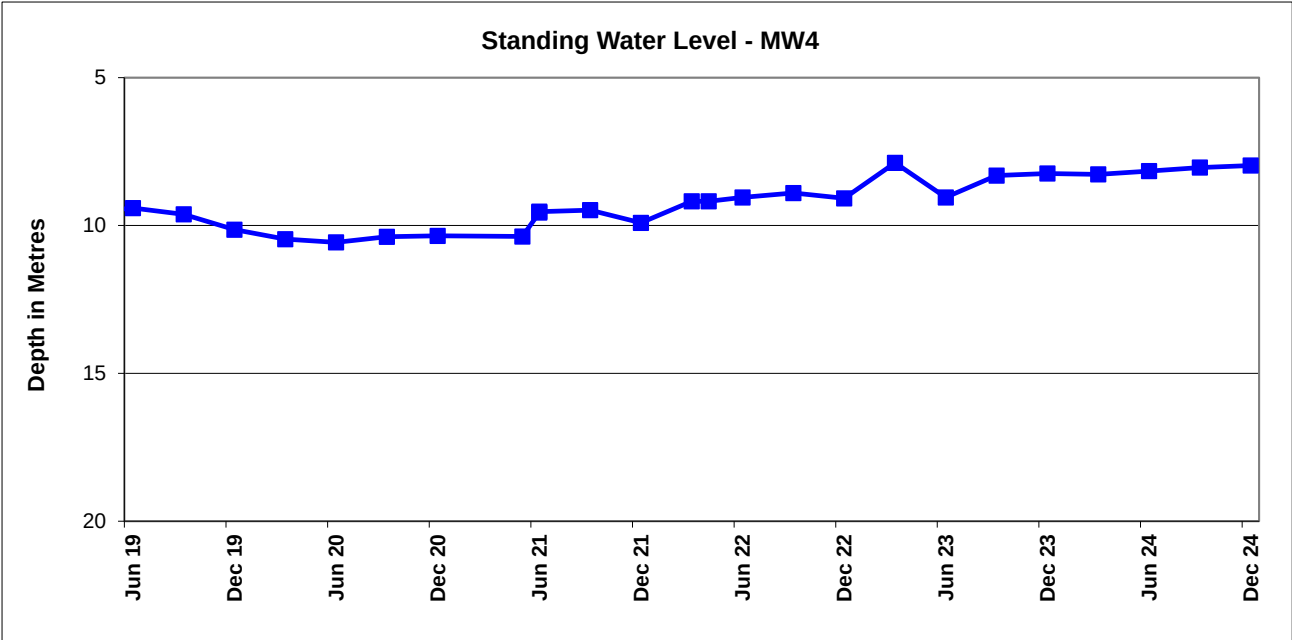
[illegible]

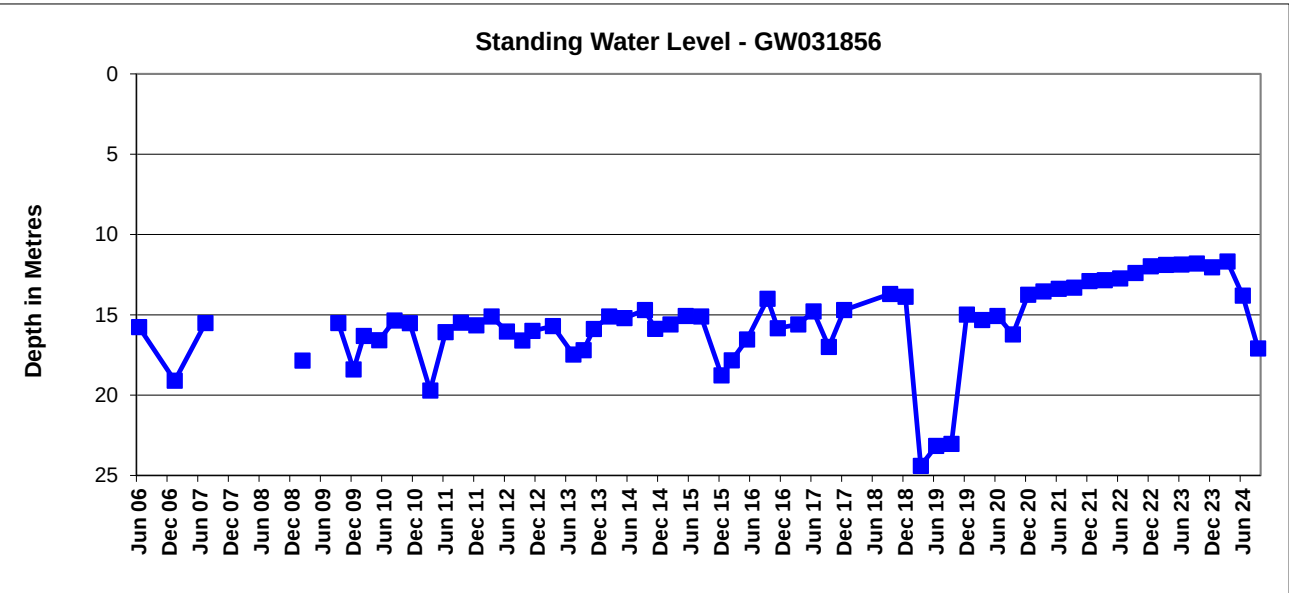
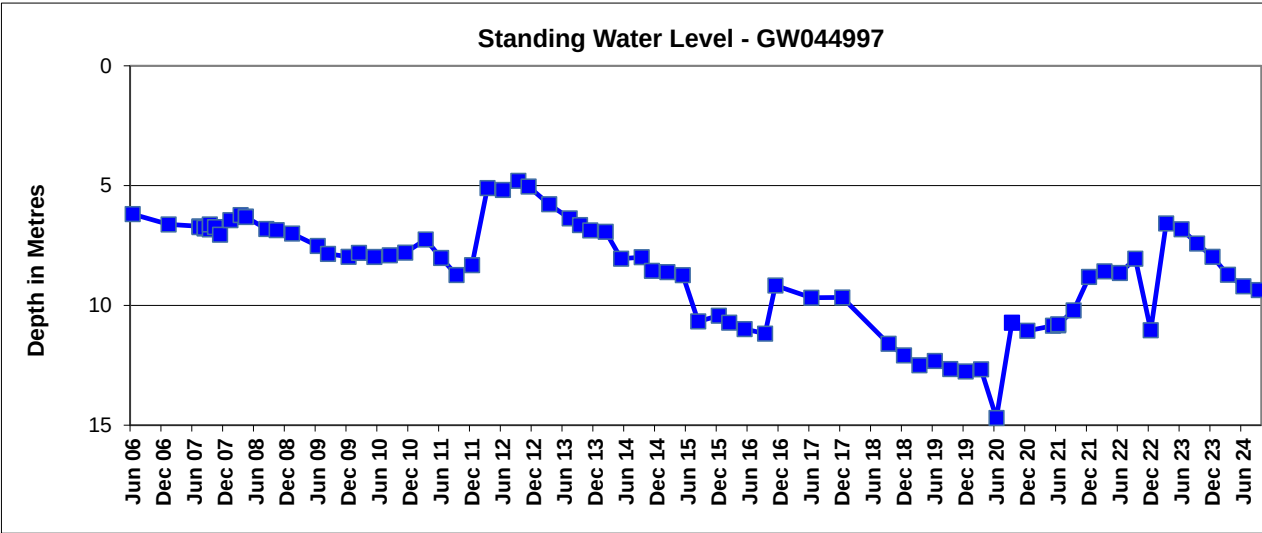
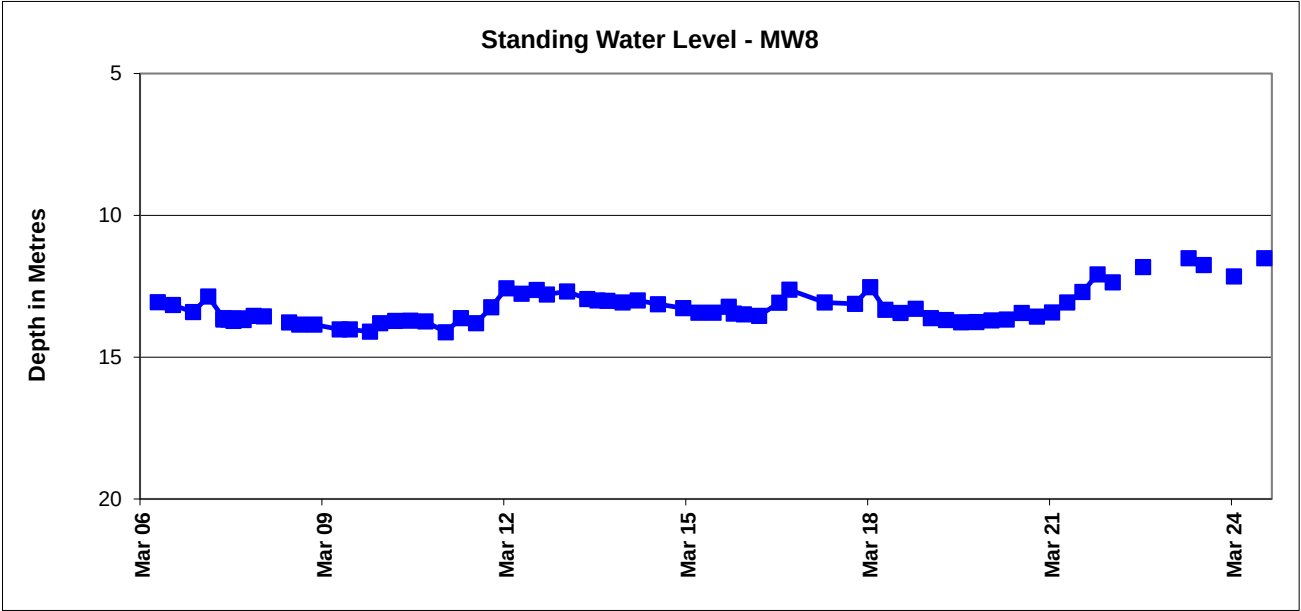
[illegible]

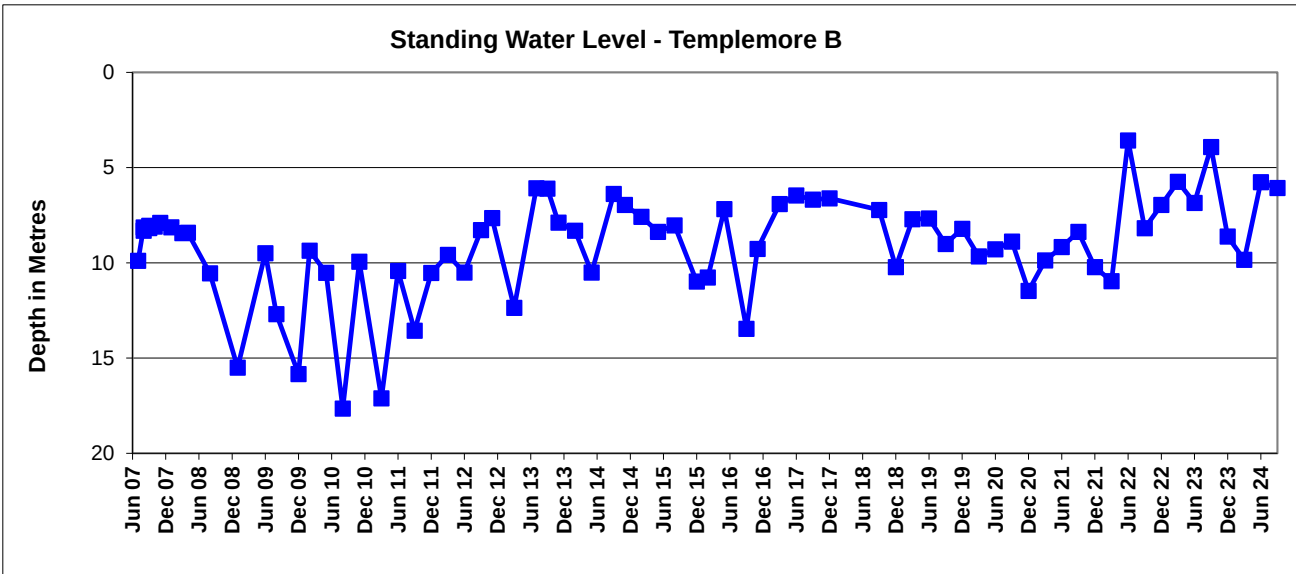
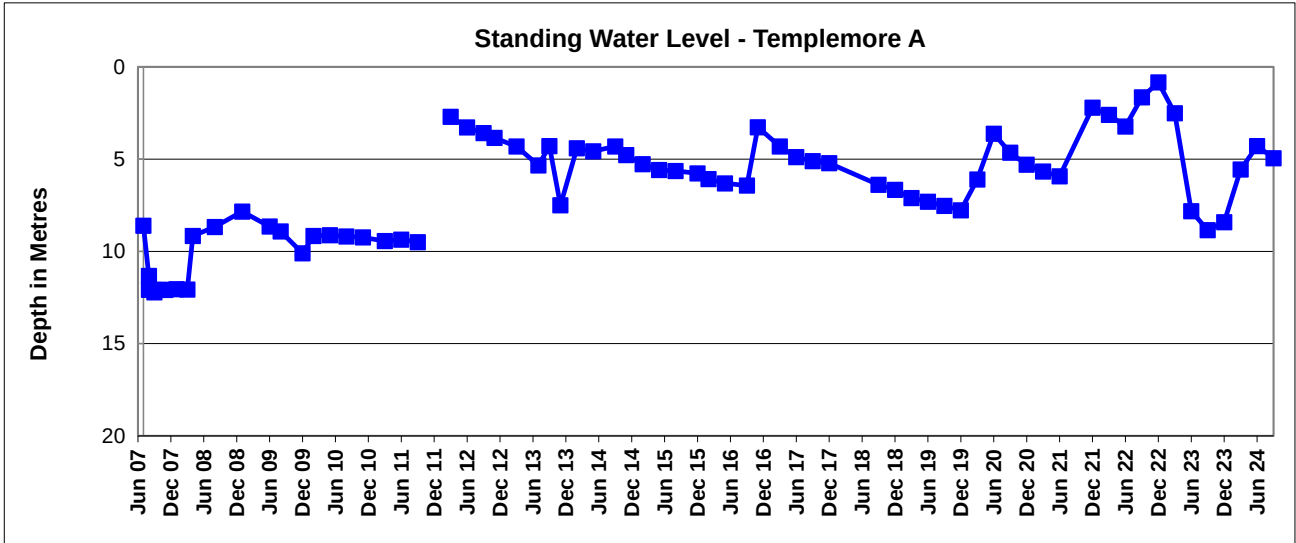
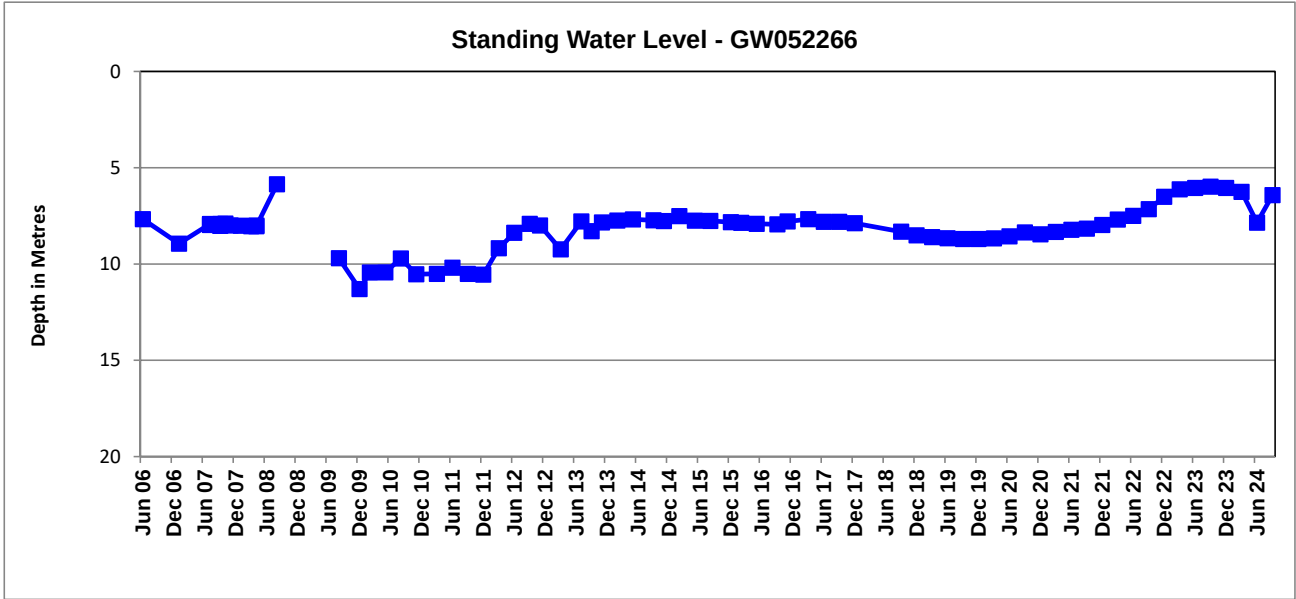
[illegible]

Sample Location	Date	Depth to Ground - m/gal	Field Parameters				pH Lab	EC Lab - µm/cm	Total Dissolved Solids	Major Anions				Major Cations				Total Metals												Ammonia as Nitrogen (N)	Nitrate as N - mg/L	Nitrate as N - mg/L	Total Anions - mg/L	Total Cations - mg/L	Ionic Balance	TPH (G-3)	TPH (G-25)	TPH (G-30)	TPH (G-50)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
			Depth to Water - m/mc	pH - field	EC - field - µm/cm	Temp - field - °C				Nitrate as N - mg/L	Sulfate as SO4 - mg/L	Chloride as Cl - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Aluminum (Al) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L											Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molybdenum (Mo) - mg/L	Barium (Ba) - mg/L	Strontium (Sr) - mg/L	Boron (B) - mg/L	Lithium (Li) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Copper (Cu) - mg/L	Zinc (Zn) - mg/L	Iron (Fe) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Cadmium (Cd) - mg/L	Lead (Pb) - mg/L	Selenium (Se) - mg/L	Vanadium (V) - mg/L	Cobalt (Co) - mg/L	Chromium (Cr) - mg/L	Chromium (Cr) - mg/L	Molyb

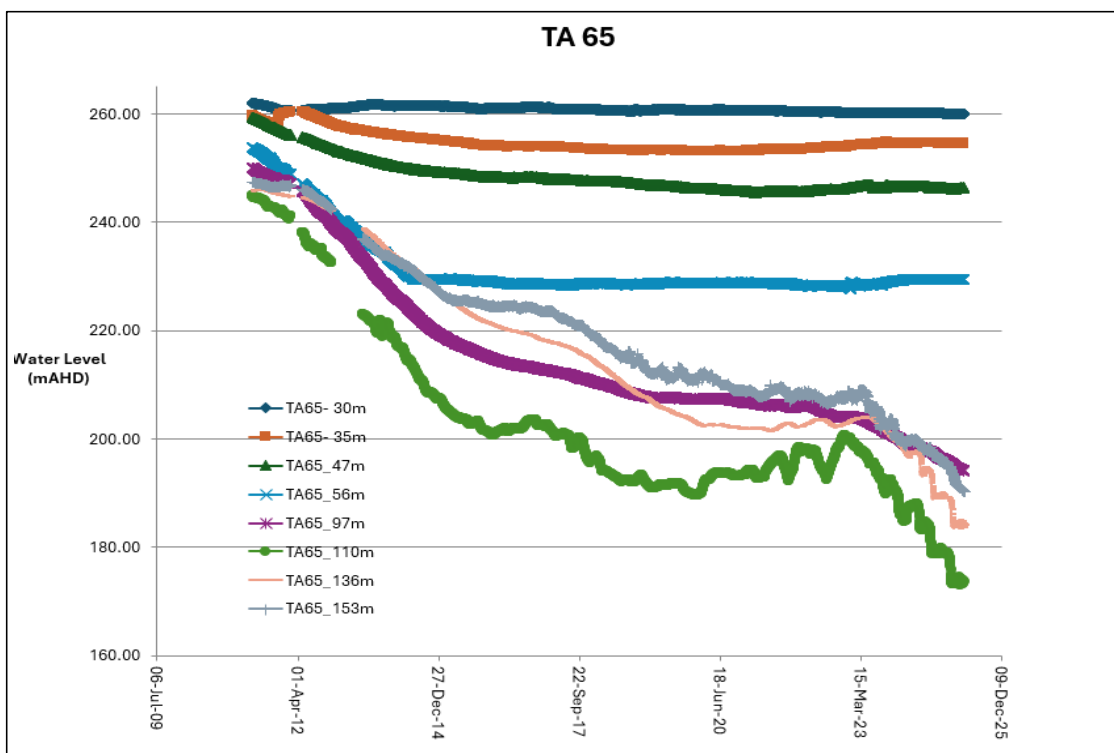




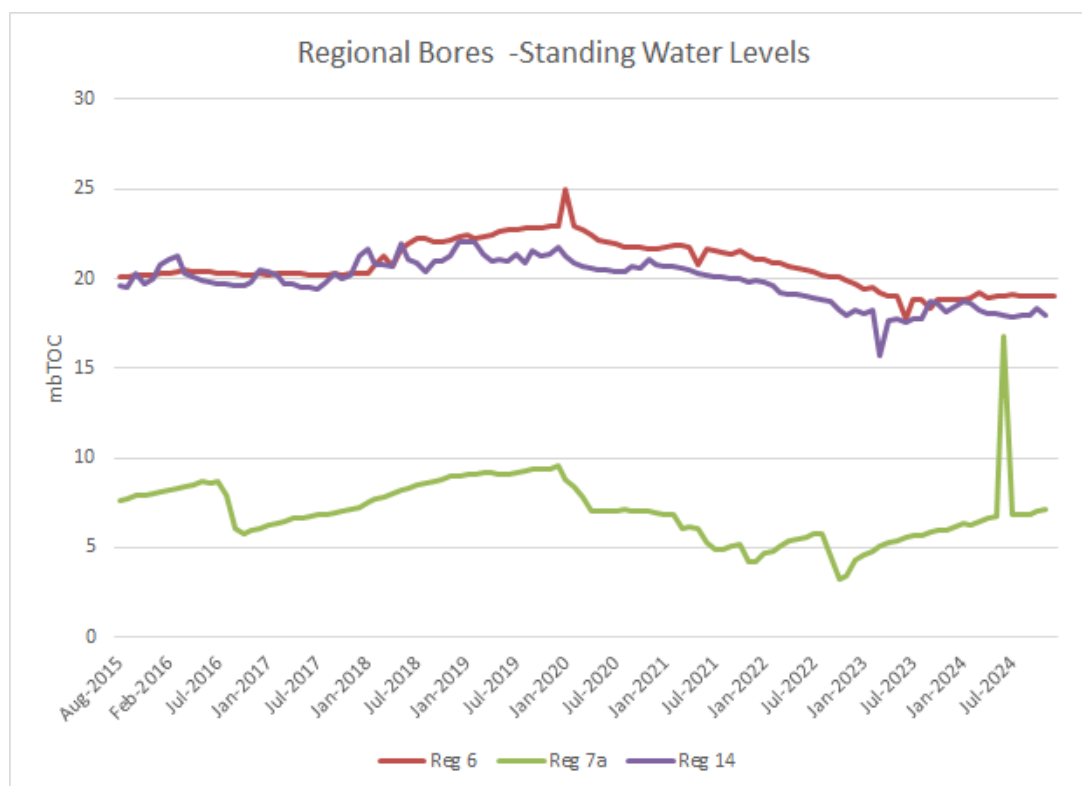




Vibrating Wire Piezometers:



Regional Bores:



NSW Planning ref: MP11_0047-PA-85



Tarrawonga Coal Pty Ltd
PO Box 600
GUNNEDAH NSW 2380
03/06/2025

Sent via the Major Projects Portal only

Subject: Tarrawonga Coal Expansion - Annual Review 2024

Dear 

I refer to the Tarrawonga Coal Mine Annual Review for the period 1 January 2024 to 31 December 2024, submitted as required by Schedule 5, Condition 4 of MP11_0047 as modified (the consent) to the NSW Department of Planning, Housing and Infrastructure (NSW Planning) on 31 March 2024.

NSW Planning has reviewed the Annual Review and considers it to generally satisfy the reporting requirements of the consent and the NSW Planning *Annual Review Guideline* (October 2015). Please make publicly available a copy of the Annual Review on the company's website within 30 days.

Please note that the NSW Planning's acceptance of this Annual Review is not an endorsement of the compliance status of the project.

NSW Planning notes that the non-compliance identified in the Annual Review with Schedule 5, Condition 13(a) of the consent was addressed during the reporting period. No further action is proposed in relation this non-compliance.

Should you wish to discuss the matter further, please contact  Senior Compliance Officer on  or email compliance@planning.nsw.gov.au

Yours sincerely



Team Leader
Compliance

As nominee of the Planning Secretary