Vickery Extension Project Groundwater Monitoring Report

Quarterly Review February 2025 – April 2025

Whitehaven Coal Ltd

Blue Vale Rd, Boggabri NSW 2382 Australia

Prepared by:

SLR Consulting Australia

SLR Project No.: 640.031099.00001

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Revision: 1.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1.0	25 June 2025	Daniel D'Elmaine Raymond Minnaar	Sharon Hulbert	Sharon Hulbert

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Whitehaven Coal Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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Acronyms and Abbreviations

CMAs	Corrective Management Actions
EC	Electronic Conductivities
EP&A Act	Environmental Planning and Assessment Act, 1979
GWMP	Groundwater Management Plan
mbgl	meter below ground level
mbtoc	meters below top of casing
pH	potential of Hydrogen
TARP	Trigger Action Response Plan
VCPL	Vickery Coal Pty Ltd
VEP	Vickery Extension Project
WMP	Water Management Plan

1.0 Introduction

1.1 Background

SLR Consulting Australia Pty Ltd (SLR) was engaged by Whitehaven Coal Pty Ltd (Whitehaven) to undertake a review of groundwater data for the Vickery Extension Project (VEP) between 1st February 2025 through 30th April 2025.

The VEP Development Consent (SSD-7480) was granted to Vickery Coal Pty Ltd. (VCPL) on 12 August 2020 by the NSW Independent Planning Commission as a delegate of the NSW Minister for Planning under Section 75J of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act). Approval EPBC 2016/7649 under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) was granted on 15 September 2021.

Pertinent to the groundwater monitoring and subsequent reporting, is Condition 8 of EPBC 2016/7649, that states:

> *8. In Addition to the Groundwater Management Plan monitoring requirements specified in condition B53 of the State Development Consent, the approval holder must:*
>
> *a. Establish and maintain a network of groundwater monitoring bores designed to detect changes in groundwater levels and include bores that are co-located or paired with surface water monitoring sites to allow monitoring and analysis of groundwater – surface water interactions. These monitoring bores must be installed prior to the commencement of mining operations.*
>
> *b. Monitor groundwater levels in each bore (required under condition 8.a) at least once every 3 months, starting within one week of the commencement of mining operations for the life of this approval.*
>
> *c. Publish on the website all groundwater monitoring data from the bore network, updated at least once every three months to include the most recent readings available and to maintain the data on the website for the life of this approval. The monitoring data must include hydrographs for the bore network and explain what the data means in relation to the groundwater performance measures specified in the State Development Consent.*

This quarterly report has been compiled for Vickery Coal Mine (VCM) to comply with Condition 8(c) of EPBC 2016/7649. Groundwater monitoring commenced in October 2023 aligning with the commencement of mining in October 2023 and in accordance with Condition 8(b). Reporting to date includes:

1. Initial Quarterly Report (August 2023 through October 2023), published January 2024.
2. 2023 Annual Review (1st January 2023 through 31st December 2023), to be published on the website following approval from NSW Department of Planning, Housing and Infrastructure (DPHI).
3. Second Quarterly Report (November 2023 through January 2024), published April 2024.
4. Third Quarterly Report (February 2024 through April 2024), published July 2024.
5. Forth Quarterly Report (May 2024 through July 2024), published October 2024.
6. Fifth Quarterly Report (August 2024 through October 2024), published January 2025.

7 Sixth Quarterly Report (November 2024 through January 2025), published March 2025.

Mining operations continue on site, with coal extraction occurring. Within the reporting period, Whitehaven Coal completed construction of Mine Water Dam 2 (MWD2) and are continuing extraction in the main box cut pit. As production zones gets deeper, there is increased in-pit water, which is a combination of groundwater seepage, direct rainfall collection, water runoff from on-site activities (i.e. dust suppression) and surface runoff. In-pit water is being managed via extraction through sump pumps into water carts for dust suppression and pumping excess water into MWD2. A water fill point is also operational at MWD2 allowing for efficient circulation of water carts for dust suppression across the active haul roads.

1.2 Trigger Action Response Plan

A Trigger Action Response Plan (TARP) was established in the Groundwater Management Plan (GWMP), as a means of providing specific suitable action where exceedances of the groundwater performance criteria are observed. The aim of the TARPs is to evaluate potential adverse changes to existing groundwater sources, confirm if they are due to the development, and provide a means to repair, mitigate and/or offset any adverse groundwater impacts (Whitehaven 2023). The groundwater level and quality TARP for the open cut activities at VEP is shown in **Appendix A**.

The GWMP states the procedure for the review, as follows. The confirmed exceedances will prompt an investigation, carried out by suitably qualified personnel, to assess the reasons for trigger exceedance, which could include but not be limited to climatic conditions, agriculture abstraction, and or mining activities. In the case exceedances are attributed to mining activities, the changes in groundwater conditions, such as a decrease in water level or changes in groundwater quality, will be compared to performance measures (discussed in Section 8.1 of GWMP) to evaluate the significance of any impacts manifested on the groundwater systems.

The results of the trigger investigations will be reported in each annual review. WHC will use the annual review following each reporting period to analyse the data and revise the trigger thresholds in response to additional baseline data as it becomes available. When this occurs the GWMP will be updated.

1.3 Report Objective

This report assesses the VEP groundwater monitoring data against the trigger levels for all required parameters (as per the TARP in the site GWMP) for the reporting period from 1st February 2025 through 30th April 2025.

This report includes:

- A summary of TARP exceedances, if any, during the reporting period;
- A summary of trigger exceedances, if any, over time including the identification of breaches of triggers that remain within normal condition in this reporting period;
- A high-level outline of potential influence factors for exceedances (a detailed analysis of exceedances is not discussed in this report) during the reporting period; and
- Recommendation of relevant actions and responses to be undertaken, in alignment with the TARPs.

The information in this monitoring report will be included in the ongoing quarterly monitoring reports for VEP and summarised in the 2025 Annual Review.

2.0 Monitoring Results

This section summarises the climate information, groundwater monitoring network, and monitoring results available to the conclusion of the reporting period.

2.1 Climate Data

Local climate data was obtained from the Vickery Coal Mine (VCM) (MET2) station, which commenced monitoring in September 2023. To understand long-term rainfall trends, the SILO climate record for the location 0.05° x 0.05° tile centred on a location within proximity of VEP (latitude: -30.75, longitude: 150.15) has been utilised (Queensland Government 2024). Comparison of the data sets show analogous trends, indicating the SILO data is a suitable representation of long-term trends.

Rainfall over the past 12 months, in comparison to the long-term average (i.e., January 1900 – present) is shown in **Table 1** and on **Figure 1**. Within the reporting period, MET2 showed slightly lower rainfall compared to long-term average rainfall in February. Significantly higher rainfall compared to the long-term average rainfall was observed from MET2 in March 2025 and slightly higher than long-term average in April 2025.

Table 1: Monthly rainfall vs long-term average rainfall

Year	2024									2025			
Month	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**March**	**Apr**
SILO 2024-2025 monthly rainfall (mm)	68.6	33.0	70.3	51.1	56.9	42.1	33.6	54.2	58.3	35.8	39.0	179.0	62.8
SILO Long-term average rainfall (mm)	33.2	39.2	40.5	38.6	35.2	37.3	49.0	58.0	60.9	69.4	57.6	47.0	33.5
On-site Rainfall (mm)	101.8	52.8	74.0	43.0	68.2	16.0	54.6	53.1	60.7	12.9	22.0	217.6	44.6

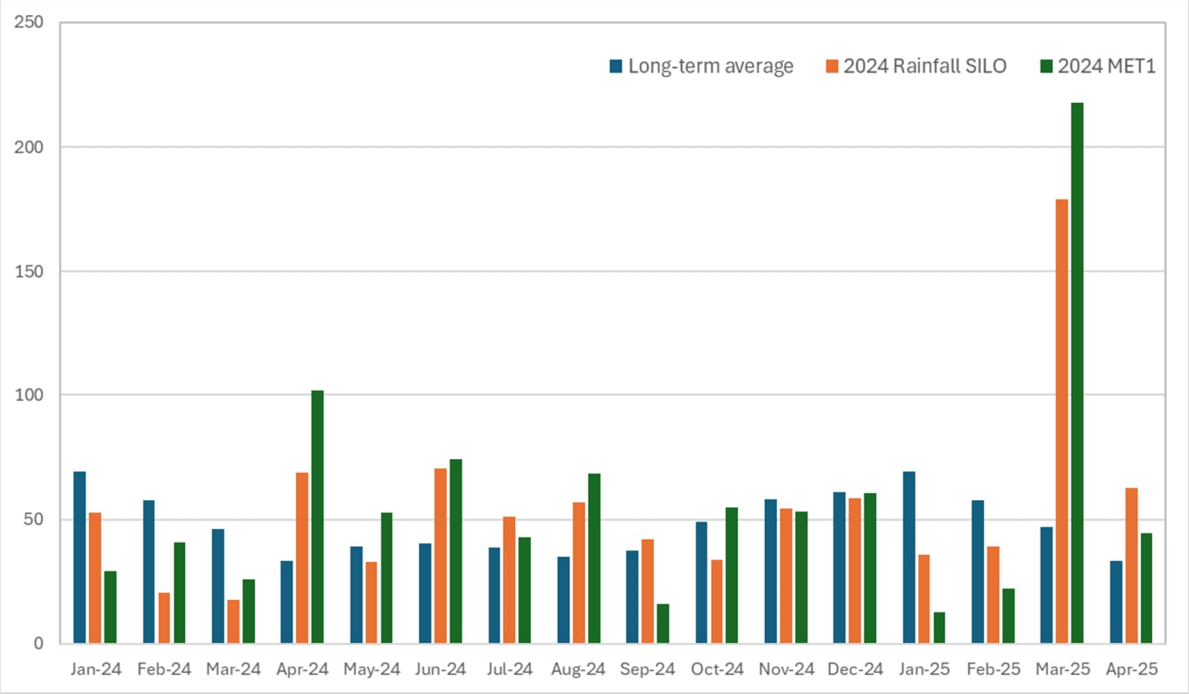


Figure 1 On-site monthly rainfall vs long-term average monthly rainfall

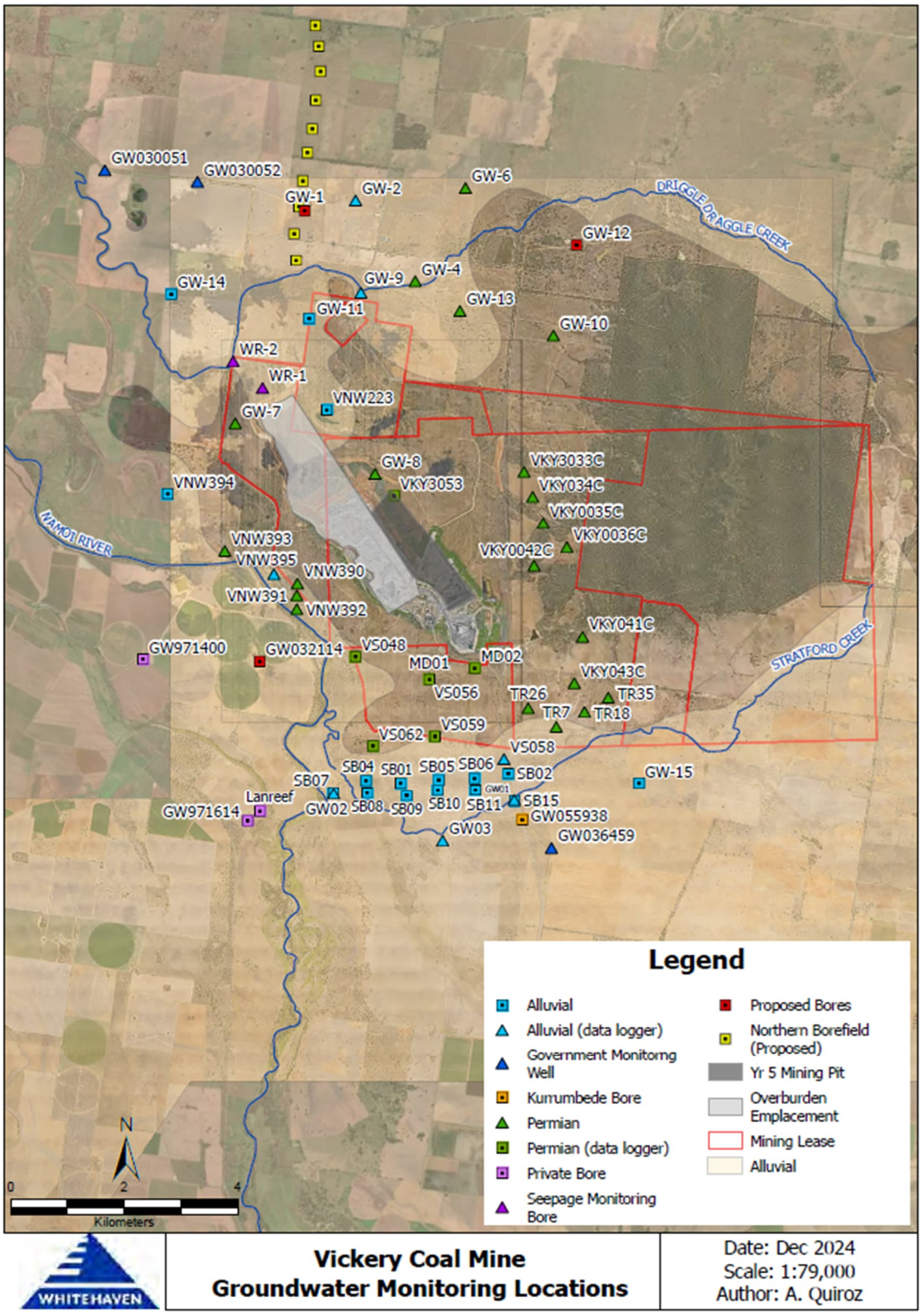
2.2 Groundwater Monitoring Network

Based on the GWMP, the existing groundwater monitoring network consists of 65 monitoring sites, including

- 32 monitoring locations in Alluvial aquifer; and
- 29 monitoring locations in Permian aquifer.
- Two sites (WR1 and WR2) positioned to monitor the potential for seepage from the spoil dump (installed January 2024).
- Two water supply bores (GW971400 and GW971614).

The groundwater network is presented on **Figure 2**, and full details provided in the GWMP (Whitehaven, 2023).

Figure 2: VCM groundwater monitoring network



2.3 Data Availability

In line with the VCM GWMP, the full suite of bores available was monitored during the reporting period.

2.4 Groundwater Levels

Groundwater levels are measured via both manual dip and continuous loggers. The data available since April 2022 is presented in this section, and shown in **Appendix B**.

2.4.1 Groundwater Level Data Summary

A summary of the groundwater level data available to date is presented below.

2.4.1.1 Alluvial Groundwater Bores

The groundwater levels in the alluvial monitoring bores are summarised in **Table 2** and presented in **Figure 3**.

Table 2: Groundwater levels in alluvial aquifer

Sample Location	Depth to Water (mbgl*)									
	Apr-22	Dec-22	May-23	Oct-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25
GW01	9.1	8.2	8.4	8.5	9.2	9.5	8.8	9.3	9.0	9.2
GW02	-	7.5	8.3	8.5	8.8	9.0	8.8	8.7	8.6	8.7
GW-11	-	-	-	16.7	16.6	16.6	14.2	16.6	16.5	16.5
GW-14	-	-	-	-	-	-	-	10.9	10.7	10.5
GW-15	-	-	-	-	-	-	-	12.7	13.3	13.2
GW-2	-	-	-	-	-	19.6	-	18.4	20.5	18.5
GW-9	-	-	-	17.8	18.4	17.8	17.8	17.7	17.6	17.6
SB01	7.3	6.4	7.2	7.2	7.4	7.9	7.7	7.6	7.3	7.7
SB02	10.3	9.8	9.7	9.5	9.7	10.0	9.8	1.4^	9.9	10.0
SB04	7.5	6.3	7.6	7.3	7.6	8.2	8.1	7.9	7.9	7.9
SB05	8.3	7.1	7.9	7.7	8.1	8.6	8.4	8.2	8.4	8.4
SB06	9.8	8.4	8.8	8.9	9.0	9.4	9.2	9.1	9.2	9.3
SB07		8.0	8.9	8.8	8.8	9.5	9.5	9.2	9.4	9.2
SB08	7.8	6.7	7.6	7.7	7.6	8.1	8.0	7.8	7.8	7.9
SB09	7.9	6.4	7.3	7.2	7.5	8.0	7.8	7.7	7.7	7.8
SB10	8.1	7.5	8.0	8.2	8.2	8.6	8.5	8.3	8.4	8.5
SB11	9.8	8.1	8.7	8.6	9.2	9.5	9.1	9.2	9.4	9.4
SB15	9.3	8.2	8.8	9.1	9.6	9.8	9.1	9.5	9.4	9.6
VNW223	-	-	-	22.0	21.9	22.1	-	21.5	21.2	21.4
VNW394	-	6.7	6.8	6.5	6.5	6.5	6.7	6.9	7.1	7.0
VNW395	-	7.4	7.3	7.3	7.3	7.5	6.5	7.6	7.6	7.6

Sample Location	Depth to Water (mbgl*)									
	Apr-22	Dec-22	May-23	Oct-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25
WR1	-	-	-	-	-	14.6	14.5	14.4	12.0	14.4
WR2	-	-	-	-	-	12.1	12.4	12.4	12.0	12.6

* mbgl = metres below ground level. ^Reading considered outlier/error.

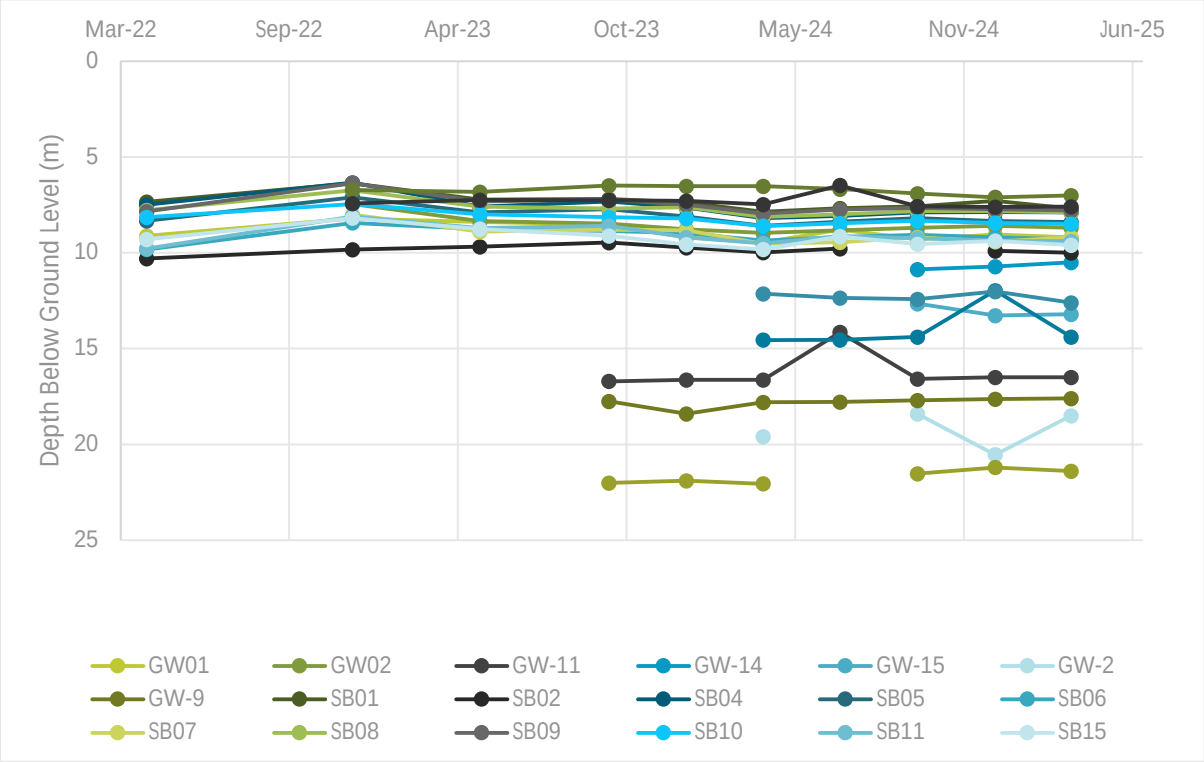


Figure 3: Alluvial bores hydrograph (manual dips, below ground level)

The groundwater contour map, based on the results from April 2025 monitoring round, is presented in **Figure 4**. These maps will be prepared for all future quarterly reports for ongoing comparison.

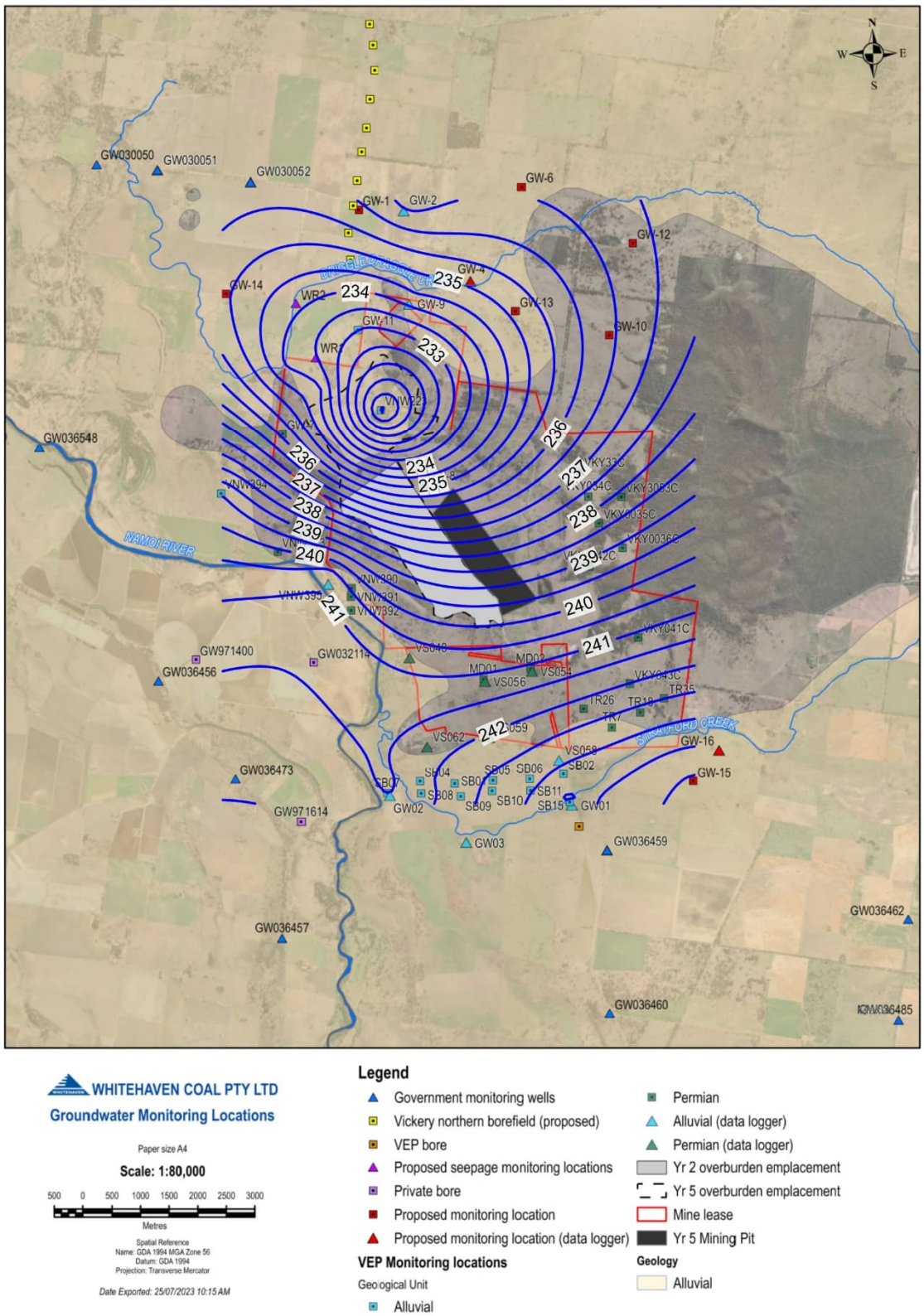


Figure 4 Alluvial groundwater contour map (April 2025)

2.4.1.2 Permian Groundwater Bores

The groundwater levels in the Permian monitoring bores are summarised in **Table 3**, and presented in **Figure 5**.

Table 3: Groundwater levels in Permian aquifer

Sample Location	Depth to Water (mbgl*)									
	Apr-22	Dec-22	May-23	Oct-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25
GW03	-	6.1	6.9	7.2	7.3	7.1	7.5	7.2	6.9	7.0
GW-4	-	-	-	-	-	-	-	19.3	19.1	19.3
GW-6	-	-	-	-	-	-	-	23.3	23.1	23.0
GW-7	-	-	-	27.9	27.8	27.9	28.0	27.8	27.7	27.3
GW-8	-	-	-	21.7	21.7	21.6	21.6	21.8	22.1	13.3
GW-10	-	-	-	-	-	-	-	17.9	18.6	14.5
GW-13	-	-	-	-	-	-	-	23.2	20.1	13.2
MD01	-	28.0	27.6	27.7	27.6	28.0	27.6	28.8	29.6	30.1
MD02	-	41.0	40.6	40.3	40.0	39.9	39.8	40.6	41.3	42.2
TR18	-	13.0	13.4	12.9	13.2	13.3	13.4	13.3	13.1	13.2
TR26	-	12.4	12.4	12.2	12.2	12.3	12.4	12.3	12.3	12.3
TR35	-	18.2	18.2	18.0	11.2	18.4	18.5	18.4	18.3	18.5
TR7	-	9.9	9.9	9.8	9.7	9.8	11.0	9.8	9.7	9.8
VKY034C	-	39.8	40.0	39.6	40.3	39.4	40.1	40.3	30.1	42.4
VKY035C	-	42.4	42.0	42.0	42.0	41.9	42.6	42.1	42.1	42.8
VKY036C	-	49.2	47.2	49.2	49.9	49.5	49.8	49.9	50.3	-
VKY042C	-	42.7	42.4	42.6	42.8	42.5	42.7	42.8	43.0	33.3
VKY043C	-	16.4	15.6	15.7	15.8	15.2	15.7	15.4	16.0	16.3
VNW390	-	9.4	9.3	9.4	9.4	9.5	9.5	9.6	9.6	9.6
VNW391	-	7.8	7.8	7.8	7.8	7.9	8.0	7.9	8.0	8.0
VNW392	-	6.3	6.1	6.2	6.2	6.4	6.5	6.4	6.5	6.5
VNW393	-	10.6	10.5	10.5	10.6	10.6	10.7	10.7	10.8	10.8

* Metres below ground level

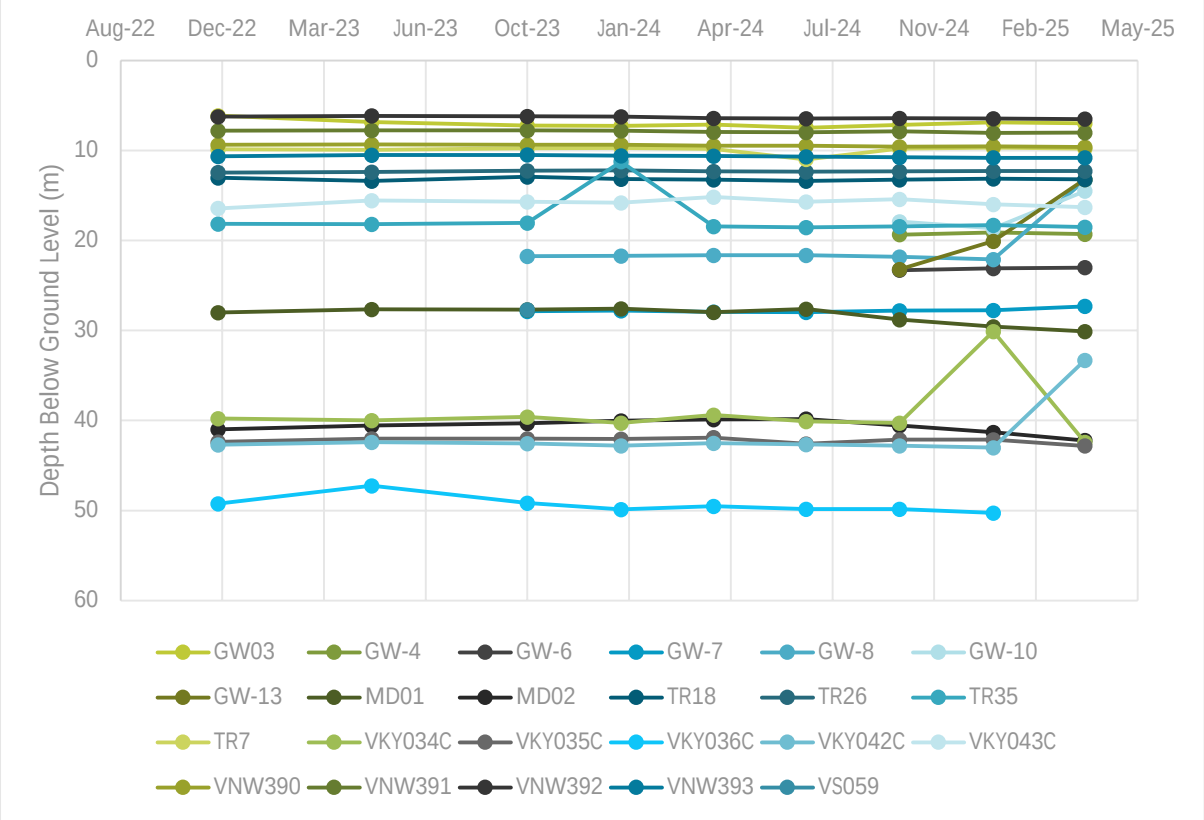


Figure 5: Permian bores hydrograph (manual dips)

The groundwater contour map, based on the results of January 2025 monitoring round, is presented in **Figure 6**. These maps will be prepared for all future quarterly reports for ongoing comparison.

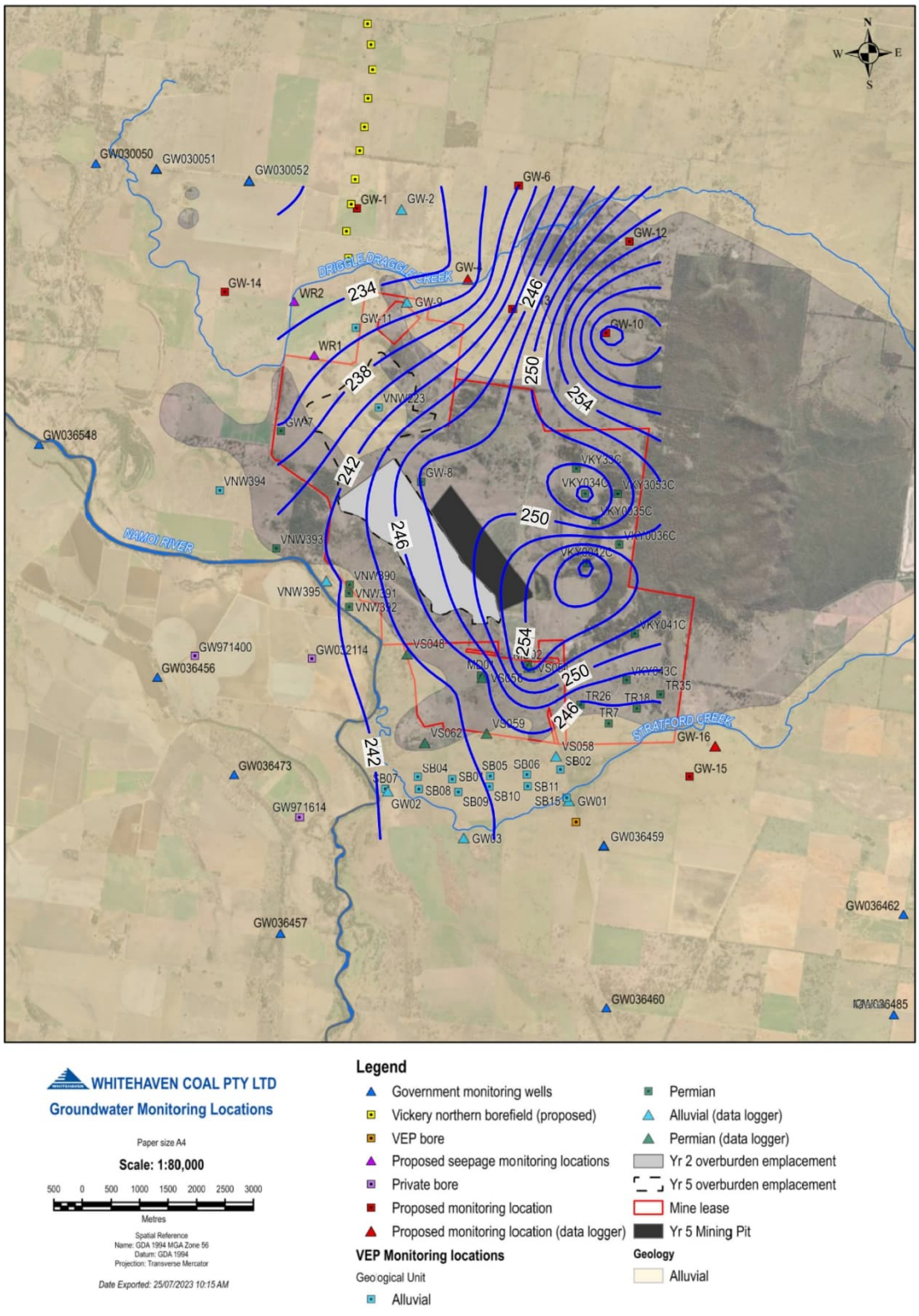


Figure 6 Permian aquifer groundwater level contour map (April 2025)

2.4.1.3 Data Loggers

A summary of the available logger data is presented in **Table 4**. An example of a logger plot is provided in **Figure 7**, with all plots provided in **Appendix B**.

Table 4: Summary of logger data availability

Bore ID	Logger Type	Recording Period	Number of Data Points	Comments
GW01	VWP	10/10/2023 – 23/04/2025	-	Data were not adopted due to significant drifting in logger readings, with generally unrealistic water levels results (i.e., above ground level). Sensor is considered malfunctioned; further investigation required.
GW02	VWP	15/11/2023 – 15/04/2025	-	Data were not adopted due to significant drifting in logger readings, with generally unrealistic water levels results (i.e., above ground level). Sensor is considered malfunctioned; further investigation required.
GW03	VWP (01-10-6743)	17/01/2024 – 18/08/2024; 05/12/2024 – 13/01/2025	3,547	Notable disparity between manual dip and logger, review next month as potentially just a recording error.
GW-9	Logger (Rugged TROLL 100)	24/04/2020 – 22/04/2025	3,183	Logger seems to have been installed deeper after the previous January 2025 monitoring round. Data indicates a ~1.8m decrease in water levels immediately after the January 2025 sampling event. Furthermore, a spike in water level was observed between 29 March 2025 and 01 April 2025, after which readings returned to normal trend levels. These
VNW395	Logger (Rugged TROLL 100)	17/01/2024 – 17/04/2024	272	Logger data was not downloaded since the July 2024 monitoring round. A temporary logger has been deployed while searching for a replacement.
TR7	Logger (Rugged TROLL 100)	17/03/2012 – 19/03/2014; 03/06/2020 – 17/04/2024; 25/07/2024 – 15/04/2025	2,080	Logger data was not available for the July 2024 monitoring round. In the January 2025 monitoring round, the logger file was named SB07, which is considered to be a typo. The file

Bore ID	Logger Type	Recording Period	Number of Data Points	Comments
				was named TR7 for the April 2025 monitoring round
TR18	Logger (Rugged TROLL 100)	16/04/2020 – 04/07/2024	1,940	Logger data was not available in the April 2025 monitoring round
VKY034C	Logger (Rugged TROLL 100)	07/01/2020 – 16/04/2025	7,704	-
VKY035C	Logger (Rugged TROLL 100)	04/11/2020 – 16/04/2025	6,894	-
VKY036C	Logger (Rugged TROLL 100)	07/01/2020 – 16/04/2025	8,102	-
VKY041C (38, 51, 70, 95, 115 m)	VWP (DT2055-02027)	11/03/2015 – 13/01/2025	-	Calibration factors and sensor depths to be confirmed.
VKY041C (140, 170, 199 m)	VWP (DT2055-02023)	11/03/2015 – 13/01/2025	-	Calibration factors and sensor depths to be confirmed.
VKY042C	Logger (Rugged TROLL 100)	04/11/2020 – 16/04/2025	6,497	-
VKY043C	Logger (Rugged TROLL 100)	07/01/2020 – 13/07/2023	5,137	Logger stopped reading in July 23
VKY3053C	VWP	04/03/2020 – 17/01/2024	-	No data in April 2025. Calibration factors and sensor depths to be confirmed.
VKY33C (38, 51, 70, 95, 115m)	VWP (DT2055-02087)	11/03/2015 – 14/01/2025	-	Calibration factors and sensor depths to be confirmed.
VKY33C (140, 170, 190m)	VWP (DT2055-02029)	11/03/2015 – 14/01/2025	-	Calibration factors and sensor depths to be confirmed.
VS048 (30m)	VWP	17/06/2011 – 15/06/2012; and 04/03/2020 – 13/01/2025	7,349	No data during April 2025 (or for the previous 12 months)
VS054 (23, 96, 120, 167m)	VWP (SN11-1769/1776/1770/1772)	17/06/2012 – 15/06/2012; and 01/12/2023 – 15/04/2025		
VS056 (25, 100m)	VWP (SN11-1765/1771)	04/03/2020 – 15/04/2025	VS056-25m: 1,623; VS056-100m: 1,622	-
VS058 (18, 88, 159m)	VWP (SN11-1768)	16/04/2020 – 22/04/2025	~6,933/sensor	-

Bore ID	Logger Type	Recording Period	Number of Data Points	Comments
VS062	VWP	12/02/2021 – 13/01/2025	10,416	-
VS059 (30, 65, 113m)	VWP	16/04/2020 – 13/01/2025	~7,326/sensor	-
WR-1	Logger (Rugged TROLL 100)	30/04/2024 - 24/04/2025	1,437	-
WR-2	Logger (Rugged TROLL 100)	30/04/2024 – 24/04/2025	1,437	-

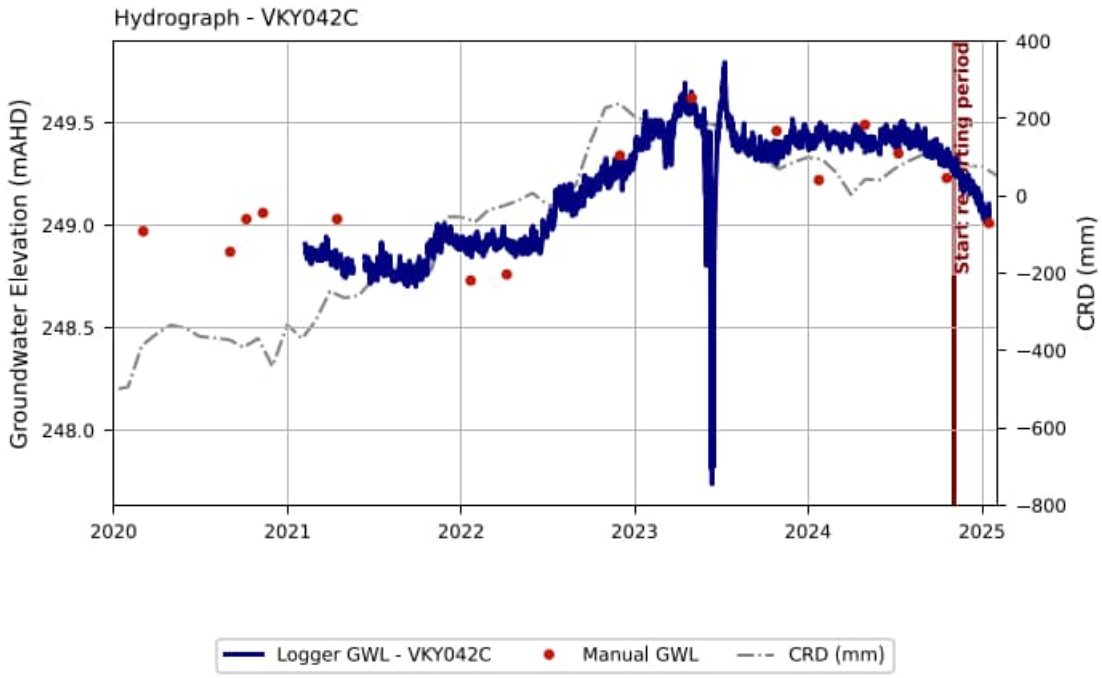


Figure 7: Logger hydrograph – VKY042C

2.4.2 TARP Trigger Level Summary

2.4.2.1 Alluvial aquifer

Groundwater levels in the Alluvial bores have shown minor variation in water levels between October 2024 and January 2025 monitoring rounds.

During the October 2024 monitoring round, SB02 had a groundwater level of 1.38 meters below ground level, representing an 8.4-meter increase from the July 2024 monitoring round. In the current reporting period, the water level measurement is 10.0 meters below ground level, returning to the historical level observed before October 2024. This confirms that the October 2024 result is considered an outlier.

There are no trigger level exceedances in the Alluvial aquifer bores.

2.4.2.2 Permian aquifer

Groundwater levels in the Permian aquifer during the April 2025 monitoring round displayed a combination of expected seasonal fluctuations and several notable anomalies. While the majority of bores remain within their historical ranges, a few locations recorded relatively large changes compared to historical trends.

Two bores in particular, GW8 and GW13, recorded increases in standing water levels. GW8 rose by approximately 8.8 metres, from 22.1 mbgl in January 2025 to 13.3 mbgl in April 2025. Similarly, GW13 recorded a 6.9 metre rise in water level, from 20.1 mbgl to 13.2 mbgl over the same period. The on-site rainfall data indicates that the reporting period received significantly above average rainfall and is likely the cause of the increase in water levels. March 2025 received 217.6 millimetres of rainfall, substantially above both the SILO monthly average (47.0 millimetres) and the long-term on-site average for that month. February 2025 also recorded elevated rainfall, at 179.0 millimetres.

The previous anomaly observed at VKY034C in January 2025, where the manual measurement recorded a significant and uncharacteristic rise to 30.1 mbgl, has now been resolved. The April 2025 reading of 42.4 mbgl is consistent with the historical range and aligns with the trend captured by the continuous logger, which shows a gradual decline. This confirms the January measurement was likely an outlier.

Elsewhere, the Permian bores showed minor variations. VKY036E and VKY042C continued their gradual downward trends, reflecting a longer-term decline possibly associated with broader aquifer behaviour or regional abstraction. Most other bores, including TR26, TR35, TR7, and the VNM series, displayed fluctuations of less than 0.3 metres, typical of seasonal variation and within expected limits.

2.4.2.3 Discussion

It was noted mining continues to intersect groundwater during this reporting period, as observed by increased in-pit water. The recent monitoring round coincided with a period of significantly elevated rainfall, particularly during February and March 2025. Historically, groundwater levels have typically shown a strong correlation to rainfall trends and any review of trends will need to consider mining operations and climatic conditions. The notably high rainfall may have resulted in subdued evidence of potential drawdowns observed with above average recharge occurring.

Within the area of approved drawdown (i.e. encompassing bores with approved levels of drawdown and consequently no trigger values assigned) there is an apparent commencement of drawdown (groundwater levels trending down) which may be resultant from mining operations within this reporting period.

Review of trigger levels as per the WMP against groundwater level observations does not indicate any breach in trigger levels. Therefore, the groundwater levels do not result in the enactment of the TARPs.

2.5 Groundwater Quality and Exceedance Summary

Routine groundwater monitoring commenced in October 2023 and continues quarterly. The full April 2025 field and laboratory suite results are summarised in **Appendix C**.

The TARP enacted, as set out in Table 8-3 of the GWMP, during the reporting period are summarised in **Table 5**. **Appendix D** provides a summary of all monitoring rounds to date compared to the interim trigger values or ANZECC default guideline values for slightly to moderately disturbed ecosystems.

Except for the pH result in TR7 and the EC levels in TR7 and GW03, all triggers identified during this reporting period are based on either interim trigger levels or ANZECC default guideline values. These trigger levels were defined using standard guideline values and, consequently, do not necessarily reflect local natural conditions. As per the GWMP, these trigger values will be updated once sufficient baseline data is acquired.

In addition, piper diagrams are used to present the geochemical signature of groundwater. Piper plots will continue to be prepared for both the alluvial and Permian aquifers to compare the geochemical signature over time.

Figure 8 and **Figure 9** show the piper diagrams for the alluvial and Permian groundwater respectively. Where data was available, the July 2024 and April 2025 data has been presented for analysis of trending change in geochemistry across the suite of bores. The piper plots show no trending variation between historical and current geochemical signature.

Review of the individual temporal plots do not indicate consistent increasing or decreasing trends over time, or across multiple locations. Additionally, there is no correlation with groundwater level trends (as groundwater is typically stable). Consequently, the groundwater quality results indicate a 'normal condition' TARP response.

Table 5: Summary of TARP triggers

Bore	Para.	Unit	Trigger Level	Oct-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25
TR7	pH	pH unit	7.4-7.8	6.53	7.05	6.71	6.82	6.63	6.51	7.36
GW03	EC	µS/cm	811	862	888	862	947	1,004	983	898
TR18			12,315*	13,400	13,640	12,730	15,350	13,820	13,810	13,300
TR35			12,315*	15,300	17,330	16,740	17,260	16,690	18,320	16,300
TR-7			12,970	14,800	15,390	14,410	15,380	14,840	15,520	15,200
GW-7	$SO4^{2-}$	mg/L	86*	364	385	399	380	396	414	354
SB05			365*	735	551	520	595	496	447	380
TR18			86*	702	620	592	622	626	630	552
TR26			86*	194	230	180	198	195	229	217
TR35			86*	660	651	622	624	624	526	562
TR7			365*	508	714	501	518	563	458	507
VKY034C			86*	123	185	116	98	90	115	117
VKY036C			86*	244	294	281	100	174	190	174
VKY042C			86*	302	309	312	283	326	307	316
VNW392			86*	-	284	296	263	314	300	266
VNW393			86*	179	185	200	165	202	205	212
VNW394			365*	-	551	560	574	591	498	535
TR35	Cobalt	mg/L	0.0014	-	0.007	0.01	0.011	0.01	0.008	0.006
TR7				-	0.008	0.004	0.008	0.004	0.005	0.003
VNW392				-	0.003	0.003	0.003	0.003	0.002	0.003

Bore	Para.	Unit	Trigger Level	Oct-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25
TR35	Nickel	mg/L	0.011	-	0.713	0.558	0.435	0.308	0.111	0.067
TR7				-	0.39	0.118	0.272	0.045	0.024	0.053
MD01	Zinc	mg/L	0.008	-	0.31	0.213	0.106	0.049	0.014	0.034
TR7				-	0.015	0.03	0.02	0.017	0.009	0.013

*Interim water level triggers adopted (as insufficient data has been recorded) based on all data for that geology. Red text shows exceedance of trigger level. Highlighted cell shows trigger level 1 as defined by TARP in the GWMP (**Appendix A**).

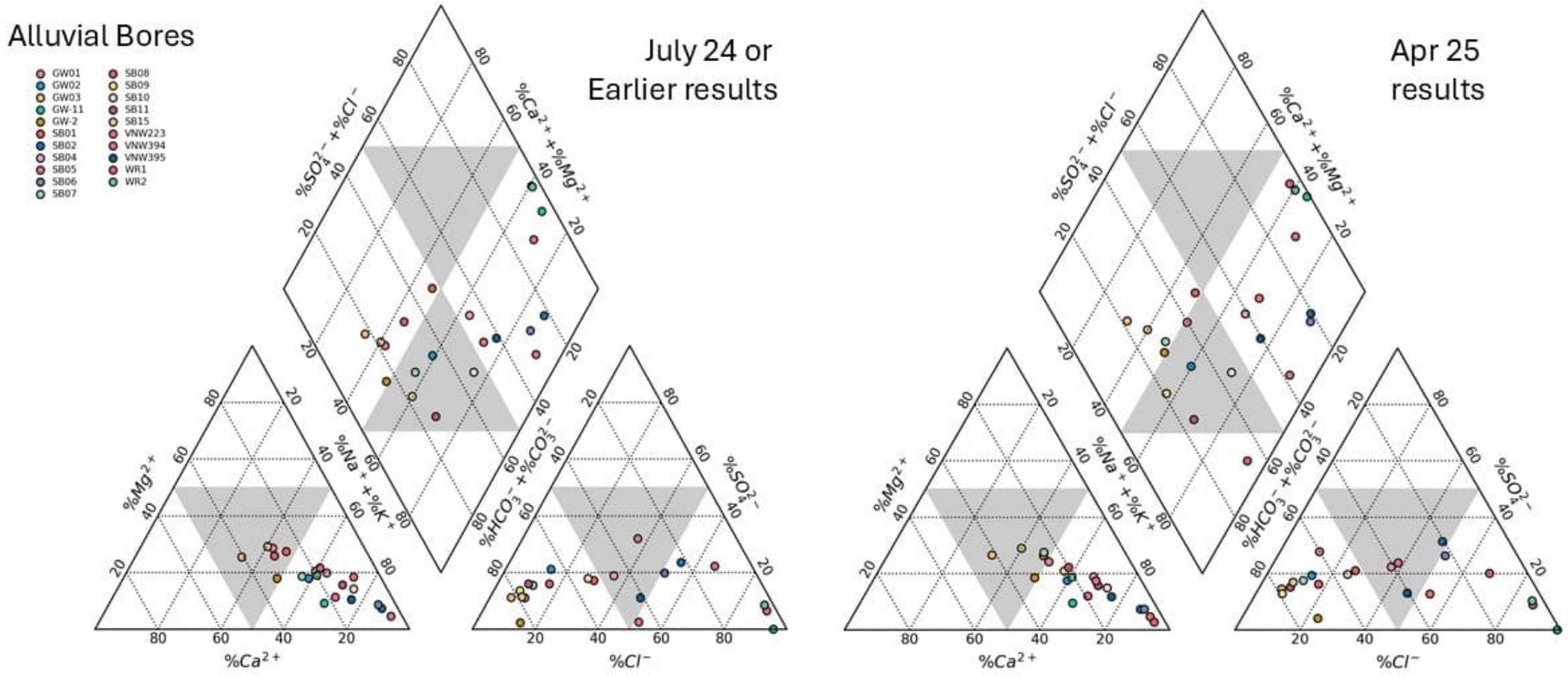


Figure 8 Alluvial groundwater piper plots

* Note: GW-2 water chemistry data are from April 24 and VNW223 from Oct 23

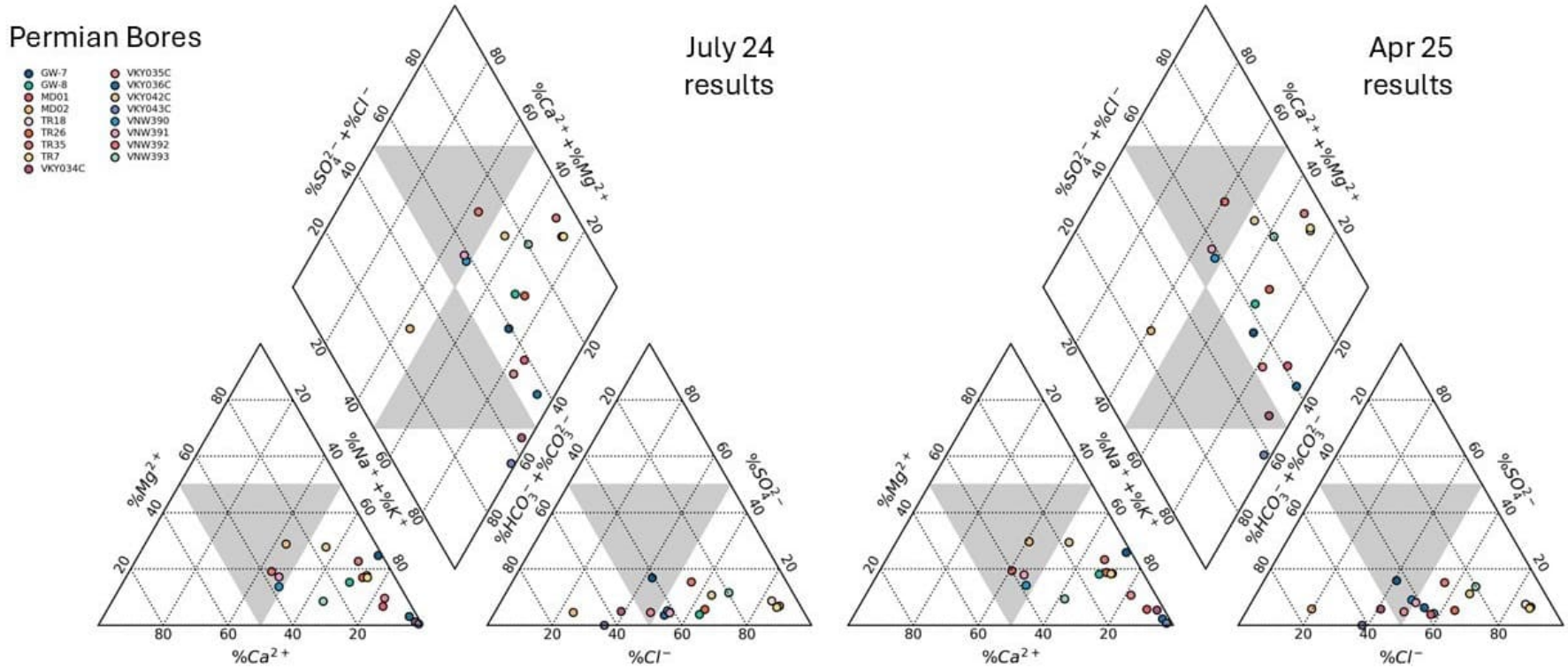


Figure 9 Permian groundwater piper plots

3.0 Action and Response

Based on the results summary presented in **Section 2.0**, the fact that both groundwater level and groundwater quality are considered “Normal Conditions”, there are no specific action and responses required.

4.0 Recommendations

Table 6 provides a summary of the historical recommendations, from Annual and prior quarterly reporting, with a comment on their current status.

Table 6: Summary and status of recommendations to date

Recommendation	Cited	Status
Continue the monitoring program and the quarterly reporting on groundwater levels and quality as outlined in the GWMP.	2023 Annual Review	COMPLETE/ONGOING: ongoing monitoring and reporting established.
Review logger data from TR7 and GW01, as appears erroneous, and replace as necessary.	April 2024 Quarterly	ONGOING: Loggers review underway.
Verify sensor depths for all VWPs in the network to assist with groundwater level calculation (calibration certificates in hand for review and update of database). Revise trigger levels based on updated sensor depth and calibration data. If this calibration data is unavailable, the overall usefulness of these bores to the network will be reviewed as part of the 2024 annual review.	April 2024 Quarterly	ONGOING: Verify sensor depths for VKY033C (or VKY3033C) and VKY041C to assist with groundwater level calculation. COMPLETE: Sensor depths have been verified for all standpipe loggers and VWPs, except for abovementioned VKY033C and VKY041C.
When adequate baseline data becomes available, review and update the quality trigger values.	October 2024	ONGOING: Trigger level review underway.

Dissolved copper or cadmium were not analysed during the January 2025 monitoring round. The two parameters were be included in the April 2025 monitoring round.

The following recommendations are made from the current monitoring period:

- The data from July 2025 monitoring round for GW-9 should be used to verify if groundwater levels have returned to baseline trend before 16 January 2025 or not, and if any further anomalous spikes were detected in the recorded data.

5.0 References

Hydrosimulations. 2018. “Vickery Extension Project: Groundwater Assessment. Report .”

Queensland Government. 2024. *SILO Long Paddock.* https://www.longpaddock.qld.gov.au/.

Whitehaven. 2023. “Vickery Coal Mine Water Management Plan Appendic C Groundwater Management Plan.”

Appendix A Trigger Action Response Plan

Vickery Extension Project Groundwater Monitoring Report

Quarterly Review February 2025 – April 2025

Whitehaven Coal Ltd

SLR Project No.: 640.031099.00001

25 June 2025

Performance Measure and Indicator, TARP Objective and Assessment Criteria	Monitoring Program	Management		
		Trigger	Action	Response
<u>Performance Measure Feature</u> Negligible groundwater level impact on the Namoi Alluvium aquifer and associated surface watercourses, groundwater dependent ecosystems, and private landowner bores. Negligible groundwater level impact on the Permian bedrock and associated private landowner bores, outside that predicted by the approved groundwater impacts (Hydrosimulations, 2018). <u>TARP Objective</u> This TARP defines levels of deviation in groundwater level from 'normal' conditions and the actions to be implemented in response to each level deviation as a result of open cut mining. <u>Assessment Criteria</u> Bore specific trigger values are based on the water levels across the entire history of monitoring in each individual bore and the predicted impacts from the Hydrosimulations (2018) numerical groundwater model.	<u>Locations</u> Open standpipes and VWPs All monitoring locations as set out in Table 4-1 of the Groundwater Management Plan (GWMP). All monitoring locations are shown in Figure 4-1 of the GWMP. <u>Monitoring Frequency</u> During mining Quarterly manual measurements of water level. Continuous monitoring in bores installed with Vibrating Wire Piezometers (VWPs) and data loggers. Post-mining TBC	**Normal Condition**		
		• Groundwater level remains above the respective trigger limits (defined as the 95th percentile over the baseline period and detailed in Table 8-2 of the GWMP) for each individual groundwater bore.	• Continue monitoring and review of data as per monitoring program.	• No response required.
		Level 1		
		• One quarterly monitoring result shows an exceedance of the trigger limit as detailed in Table 8-2 of the GWMP.	• *Actions as required for Normal Condition.* • Re-sample of groundwater level within seven days.	• Report declines and climate investigation outcomes in Annual Review.
		Level 2		
		• Groundwater level in a groundwater bore exceeds the respective trigger limit during three consecutive quarterly monitoring rounds. OR • Complaint received by landowners of private bores regarding groundwater level declines.	• *Actions as stated in Level 1.* For Open Standpipe Monitoring Bores, VWPs, and Private Bores: • Undertake a preliminary hydrogeological investigation as efficiently as practicable to check and validate the data and assess cause of trigger exceedances to determine if mining related as per the requirements set out in Section 8.3 of the GWMP. Review of groundwater levels to be carried out by qualified personnel. • Increase monitoring and review of data frequency for sites where Level 2 has been reached, subject to land access. For Private Bores: • Undertake investigation to demonstrate if the decline will impact the long-term viability of the affected water supply works. • Commence level monitoring of said private bore in quarterly monitoring rounds, subject to negotiation and land access restrictions. The investigation will be commenced/ completed as efficiently as practicable.	• *Responses as stated in Level 1.* • Include outcomes from the preliminary investigation report in Annual Review.
		Level 3		

		• The reduction in water level is determined in the Level 2 preliminary investigation not to be controlled by climatic or external anthropogenic factors.
		OR
		• Groundwater level in a groundwater bore continues to exceed the respective trigger limit during six consecutive monitoring rounds.
			• *Actions as stated in Level 2.*
			
			For Open Standpipe Monitoring Bores, VWPs, and Private Bores:
			• Undertake a detailed investigation to assess if the change in behaviour is related to mining effects (e.g., catchment changes, another effect unrelated to mining).
			• Review groundwater model.
			
			For Private Bores:
			• Review corrective management actions (CMAs) as specified in Section 8.3 of the GWMP considering findings from further investigations and consider additional reasonable and feasible options.
				• *Responses as stated in Level 2.*
				• Report trigger exceedance to DPE and key stakeholders. Provide the detailed investigation report to relevant agencies within a reasonable timeframe of identifying the non-compliance.
				• Report trigger exceedance and investigation outcomes in Annual Review.
				• Develop/design contingency and remedial measures based on the results of the above investigations. Contingency and remedial measures considered practical for implementation may include:
				  • Undertake landholder and government consultation;
				  • Offset groundwater leakage from the Namoi Alluvium aquifer;
				  • Review and refine the GWMP including undertaking additional specific monitoring of private landholder bores;
				  • Review Site Water Balance and predictive groundwater model; and
				  • Review mine plan impacts on alluvial groundwater source.
				
				For Private Bores:
				• Provide DPE and key stakeholders with proposed corrective management actions (CMAs) for consultation (e.g., extending the depth of the bore, establishment of additional bores, compensation to affected landowners as per Section 8.3 of the GWMP).
				• Implement CMAs, subject to land access (finalise negotiations and implement the agreed "make-good" arrangements).
				• Monitor and report on success of CMAs in Annual Review.

Performance Measure and Indicator, TARP Objective and Assessment Criteria	Monitoring Program	Management		
		Trigger	Action	Response
<u>Performance Measure Feature</u> Negligible quality impact on the Namoi Alluvium aquifer and associated surface watercourses and private landholder bores. Negligible quality impact on the Permian bedrock and associated private landowner bores, outside that predicted by the approved groundwater impacts (Hydrosimulations, 2018). <u>TARP Objective</u> This TARP defines levels of deviation in groundwater quality from baseline conditions and the actions to be implemented in response to each level deviation. <u>Assessment Criteria</u> Quality in each monitoring bore remains within the 5th and 95th percentile of the baseline conditions set out in Table 8-4 of the GWMP for the following parameters: • Electrical Conductivity; • pH; and • Sulfate. Other major and metal ions will be assessed against the relevant ANZECC guidelines.	<u>Locations</u> Open standpipes All open standpipe monitoring locations as set out in Table 4-2 of the GWMP. <u>Monitoring Frequency</u> During mining pH and EC will be measured in the field on a quarterly basis in the alluvial and waste rock deposits (after waste rock bores installed) and on a biannual basis in the Permian geology . Other parameters (detailed in Table 4-2 of the GWMP) to be measured on an annual basis. Post-mining TBC	Normal Condition		
		• Groundwater pH remains within the baseline 5th and 95th percentile range, as specified in the GWMP. • Other groundwater quality parameters remain below the baseline 95th percentile, as specified in the GWMP.	• Continue monitoring and review of data as per monitoring program.	• No response required.
		Level 1		
		• Two six-monthly exceedances or one annual quality exceedances outside of the specified baseline range (pH) or above 95th percentile baseline (other quality parameters).	• *Actions as required for Normal Condition.* • Re-sample of groundwater quality within seven days.	• Report exceedances in Annual Review.
		Level 2		
		• Three consecutive six-monthly exceedances or two annual quality exceedances (including re-samples from Level 1) outside of the specified baseline range (pH) or above 95th percentile baseline (other quality parameters). OR • Complaint received by landowners of private bores regarding groundwater quality declines.	• *Actions as stated in Level 1.* For Open Standpipe Monitoring Bores: • Undertake a preliminary hydrogeological investigation as efficiently as practicable to assess cause of quality exceedances and determine if mining related as per the requirements set out in Section 8.3 of the GWMP. Review of groundwater quality to be carried out by qualified personnel. For Private Bores: • Collect quality sample from said private bore for comparison with wider aquifer data, subject to negotiation and land access restrictions. • Undertake investigation to demonstrate if quality will impact the long-term viability of the affected water supply works. The investigation will be commenced/ completed as efficiently as practicable.	• *Responses as stated in Level 1.* • Include outcomes from the preliminary investigation report in Annual Review.
		Level 3		
		• The water quality changes are determined from Level 2 preliminary investigation to not be controlled by climatic, local land uses, or other external anthropogenic factors. OR • Groundwater quality continues to decline with six consecutive six-monthly exceedances or three annual quality exceedances outside of the specified baseline range (pH) or above 95th percentile baseline (other quality parameters).	• *Actions as stated in Level 2.* For Private Bores and Open Standpipe Monitoring Bores • Increase monitoring to at least quarterly measurements for sites where Level 3 has been reached, subject to land access. • Undertake a detailed investigation to assess if the change in behaviour is related to mining effects (e.g., catchment changes, another effect unrelated to mining). • Review corrective management actions (CMAs) as specified in Section 8.3 of the WMP considering findings from further investigations and consider additional reasonable and feasible options.	• *Responses as stated in Level 2.* For Private Bores and Open Standpipe Monitoring Bores: • Report trigger exceedance to DPE and key stakeholders. • Report trigger exceedance and investigation outcomes in Annual Review. For Private Bores, if the changes have been confirmed to be related to mining effects: • Initiate negotiations with impacts landowners as soon as practicable. Consider all reasonable and feasible options for remediation as relevant (e.g., isolation, remediation, etc.). • Provide DPE and key stakeholders with proposed corrective management actions (CMAs) for consultation (e.g., extending the depth of the bore, establishment of additional bores, compensation to affected landowners as per Section 10.2.2 of the WMP). • Implement CMAs, subject to land access (finalise negotiations and implement the agreed “make-good” arrangements). • Monitor and report on success of CMAs in Annual Review.

Appendix B Groundwater Level Results

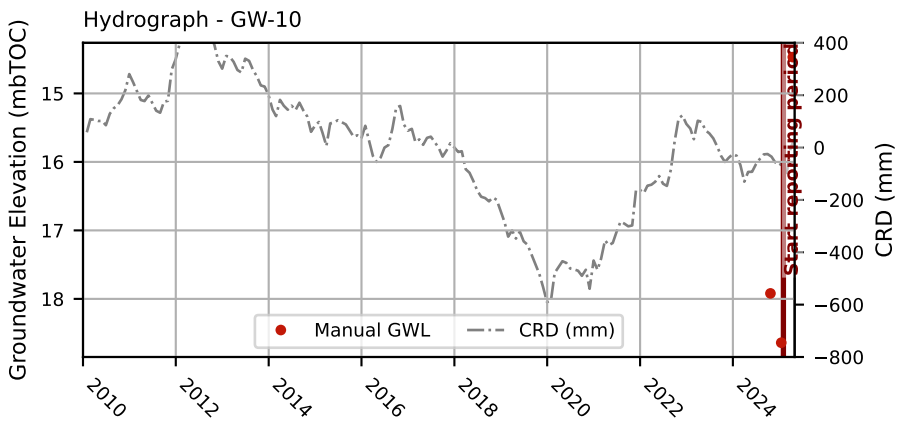
Vickery Extension Project Groundwater Monitoring Report

Quarterly Review February 2025 – April 2025

Whitehaven Coal Ltd

SLR Project No.: 640.031099.00001

25 June 2025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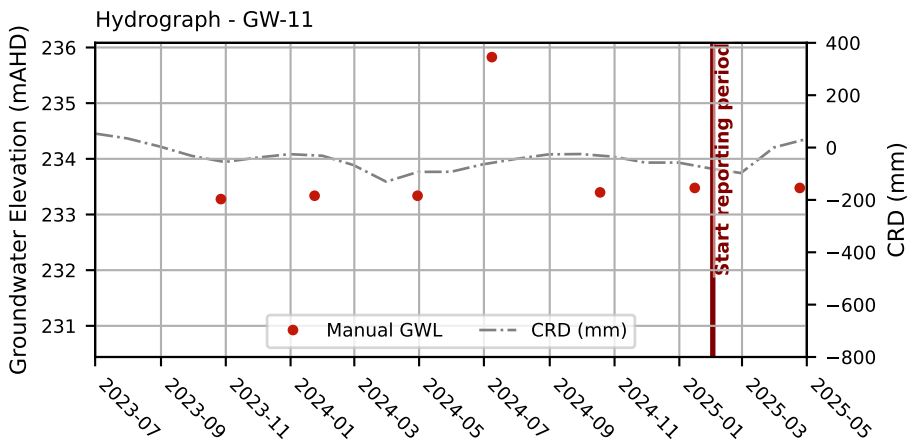
CRD (mm)
Start reporting period
Manual GWL
CRD (mm)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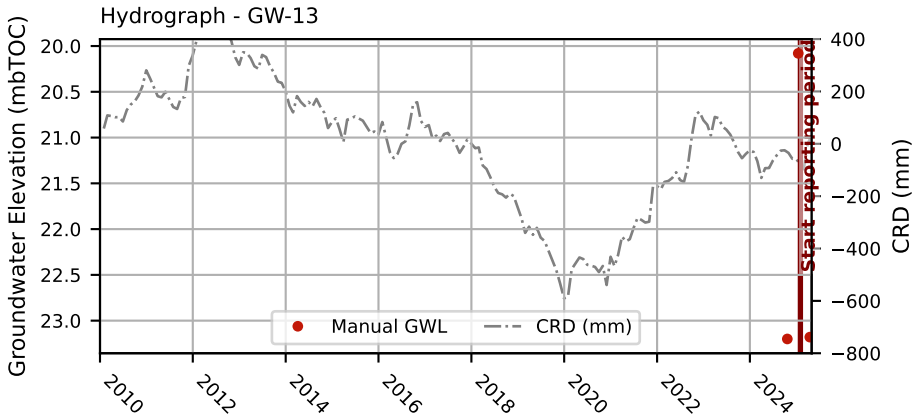
CRD (mm)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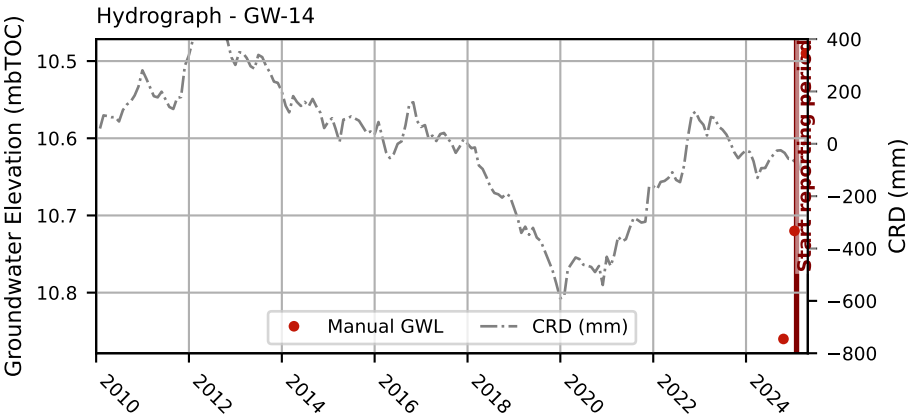
Start reporting period
Manual GWL
CRD (mm)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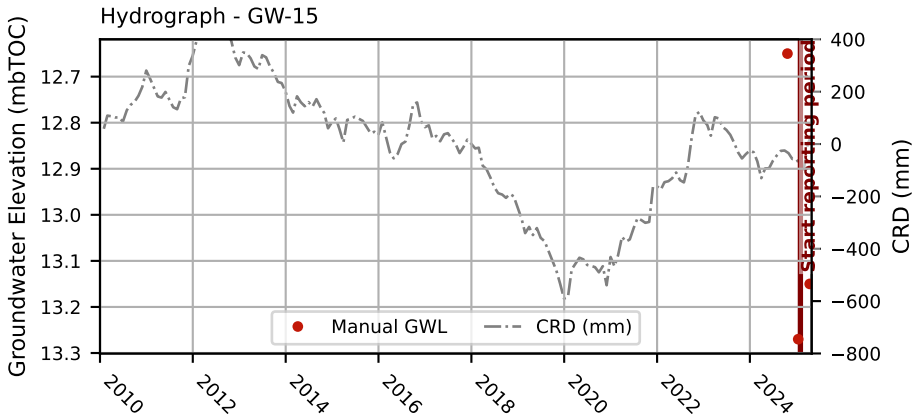
Manual GWL
CRD (mm)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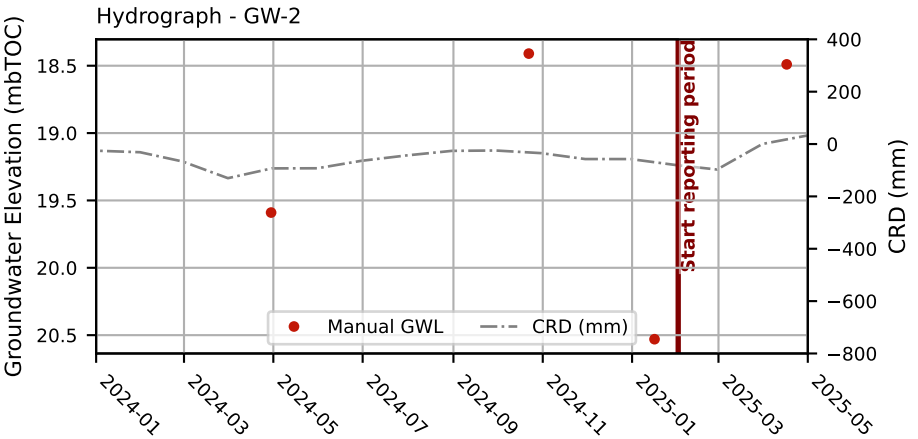
Manual GWL
CRD (mm)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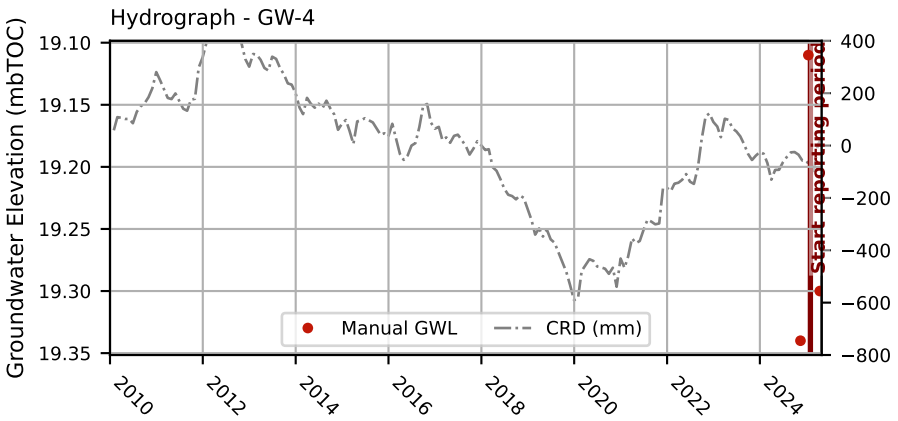
Manual GWL
CRD (mm)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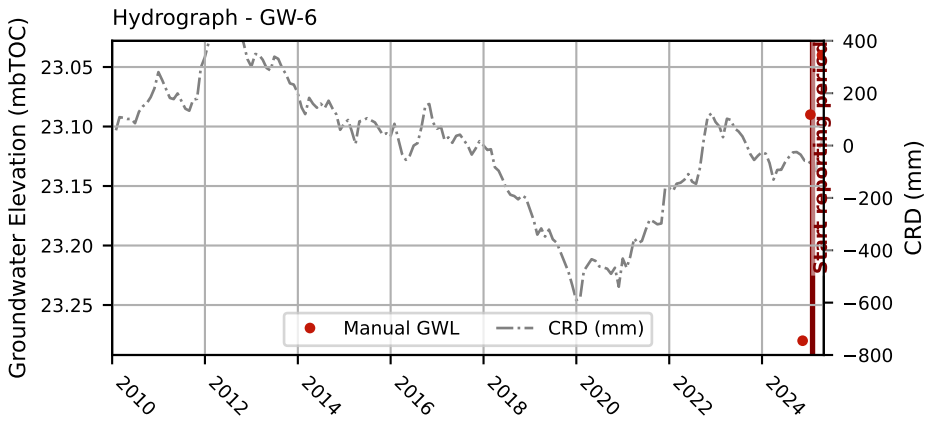
Start reporting period
Manual GWL
CRD (mm)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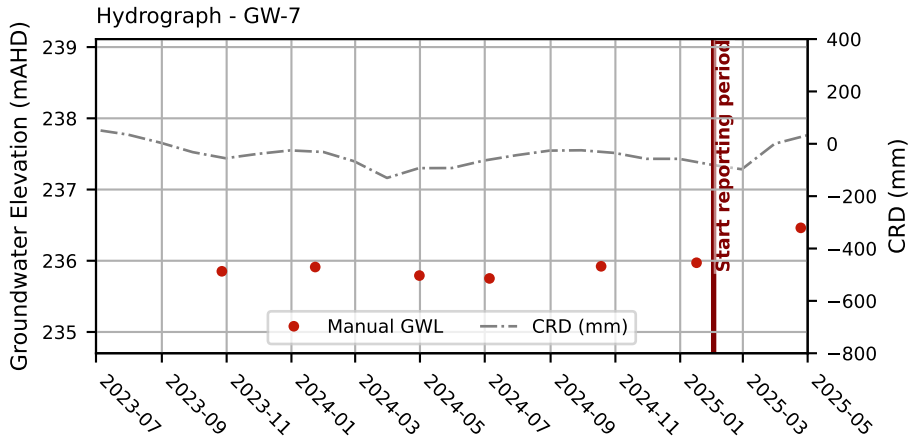
Manual GWL
CRD (mm)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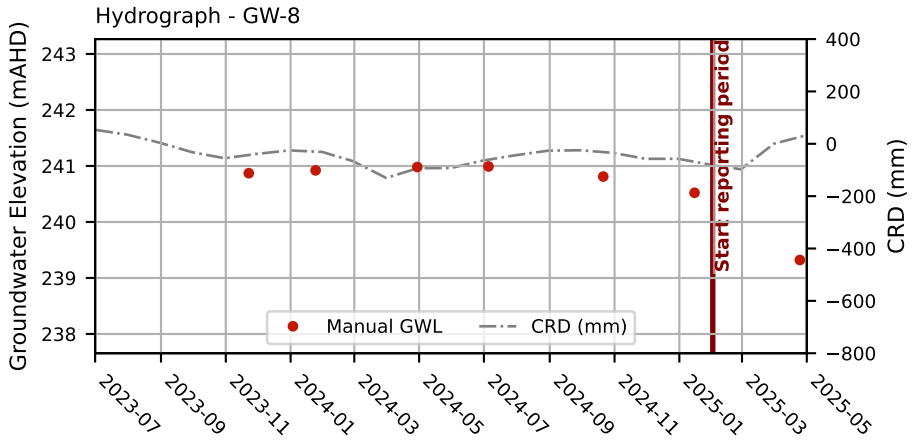
Manual GWL
CRD (mm)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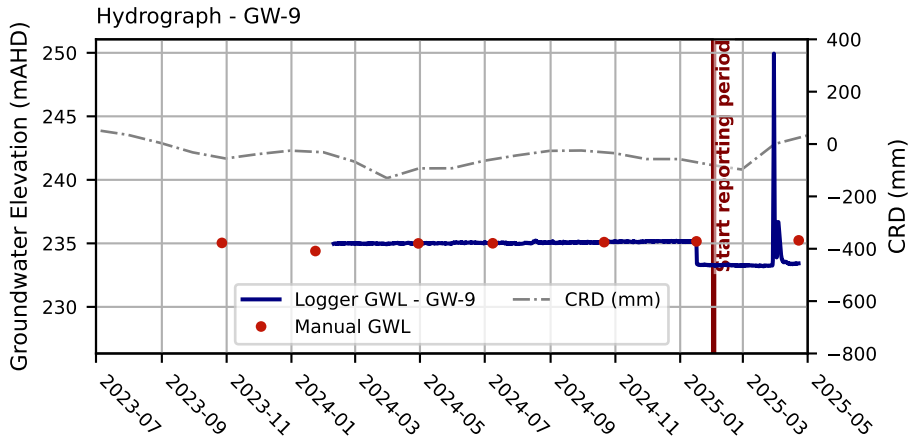
Manual GWL
CRD (mm)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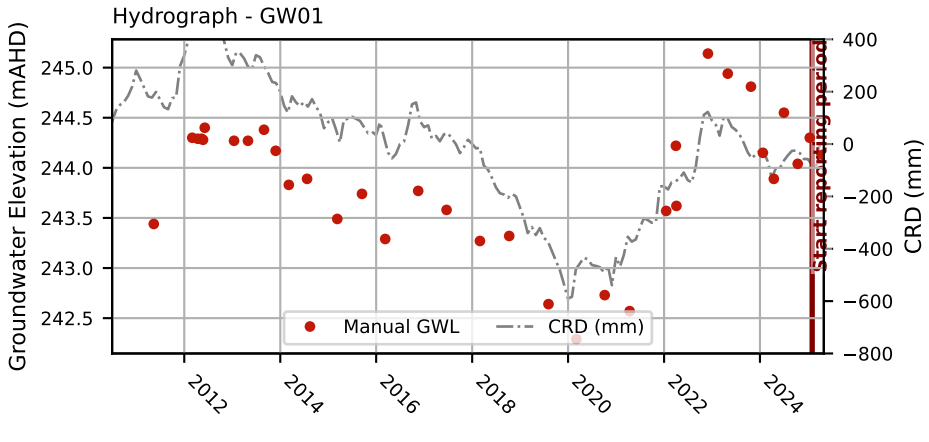
CRD (mm)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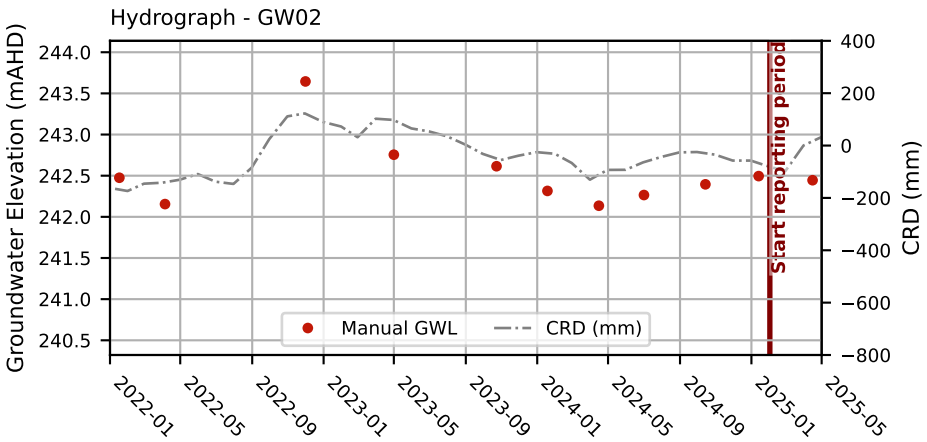
CRD (mm)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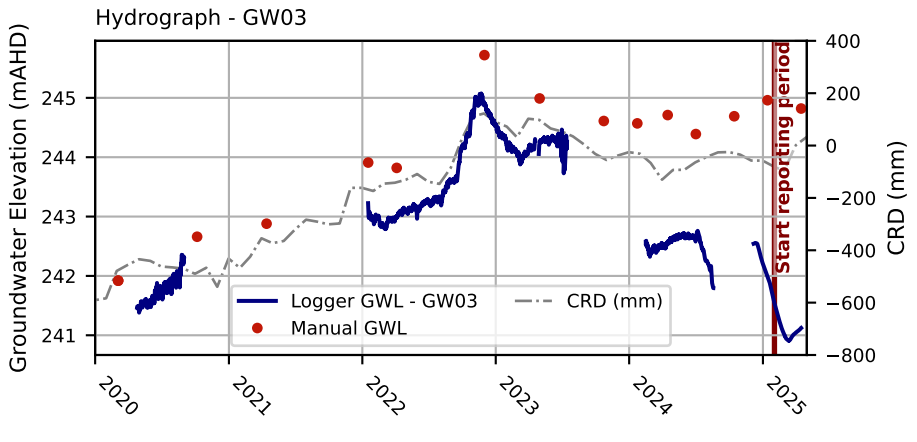
CRD (mm)
Start reporting period
Manual GWL
CRD (mm)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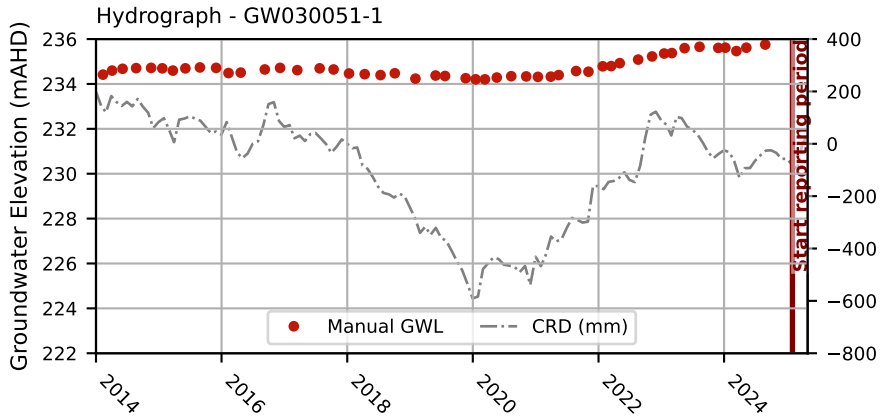
Logger GWL - GW03
Manual GWL
CRD (mm)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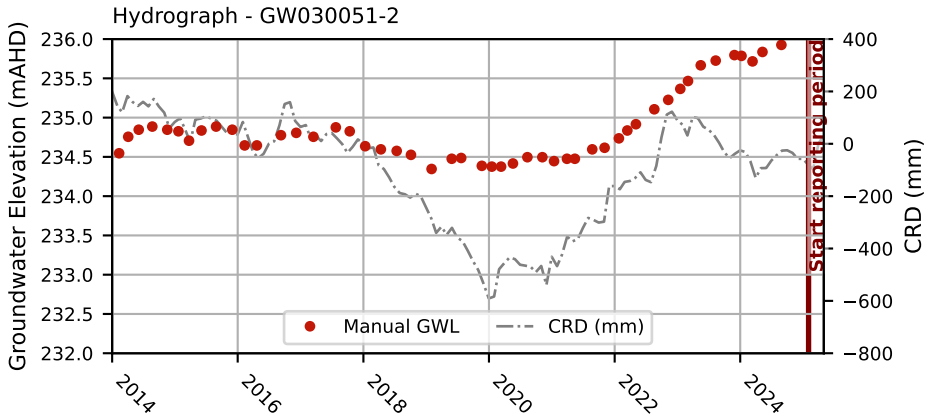
Start reporting period
Manual GWL
CRD (mm)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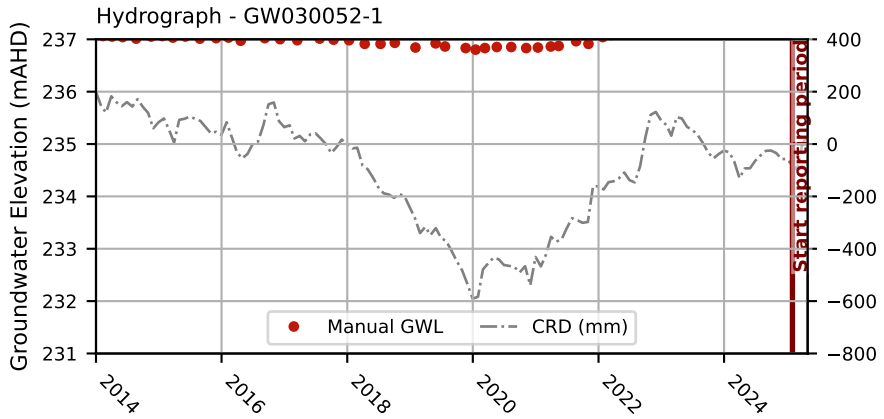
CRD (mm)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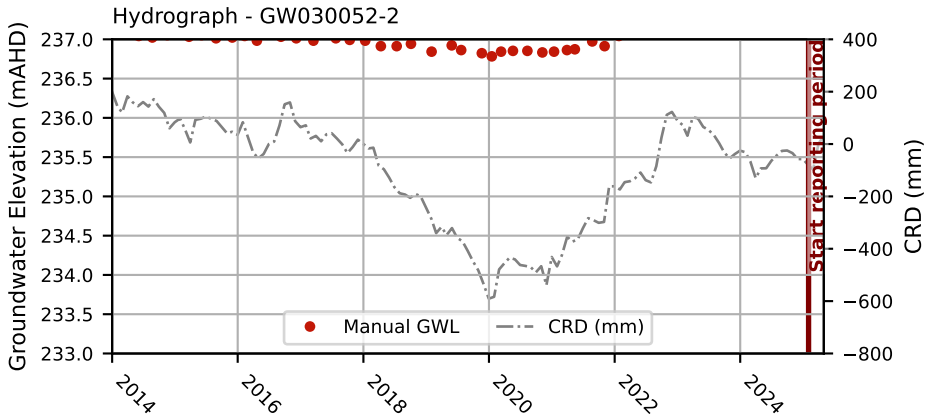
Manual GWL
CRD (mm)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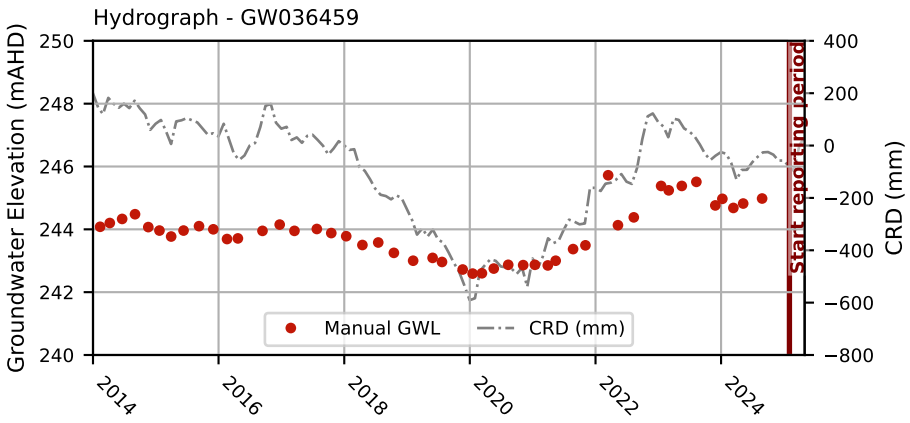
Manual GWL
CRD (mm)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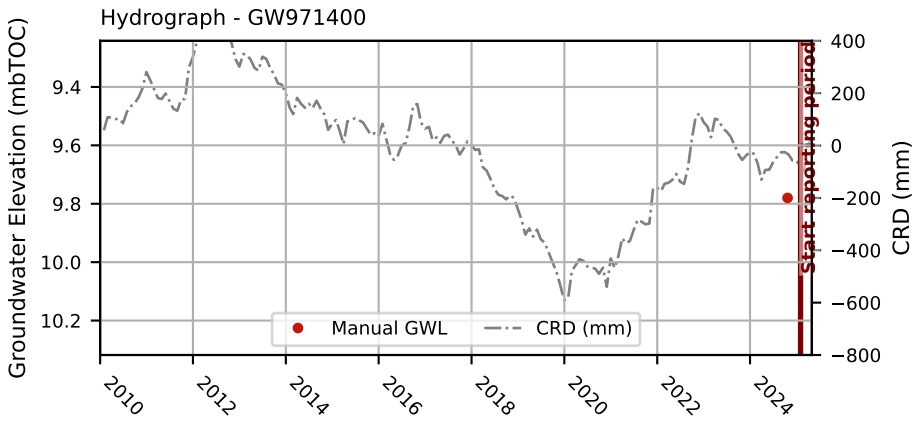
Manual GWL
CRD (mm)
Start reporting period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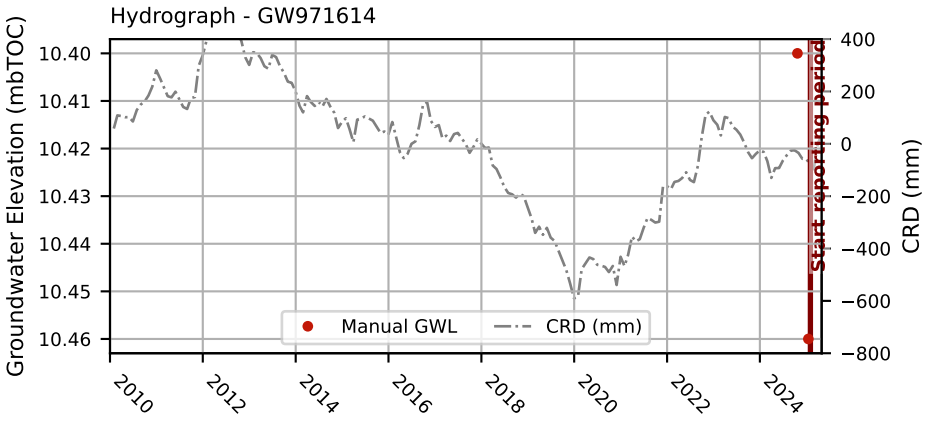
Manual GWL
CRD (mm)
Start reporting period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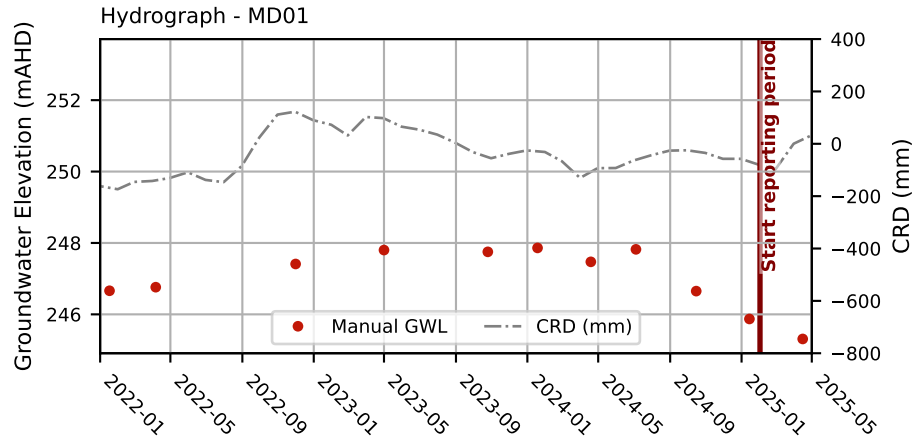
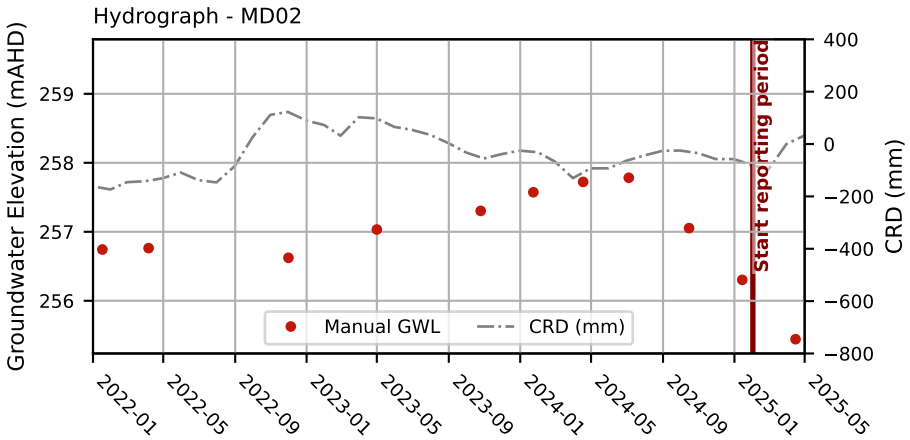
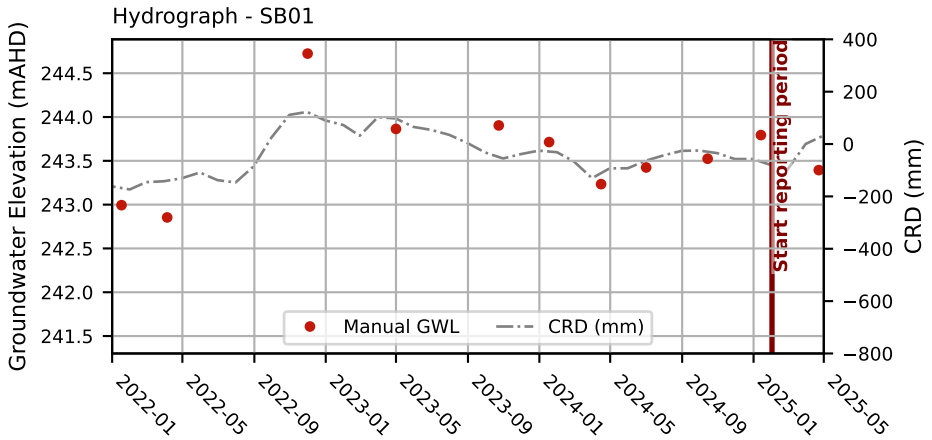
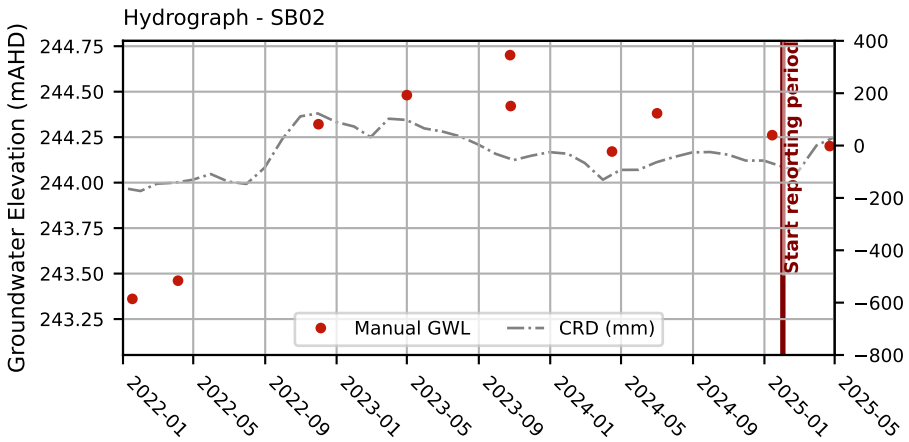
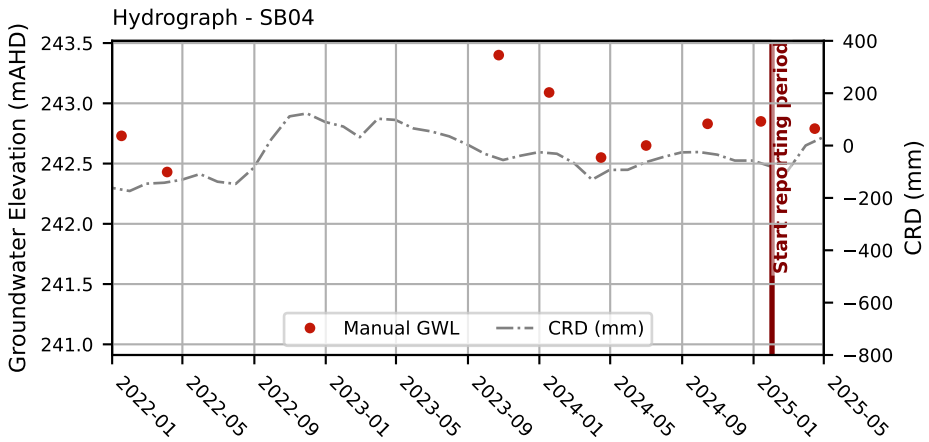
Groundwater Elevation (mbTOC)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

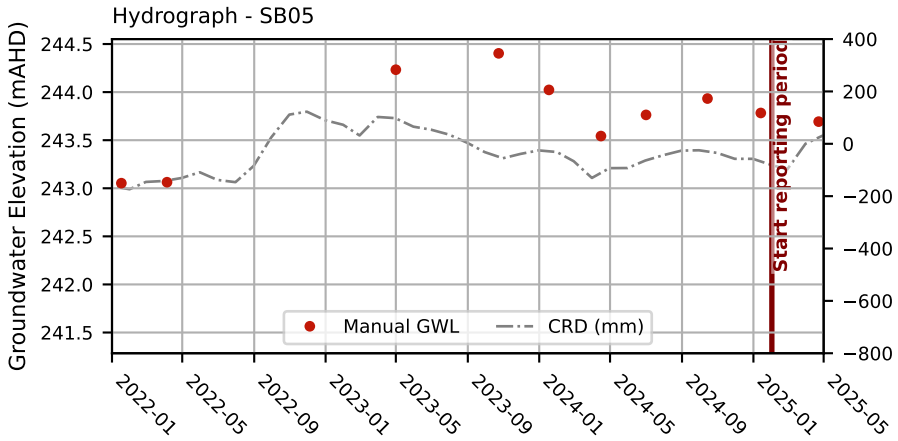

Hydrograph - MD01
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

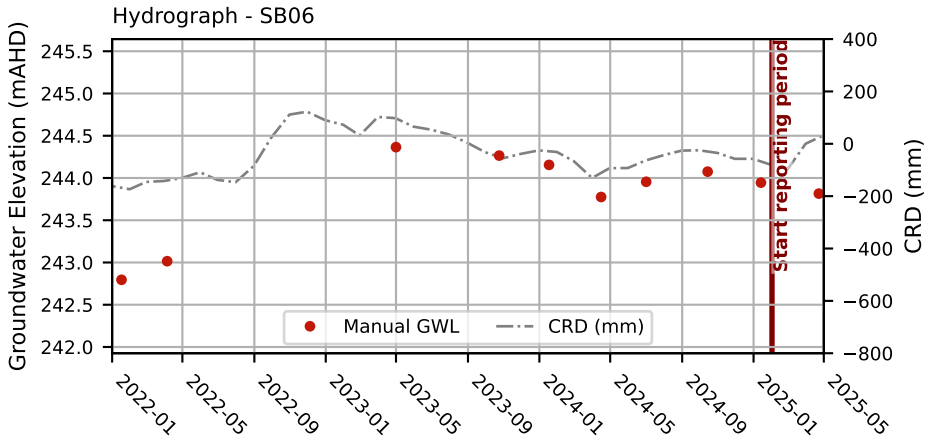

Hydrograph - MD02
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

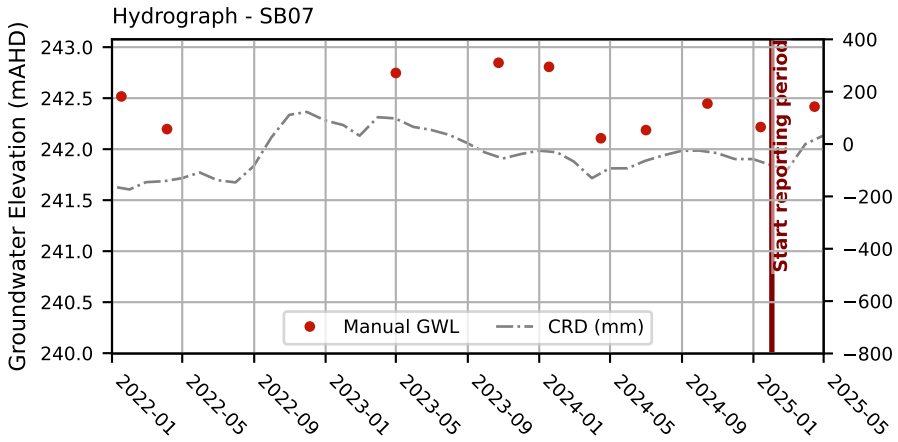

Hydrograph - SB01
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

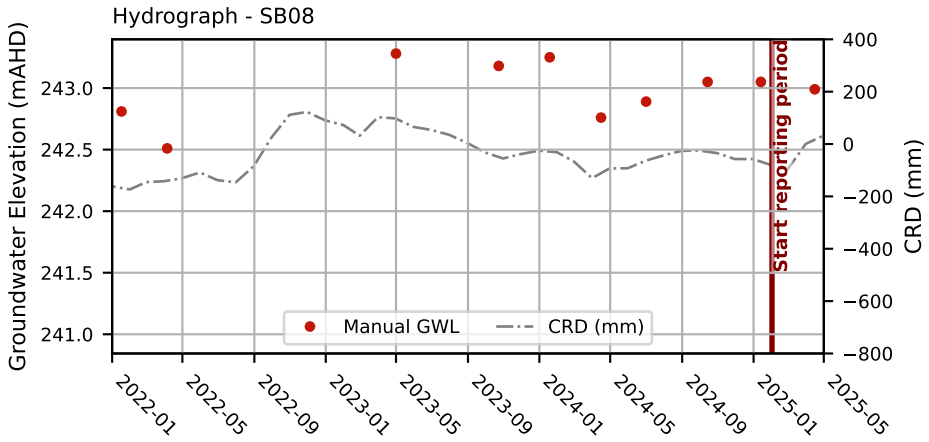

Hydrograph - SB02
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

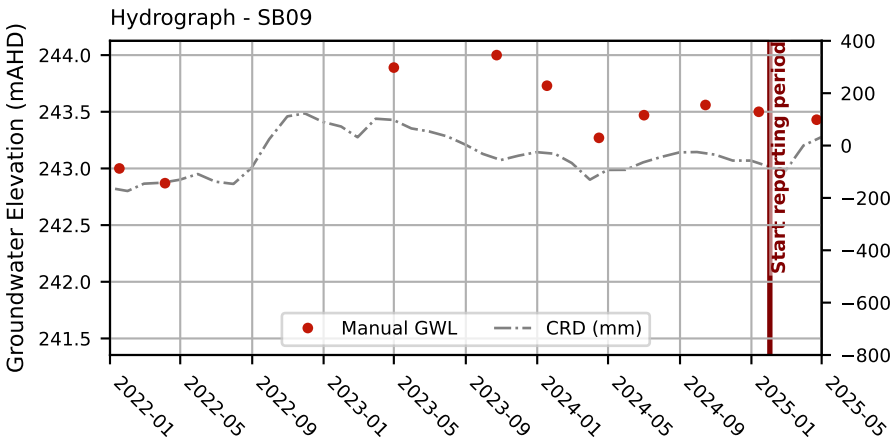

Hydrograph - SB04
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

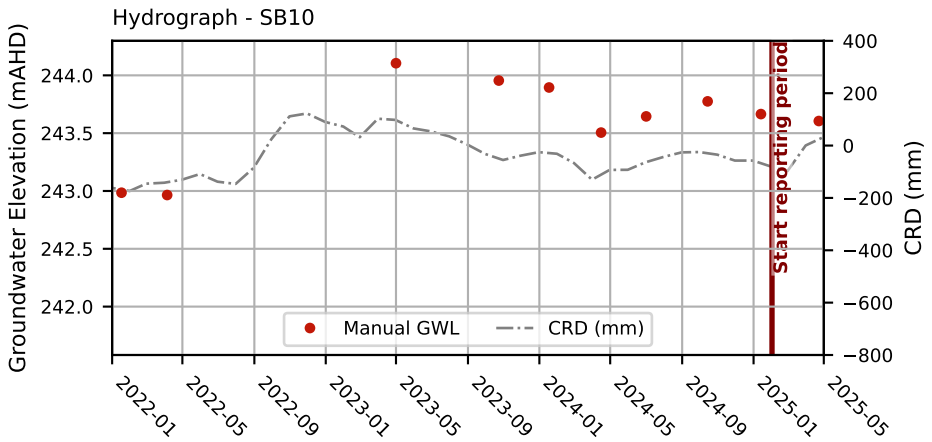

Hydrograph - SB05
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

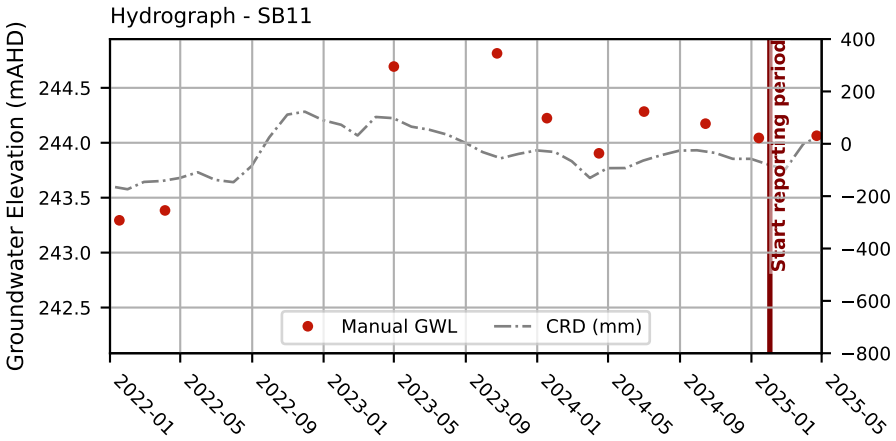

Hydrograph - SB06
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

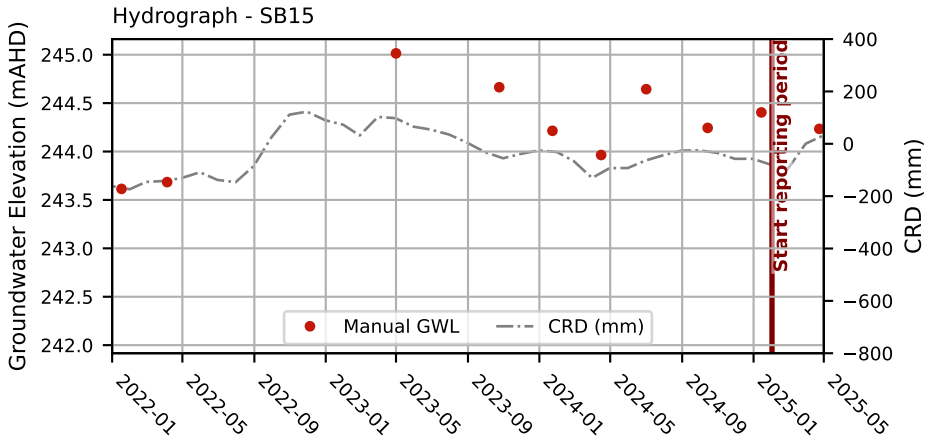

Hydrograph - SB07
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

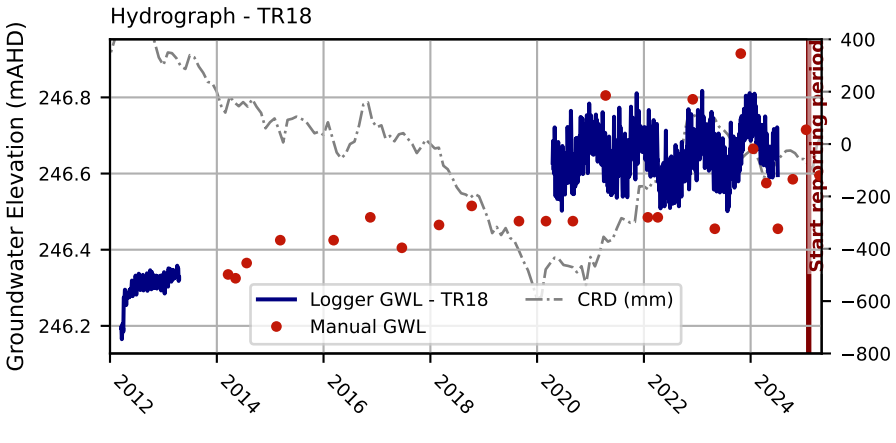

Hydrograph - SB08
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

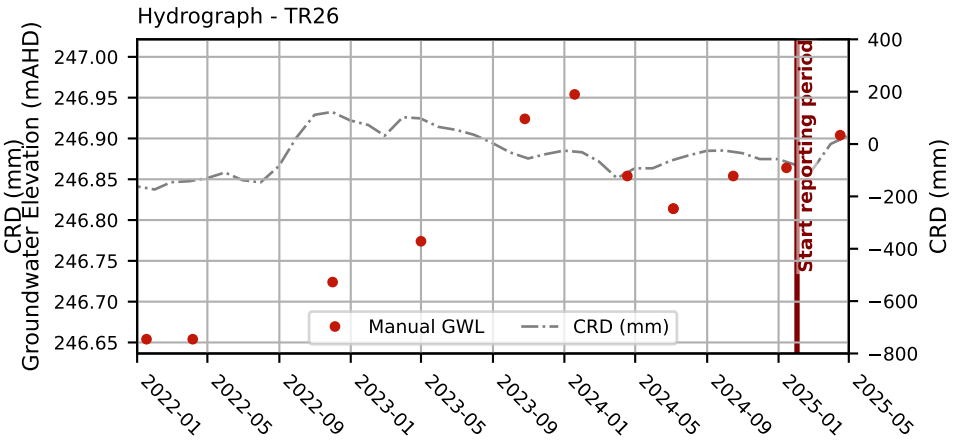

Hydrograph - SB09
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

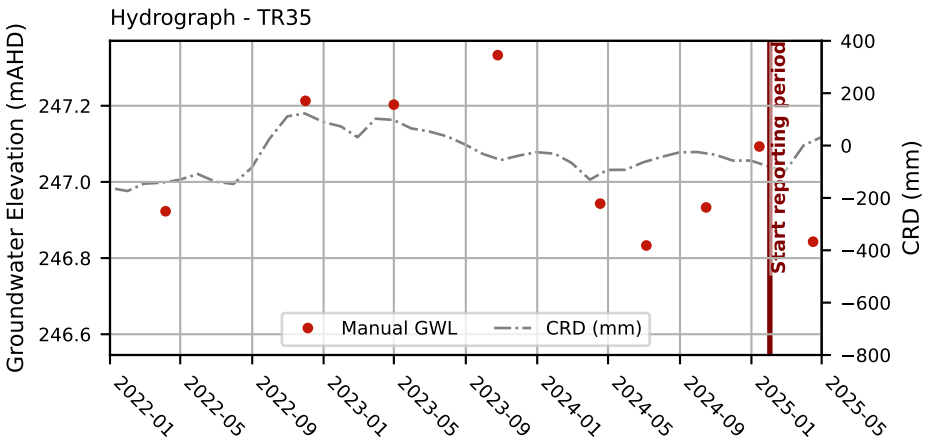

Hydrograph - SB10
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

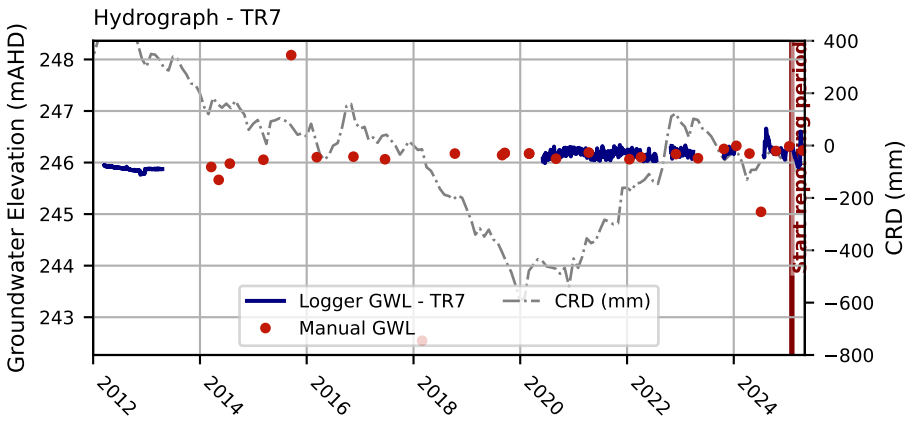

Hydrograph - SB11
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

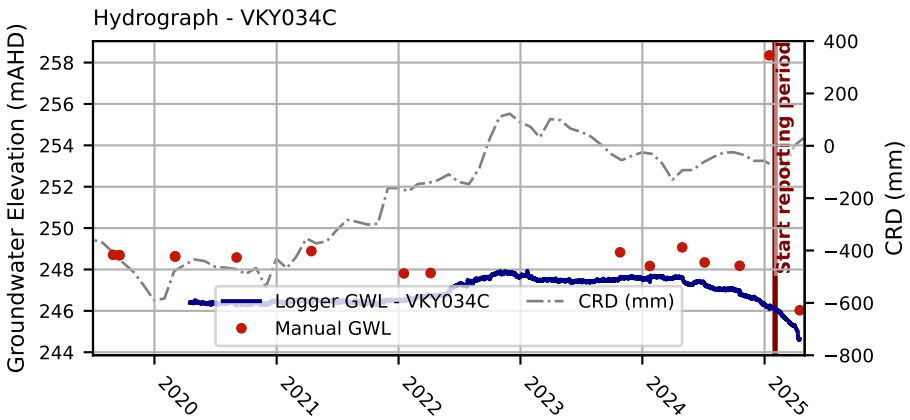

Hydrograph - SB15
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

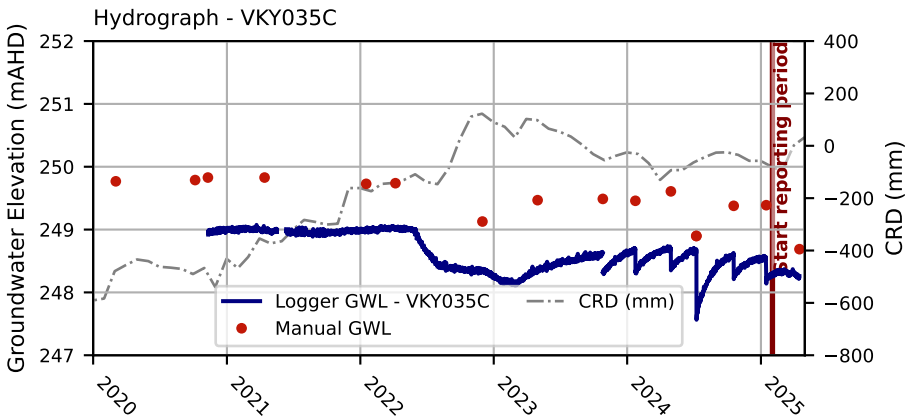

Hydrograph - TR18
Groundwater Elevation (mAHD)
CRD (mm)
Logger GWL - TR18
Manual GWL
CRD (mm)
Start reporting period

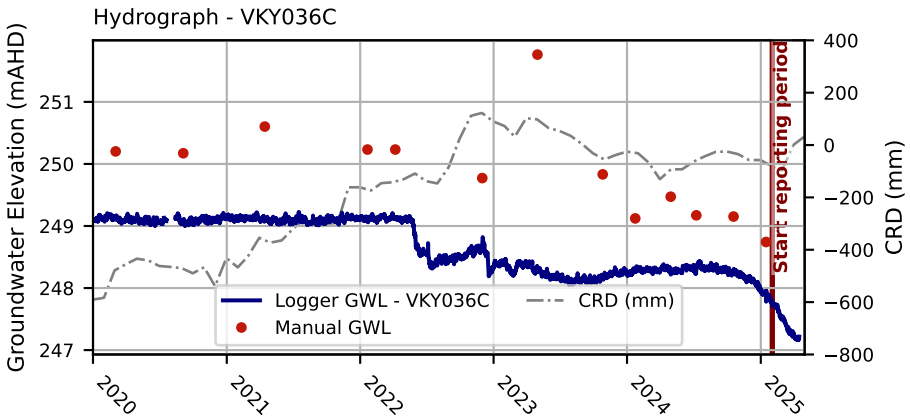

Hydrograph - TR26
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

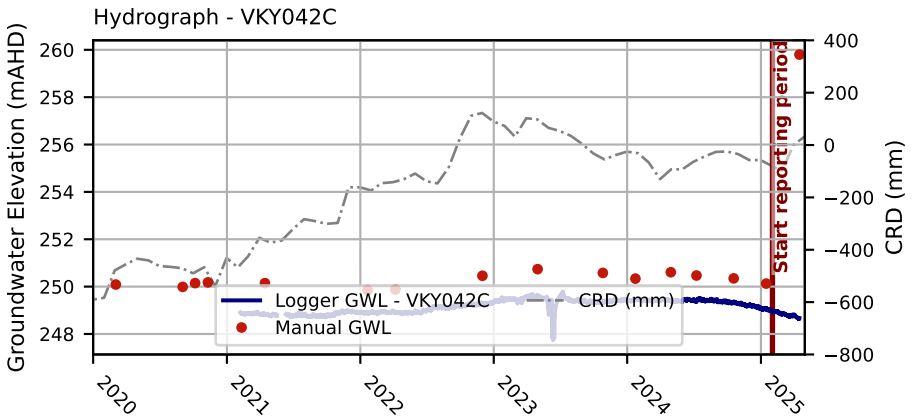

Hydrograph - TR35
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

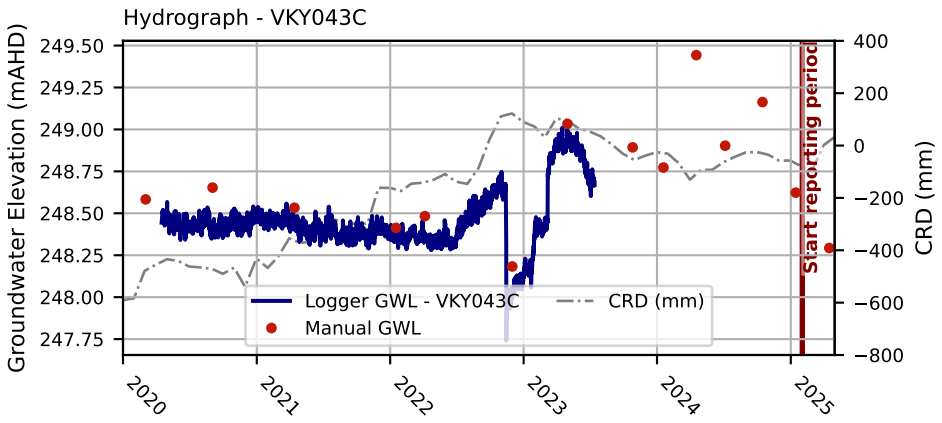

Hydrograph - TR7
Groundwater Elevation (mAHD)
CRD (mm)
Logger GWL - TR7
Manual GWL
CRD (mm)
Start reporting period

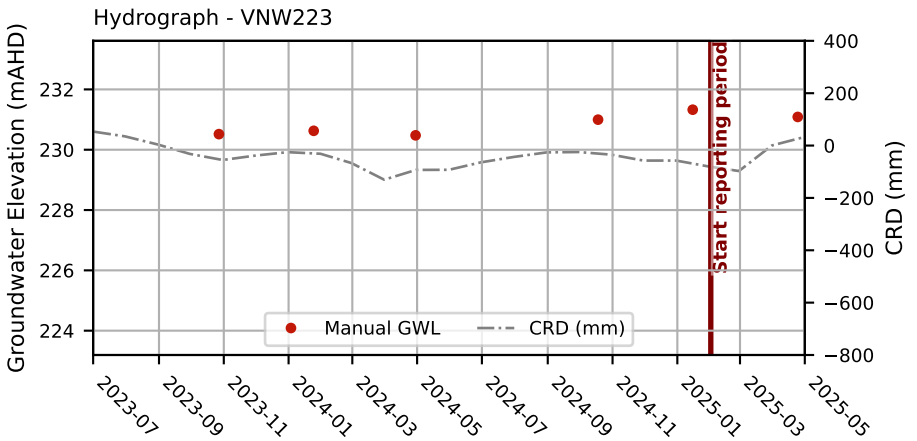

Hydrograph - VKY034C
Groundwater Elevation (mAHD)
CRD (mm)
Logger GWL - VKY034C
Manual GWL
CRD (mm)
Start reporting period

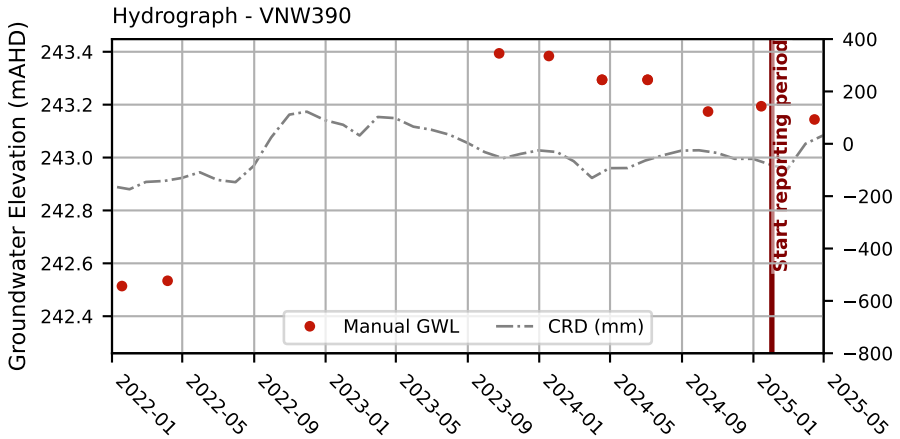

Hydrograph - VKY035C
Groundwater Elevation (mAHD)
CRD (mm)
Logger GWL - VKY035C
Manual GWL
CRD (mm)
Start reporting period

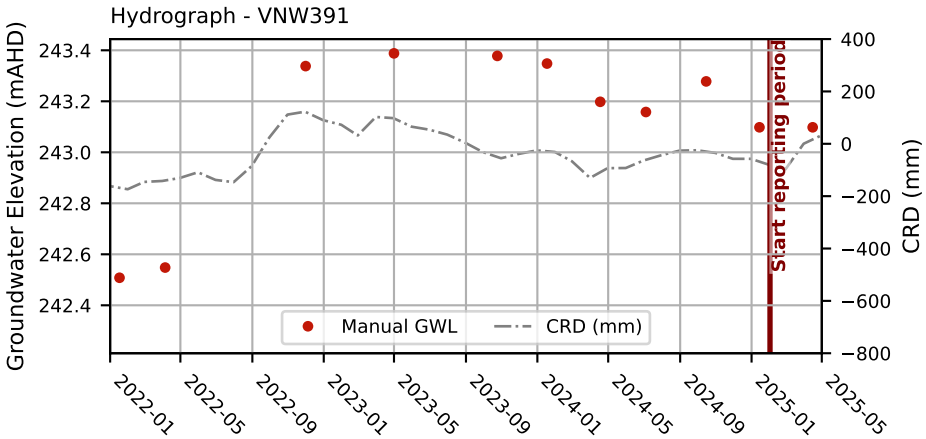

Hydrograph - VKY036C
Groundwater Elevation (mAHD)
CRD (mm)
Logger GWL - VKY036C
Manual GWL
CRD (mm)
Start reporting period

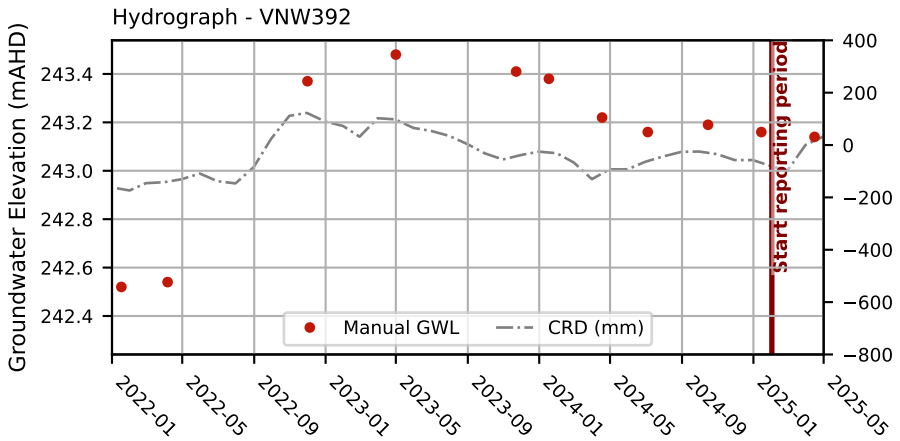

Hydrograph - VKY042C
Groundwater Elevation (mAHD)
CRD (mm)
Logger GWL - VKY042C
Manual GWL
CRD (mm)
Start reporting period

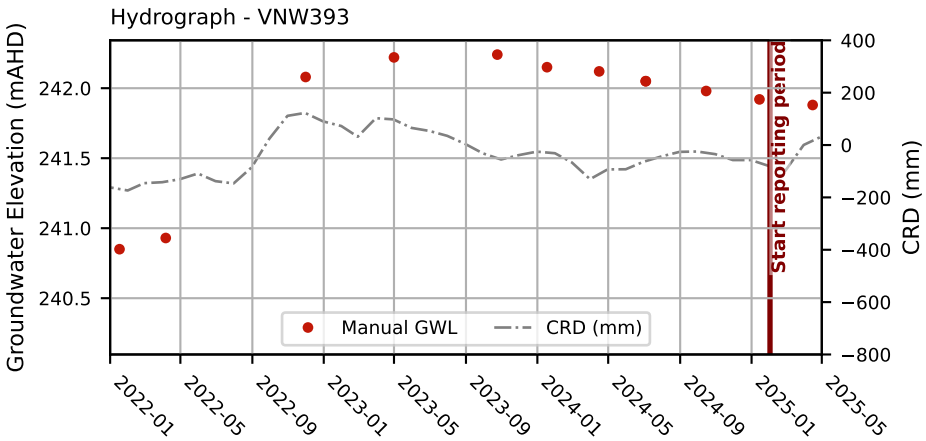

Hydrograph - VKY043C
Groundwater Elevation (mAHD)
CRD (mm)
Logger GWL - VKY043C
Manual GWL
CRD (mm)
Start reporting period

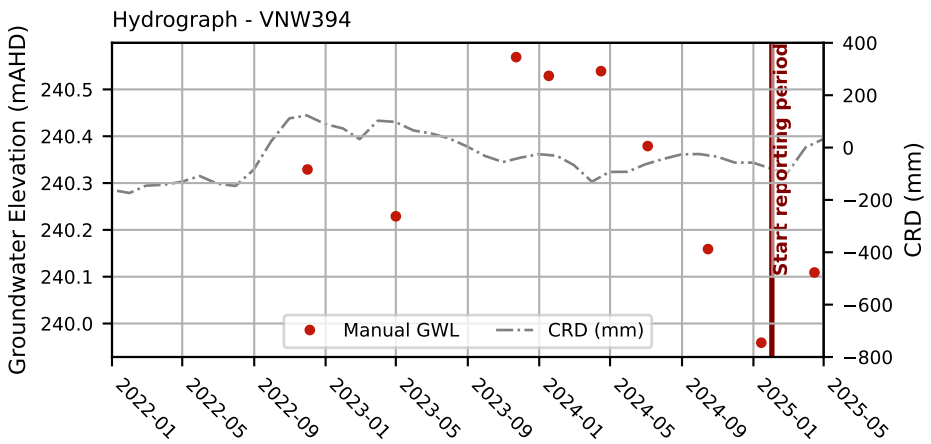

Hydrograph - VNW223
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

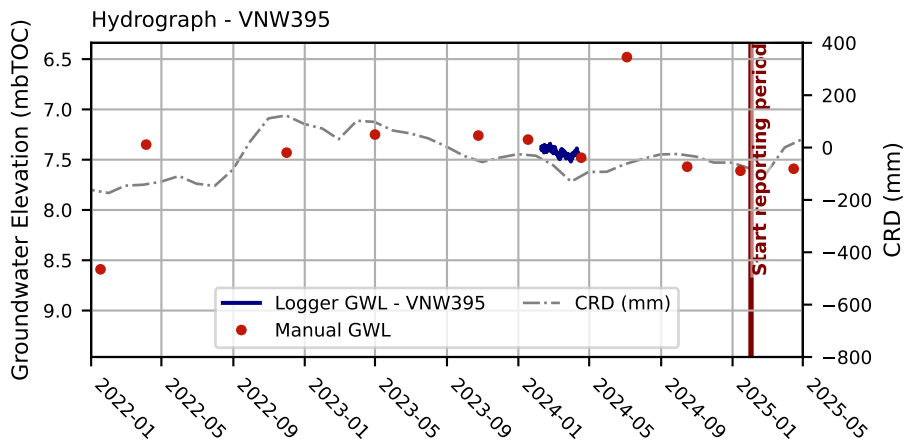

Hydrograph - VNW390
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

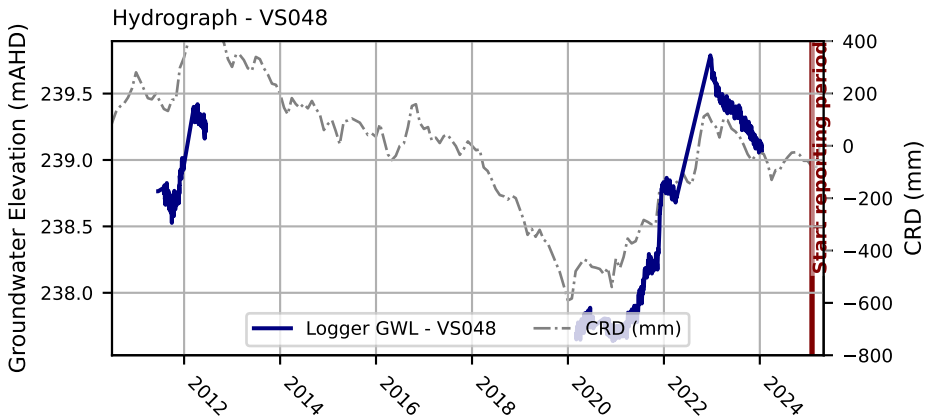

Hydrograph - VNW391
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

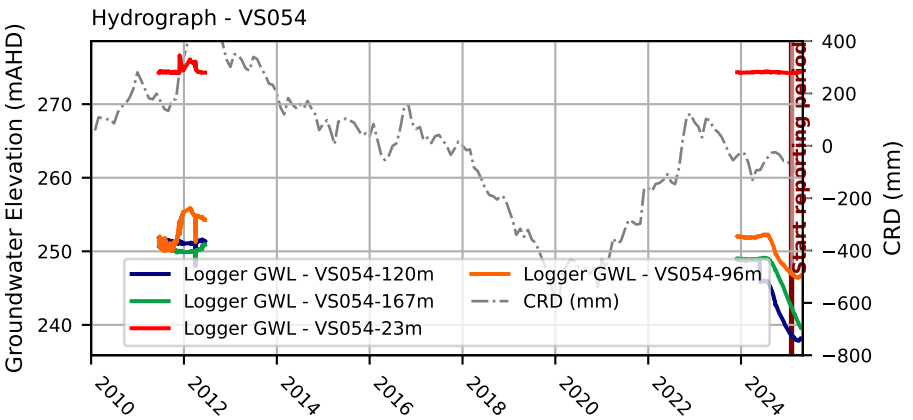

Hydrograph - VNW392
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

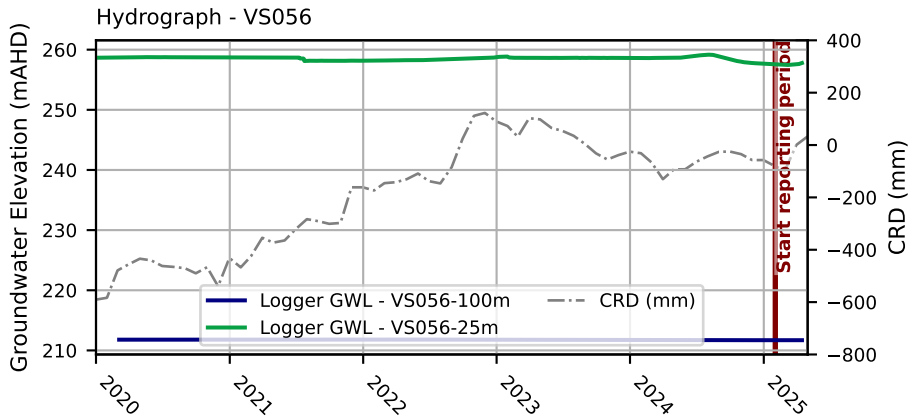

Hydrograph - VNW393
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

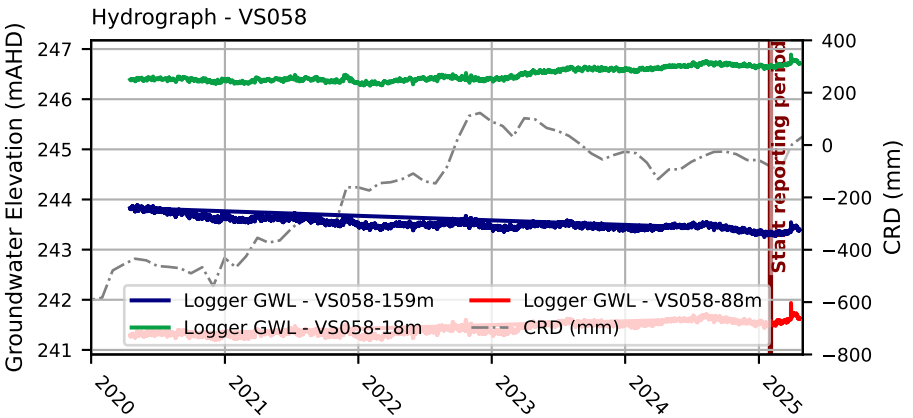

Hydrograph - VNW394
Groundwater Elevation (mAHD)
CRD (mm)
Manual GWL
CRD (mm)
Start reporting period

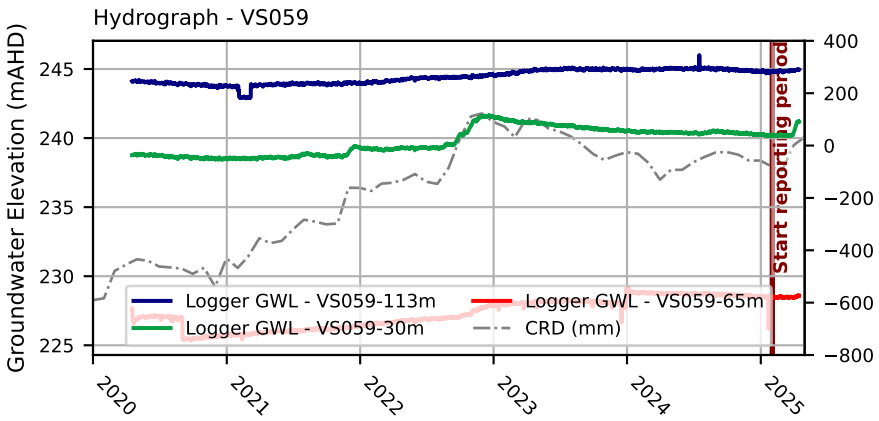

Hydrograph - VNW395
Groundwater Elevation (mbTOC)
CRD (mm)
Logger GWL - VNW395
Manual GWL
CRD (mm)
Start reporting period

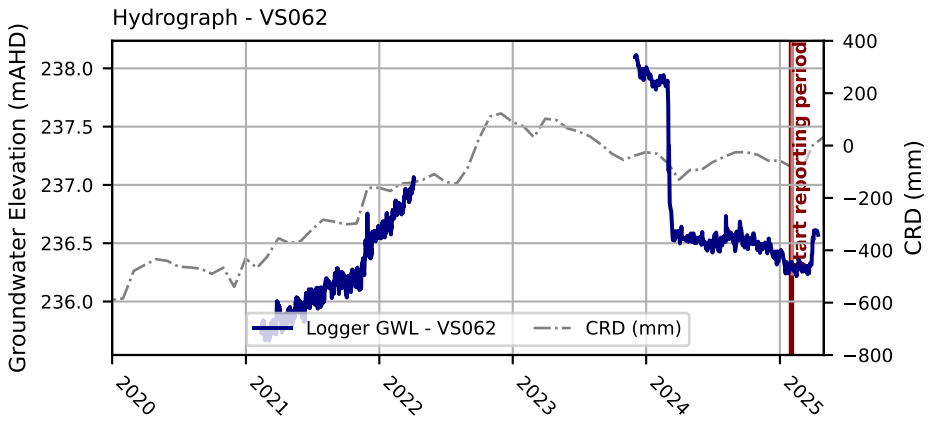

Hydrograph - VS048
Groundwater Elevation (mAHD)
CRD (mm)
Logger GWL - VS048
CRD (mm)
Start reporting period

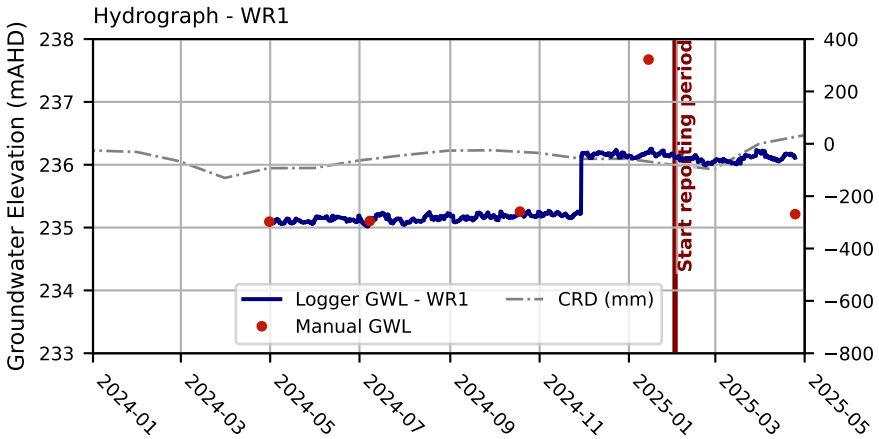

Hydrograph - VS054
Groundwater Elevation (mAHD)
CRD (mm)
Logger GWL - VS054-120m
Logger GWL - VS054-167m
Logger GWL - VS054-23m
Logger GWL - VS054-96m
CRD (mm)
Start reporting period

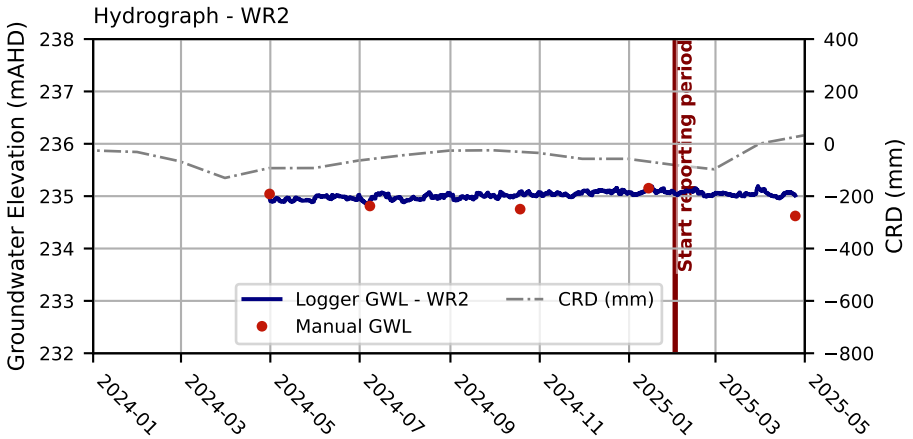

Hydrograph - VS056
Groundwater Elevation (mAHD)
CRD (mm)
Logger GWL - VS056-100m
Logger GWL - VS056-25m
CRD (mm)
Start reporting period


Hydrograph - VS058
Groundwater Elevation (mAHD)
CRD (mm)
Logger GWL - VS058-159m
Logger GWL - VS058-18m
Logger GWL - VS058-88m
CRD (mm)
Start reporting period


Hydrograph - VS059
Groundwater Elevation (mAHD)
CRD (mm)
Start reporting period
Logger GWL - VS059-113m
Logger GWL - VS059-65m
Logger GWL - VS059-30m
CRD (mm)


Hydrograph - VS062
Groundwater Elevation (mAHD)
CRD (mm)
Start reporting period
Logger GWL - VS062
CRD (mm)


Hydrograph - WR1
Groundwater Elevation (mAHD)
CRD (mm)
Start reporting period
Logger GWL - WR1
Manual GWL
CRD (mm)


Hydrograph - WR2
Groundwater Elevation (mAHD)
CRD (mm)
Start reporting period
Logger GWL - WR2
Manual GWL
CRD (mm)

Appendix C Groundwater Quality Results

Vickery Extension Project Groundwater Monitoring Report

Quarterly Review February 2025 – April 2025

Whitehaven Coal Ltd

SLR Project No.: 640.031099.00001

25 June 2025

Table C-1: Field GW Monitoring Data

Sample Location	Date	pH - Field	EC - Field (µS)	Temperature	Redox	Odour	Appearance	Colour	Comments
SB02	24-10-2023 10:40	7.21	7250	24.1	44	Nil	Slightly turbid	Orange	Quarterly sampling
GW01	24-10-2023 9:36	7.33	1042	22.4	79	Nil	Clear	Colourless	Quarterly sampling
SB15	24-10-2023 10:10	7.29	1019	22.6	59	Nil	Clear	Colourless	Quarterly sampling
SB06	24-10-2023 7:35	7.35	3280	20.6	41	Nil	Clear	Colourless	Quarterly sampling
SB11	24-10-2023 8:25	7.26	1080	22.6	46	Nil	Clear	Colourless	Quarterly sampling
SB10	23-10-2023 15:55	7.43	1880	24.3	34	Nil	Clear	Colourless	Quarterly sampling; small amount of sediment in water
SB05	23-10-2023 16:20	2.09	3740	25	43	Nil	Clear	Colourless	Quarterly sampling
SB09	23-10-2023 15:20	3.32	949	27.3	28	Nil	Slightly turbid	Orange/brown	Quarterly sampling; a lot of sediment in water, possible rust particles
SB01	23-10-2023 15:00	7.44	1541	26.5	36	Nil	Clear	Colourless	Quarterly sampling
SB04	23-10-2023 13:19	7.29	2680	28.2	47	Slight	Slightly turbid	Grey	Quarterly sampling; bailed due to depth; Standpipe extremely unstable; too shallow to hydrasleeve so bailed to test.
SB08	23-10-2023 13:35	7.24	983	26.3	41	Nil	Clear	Colourless	Quarterly sampling
SB07	23-10-2023 11:47	7.35	770	23.2	46	Nil	Clear	Colourless	Quarterly sampling
GW02	23-10-2023 10:51	7.59	731	25.2	25	Nil	Clear	Colourless	Quarterly sampling
MD01	25-10-2023 9:50	11.58	1799	25.6	-91	Slight	Clear	Colourless	Quarterly sampling; Slight unknown odour. No cap on bore;
MD02	25-10-2023 11:10	6.84	1195	27.4	-69	Nil	Clear	Colourless	Quarterly sampling
GW03	23-10-2023 14:14	7.19	862	25.9	21	Nil	Clear	Colourless	Quarterly sampling; fence panels down and logger missing (assume down the bore).
TR26	25-10-2023 12:00	7.06	6290	26.3	52	Nil	Clear	Colourless	Quarterly sampling
TR7	25-10-2023 12:25	6.53	####	26.4	61	Nil	Clear	Colourless	Quarterly sampling
TR18	25-10-2023 13:30	6.58	####	27.8	99	Nil	Clear	Colourless	Quarterly sampling
TR35	25-10-2023 14:10	6.66	####	25.5	-55	Slight	Clear	Colourless	Quarterly sampling
VKY043C	26-10-2023 8:25	7.72	2990	20	-32	Nil	Clear	Colourless	Quarterly sampling
VKY042C	26-10-2023 11:45	6.75	5420	28.1	-28	Nil	Clear	Colourless	Quarterly sampling; Unable to determine total bore depth as it was greater than 150m (length of the dip tape)
VKY035C	26-10-2023 10:40	7.1	3110	25.5	-26	Nil	Clear	Colourless	Quarterly sampling
VKY034C	26-10-2023 9:15	7.3	3590	23.4	70	Nil	Clear	Colourless	Quarterly sampling
VKY036C	26-10-2023 12:40	7.08	5600	25.1	-39	Nil	Clear	Colourless	Quarterly sampling
VNW390	24-10-2023 12:35	6.92	2300	22.6	-96	Moderate	Clear	Colourless	Quarterly sampling; Sulphur odour
VNW391	24-10-2023 14:20	7.04	2530	23.9	-60	Nil	Clear	Colourless	Quarterly sampling
VNW392	22-11-2023 13:58	6.74	3690	20.8	-96	Slight	Clear	Colourless	Quarterly sampling; No access - locked out on 24/10/2023; Sampled 22/11/2023; Slight H2S odour
VNW393	24-10-2023 13:05	7.36	2740	22.1	26	Slight	Clear	Colourless	Quarterly sampling; Slight sulphur odour
VNW394	22-11-2023 13:12	7.13	5520	12.8	-70	Nil	Slight	Grey	Quarterly sampling;
VNW395	24-10-2023 13:41	7.47	463	20.9	57	Slight	Clear	Colourless	Quarterly sampling; no logger
GW-8	22-11-2023 15:47	7.11	4290	22.5	-176	Nil	Slight	Brown	Quarterly sampling; Unable to locate on 27/10/2023; Sampled 22/11/2023
GW-7	27-10-2023 11:50	8.89	4300	22.7	60	Nil	Clear	Colourless	Quarterly sampling; Suspended matter in water
VNW223	27-10-2023 10:10	7.25	5940	19.9	49	Nil	Clear	Colourless	
GW-11	27-10-2023 9:40	7.36	4360	21.5	-111	Nil	Clear	Colourless	Quarterly sampling; old windmill overhead
GW-9	27-10-2023 12:55	7.94	6110	22.6	-87	Nil	Clear	Brown	Quarterly sampling; old windmill overhead
VKY GW Duplicate 1	24-10-2023 8:25	7.26	1081	22.6	46	Nil	Clear	Colourless	Quarterly sampling; site duplicate taken from SB11
VKY GW Duplicate 2	26-10-2023 8:25	7.71	2990	20.1	-32	Nil	Clear	Colourless	Quarterly sampling; site duplicate taken from VKY0043C
VKY GW Lab Split Dup 1	24-10-2023 8:25	7.27	1080	22.7	47	Nil	Clear	Colourless	Quarterly sampling; site split duplicate taken from SB11
VKY GW Lab Split Dup 2	26-10-2023 8:25	7.71	2990	20	-33	Nil	Clear	Colourless	Quarterly sampling; site split duplicate taken from VKY0043C

Sample Location	Date	pH - Field	EC - Field (µS)	Temperature	Redox	Odour	Appearance	Colour	Comments
VKY GW Blank	24-10-2023 7:35	8.77	13	15.4	70	Nil	Clear	Colourless	Quarterly sampling; blank
SB02	25-10-2023 12:25	7.28	7330	22.5	Clear	Nil	Slightly turbid	Orange	-
GW01	23-01-2024 7:39	7.2	1265	19.6	-15.7	Nil	Clear	Colourless	-
SB15	23-01-2024 8:05	7.23	1070	21.1	-88	Nil	Clear	Colourless	-
SB06	17-01-2024 12:55	7.61	3460	26.5	-84	Nil	Turbid	Brown	-
SB11	17-01-2024 13:26	7.7	1021	26.4	-62	Nil	Clear	Colourless	-
SB10	17-01-2024 13:49	7.47	1972	29.7	-69	Nil	Clear	Colourless	-
SB05	17-01-2024 14:31	7.73	3690	28	-131	Nil	Clear	Colourless	-
SB09	17-01-2024 15:18	7.56	1014	26.1	-70	Nil	Slightly turbid	Black	-
SB01	17-01-2024 14:58	7.31	1716	28.3	-70	Nil	Clear	Colourless	-
SB04	17-01-2024 15:51	7.43	3360	24.6	-188	Slightly	Clear	Colourless	Slight H2S odour
SB08	18-01-2024 16:09	7.39	1115	23.4	-119	Nil	Clear	Colourless	-
SB07	17-01-2024 16:32	7.47	919	24.5	-87	Nil	Clear	Colourless	-
GW02	18-01-2024 10:54	7.79	971	23.9	-74	Nil	Clear	Colourless	-
MD01	18-01-2024 9:10	11.69	1786	22.9	-135	Nil	Slightly turbid	Brown	-
MD02	23-01-2024 10:29	6.78	1306	24.3	-140	Nil	Clear	Colourless	-
GW03	23-01-2024 6:59	7.16	888	19.6	66	Nil	Clear	Colourless	-
TR26	18-01-2024 13:35	7.16	8380	24.8	-62	Nil	Slightly turbid	Brown	-
TR7	18-01-2024 13:55	7.05	1539	25.2	-30	Nil	Slightly turbid	Brown	-
TR18	18-01-2024 14:28	6.85	1364	24.5	-21	Nil	Slightly turbid	Brown	-
TR35	18-01-2024 15:25	6.75	1733	24	-63	Nil	Clear	Colourless	-
VKY043C	18-01-2024 14:58	7.8	3410	24.1	-74	Nil	Clear	Colourless	-
VKY042C	23-01-2024 12:58	6.72	5430	31	-119	Nil	Clear	Colourless	-
VKY035C	23-01-2024 12:14	7.01	3340	27.2	-170	Nil	Clear	Colourless	-
VKY034C	23-01-2024 11:05	6.94	3850	29.4	-149	Nil	Slightly turbid	Brown	-
VKY036C	23-01-2024 11:35	6.79	5810	28.7	-139	Nil	Clear	Colourless	-
VNW390	17-01-2024 11:23	7.13	2376	24.3	-69	Nil	Clear	Colourless	-
VNW391	17-01-2024 11:52	7.31	2471	23.1	-109	Nil	Clear	Colourless	-
VNW392	17-01-2024 12:22	6.74	3310	26.1	-149	Nil	Clear	Grey	-
VNW393	17-01-2024 10:51	7.56	2830	29.5	-90	Slightly	Clear	Colourless	Very slight H2S odour
VNW394	17-01-2024 9:30	6.92	5410	23.9	-104	Nil	Slightly turbid	Grey	-
VNW395	17-01-2024 11:39	7.77	1395	27	-168	Nil	Clear	Grey	-
GW-8	24-01-2024 13:55	7.03	3950	26.5	-208	Nil	Clear	Black	-
GW-7	23-01-2024 9:12	8.82	4490	23	-64	Nil	Clear	Colourless	Site overgrown and dangerous - Need cleanning up
VNW223	24-01-2024	-	-	-	-	-	-	-	Blocked at 1.3 mbtoc
GW-11	23-01-2024 14:26	6.93	4340	30.6	-192	Nil	Slightly turbid	Orange	-
GW-9	23-01-2024 13:49	6.68	3320	24.2	-196	Nil	Slightly turbid	Brown	No logger
GW030051	-	-	-	-	-	-	-	-	No access - NSWWater locked bore
GW030052	-	-	-	-	-	-	-	-	No access - NSWWater locked bore
GW-2	-	-	-	-	-	-	-	-	Unable to locate

Sample Location	Date	pH - Field	EC - Field (µS)	Temperature	Redox	Odour	Appearance	Colour	Comments
VKY GW Duplicate 1 - MD01	18-01-2024 9:38	11.54	1848	22.9	-147	Nil	Slightly turbid	Brown	-
VKY GW Duplicate 2 - GW-11	23-01-2024 14:26	-	-	-	-	-	-	-	-
VKY GW Lab Split Dup 1 - MD01	18-01-2024 9:42	11.73	1872	22.9	-149	Nil	Slightly turbid	Brown	-
VKY GW Lab Split Dup 2 -	23-01-2024 13:53	6.65	3490	24.8	-193	Nil	Slightly turbid	Brown	-
VKY GW Blank	17-01-2024 9:35	8.94	3.1	22.8	100	Nil	Clear	Colourless	-
VS058	15-04-2024 13:49	-	-	-	-	-	-	-	Li Battery 3.67V
SB02	15-04-2024 13:36	7.14	7210	24.7	-128	Nil	Slightly Turbid	Orange	
GW01	15-04-2024 13:12	7.14	1384	26.5	-127	Nil	Slightly Turbid	Black	Suspended solids minor
SB15	15-04-2024 12:56	7.17	972	27	43	Nil	Clear	Clear	Suspended solids minor
SB06	15-04-2024 12:21	7.42	3410	26.1	-70	Nil	Turbid	Black	-
SB11	15-04-2024 12:37	7.45	1048	24.3	69	Nil	Clear	Clear	-
SB10	15-04-2024 11:11	7.28	1859	24	-5	Nil	Slightly Turbid	Black	Suspended solids minor
SB05	15-04-2024 11:31	7.63	3680	22.9	-113	Nil	Slightly Turbid	Black	Suspended solids moderate
SB09	15-04-2024 10:52	7.27	973	21.7	-61	Nil	Turbid	Black	Suspended solids minor
SB01	15-04-2024 10:34	7.2	1698	24.1	-91	Nil	Clear	Grey	Suspended solids minor
SB04	15-04-2024 9:21	7.27	1868	24.1	-214	Yes	Turbid	Black	Sufer odour, suspended solids
SB08	15-04-2024 9:31	7.17	1039	21.2	-55	Nil	Clear	Clear	-
SB07	15-04-2024 8:48	7.28	934	21	57	Nil	Clear	Clear	Suspended solids minor
GW02	15-04-2024 8:16	7.14	926	24.3	8	Nil	Clear	Clear	Suspended solids moderate
VS062	15-04-2024 9:04	-	-	-	-	-	-	-	Li Battery 3.64V
VS059	15-04-2024 12:05	-	-	-	-	-	-	-	Li Battery 3.64V
VS056	17-04-2024 11:23	-	-	-	-	-	-	-	-
VS056	17-04-2024 11:26	-	-	-	-	-	-	-	-
MD01	18-04-2024 10:23	10.73	1283	24.2	-286	Strong	Slightly Turbid	Grey	Strong fecal odour
VS048	17-04-2024 10:59	-	-	-	-	-	-	-	-
VS054	17-04-2024 11:50	-	-	-	-	-	-	-	Li Battery 3.65V
MD02	17-04-2024 11:38	6.59	1210	31.1	-114	Slight	Clear	Clear	Suspended solids moderate
GW03	15-04-2024 9:56	7.05	862	24	-26	Nil	Clear	Grey	Suspended solids minor
TR26	17-04-2024 12:31	7.11	5180	29.4	60	Nil	Clear	Clear	
TR7	17-04-2024 12:49	6.71	14410	27.4	157	Nil	Clear	Orange	Logger length recorded
TR18	17-04-2024 13:26	6.69	12730	27.8	57	Nil	Slightly Turbid	Orange	Logger length recorded
TR35	17-04-2024 14:20	6.72	16740	22.8	48	Nil	Clear	Clear	
VKY43C	17-04-2024 14:06	7.65	3410	23.6	-47	Nil	Slightly Turbid	Orange	Logger was not working, removed at client request, not being replaced
VKY041C	17-04-2024 12:14								51.7% (should be battery)
	17-04-2024 12:17								35.2% (battery?)
VKY042C	29-04-2024 10:32	6.61	5480	24.3	-36	Nil	Clear	Clear	last 8m of logger cable rusty
VKY33C	18-04-2024 11:03	-	-	-	-	-	-	-	-
	18-04-2024 11:04	-	-	-	-	-	-	-	-
VKY035C	29-04-2024 14:41	6.88	3230	25	-120	Nil	Clear	Clear	
VKY034C	29-04-2024 9:58	7.05	4030	23.4	-80	Nil	Clear	Grey	
VKY036C	29-04-2024 14:10	6.8	5780	24.6	-93	Nil	Clear	Clear	

Sample Location	Date	pH - Field	EC - Field (µS)	Temperature	Redox	Odour	Appearance	Colour	Comments
VKY3053C	29-04-2024 8:41	-	-	-	-	-	-	-	In forest? Incline to east VKY034C; Battery = 34.9%
VNW390	17-04-2024 8:30	6.59	2291	23.9	-98	Yes	Clear	Clear	Very slight sulfur odour
VNW391	17-04-2024 10:11	7.06	2352	24.3	-107	Nil	Clear	Clear	
VNW392	17-04-2024 10:25	6.66	3480	21.9	-90	Nil	Clear	Grey	Suspended solids minor
VNW393	15-04-2024 14:40	7.2	2840	26.9	-103	Nil	Clear	Grey	
VNW394	15-04-2024 14:16	6.94	5400	25.7	-104	Nil	Turbid	Black	
VNW395	17-04-2024 9:28	7.77	1681	27.1	41	Nil	Clear	Clear	Logger length recorded
GW036459	-	-	-	-	-	-	-	-	-
GW-8	29-04-2024 8:28	6.95	4000	19.7	-151	Nil	Clear	Grey	
GW-7	30-04-2024 11:31	8.79	4560	21.9	97	Nil	Clear	Clear	
VWN223	29-04-2024 13:42	-	-	-	-	-	-	-	Blocked at 1.3m
GW-11	29-04-2024 12:59	6.59	4550	25.1	-123	Nil	Clear	Orange	
GW-9	29-04-2024 12:10	6.81	5630	22.2	-125	Nil	Slightly Turbid	Orange	
GW030051	-	-	-	-	-	-	-	-	No access, NSW Water locked bore
GW030052	-	-	-	-	-	-	-	-	No access, NSW Water locked bore
GW-2	29-04-2024 11:30	6.85	1218	25.3	70	Nil	Clear	Clear	Located, NotE?
WR-1	30-04-2024 10:15	6.7	####	22.7	217	Nil	Clear	Grey	Logger + HS installed
WR-2	30-04-2024 11:50	6.57	####	22.5	155	Nil	Slightly Turbid	Orange	Logger + HS installed
VKY GW Duplicate 1 - VWN390	17-04-2024 9:07	6.72	2320	22.4	-96	Nil	Clear	Clear	
VKY GW Duplicate 2 - GW-9	29-04-2024 12:33	6.72	5650	22.4	-155	Nil	Clear	Orange	
VKY GW Blank	17-04-2024 8:25	7.56	3.7	18.1	141	Nil	Clear	Clear	
VKY GW Lab Split Dup 1 - TR18	17-04-2024 13:52	6.77	####	25.2	139	Nil	Slightly Turbid	Orange	
VKY GW Lab Split Dup 2 - GW-11	29-04-2024 13:20	6.55	4520	25.1	-121	Nil	Clear	Orange	
VS058	01-07-2024 14:28	-	-	-	-	-	-	-	-
SB02	01-07-2024 14:04	7.2	6860	20.3	-109	Nil	Slightly Turbid	Brown	-
GW01	01-07-2024 13:42	7.2	1052	19.1	-32	Nil	Clear	Clear	-
SB15	01-07-2024 13:25	7.3	1049	19.6	8	Nil	Clear	Clear	-
SB06	01-07-2024 12:36	7.56	3440	18.6	-56	Nil	Turbid	Brown	Turbid brown
SB11	01-07-2024 13:05	7.77	461	17.9	-11	Nil	Clear	Clear	-
SB10	01-07-2024 12:01	7.5	1928	18	-23	Nil	Clear	Clear	Black particulate
SB05	01-07-2024 12:18	7.58	3490	18.6	-126	Nil	Clear	Clear	-
SB09	01-07-2024 11:40	7.52	1013	18.4	-84	Nil	Clear	Clear	Black particulate
SB01	01-07-2024 11:15	7.21	1756	17.6	-134	Nil	Clear	Clear	Black particulate
SB04	01-07-2024 10:07	7.12	2390	15.5	-204	H2S	Clear	Clear	H_2S
SB08	01-07-2024 10:16	7.29	1088	16.9	-132	Nil	Clear	Clear	-
SB07	01-07-2024 9:51	7.22	978	15.8	28	Nil	Clear	Clear	-
GW02	01-07-2024 9:00	7.23	1065	14.4	151	Nil	Clear	Clear	-
VS062	01-07-2024 8:44	-	-	-	-	-	-	-	-
VS059	01-07-2024 13:25	-	-	-	-	-	-	-	-
VS056	04-07-2024 12:50	-	-	-	-	-	-	-	-
VS056	04-07-2024 12:55	-	-	-	-	-	-	-	-

Sample Location	Date	pH - Field	EC - Field (µS)	Temperature	Redox	Odour	Appearance	Colour	Comments
MD01	04-07-2024 12:45	9.59	1505	19.6	-244	-	Slightly Turbid	Brown	H2S; Vegetable matter
VS048	04-07-2024 11:55	-	-	-	-	-	-	-	-
VS054	04-07-2024 12:15	-	-	-	-	-	-	-	Comm Port 25 (V3.66)
MD02	04-07-2024 12:24	6.57	1224	19.9	-117	-	Clear	Clear	Black particulate; vegetable matter
GW03	01-07-2024 10:45	7.36	947	15.7	-143	-	Clear	Clear	Slight H2S
TR26	05-07-2024 9:37	6.69	7330	20.4	-	-	Slightly Turbid	Brown	
TR7	05-07-2024 10:27	6.82	####	17.9	-	-	Clear	Clear	
TR18	05-07-2024 10:53	6.64	####	17.2	-	-	Slightly Turbid	Brown	
TR35	05-07-2024 12:02	6.75	####	18.7	-	-	Clear	Clear	
VKY43C	05-07-2024 11:38	7.85	3290	7.2	-	-	Clear	Clear	
VKY041C	04-07-2024 13:45	-	-	-	-	-	-	-	Battery 53%
VKY041C	04-07-2024 13:45	-	-	-	-	-	-	-	Battery 34%
VKY042C	08-07-2024 15:02	6.65	5990	19.5	-13	-	Clear	Clear	
VKY33C	05-07-2024 12:32	-	-	-	-	-	-	-	Lithium 34%
VKY33C	05-07-2024 12:32	-	-	-	-	-	-	-	Lithium 37.1%
VKY035C	08-07-2024 13:25	6.9	3290	20.6	-88	-	Clear	Clear	-
VKY034C	05-07-2024 12:40	7.25	4170	19.3	-	-	Slightly Turbid	Grey	Slightly turbid; too turbid to filter, lab to filter; Grey
VKY036C	08-07-2024 14:27	7.19	5830	20.5	-111	-	Clear	Clear	-
VKY3053C	05-07-2024 8:31	-	-	-	-	-	-	-	Lithium
VNW390	04-07-2024 9:45	6.84	2473	17.7	-117	-	Clear	Clear	-
VNW391	04-07-2024 11:03	6.81	2458	19.2	-134	-	Clear	Clear	-
VNW392	04-07-2024 11:24	6.51	3510	19.6	-78	-	Clear	Clear	Slight H2S odor, black particulate
VNW393	04-07-2024 8:45	7.13	3090	18.4	104	-	Clear	Clear	-
VNW394	04-07-2024 8:28	6.62	5620	18.2	227	-	Slightly Turbid	Grey	-
VNW395	04-07-2024 10:27	7.61	1832	18.5	-4	-	Clear	Clear	Logger not responding
GW036459	-	-	-	-	-	-	-	-	No access - WaterNSW locked bore
GW-8	05-07-2024 8:00	6.49	4100	12.5	-	-	Slightly Turbid	Brown	-
GW-7	05-07-2024 10:39	8.67	4710	18.1	135	-	Clear	Clear	-
VWN223	05-07-2024 12:58	-	-	-	-	-	-	-	Blocked at 1.38mboc
GW-11	08-07-2024 12:20	6.09	4760	18.8	-54		Slightly Turbid	Brown	-
GW-9	08-07-2024 11:50	6.76	1591	19.3	-130		Slightly Turbid	Green	Slightly turbid; green
GW030051	-	-	-	-	-	-	-	-	No access - WaterNSW locked bore
GW030052	-	-	-	-	-	-	-	-	No access - WaterNSW locked bore
GW-2	-	-	-	-	-	-	-	-	Unable to locate
WR-1	08-07-2024 0:00	6.47	26800	18.2	254	-	Slightly Turbid	Brown	-
WR-2	08-07-2024 0:00	6.52	26600	17	10	-	Slightly Turbid	Brown	-
VKY GW Duplicate 1 - VNW390	04-07-2024 0:00	6.69	2366	19	-111	-	Clear	Clear	-
VKY GW Duplicate 2 - TR26	05-07-2024 0:00	7.03	7330	20.4	-	-	Slightly Turbid	Brown	-
VKY GW Blank	01-07-2024 0:00	7.1	2315	14.4	-124	-	Clear	Clear	-
VKY GW Lab Split Dup 1 - VNW393	04-07-2024 0:00	6.97	3270	20.5	-85	-	Clear	Clear	-
VKY GW Lab Split Dup 2 - VKY035C	08-07-2024 0:00	8	1.6	11	92	-	Clear	Clear	-

Sample Location	Date	pH - Field	EC - Field (µS)	Temperature	Redox	Odour	Appearance	Colour	Comments
GW-11	18-10-2024 9:25	7.17	4760	22.6	-94	NIL	Clear	Brown	Overgrown
GW-13	21-10-2024 12:48	7.35	1647	23.5	-158	NIL	Clear	Black	C?
GW-14	21-10-2024 10:33	6.95	3840	23.4	22	NIL	Clear	Colourless	Overgrown
GW-2	22-10-2024 10:58	6.84	1226	21	100	NIL	Clear	Colourless	-
GW-6	15-11-2024 9:11	7.73	1459	27.3	-142	NIL	Slightly Turbid	Black	No access to bore on 21-10-24; uncovered on 15-11-24
GW-7	18-10-2024 13:30	8.3	4470	24.5	55	NIL	Clear	Colourless	Overgrown
GW-8	21-10-2024 8:40	7	3930	16.1	-210	NIL	Slightly Turbid	Brown	-
GW-9	21-10-2024 9:40	6.68	1099	20.7	-188	NIL	Slightly Turbid	Orange	-
GW01	14-10-2024 13:47	7.16	738	19.8	-84	S	Clear	Colourless	Slight H2S odour. Ant bait changed.
GW02	14-10-2024 8:50	7.42	1016	18.7	196	NIL	Clear	Colourless	Comport 1?. Ant bait changed.
GW03	14-10-2024 11:10	7.22	1004	19	-39	NIL	Clear	Colourless	Ant bait changed.
MD01	15-10-2024 12:16	8.33	1787	25	-280	Decomposing odour (organic matter?)	Slightly Turbid	Grey	Decomposing odour (organic matter?)
MD02	15-10-2024 12:03	6.72	1279	25	-71	NIL	Clear	Colourless	-
SB01	14-10-2024 11:31	7.23	1869	20.7	-60	NIL	Clear	Colourless	-
SB02	14-10-2024 14:06	7.23	7250	19.9	-113	NIL	Slightly Turbid	Brown	-
SB04	14-10-2024 10:22	7.21	2289	19.4	-178	Mild H2S	Clear	Colourless	Mild H2S
SB05	14-10-2024 12:27	7.71	3790	19.5	-45	NIL	Clear	Colourless	-
SB06	14-10-2024 12:48	7.7	2790	19.5	-113	NIL	Slightly Turbid	Grey	-
SB07	14-10-2024 9:42	7.58	1042	18.4	98	NIL	Clear	Colourless	-
SB08	14-10-2024 10:35	7.27	388	19.3	-57	Mild H2S	Clear	Colourless	Mild H2S
SB09	14-10-2024 11:58	7.44	1130	20.6	7	NIL	Clear	Colourless	-
SB10	14-10-2024 12:09	7.38	2200	20.4	32	NIL	Clear	Grey	-
SB11	14-10-2024 13:07	7.51	1266	19.8	-9	NIL	Clear	Colourless	-
SB15	14-10-2024 13:30	7.24	1143	19.8	44	NIL	Clear	Colourless	-
TR18	15-10-2024 14:05	6.79	13820	21.3	100	NIL	Slightly Turbid	Brown	Logger removed
TR26	15-10-2024 13:30	6.93	6090	28.5	-31	NIL	Clear	Colourless	-
TR35	15-10-2024 14:34	6.73	16690	23	92	NIL	Clear	Colourless	-
TR7	15-10-2024 13:45	6.63	1484	26.2	80	NIL	Clear	Colourless	-
VKY035C	18-10-2024 11:15	7.09	3330	28.4	-48	NIL	Clear	Colourless	-
VKY036C	18-10-2024 10:24	7.21	6020	24.7	-71	NIL	Clear	Grey	-
VKY042C	18-10-2024 10:54	6.72	5850	23.9	-18	NIL	Clear	Colourless	-
VKY034C	18-10-2024 12:02	7.25	3970	26.4	29	NIL	Turbid	Grey	Too turbid, send lab to filter
VKY041C	15-10-2024 13:09	-	-	-	-	-	-	-	Not sure which is which as no machine serial numbers on loggers. Change battery in 02027. Ant bait changed.
VKY041C	15-10-2024 13:09	-	-	-	-	-	-	-	Ant bait changed
VKY043C	15-10-2024 14:20	7.7	3050	22.7	30	NIL	Clear	Colourless	
VKY33C	18-10-2024 12:44	-	-	-	-	-	-	-	Ant bait changed
VKY33C	18-10-2024 12:46	-	-	-	-	-	-	-	Ant bait changed
VKY3053C	21-10-2024 8:46	-	-	-	-	-	-	-	Ant bait changed
VNW223	18-10-2024 8:32	7.17	5360	22.2	129	NIL	Clear	Colourless	

Sample Location	Date	pH - Field	EC - Field (µS)	Temperature	Redox	Odour	Appearance	Colour	Comments
VNW390	15-10-2024 10:09	6.81	2431	21.6	-103	NIL	Clear	Colourless	
VNW394	15-10-2024 9:10	7.07	5420	19.8	-98	NIL	Clear	Colourless	
VNW392	15-10-2024 11:04	6.74	3410	23.3	-60	NIL	Clear	Colourless	
VNW393	15-10-2024 9:45	7.16	3140	23.7	-117	NIL	Clear	Colourless	
VNW391	15-10-2024 10:45	7.1	2424	22.4	-104	NIL	Clear	Colourless	
VNW395	15-10-2024 10:30	7.56	1834	21.7	40	NIL	Clear	Colourless	No logger; Ant bait changed
VS048	15-10-2024 11:35	-	-	-	-	-	-	-	Ant bait changed
VS054	15-10-2024 11:51	-	-	-	-	-	-	-	Comport 25; Ant bait changed
VS056	15-10-2024 12:24	-	-	-	-	-	-	-	Ant bait changed
VS056	15-10-2024 12:24	-	-	-	-	-	-	-	Ant bait changed
VS058	14-10-2024 14:20	-	-	-	-	-	-	-	Ant bait changed
VS059	14-10-2024 8:30	-	-	-	-	-	-	-	Ant bait changed
VS062	14-10-2024 10:00	-	-	-	-	-	-	-	Ant bait changed
WR-1	18-10-2024 13:58	6.5	2680	23.5	150	NIL	Clear	Grey	Comport 8
WR-2	18-10-2024 14:40	6.36	2660	24.2	-37	NIL	Slightly Turbid	Grey	
GW036459	-	-	-	-	-	-	-	-	No access - NSW Water locked bore
GW030051	-	-	-	-	-	-	-	-	No access - NSW Water locked bore
GW030052	-	-	-	-	-	-	-	-	No access - NSW Water locked bore
GW-4	15-11-2024 8:50	7.92	2980	21.8	177	NIL	Slightly Turbid	Colourless	No access for sampling on 22 Oct 2024, bore uncovered on 15 Nov 2024
GW-10	22-10-2024 11:45	7.57	1438	23.8	93	NIL	Clear	Orange	-
GW-15	22-10-2024 13:30	8.97	638	23.6	12	NIL	Clear	Colourless	See photos
GW971614	22-10-2024 9:40	6.65	651	19	219	NIL	Clear	Colourless	Sampled from tank outflow?
GW971400	22-10-2024 10:15	6.8	2458	20.2	76	NIL	Clear	Colourless	Sampled from outflow
GW4	22-10-2024 11:30	-	-	-	-	-	-	-	No access
VKY GW Duplicate 1 - GW-9	21-10-2024 9:40	6.66	1076	20.3	779	NIL	Slightly Turbid	Orange	-
VKY GW Duplicate 2 - GW-10	22-10-2024 11:45	7.54	1478	23.7	77	NIL	Clear	Colourless	-
VKY GW Blank	21-10-2024 7:30	7.5	3.2	19.7	-83	NIL	Clear	Colourless	-
VKY GW Lab Split Dup 1 - GW-14	21-10-2024 10:33	6.91	3830	21.6	10	NIL	Clear	Colourless	-
VKY GW Lab Split Dup 2 - GW-10	22-10-2024 11:45	7.6	1477	22.8	110	NIL	Clear	Colourless	-
GW-11	15-01-2025 12:25	7.03	4310	33.5	-142	NIL	Slightly Turbid	Grey	-
GW-13	15-01-2025 13:30	7.3	1570	32.7	55	NIL	Clear	Green/Grey	-
GW-14	16-01-2025 8:30	6.53	4260	21.8	-215	NIL	Clear	Colourless	
GW-2	16-01-2025 7:50	6.45	1339	20.6	-210	NIL	Clear	Colourless	
GW-6	15-01-2025 13:45	7.52	1256	31.5	-142	NIL	Slightly Turbid	Green	
GW-7	16-01-2025 9:30	7.76	4690	25.5	-192	NIL	Clear	Colourless	
GW-8	15-01-2025 7:45	6.62	4350	28.9	-119	NIL	Slightly Turbid	Brown	
GW-9	16-01-2025 7:40	5.4	1544	21.6	-147	NIL	Slightly Turbid	Brown	
GW01	14-01-2025 8:08	7.1	1244	23.6	-164	NIL	Clear	Colourless	
GW02	13-01-2025 8:45	6.63	992	22	69	NIL	Clear	Colourless	D/cell
GW03	13-01-2025 12:42	7.08	983	26.2	-143	NIL	Clear	Grey	
MD01	14-01-2025 10:11	8.84	1519	28.1	-323	NIL	Clear	Colourless	Mild H2S Odour

Sample Location	Date	pH - Field	EC - Field (µS)	Temperature	Redox	Odour	Appearance	Colour	Comments
MD02	14-01-2025 9:37	6.81	1381	28.9	-158	NIL	Clear	Colourless	-
SB01	13-01-2025 13:12	7.12	1851	26.7	-114	NIL	Clear	Grey	-
SB02	14-01-2025 8:32	7.22	6990	28.4	-126	NIL	Clear	Colourless	-
SB04	13-01-2025 11:52	7.04	3420	25.3	-171	S	Slightly Turbid	Grey	H2S ODOR
SB05	13-01-2025 14:30	7.52	3660	25.2	-128	NIL	Slightly Turbid	Grey	-
SB06	13-01-2025 15:04	7.42	3160	29.3	-127	NIL	Clear	Grey	-
SB07	13-01-2025 9:32	7.29	1009	22.7	-53	NIL	Clear	Colourless	TR7 Logger
SB08	13-01-2025 12:04	7.27	1154	24.7	-68	NIL	Clear	Colourless	-
SB09	13-01-2025 13:40	7.4	1045	28.4	-78	NIL	Clear	Colourless	-
SB10	13-01-2025 14:06	7.25	2086	28.4	22	NIL	Clear	Colourless	-
SB11	13-01-2025 15:19	7.39	1209	27.8	-27	NIL	Clear	Colourless	-
SB15	14-01-2025 7:42	7.41	1163	23	61	NIL	Clear	Colourless	-
TR18	14-01-2025 13:10	6.68	13810	27.3	12	NIL	Slightly Turbid	Grey	-
TR26	14-01-2025 12:40	6.85	6170	35.3	-47	NIL	Slightly Turbid	Grey	-
TR35	14-01-2025 13:40	6.54	18320	26	122	NIL	Clear	Colourless	-
TR7	14-01-2025 12:55	6.51	1552	26.8	76	NIL	Slightly Turbid	Grey	-
VKY035C	15-01-2025 10:10	6.93	3220	30.2	-86	NIL	Clear	Colourless	-
VKY036C	15-01-2025 10:45	7.06	2980	30.6	-110	NIL	Slightly Turbid	Grey	-
VKY042C	15-01-2025 11:15	6.64	5590	30.4	-54	NIL	Clear	Colourless	-
VKY034C	15-01-2025 9:45	7.16	3910	28.9	18	NIL	Grey	Grey	Too turbid to field filter
VKY041C	15-01-2025 12:10	-	-	-	-	-	-	-	Batt. 48.7%
VKY041C	15-01-2025 12:18	-	-	-	-	-	-	-	Batt. 31.2%
VKY043C	14-01-2025 13:25	7.5	3240	31	-42	NIL	Clear	Colourless	-
VKY33C	15-01-2025 9:35	-	-	-	-	-	-	-	Batt. 34.5%
VKY33C	15-01-2025 9:35	-	-	-	-	-	-	-	-
VKY3053C	15-01-2025 8:00	-	-	-	-	-	-	-	-
VNW223	15-01-2025 11:45	7.07	4390	32.5	88	NIL	Clear	Colourless	
VNW390	14-01-2025 10:15	6.96	2629	28.4	-10	NIL	Clear	Colourless	
VNW391	14-01-2025 11:40	7.02	2550	24.7	-129	NIL	Clear	Green	
VNW392	14-01-2025 12:10	6.47	3480	31.3	-467	NIL	Clear	Colourless	
VNW393	14-01-2025 11:30	6.94	3210	29.8	-70	NIL	Clear	Grey	
VNW394	14-01-2025 11:00	6.87	5480	29.5	-46	NIL	Slightly Turbid	Grey	
VNW395	14-01-2025 11:17	7.58	2153	23.1	-229	S	Clear	Green	Slight Unknown
VS048	14-01-2025 10:55	-	-	-	-	-	-	-	D-cell
VS054	14-01-2025 9:55	-	-	-	-	-	-	-	Lithium Dk
VS056	14-01-2025 10:32	-	-	-	-	-	-	-	D-cell
VS056	14-01-2025 10:38	-	-	-	-	-	-	-	D-cell
VS058	14-01-2025 8:57	-	-	-	-	-	-	-	Lithium Dk
VS059	13-01-2025 8:15	-	-	-	-	-	-	-	Indicated low battery-changed
VS062	13-01-2025 11:25	-	-	-	-	-	-	-	D-cell
WR-1	14-01-2025 9:30	6.95	25400	27.8	93	NIL	Clear	Colourless	

Sample Location	Date	pH - Field	EC - Field (µS)	Temperature	Redox	Odour	Appearance	Colour	Comments
WR-2	14-01-2025 7:50	6.41	27900	23.8	29	NIL	Slightly Turbid	Colourless	
GW-4	16-01-2025 8:25	7.84	2970	21	-258	NIL	Clear	Colourless	
GW-10	15-01-2025 13:00	7.36	1423	-	67	NIL	Clear	Green	
GW-15	15-01-2025 8:43	8.85	644	30.8	-224	NIL	Clear	Colourless	
GW971614	16-01-2025 12:00	7.08	608	26.7	-106	NIL	Clear	Colourless	
Landreef Tap	16-01-2025 11:30	6.96	841	27.6	-103	NIL	Clear	Colourless	
VKY GW Duplicate 1 - GW-15	15-01-2025 8:45	8.91	684	26.4	-200	NIL	Clear	Colourless	
VKY GW Duplicate 2 - GW-11	15-01-2025 12:25	6.92	4650	30	-124	NIL	Clear	Colourless	
VKY GW Blank	16-01-2025 8:40	4.83	-5.8	22.7	286	NIL	Clear	Colourless	
VKY GW Lab Split Dup 1 - GW-15	15-01-2025 8:45	8.94	716	24.4	-187	NIL	Clear	Colourless	
VKY GW Lab Split Dup 2 - GW-11	15-01-2025 12:25	8.67	4840	27.2	-118	NIL	Clear	Colourless	
GW-13	16-04-2025 12:01	7.24	822	22.8	66	NIL	Clear	Colourless	
GW-14	16-04-2025 14:38	6.94	3360	21.2	74	NIL	Clear	Colourless	
GW-2	16-04-2025 13:58	6.86	1191	21.1	119	NIL	Clear	Colourless	
GW-6	16-04-2025 12:28	7.60	1388	23.5	-168	S	Slightly Turbid	Brown	Slight hydrocarbon odour
GW02	15-04-2025 11:53	7.74	872	24.4	26	NIL	Clear	Colourless	
GW03	15-04-2025 13:29	7.17	8720	23.4	-85	VS	Clear	Grey	Very slight H_2S Odour
MD01	15-04-2025 11:21	8.67	1438	23.9	-244	STG	Clear	Colourless	Strong Unknown Odour
MD02	15-04-2025 10:55	6.80	1232	25.1	-61	NIL	Clear	Colourless	
SB04	15-04-2025 12:49	7.15	2184	22.5	-171	S	Turbid	Grey	Slight H2S Odour
SB07	15-04-2025 11:53	7.32	908	22.0	63	NIL	Clear	Colourless	
SB08	15-04-2025 13:05	7.22	1035	21.4	-95	S	Clear	Colourless	
TR18	16-04-2025 08:20	6.93	1362	17.5	131	NIL	Slight Turbid	Grey	
TR26	16-04-2025 07:50	7.09	7290	19.0	117	NIL	Slight Turbid	Brown	
TR35	16-04-2025 08:53	6.96	1618	18.9	163	NIL	Clear	Colourless	
TR7	16-04-2025 08:05	6.93	1535	17.0	113	NIL	Clear	Colourless	
VKY035C	16-04-2025 10:05	7.01	3170	22.2	-17	S	Clear	Colourless	Slight Unknown Odour
VKY036C	16-04-2025 10:23	7.30	5720	22.0	-89	NIL	Clear	Colourless	
VKY042C	16-04-2025 10:57	6.71	5510	22.3	-3	NIL	Clear	Colourless	
VKY034C	16-04-2025 09:36	7.21	3840	22.2	53	NIL	Slight Turbid	Grey	Too turbid to filter – Lab to filter
VKY043C	16-04-2025 08:36	7.87	3510	16.8	30	NIL	Clear	Colourless	
VNW390	15-04-2025 09:03	6.84	2350	21.3	-154	S	Clear	Colourless	Very slight H2S
VNW391	15-04-2025 09:43	7.03	2308	21.9	-193	NIL	Clear	Colourless	
VNW392	15-04-2025 09:56	6.67	3340	20.9	-132	NIL	Clear	Colourless	
VNW393	15-04-2025 08:39	7.11	3100	21.3	-111	NIL	Clear	Colourless	
VNW394	15-04-2025 08:04	6.84	5520	20.6	-199	S	Slight Turbid	Black	Slight H2S
VNW395	15-04-2025 09:30	7.31	2280	20.0	-272	M	Clear	Colourless	No logger – faulty and removed previously
GW-4	16-04-2025 13:29	8.11	2990	22.6	57	NIL	Clear	Colourless	
GW-10	16-04-2025 11:37	7.92	1808	23.0	37	NIL	Clear	Brown	
GW-15	15-04-2025 14:50	8.96	680	21.9	-18	NIL	Clear	Colourless	

GROUND WATER MONITORING

Client: **Whitehaven Coal - Vickery Project** Sampled By: GQ/SM

Project: **Quarterly Groundwater Sampling** (Jan, Apr, Jul, Oct) Signed:

Meters need to be checked every 24 hours

*Data saved into Field Downloads folder or emailed to monitoringresults@chased.com.au

Date	Field pH/EC/ Temp meter #	Calibation checked (record details on F305)	Field Redox meter #	Calibation checked (record details on F323)	Field Laptop #	VWP data files transferred*	Weather conditions (eg. sunny, rain)	Any Health/safety issues on site (if yes, detail under Comments)	Field Tech Initials	
		Y / N		Y / N		Y / N				
		Y / N		Y / N		Y / N				
		Y / N		Y / N		Y / N				
		Y / N		Y / N		Y / N				
		Y / N		Y / N		Y / N				

Site	Date	Time	Logger Downloaded	Logger Batteries Replaced	Bore Total Depth (m)	Standpipe TOC to Ground (m) height	Depth to Water (m)	Typical Depth (m)	Sampling Method	Field pH	Field EC	Temp. (°C)	Redox (mV)	Odour	Water Turbidity	Water Colour	Monitoring bore in good condition (note any damage under comments)	Photo taken	Bottles: 500ml GP	Bottles: RP (filt.)	Bottles: PP	Bottles: PG	Comments
GW-11						0.3	2		GS LF HF HS	6					C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW-13	16-4-25	1201	[illegible]	—	47.99	•	23.18		GS LF HF HS	7.24	822 us	22.8	66	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
GW-14	16-4-25	1438	—	—	—		1049		GS LF HF HS	6.94	3.36ms	21.2	74	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
GW-2	16/4/25	1358	—	—	[illegible]	N/A	18.49		GS LF HF HS	6.86	1191 us	21.1	119	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
GW-6	16/4/25	1228	—	—	63.86		23.04		GS LF HF HS	7.60	1388 us	23.5	-168	S	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	SLIGHT HYDROCARBON ODOUR
GW-7						0.34			GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW-8									GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW-9			? - Y / N	Y / N		0.64			GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW01			ML - Y / N	Y / N		0.52		8.20	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW02	15/4/25	1153	ML Y N	Y N	17.69	0.45	8.65	7.45	GS LF HF HS	7.74	872 us	24.4	26	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
GW03	15/4/25	1329	VL - Y / N	Y / N	43.48	-.77	7.02	6.12	GS LF HF HS	7.17	872 us	23.4	-85	VS	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	VERY SLIGHT H2S ODOUR
MD01	15/4/25	1121			53.57	0.62	30.12	28.02	GS LF HF HS	8.67	1438 us	23.9	-244	STG	C S T	C O Bk Bn Gn Gy	Y N	Y / N	1	1	1	1	STRONG UNKNOWN ODOUR
MD02	15/4/25	1055			59.69	0.64	42.16	40.98	GS LF HF HS	6.80	1232 us	25.1	-61	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
SB01						0.9		6.37	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	

ML = Mini Logger
QL = Quattro Logger
VL = V-Logger
WS = Win Situ (Rugged Troll)
RST = RST Logger

GS=Grab Sample with Bailer,
LF=Low Flow Sampling,
HF=High Volume Pumping,
HS = Hydrasleeve (CIRCLE)

CBased Sampling Method: M105 - Groundwater Sampling
Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)
Colour: C=Colourless, O=Orange, Bk = Black, Bn=Brown, Gn=Green, Gy = Grey (CIRCLE)
Flow Rate: Still → Trickle → Slow → Steady → Fast
Bottles: GP = Green Plastic, RP = Red Plastic, (filt. = filtered), PP = Purple Plastic, BP = Blue Plastic, YP = Yellow Plastic, OG = Orange Glass, PG = Purple Glass, BG = Brown Glass, MP = Maroon Plastic, PV = Purple Vial, ST = Sterile

pH 7 buffer check required every 10 samples - If the Difference is over 0.2, recalibrate using Form F305 (2 point calibration)

Date	Time	pH reading	Recalibration required? (Yes/No)	Date	Time	pH reading	Recalibration required? (Yes/No)
			Yes/No				Yes/No
			Yes/No				Yes/No

Transport conditions ☐ Esky with Ice
☐ Other (Provide details)

Client: Whitehaven Coal - Vickery Project

Sampled By: GR/SM

Project: Quarterly Groundwater Sampling (Jan, Apr, Jul, Oct)

Signed: [signature]

GROUND WATER MONITORING

Site	Date	Time	Logger Downloaded	Logger Batteries Replaced	Bore Total Depth (m)	Standpipe TOC to Ground (m) height	Depth to Water (m)	Typical Depth (m)	Sampling Method	Field pH	Field EC	Temp. (°C)	Redox (mV)	Odour	Water Turbidity	Water Colour	Monitoring bore in good condition (note any damage under comments)	Photo taken	Bottles: 500ml GP	Bottles: RP (filt.)	Bottles: PP	Bottles: PG	Comments
SB02						0.4		9.84	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
SB04	15.4.25	1249			9.15	0.8	7.94	6.34	GS LF HF HS	7.15	2184 us	22.5	-171	S	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	SLIGHT H2S ODOUR
SB05						0.75		7.10	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
SB06						0.3		8.43	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
SB07	15.4.25	1153	WS - Y / N		18.14	0.73	09.22	8.01	GS LF HF HS	7.32	908 us	22.0	63	NIL	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
SB08	15.4.25	1305			18.08	1.02	07.89	6.73	GS LF HF HS	7.22	1035 us	21.4	-95	S	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	SLIGHT UNKNOWN ODOUR
SB09						0.5		6.36	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
SB10						1		7.45	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
SB11						0.25		8.10	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
SB15						0.8		8.18	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
TR18	16.4.25	0820			21.46	0.87	13.24	13.04	GS LF HF HS	6.93	13.62 ms	17.5	131	NIL	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
TR26	16.4.25	0750			20.27	1.0	12.26	12.44	GS LF HF HS	7.09	7.29 ms	19.0	117	NIL	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
TR35	16.4.25	0853			25.40	0.65	18.53	18.16	GS LF HF HS	6.96	16.18 ms	18.9	103		C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
TR7	16.4.25	0805			18.67	0.72	9.78	9.85	GS LF HF HS	6.93	15.35 ms	17.0	113	NIL	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
VKY035C	16.4.25	1005	WS - Y / N		—	0.51	42.81	42.37	GS LF HF HS	7.01	3.17 ms	22.2	-17	S	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
VKY036C	16.4.25	1023	WS - Y / N			0.88		49.23	GS LF HF HS	7.30	5.72 ms	22.0	-89	NIL	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	SLIGHT UNKNOWN ODOUR
VKY042C	16.4.25	1057	WS - Y / N		—	0.75	33.34	42.68	GS LF HF HS	6.71	5.51 ms	22.3	-3	NIL	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
VKY034C	16.4.25	0936	WS - Y / N		—	0.78	42.41	39.79	GS LF HF HS	7.21	3.84 ms	22.2	53	NIL	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	X	1	1	TO TURBID TO FILTER LOG TO FILTER
VKY041C	15.4.25	1427	RST (#101508 - SN 02023) - Y / N	Y / N																			
	15.4.25	1430	RST (#101349 - SN 02027) - Y / N	Y / N																			
VKY043C	16.4.25	0936			—	0.96	16.30	16.41	GS LF HF HS	7.84	3.51 ms	16.8	30	NIL	CLEAR	CLEAR	Y / N	Y / N	1	X	1	1	TO TURBID TO FILTER LOG TO FILTER
VKY33C	16.4.25	0921	RST (#2029) - Y / N	Y / N																			
	16.4.25	0925	RST (#2087) - Y / N	Y / N																			
VKY3053C			RST - Y / N	Y / N																			

0936
0936

ML = Mini Logger
QL = Quattro Logger
VL = V-Logger
WS = Win Situ (Rugged Troll)
RST = RST Logger

GS=Grab Sample with Bailer,
LF=Low Flow Sampling,
HF=High Volume Pumping,
HS = Hydrasleeve (CIRCLE)

CBased Sampling Method: M105 - Groundwater Sampling
Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)
Colour: C=Colourless, O=Orange, Bk = Black, Bn=Brown, Gn=Green, Gy = Grey (CIRCLE)
Flow Rate: Still → Trickle → Slow → Steady → Fast
Bottles: GP = Green Plastic, RP = Red Plastic, (filt. = filtered), PP = Purple Plastic, BP = Blue Plastic, YP = Yellow Plastic, OG = Orange Glass, PG = Purple Glass, BG = Brown Glass, MP = Maroon Plastic, PV = Purple Vial, ST = Sterile

pH 7 buffer check required every 10 samples - If the Difference is over 0.2, recalibrate using Form F305 (2 point calibration)

Date	Time	pH reading	Recalibration required? (Yes/No)	Date	Time	pH reading	Recalibration required? (Yes/No)
			Yes/No				Yes/No
			Yes/No				Yes/No

Transport conditions ☐ Esky with Ice
☐ Other (Provide details)

W 20
T 18
TOOO 22

Client: Whitehaven Coal - Vickery Project

Sampled By: GG/SM

Project: Quarterly Groundwater Sampling (Jan, Apr, Jul, Oct)

Signed:

GROUND WATER MONITORING

Site	Date	Time	Logger Downloaded	Logger Batteries Replaced	Bore Total Depth (m)	Standpipe TOC to Ground (m) height	Depth to Water (m)	Typical Depth (m)	Sampling Method	Field pH	Field EC	Temp. (°C)	Redox (mV)	Odour	Water Turbidity	Water Colour	Monitoring bore in good condition (note any damage under comments)	Photo taken	Bottles: 500ml GP	Bottles: RP (filt.)	Bottles: PP	Bottles: PG	Comments
VNW223						0.74			GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
VNW390	15/4/25	0903			54.90	0.81	9.61	9.38	GS LF HF HS	6.84	2.33ms	21.3	-154	S	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
VNW391	15/4/25	0947			51.62	0.56	8.04	7.80	GS LF HF HS	7.03	2308us	21.9	-193	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	VERY SLEIGHT H2S
VNW392	15/4/25	0956			61.79	0.56	6.48	6.25	GS LF HF HS	6.67	3.34ms	20.9	-137	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
VNW393	15/4/25	0839			59.27	0.74	10.86	10.64	GS LF HF HS	7.11	3.10ms	21.3	-111	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
VNW394	15/4/25	0814			26.35	0.59	6.95	6.73	GS LF HF HS	6.84	5.52ms	20.6	-199	S	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
VNW395	15/4/25	0930	? - Y / N	Y / N	12.08	0.56	7.59	7.43	GS LF HF HS	7.31	2.28 ms	20.0	-272	M	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	SLEIGHT H2S
VS048	15/4/25	1036	ML - Y / N	Y / N																			NO LOGGER - FAULTY AND REMOVED PREVIOUSLY
VS054	15/4/25	1052	VL - Y / N	Y / N																			ANT BAIT
VS056	15/4/25	1112	ML (#1765) - Y / N	Y / N																			ANT BAIT
	15/4/25	1118	ML (#1771) - Y / N	Y / N																			
VS058			VL - Y / N	Y / N																			
VS059	15/4/25	1409	VL - Y / N	Y / N																			
VS062	15.4.25	1232	ML - Y / N	Y / N																			LITHIUM BATTERY REPLACED
WR-1			Y / N	Y / N				13.37	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
WR-2			Y / N	Y / N				11.35	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW036459																			1	1	1	1	No access - NSW Water locked bore
GW030051																			1	1	1	1	No access - NSW Water locked bore
GW030052																			1	1	1	1	No access - NSW Water locked bore

ML = Mini Logger
QL = Quattro Logger
VL = V-Logger
WS = Win Situ (Rugged Troll)
RST = RST Logger

GS=Grab Sample with Bailer,
LF=Low Flow Sampling,
HF=High Volume Pumping,
HS = Hydrasleeve (CIRCLE)

pH 7 buffer check required every 10 samples - if the Difference is over 0.2, recalibrate using Form F305 (2 point calibration)

Date	Time	pH reading	Recalibration required? (Yes/No)	Date	Time	pH reading	Recalibration required? (Yes/No)
			Yes/No				Yes/No
			Yes/No				Yes/No

CBased Sampling Method: M105 - Groundwater Sampling
Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)
Colour: C=Colourless, O=Orange, Bk = Black, Brn=Brown, Gn=Green, Gy = Grey (CIRCLE)
Flow Rate: Still → Trickle → Slow → Steady → Fast
Bottles: GP = Green Plastic, RP = Red Plastic, (filt. = filtered), PP = Purple Plastic, BP = Blue Plastic, YP = Yellow Plastic, OG = Orange Glass, PG = Purple Glass, BG = Brown Glass, MP = Maroon Plastic, PV = Purple Vial, ST = Sterile

Transport conditions ☐ Esky with Ice
☐ Other (Provide details)

* VNW395 - NOTED UNKNOWN ODOUR

Client: Whitehaven Coal - Vickery Project

Sampled By: GR/SM

Project: Quarterly Groundwater Sampling (Jan, Apr, Jul, Oct)

Signed:

GROUND WATER MONITORING

Site	Date	Time	Logger Downloaded	Logger Batteries Replaced	Bore Total Depth (m)	Standpipe TOC to Ground (m) height	Depth to Water (m)	Typical Depth (m)	Sampling Method	Field pH	Field EC	Temp. (°C)	Redox (mV)	Odour	Water Turbidity	Water Colour	Monitoring bore in good condition (note any damage under comments)	Photo taken	Bottles: 500ml GP	Bottles: RP (filt.)	Bottles: PP	Bottles: PG	Comments
GW-4	16-4-25	1329			48.60	0.25	19.30	~	GS LF HF HS	8.11	2.99mS	22.6	57	NIL	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW-10	16-4-25	1137			24.88	0.52	14.47	~	GS LF HF HS	7.92	1808uS	23.0	37	NIL	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW-15	15-4-25	1450			29.03	0.44	13.15	~	GS LF HF HS	8.96	6802uS	21.9	-18	NIL	C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW971614									GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
															C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
QA Samples							33.34																
VKY GW Duplicate 1	16-4-25	11.11	Duplicate 1 Taken From: VKY0004LC						GS LF HF HS	6.69	5.42mS	22.8	-9	NIL	C S T	C O Bk Bn Gn Gy			1	1	1	1	
VKY GW Duplicate 2			Duplicate 2 Taken From:.....						GS LF HF HS						C S T	C O Bk Bn Gn Gy			1	1	1	1	
VKY GW Blank															C S T	C O Bk Bn Gn Gy			1	1	1	1	
Split Duplicate samples to be split into two bottle sets. Please label one set as 'Split Dup (1/2) ALS' and one as 'Split Dup (1/2) Eurofins"																							
VKY GW Lab Split Dup 1	16-4-25	11.11	Site Split Duplicate 1 Taken From: VKY0002C				33.34		GS LF HF HS	6.72	5.49mS	22.8	-12	NIL	C S T	C O Bk Bn Gn Gy			2	2	2	2	
VKY GW Lab Split Dup 2			Site Split Duplicate 2 Taken From:.....						GS LF HF HS						C S T	C O Bk Bn Gn Gy			2	2	2	2	
																	Total Bottles:		56	56	56	56	

ML = Mini Logger
QL = Quattro Logger
VL = V-Logger
WS = Win Situ (Rugged Troll)
RST = RST Logger

GS=Grab Sample with Bailer,
LF=Low Flow Sampling,
HF=High Volume Pumping,
HS = Hydrasleeve (CIRCLE)

pH 7 buffer check required every 10 samples - If the Difference is over 0.2, recalibrate using Form F305 (2 point calibration)

Date	Time	pH reading	Recalibration required? (Yes/No)	Date	Time	pH reading	Recalibration required? (Yes/No)
			Yes/No				Yes/No
			Yes/No				Yes/No

CBased Sampling Method: M105 - Groundwater Sampling
Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)
Colour: C=Colourless, O=Orange, Bk = Black, Bn=Brown, Gn=Green, Gy = Grey (CIRCLE)
Flow Rate: Still -> Trickle -> Slow -> Steady -> Fast
Bottles: GP = Green Plastic, RP = Red Plastic, (filt. = filtered), PP = Purple Plastic, BP = Blue Plastic, YP = Yellow Plastic, OG = Orange Glass, PG = Purple Glass, BG = Brown Glass, MP = Maroon Plastic, PV = Purple Vial, ST = Sterile

Transport conditions ☐ Esky with Ice
☐ Other (Provide details)

CHAIN OF CUSTODY	HANDED OVER BY	HANDOVER DATE/TIME	REQUIRED TURNAROUND	RETURN EQUIPMENT	EDD FORMAT	PAGE
6YXYZ8P2	Cbased Environmental al	2025-04-17 13:43	5 Working Days	N o	IN X	1 OF 6

LAB USE ONLY	RECEIVED (DATE/TIME): 17/4/25 4:40	APPROPRIATELY SEALED?: YES / NO	TEMPERATURE: ICE 0.7	JOB #:	SIGNED:

LABORATORY	ALS Newcastle | 5/585 Maitland Road Mayfield West 2304 NSW
SAMPLERS	CBased Environmental
QUOTE #	SYBQ-403-21v4
PO #	

SITE	Vickery
PROJECT	Vickery Quarterly Groundwaters
PROJECT MANAGER	
COMPANY	CBased Environmental Pty Ltd | PO Box 245 Cessnock NSW 2325
CONTACT PERSON	Marnie Blake
CONTACT NUMBER	
CONTACT FAX	
CONTACT EMAILS	monitoringresults@cbased.com.au
INVOICING EMAILS	accounts@cbased.com.au
RESULT EMAILS	monitoringresults@cbased.com.au, inxpreservemail@whitehavencoal.com.au, vickeryenvironment@whitehavencoal.com.au

ANALYSIS REQUIRED	GENERAL INSTRUCTIONS
A. Ammonia as N B. Bicarbonate Alkalinity as CaCO3 C. Calcium (dissolved) D. Carbonate Alkalinity as CaCO3 E. DO F. EC G. Hydroxide Alkalinity as CaCO3 H. Ionic balance I. Nitrate as N J. Nitrite + Nitrate as N K. Nitrite as N L. Oil and Grease M. pH N. Sodium (Dissolved) O. TDS ph/ec/alk2EN	

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	SAMPLE INSTRUCTIONS
1	GW-13	2025-04-16 12:01	VPCGBNM5-1	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	GW-14	2025-04-16 14:38	VPCGBNM5-2	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	GW-2	2025-04-16 13:58	VPCGBNM5-3	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	GW-6	2025-04-16 12:28	VPCGBNM5-4	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	GW02	2025-04-15 11:53	VPCGBNM5-5	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	GW03	2025-04-15 13:29	VPCGBNM5-6	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7	MD01	2025-04-15 11:21	VPCGBNM5-7	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8	MD02	2025-04-15 10:55	VPCGBNM5-8	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9	SB04	2025-04-15 12:49	VPCGBNM5-9	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10	SB07	2025-04-15 11:53	VPCGBNM5-10	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11	SB08	2025-04-15 13:05	VPCGBNM5-11	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12	TR18	2025-04-16 08:20	VPCGBNM5-12	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13	TR26	2025-04-16 07:50	VPCGBNM5-13	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14	TR35	2025-04-16 08:53	VPCGBNM5-14	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15	TR7	2025-04-16 08:05	VPCGBNM5-15	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16	VKY0035C	2025-04-16 10:05	VPCGBNM5-16	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
17	VKY0036C	2025-04-16 10:23	VPCGBNM5-17	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
18	VKY0042C	2025-04-16 10:57	VPCGBNM5-18	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Environmental Division
Sydney
Work Order Reference
ES2511376

Telephone : +61-2-8784 8555

19	VKY0034C	2025-04-16 09:36	VPCGBNM5-19	3	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Lab to filter. To turbid to filter.
20	VKY0043C	2025-04-16 08:36	VPCGBNM5-20	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
21	VNW390	2025-04-15 09:03	VPCGBNM5-21	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
22	VNW391	2025-04-15 09:45	VPCGBNM5-22	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
23	VNW392	2025-04-15 09:56	VPCGBNM5-23	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

CHAIN OF CUSTODY 6YXYZ8P2 **HANDED OVER BY** Cbased Environmental **HANDOVER DATE/TIME** 2025-04-17 13:43 **REQUIRED TURNAROUND** 5 Working Days **RETURN EQUIPMENT** No **EDD FORMAT** INX **PAGE 2 OF 6**

ANALYSIS REQUIRED	GENERAL INSTRUCTIONS
A. Ammonia as N B. Bicarbonate Alkalinity as CaCO3 C. Calcium (dissolved) D. Carbonate Alkalinity as CaCO3 E. DO F. EC G. Hydroxide Alkalinity as CaCO3 H. Ionic balance I. Nitrate as N J. Nitrite + Nitrate as N K. Nitrite as N L. Oil and Grease M. pH N. Sodium (Dissolved) O. TDS	

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	SAMPLE INSTRUCTIONS
24	VNW393	2025-04-15 08:39	VPCGBNM5-24	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
25	VNW394	2025-04-15 08:14	VPCGBNM5-25	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
26	VNW395	2025-04-15 09:30	VPCGBNM5-26	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
27	GW-4	2025-04-16 13:29	VPCGBNM5-27	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
28	GW-10	2025-04-16 11:37	VPCGBNM5-28	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
29	GW-15	2025-04-15 14:50	VPCGBNM5-29	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
30	VKY GW Duplicate 1	2025-04-16 11:11	VPCGBNM5-30	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
31	VKY GW Lab Split Dup 1	2025-04-16 11:11	VPCGBNM5-31	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

CHAIN OF CUSTODY	6YXYZ8P	HANDED OVER BY	Cbased Environment	HANDOVER DATE/TIME	2025-04-17 13:	REQUIRED TURNAROUND	5 Working Da	RETURN EQUIPMENT	N	EDD FORMAT	IN	PAGE 3 OF
2		al		43		ys		o		X		6

ANALYSIS REQUIRED	GENERAL INSTRUCTIONS
P. Total Alkalinity as CaCO3 Q. Total anions R. Total Cations S. Total Phosphorus as P T. Alkalinity (total) U. Aluminium (dissolved) V. Antimony (dissolved) W. Arsenic (dissolved) X. Barium (dissolved) Y. Boron (dissolved) Z. Cadmium (dissolved) AA. Chloride AB. Chromium (dissolved) AC. Cobalt (dissolved) AD. Copper (dissolved)	

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	SAMPLE INSTRUCTIONS
1	GW-13	2025-04-16 12:01	VPCGBNM5-1	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	GW-14	2025-04-16 14:38	VPCGBNM5-2	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	GW-2	2025-04-16 13:58	VPCGBNM5-3	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	GW-6	2025-04-16 12:28	VPCGBNM5-4	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	GW02	2025-04-15 11:53	VPCGBNM5-5	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	GW03	2025-04-15 13:29	VPCGBNM5-6	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7	MD01	2025-04-15 11:21	VPCGBNM5-7	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8	MD02	2025-04-15 10:55	VPCGBNM5-8	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9	SB04	2025-04-15 12:49	VPCGBNM5-9	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10	SB07	2025-04-15 11:53	VPCGBNM5-10	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11	SB08	2025-04-15 13:05	VPCGBNM5-11	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12	TR18	2025-04-16 08:20	VPCGBNM5-12	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13	TR26	2025-04-16 07:50	VPCGBNM5-13	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14	TR35	2025-04-16 08:53	VPCGBNM5-14	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15	TR7	2025-04-16 08:05	VPCGBNM5-15	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16	VKY0035C	2025-04-16 10:05	VPCGBNM5-16	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
17	VKY0036C	2025-04-16 10:23	VPCGBNM5-17	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

18	VKY0042C	2025-04-16 10:57	VPCGBNM5-18	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
19	VKY0034C	2025-04-16 09:36	VPCGBNM5-19	3	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Lab to filter. To turbid to filter.
20	VKY0043C	2025-04-16 08:36	VPCGBNM5-20	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
21	VNW390	2025-04-15 09:03	VPCGBNM5-21	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
22	VNW391	2025-04-15 09:45	VPCGBNM5-22	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
23	VNW392	2025-04-15 09:56	VPCGBNM5-23	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

CHAIN OF CUSTODY 6YXYZ8P2 **HANDED OVER BY** Cbased Environmental **HANDOVER DATE/TIME** 2025-04-17 13:43 **REQUIRED TURNAROUND** 5 Working Days **RETURN EQUIPMENT** No **EDD FORMAT** IN X **PAGE 4 OF 6**

ANALYSIS REQUIRED	GENERAL INSTRUCTIONS
P. Total Alkalinity as CaCO3 Q. Total anions R. Total Cations S. Total Phosphorus as P T. Alkalinity (total) U. Aluminium (dissolved) V. Antimony (dissolved) W. Arsenic (dissolved) X. Barium (dissolved) Y. Boron (dissolved) Z. Cadmium (dissolved) AA. Chloride AB. Chromium (dissolved) AC. Cobalt (dissolved) AD. Copper (dissolved)	

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	SAMPLE INSTRUCTIONS
24	VNW393	2025-04-15 08:39	VPCGBNM5-24	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
25	VNW394	2025-04-15 08:14	VPCGBNM5-25	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
26	VNW395	2025-04-15 09:30	VPCGBNM5-26	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
27	GW-4	2025-04-16 13:29	VPCGBNM5-27	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
28	GW-10	2025-04-16 11:37	VPCGBNM5-28	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
29	GW-15	2025-04-15 14:50	VPCGBNM5-29	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
30	VKY GW Duplicate 1	2025-04-16 11:11	VPCGBNM5-30	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
31	VKY GW Lab Split Dup 1	2025-04-16 11:11	VPCGBNM5-31	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

CHAIN OF CUSTODY	6YXYZ8P	HANDED OVER BY	Cbased Environment	HANDOVER DATE/TIME	2025-04-17 13:	REQUIRED TURNAROUND	5 Working Da	RETURN EQUIPMENT	N	EDD FORMAT	IN	PAGE 5 OF
2		al		43		ys		o		X		6

ANALYSIS REQUIRED	GENERAL INSTRUCTIONS
AE. Iron (dissolved) AF. Lead (dissolved) AG. Magnesium (dissolved) AH. Manganese (dissolved) AI. Mercury (dissolved) AJ. Molybdenum (dissolved) AK. Nickel (dissolved) AL. Phosphorus (dissolved) AM. Potassium (dissolved) AN. Selenium (dissolved) AO. Silver (dissolved) AP. Strontium (dissolved) AQ. Sulfate as SO_4 - Turbidimetric (dissolved) AR. Tin (dissolved) AS. Zinc (dissolved)	

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	SAMPLE INSTRUCTIONS
1	GW-13	2025-04-16 12:01	VPCGBNM5-1	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	GW-14	2025-04-16 14:38	VPCGBNM5-2	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	GW-2	2025-04-16 13:58	VPCGBNM5-3	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	GW-6	2025-04-16 12:28	VPCGBNM5-4	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	GW02	2025-04-15 11:53	VPCGBNM5-5	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	GW03	2025-04-15 13:29	VPCGBNM5-6	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7	MD01	2025-04-15 11:21	VPCGBNM5-7	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8	MD02	2025-04-15 10:55	VPCGBNM5-8	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9	SB04	2025-04-15 12:49	VPCGBNM5-9	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10	SB07	2025-04-15 11:53	VPCGBNM5-10	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

11	SB08	2025-04-15 13:05	VPCGBNM5-11	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12	TR18	2025-04-16 08:20	VPCGBNM5-12	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13	TR26	2025-04-16 07:50	VPCGBNM5-13	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14	TR35	2025-04-16 08:53	VPCGBNM5-14	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15	TR7	2025-04-16 08:05	VPCGBNM5-15	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16	VKY0035C	2025-04-16 10:05	VPCGBNM5-16	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
17	VKY0036C	2025-04-16 10:23	VPCGBNM5-17	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
18	VKY0042C	2025-04-16 10:57	VPCGBNM5-18	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
19	VKY0034C	2025-04-16 09:36	VPCGBNM5-19	3	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Lab to filter. To turbid to filter.
20	VKY0043C	2025-04-16 08:36	VPCGBNM5-20	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
21	VNW390	2025-04-15 09:03	VPCGBNM5-21	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
22	VNW391	2025-04-15 09:45	VPCGBNM5-22	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
23	VNW392	2025-04-15 09:56	VPCGBNM5-23	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

CHAIN OF CUSTODY 6YXYZ8P2 **HANDED OVER BY** Cbased Environmental **HANDOVER DATE/TIME** 2025-04-17 13:43 **REQUIRED TURNAROUND** 5 Working Days **RETURN EQUIPMENT** No **EDD FORMAT** INX **PAGE 6 OF 6**

ANALYSIS REQUIRED	GENERAL INSTRUCTIONS
AE. Iron (dissolved) AF. Lead (dissolved) AG. Magnesium (dissolved) AH. Manganese (dissolved) AI. Mercury (dissolved) AJ. Molybdenum (dissolved) AK. Nickel (dissolved) AL. Phosphorus (dissolved) AM. Potassium (dissolved) AN. Selenium (dissolved) AO. Silver (dissolved) AP. Strontium (dissolved) AQ. Sulfate as SO_4-Turbidimetric (dissolved) AR. Tin (dissolved) AS. Zinc (dissolved)	

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	SAMPLE INSTRUCTIONS

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	SAMPLE INSTRUCTIONS
24	VNW393	2025-04-15 08:39	VPCGBNM5-24	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
25	VNW394	2025-04-15 08:14	VPCGBNM5-25	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
26	VNW395	2025-04-15 09:30	VPCGBNM5-26	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
27	GW-4	2025-04-16 13:29	VPCGBNM5-27	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
28	GW-10	2025-04-16 11:37	VPCGBNM5-28	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
29	GW-15	2025-04-15 14:50	VPCGBNM5-29	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
30	VKY GW Duplicate 1	2025-04-16 11:11	VPCGBNM5-30	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
31	VKY GW Lab Split Dup 1	2025-04-16 11:11	VPCGBNM5-31	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

CERTIFICATE OF ANALYSIS

Work Order	: **ES2511376**	Page	: 1 of 20
Client	: **CBASED ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: All Deliverables	Contact	: Jessica Chen
Address	: Unit 3 2 Enterprise Cres Singleton NSW 2330	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 6571 3334	Telephone	: +61-2-8784 8555
Project	: Vickery Quarterly Groundwaters	Date Samples Received	: 17-Apr-2025 16:40
Order number	: ----	Date Analysis Commenced	: 19-Apr-2025
C-O-C number	: ----	Issue Date	: 29-Apr-2025 15:05
Sampler	: CBased Environmental		
Site	: Vickery		
Quote number	: SYBQ/403/21v4 and PLANNED EVENTS		
No. of samples received	: 28		
No. of samples analysed	: 28		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EG020: Poor matrix spike recovery was obtained for some elements on sample ES2509683-#002. Confirmed by reanalysis.
- ED041G: LOR raised for Sulfate due to sample matrix
- EK067G/EK067FG: It is recognised that total phosphrous is less than filtered total phosphrous. However, the difference is within experimental variation of the methods.
- TDS by method EA-015 various samples may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	GW-13 VPCGBNM5-1	GW-6 VPCGBNM5-4	GW02 VPCGBNM5-5	GW03 VPCGBNM5-6	MD01 VPCGBNM5-7
				Sampling date / time	16-Apr-2025 12:01	16-Apr-2025 12:28	15-Apr-2025 11:53	15-Apr-2025 13:29	15-Apr-2025 11:21
					ES2511376-001	ES2511376-004	ES2511376-005	ES2511376-006	ES2511376-007
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**7.65**	**8.03**	**7.78**	**7.63**	**8.64**
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**814**	**1450**	**995**	**898**	**1630**
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**752**	**1050**	**706**	**633**	**994**
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	**45**
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**430**	**748**	**388**	**422**	**309**
Total Alkalinity as CaCO3	----	1	mg/L		**430**	**748**	**388**	**422**	**354**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		<10	<1	**89**	**62**	**32**
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**16**	**54**	**47**	**22**	**343**
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**29**	**9**	**47**	**87**	**14**
Magnesium	7439-95-4	1	mg/L		**9**	**5**	**22**	**34**	**9**
Sodium	7440-23-5	1	mg/L		**166**	**349**	**141**	**76**	**256**
Potassium	7440-09-7	1	mg/L		**8**	**2**	<1	**2**	**20**
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**0.02**	<0.01	<0.01	<0.01	**0.02**
Antimony	7440-36-0	0.001	mg/L		**0.005**	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L		**0.033**	**0.355**	**0.045**	**0.084**	**0.058**
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		**0.035**	<0.001	**0.001**	<0.001	<0.001

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	GW-13 VPCGBNM5-1	GW-6 VPCGBNM5-4	GW02 VPCGBNM5-5	GW03 VPCGBNM5-6	MD01 VPCGBNM5-7
				Sampling date / time	16-Apr-2025 12:01	16-Apr-2025 12:28	15-Apr-2025 11:53	15-Apr-2025 13:29	15-Apr-2025 11:21
					ES2511376-001	ES2511376-004	ES2511376-005	ES2511376-006	ES2511376-007
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		**0.002**	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.009**	<0.001	<0.001	<0.001	**0.004**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		**0.144**	**0.018**	<0.005	<0.005	**0.034**
Manganese	7439-96-5	0.001	mg/L		**0.224**	**0.034**	**0.005**	**0.119**	**0.007**
Molybdenum	7439-98-7	0.001	mg/L		**0.001**	<0.001	<0.001	<0.001	**0.011**
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L		**0.816**	**0.173**	**0.670**	**1.00**	**0.534**
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L		**0.09**	**0.08**	**0.06**	<0.05	<0.05
Iron	7439-89-6	0.05	mg/L		**0.17**	**1.08**	<0.05	**0.17**	<0.05
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.10**	**0.90**	**0.13**	**0.54**	**19.2**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	**0.03**	**0.03**	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.12**	**0.01**	**1.88**	**0.79**	**0.03**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.12**	**0.01**	**1.91**	**0.82**	**0.03**
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L		**0.37**	**0.07**	**0.13**	**1.07**	**0.32**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.44**	**0.11**	**0.17**	**1.26**	**0.39**
EN055: Ionic Balance									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GW-13 VPCGBNM5-1	GW-6 VPCGBNM5-4	GW02 VPCGBNM5-5	GW03 VPCGBNM5-6	MD01 VPCGBNM5-7
				Sampling date / time	16-Apr-2025 12:01	16-Apr-2025 12:28	15-Apr-2025 11:53	15-Apr-2025 13:29	15-Apr-2025 11:21
Compound	CAS Number	LOR	Unit		ES2511376-001	ES2511376-004	ES2511376-005	ES2511376-006	ES2511376-007
					Result	Result	Result	Result	Result
EN055: Ionic Balance - Continued									
ø Total Anions	----	0.01	meq/L		9.04	16.5	10.9	10.3	17.4
ø Total Cations	----	0.01	meq/L		----	----	----	----	14.5
ø Total Cations	----	0.01	meq/L		9.61	16.1	10.3	10.5	----
ø Ionic Balance	----	0.01	%		----	----	----	----	9.30
ø Ionic Balance	----	0.01	%		3.06	1.15	3.02	0.74	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		8.6	7.8	9.9	7.6	6.7

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MD02 VPCGBNM5-8	SB04 VPCGBNM5-9	SB07 VPCGBNM5-10	SB08 VPCGBNM5-11	TR18 VPCGBNM5-12
			Sampling date / time	15-Apr-2025 10:55	15-Apr-2025 12:49	15-Apr-2025 11:53	15-Apr-2025 13:05	16-Apr-2025 08:20
Compound	CAS Number	LOR	Unit	ES2511376-008	ES2511376-009	ES2511376-010	ES2511376-011	ES2511376-012
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.26**	**7.64**	**7.76**	**7.70**	**7.40**
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1240**	**2360**	**928**	**1020**	**13300**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**839**	**1660**	**690**	**704**	**10400**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**542**	**620**	**388**	**397**	**736**
Total Alkalinity as CaCO3	----	1	mg/L	**542**	**620**	**388**	**397**	**736**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**33**	**269**	**85**	**77**	**552**
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**83**	**326**	**39**	**61**	**4580**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**85**	**74**	**55**	**72**	**264**
Magnesium	7439-95-4	1	mg/L	**52**	**61**	**23**	**37**	**311**
Sodium	7440-23-5	1	mg/L	**130**	**408**	**130**	**120**	**2290**
Potassium	7440-09-7	1	mg/L	**8**	<1	<1	<1	**11**
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L	**0.001**	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L	**0.252**	**0.082**	**0.049**	**0.056**	**0.064**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	**0.002**	<0.001	**0.873**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MD02 VPCGBNM5-8	SB04 VPCGBNM5-9	SB07 VPCGBNM5-10	SB08 VPCGBNM5-11	TR18 VPCGBNM5-12
				Sampling date / time	15-Apr-2025 10:55	15-Apr-2025 12:49	15-Apr-2025 11:53	15-Apr-2025 13:05	16-Apr-2025 08:20
Compound	CAS Number	LOR	Unit		ES2511376-008	ES2511376-009	ES2511376-010	ES2511376-011	ES2511376-012
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.012**	<0.001	<0.001	<0.001	**0.013**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	**0.010**
Manganese	7439-96-5	0.001	mg/L		**0.074**	**0.136**	**0.001**	**0.046**	**0.021**
Molybdenum	7439-98-7	0.001	mg/L		**0.002**	<0.001	<0.001	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L		**1.30**	**1.75**	**0.724**	**1.11**	**7.35**
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L		<0.05	**0.10**	**0.06**	**0.06**	**0.06**
Iron	7439-89-6	0.05	mg/L		**1.55**	**0.14**	<0.05	<0.05	<0.05
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.33**	**0.17**	**0.02**	**0.29**	**0.08**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	**0.03**
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.07**	**0.04**	**0.30**	**0.14**	**0.02**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.07**	**0.04**	**0.30**	**0.14**	**0.05**
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L		**0.06**	**0.16**	**0.02**	**0.08**	**0.09**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.11**	**0.28**	**0.07**	**0.09**	**0.22**
EN055: Ionic Balance									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MD02 VPCGBNM5-8	SB04 VPCGBNM5-9	SB07 VPCGBNM5-10	SB08 VPCGBNM5-11	TR18 VPCGBNM5-12
				Sampling date / time	15-Apr-2025 10:55	15-Apr-2025 12:49	15-Apr-2025 11:53	15-Apr-2025 13:05	16-Apr-2025 08:20
Compound	CAS Number	LOR	Unit		ES2511376-008	ES2511376-009	ES2511376-010	ES2511376-011	ES2511376-012
					Result	Result	Result	Result	Result
EN055: Ionic Balance - Continued									
ø Total Anions	----	0.01	meq/L		**13.8**	**27.2**	**10.6**	**11.2**	**155**
ø Total Cations	----	0.01	meq/L		**14.4**	**26.5**	**10.3**	**11.8**	**139**
ø Ionic Balance	----	0.01	%		**1.85**	**1.35**	**1.58**	**2.60**	**5.69**
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**9.3**	**7.6**	**8.2**	**8.0**	**9.9**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	TR26 VPCGBNM5-13	TR35 VPCGBNM5-14	TR7 VPCGBNM5-15	VKY0035C VPCGBNM5-16	VKY0036C VPCGBNM5-17
				Sampling date / time	16-Apr-2025 07:50	16-Apr-2025 08:53	16-Apr-2025 08:05	16-Apr-2025 10:05	16-Apr-2025 10:23
					ES2511376-013	ES2511376-014	ES2511376-015	ES2511376-016	ES2511376-017
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.58	7.48	7.36	7.59	7.74
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		8270	16300	15200	3360	5830
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		6010	16300	14500	2330	4080
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		1600	738	777	942	1400
Total Alkalinity as CaCO3	----	1	mg/L		1600	738	777	942	1400
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		217	562	507	77	174
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		1930	5530	5300	570	1110
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		180	329	312	52	27
Magnesium	7439-95-4	1	mg/L		181	492	344	44	17
Sodium	7440-23-5	1	mg/L		1270	2660	2540	628	1310
Potassium	7440-09-7	1	mg/L		11	18	14	7	6
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	0.003	0.010
Barium	7440-39-3	0.001	mg/L		0.142	0.093	0.097	0.078	0.265
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	0.0002	0.0002	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	0.002	<0.001
Copper	7440-50-8	0.001	mg/L		0.002	0.844	0.387	0.001	<0.001

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	TR26 VPCGBNM5-13	TR35 VPCGBNM5-14	TR7 VPCGBNM5-15	VKY0035C VPCGBNM5-16	VKY0036C VPCGBNM5-17
				Sampling date / time	16-Apr-2025 07:50	16-Apr-2025 08:53	16-Apr-2025 08:05	16-Apr-2025 10:05	16-Apr-2025 10:23
					ES2511376-013	ES2511376-014	ES2511376-015	ES2511376-016	ES2511376-017
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	**0.006**	**0.003**	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.004**	**0.067**	**0.053**	**0.012**	**0.002**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		**0.013**	**0.011**	**0.013**	**0.023**	<0.005
Manganese	7439-96-5	0.001	mg/L		**0.042**	**0.789**	**0.193**	**0.321**	**0.185**
Molybdenum	7439-98-7	0.001	mg/L		**0.002**	**0.004**	**0.001**	**0.007**	**0.004**
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L		**4.85**	**8.64**	**10.1**	**0.906**	**0.558**
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L		**0.10**	**0.08**	**0.06**	<0.05	**0.09**
Iron	7439-89-6	0.05	mg/L		<0.05	**0.08**	**0.12**	**0.46**	**0.43**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.03**	**0.07**	**0.07**	**0.99**	**0.88**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.14**	**0.38**	**0.14**	**0.01**	**0.02**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.14**	**0.38**	**0.14**	**0.01**	**0.02**
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L		**0.09**	**0.02**	**0.09**	**0.09**	**0.17**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.11**	**0.06**	**0.13**	**0.15**	**0.70**
EN055: Ionic Balance									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TR26 VPCGBNM5-13	TR35 VPCGBNM5-14	TR7 VPCGBNM5-15	VKY0035C VPCGBNM5-16	VKY0036C VPCGBNM5-17
				Sampling date / time	16-Apr-2025 07:50	16-Apr-2025 08:53	16-Apr-2025 08:05	16-Apr-2025 10:05	16-Apr-2025 10:23
Compound	CAS Number	LOR	Unit		ES2511376-013	ES2511376-014	ES2511376-015	ES2511376-016	ES2511376-017
					Result	Result	Result	Result	Result
EN055: Ionic Balance - Continued									
ø Total Anions	----	0.01	meq/L		**90.9**	**182**	**176**	**36.5**	**62.9**
ø Total Cations	----	0.01	meq/L		**79.4**	**173**	**155**	**33.7**	**59.9**
ø Ionic Balance	----	0.01	%		**6.77**	**2.63**	**6.32**	**3.98**	**2.46**
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**9.7**	**9.1**	**9.2**	**8.2**	**8.4**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	VKY0042C VPCGBNM5-18	VKY0034C VPCGBNM5-19	VKY0043C VPCGBNM5-20	VNW390 VPCGBNM5-21	VNW391 VPCGBNM5-22
				Sampling date / time	16-Apr-2025 10:57	16-Apr-2025 09:36	16-Apr-2025 08:36	15-Apr-2025 09:03	15-Apr-2025 09:45
					ES2511376-018	ES2511376-019	ES2511376-020	ES2511376-021	ES2511376-022
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.24	7.74	8.09	7.33	7.58
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		5640	4070	3120	2400	2510
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		4230	2970	2210	1510	1670
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		830	1370	1170	621	630
Total Alkalinity as CaCO3	----	1	mg/L		830	1370	1170	621	630
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		316	117	<1	106	97
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		1360	611	421	418	448
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		208	20	11	195	194
Magnesium	7439-95-4	1	mg/L		214	29	3	44	57
Sodium	7440-23-5	1	mg/L		716	920	723	272	264
Potassium	7440-09-7	1	mg/L		21	7	5	11	12
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	0.002	0.001
Barium	7440-39-3	0.001	mg/L		0.135	0.171	0.334	0.130	0.194
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		0.003	<0.001	0.001	<0.001	<0.001

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	VKY0042C VPCGBNM5-18	VKY0034C VPCGBNM5-19	VKY0043C VPCGBNM5-20	VNW390 VPCGBNM5-21	VNW391 VPCGBNM5-22
				Sampling date / time	16-Apr-2025 10:57	16-Apr-2025 09:36	16-Apr-2025 08:36	15-Apr-2025 09:03	15-Apr-2025 09:45
Compound	CAS Number	LOR	Unit		ES2511376-018	ES2511376-019	ES2511376-020	ES2511376-021	ES2511376-022
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	**0.002**	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.002**	**0.004**	<0.001	**0.026**	**0.002**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		**0.013**	**0.013**	**0.005**	<0.005	**0.005**
Manganese	7439-96-5	0.001	mg/L		**0.216**	**0.002**	**0.004**	**0.362**	**0.264**
Molybdenum	7439-98-7	0.001	mg/L		<0.001	**0.003**	<0.001	**0.004**	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L		**3.60**	**0.528**	**0.421**	**1.97**	**1.90**
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L		**0.05**	**0.06**	**0.07**	**0.11**	**0.10**
Iron	7439-89-6	0.05	mg/L		**0.98**	<0.05	**0.13**	**1.08**	**4.92**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.73**	**0.86**	**0.44**	**0.53**	**0.75**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	**0.09**
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.05**	**0.02**	**0.02**	**0.09**	**0.20**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.05**	**0.02**	**0.02**	**0.09**	**0.29**
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L		<0.01	**0.47**	**0.01**	**0.10**	**0.13**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.03**	**0.68**	**0.04**	**0.14**	**0.18**
EN055: Ionic Balance									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	VKY0042C VPCGBNM5-18	VKY0034C VPCGBNM5-19	VKY0043C VPCGBNM5-20	VNW390 VPCGBNM5-21	VNW391 VPCGBNM5-22
				Sampling date / time	16-Apr-2025 10:57	16-Apr-2025 09:36	16-Apr-2025 08:36	15-Apr-2025 09:03	15-Apr-2025 09:45
Compound	CAS Number	LOR	Unit		ES2511376-018	ES2511376-019	ES2511376-020	ES2511376-021	ES2511376-022
					Result	Result	Result	Result	Result
EN055: Ionic Balance - Continued									
ø Total Anions	----	0.01	meq/L		**61.5**	**47.0**	**35.2**	**26.4**	**27.2**
ø Total Cations	----	0.01	meq/L		**59.7**	**43.6**	**32.4**	**25.5**	**26.2**
ø Ionic Balance	----	0.01	%		**1.53**	**3.82**	**4.26**	**1.81**	**2.03**
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**8.6**	**7.7**	**8.2**	**8.4**	**8.5**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	VNW392 VPCGBNM5-23	VNW393 VPCGBNM5-24	VNW394 VPCGBNM5-25	VNW395 VPCGBNM5-26	GW-10 VPCGBNM5-28
				Sampling date / time	15-Apr-2025 09:56	15-Apr-2025 08:39	15-Apr-2025 08:14	15-Apr-2025 09:30	16-Apr-2025 11:37
					ES2511376-023	ES2511376-024	ES2511376-025	ES2511376-026	ES2511376-028
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.18	7.64	7.48	7.80	8.30
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		3590	3190	5460	2390	1820
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		2640	2130	3950	1680	1540
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		646	392	395	591	713
Total Alkalinity as CaCO3	----	1	mg/L		646	392	395	591	713
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		266	212	535	151	<10
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		724	749	1340	394	83
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		307	182	216	57	45
Magnesium	7439-95-4	1	mg/L		90	36	82	34	30
Sodium	7440-23-5	1	mg/L		347	445	882	410	348
Potassium	7440-09-7	1	mg/L		17	6	8	6	36
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	0.01	<0.01	0.01	<0.01
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	0.011
Arsenic	7440-38-2	0.001	mg/L		0.003	<0.001	0.004	<0.001	0.006
Barium	7440-39-3	0.001	mg/L		0.138	0.057	0.076	0.054	0.073
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	0.141

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	VNW392 VPCGBNM5-23	VNW393 VPCGBNM5-24	VNW394 VPCGBNM5-25	VNW395 VPCGBNM5-26	GW-10 VPCGBNM5-28
				Sampling date / time	15-Apr-2025 09:56	15-Apr-2025 08:39	15-Apr-2025 08:14	15-Apr-2025 09:30	16-Apr-2025 11:37
					ES2511376-023	ES2511376-024	ES2511376-025	ES2511376-026	ES2511376-028
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		**0.003**	<0.001	**0.002**	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.005**	**0.006**	**0.008**	**0.004**	**0.006**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	**0.130**
Manganese	7439-96-5	0.001	mg/L		**0.510**	**0.195**	**0.353**	**0.122**	**0.057**
Molybdenum	7439-98-7	0.001	mg/L		**0.001**	**0.004**	**0.002**	<0.001	**0.004**
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L		**2.94**	**2.37**	**2.98**	**0.680**	**0.932**
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L		**0.08**	**0.08**	**0.06**	**0.05**	**0.17**
Iron	7439-89-6	0.05	mg/L		**4.76**	**0.56**	**0.80**	<0.05	**0.10**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.58**	**0.53**	**1.83**	**4.06**	**0.28**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	**0.38**
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.01**	**0.06**	**0.05**	**0.15**	**39.2**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.01**	**0.06**	**0.05**	**0.15**	**39.6**
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L		**0.02**	**0.05**	**0.08**	**0.68**	**1.05**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.25**	**0.09**	**0.57**	**0.72**	**1.09**
EN055: Ionic Balance									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	VNW392 VPCGBNM5-23	VNW393 VPCGBNM5-24	VNW394 VPCGBNM5-25	VNW395 VPCGBNM5-26	GW-10 VPCGBNM5-28
				Sampling date / time	15-Apr-2025 09:56	15-Apr-2025 08:39	15-Apr-2025 08:14	15-Apr-2025 09:30	16-Apr-2025 11:37
Compound	CAS Number	LOR	Unit		ES2511376-023	ES2511376-024	ES2511376-025	ES2511376-026	ES2511376-028
					Result	Result	Result	Result	Result
EN055: Ionic Balance - Continued									
ø Total Anions	----	0.01	meq/L		----	----	----	----	19.4
ø Total Anions	----	0.01	meq/L		38.9	33.4	56.8	26.1	----
ø Total Cations	----	0.01	meq/L		38.2	31.6	56.1	23.6	20.8
ø Ionic Balance	----	0.01	%		----	----	----	----	3.34
ø Ionic Balance	----	0.01	%		0.80	2.80	0.65	4.90	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		8.6	9.2	7.0	5.9	7.9

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	GW-15 VPCGBNM5-29	VKY GW Duplicate 1 VPCGBNM5-30	VKY GW Lab Split Dup 1 VPCGBNM5-31	----	----
				Sampling date / time	15-Apr-2025 14:50	16-Apr-2025 11:11	16-Apr-2025 11:11	----	----
					ES2511376-029	ES2511376-030	ES2511376-031	--------	--------
					Result	Result	Result	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		8.91	7.35	7.30	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		706	5620	5540	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		540	4030	3920	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		39	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		268	825	824	----	----
Total Alkalinity as CaCO3	----	1	mg/L		307	825	824	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		34	303	305	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		29	1360	1390	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		5	207	204	----	----
Magnesium	7439-95-4	1	mg/L		2	217	211	----	----
Sodium	7440-23-5	1	mg/L		159	731	714	----	----
Potassium	7440-09-7	1	mg/L		4	22	21	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Barium	7440-39-3	0.001	mg/L		0.022	0.130	0.134	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	0.0001	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	GW-15 VPCGBNM5-29	VKY GW Duplicate 1 VPCGBNM5-30	VKY GW Lab Split Dup 1 VPCGBNM5-31	----	----
			Sampling date / time	15-Apr-2025 14:50	16-Apr-2025 11:11	16-Apr-2025 11:11	----	----
Compound	CAS Number	LOR	Unit	ES2511376-029	ES2511376-030	ES2511376-031	--------	--------
				Result	Result	Result	----	----
EG020F: Dissolved Metals by ICP-MS - Continued								
Copper	7440-50-8	0.001	mg/L	**0.002**	**0.005**	**0.009**	**----**	**----**
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	**----**	**----**
Nickel	7440-02-0	0.001	mg/L	<0.001	**0.003**	**0.003**	**----**	**----**
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	**----**	**----**
Zinc	7440-66-6	0.005	mg/L	<0.005	**0.021**	**0.029**	**----**	**----**
Manganese	7439-96-5	0.001	mg/L	**0.012**	**0.220**	**0.220**	**----**	**----**
Molybdenum	7439-98-7	0.001	mg/L	**0.002**	<0.001	<0.001	**----**	**----**
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	**----**	**----**
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	**----**	**----**
Strontium	7440-24-6	0.001	mg/L	**0.213**	**3.48**	**3.47**	**----**	**----**
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	**----**	**----**
Boron	7440-42-8	0.05	mg/L	<0.05	**0.05**	**0.05**	**----**	**----**
Iron	7439-89-6	0.05	mg/L	<0.05	**0.92**	**0.87**	**----**	**----**
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	**----**	**----**
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.27**	**0.81**	**0.86**	**----**	**----**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	**----**	**----**
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.03**	**0.10**	**0.11**	**----**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.03**	**0.10**	**0.11**	**----**	**----**
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser								
Filtered Total Phosphorus as P	----	0.01	mg/L	**0.12**	**0.02**	**0.01**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser								

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GW-15 VPCGBNM5-29	VKY GW Duplicate 1 VPCGBNM5-30	VKY GW Lab Split Dup 1 VPCGBNM5-31	----	----
				Sampling date / time	15-Apr-2025 14:50	16-Apr-2025 11:11	16-Apr-2025 11:11	----	----
Compound	CAS Number	LOR	Unit		ES2511376-029	ES2511376-030	ES2511376-031	--------	--------
					Result	Result	Result	----	----
EK067G: Total Phosphorus as P by Discrete Analyser - Continued									
Total Phosphorus as P	----	0.01	mg/L		**0.12**	**0.01**	**0.02**	**----**	**----**
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**7.66**	**61.2**	**62.0**	**----**	**----**
ø Total Cations	----	0.01	meq/L		**7.43**	**60.5**	**59.1**	**----**	**----**
ø Ionic Balance	----	0.01	%		**1.51**	**0.50**	**2.38**	**----**	**----**
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	**----**	**----**
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**9.0**	**8.7**	**8.7**	**----**	**----**

GROUND WATER MONITORING

Client: **Whitehaven Coal - Vickery Project**

Sampled By: GD/GH

Project: **Quarterly Groundwater Sampling** (Jan, Apr, Jul, Oct)

Signed:

Meters need to be checked every 24 hours

*Data saved into Field Downloads folder or emailed to monitoringresults@cbased.com.au

Date	Field pH/EC/ Temp meter #	Calibration checked (record details on F305)	Field Redox meter #	Calibration checked (record details on F323)	Field Laptop #	VWP data files transferred*	Weather conditions (eg. sunny, rain)	Any Health/safety issues on site (If yes, detail under Comments)	Field Tech Initials
		Y / N		Y / N		Y / N			
		Y / N		Y / N		Y / N			
		Y / N		Y / N		Y / N			
		Y / N		Y / N		Y / N			
		Y / N		Y / N		Y / N			

Site	Date	Time	Logger Downloaded	Logger Batteries Replaced	Bore Total Depth (m)	Standpipe TOC to Ground (m) height	Depth to Water (m)	Typical Depth (m)	Sampling Method	Field pH	Field EC	Temp. (°C)	Redox (mV)	Odour	Water Turbidity	Water Colour	Monitoring bore in good condition (note any damage under comments)	Photo taken	Bottles: 500ml GP	Bottles: RP (filt.)	Bottles: PP	Bottles: PG	Comments
GW-11	24/4/25	0915			45.25	0.3	16.50		GS LF HF HS	7.15	4.75mS	21.7		NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
~~GW-13~~									GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
~~GW-14~~									GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
~~GW-2~~									GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
~~GW-5~~									GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
GW-7	24/4/25	1305			48.54	0.34	27.25		GS LF HF HS	8.91	4.47mS	25.0		NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	6	1	1	1	
GW-8	24/4/25	1105			—		23.29		GS LF HF HS	5.28	4.20mS	21.7		NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
GW-9	22/4/25	1353	? Y / N	Y N	—	0.64	17.56		GS LF HF HS	7.52	487µS	22.5	-120	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
GW01	23/4/25	0807	ML Y / N	Y N	32.80	0.52	9.21	8.20	GS LF HF HS	7.33	244mS	18.3	-22	NIL	G S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
~~GW02~~			ML Y / N	Y / N		0.45		7.45	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
~~GW03~~			VL Y / N	Y / N				6.42	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
~~MB01~~								28.03	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
~~MB02~~								40.98	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
SB01	22.4.25	1041			23.18	0.9	7.70	6.37	GS LF HF HS	7.30	1788µS	19.6	-2	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	

ML = Mini Logger
QL = Quattro Logger
VL = V-Logger
WS = Win Situ (Rugged Troll)
RST = RST Logger

GS=Grab Sample with Bailer,
LF=Low Flow Sampling,
HF=High Volume Pumping,
HS = Hydrasleeve (CIRCLE)

pH 7 buffer check required every 10 samples - If the Difference is over 0.2, recalibrate using Form F305 (2 point calibration)

Date	Time	pH reading	Recalibration required? (Yes/No)	Date	Time	pH reading	Recalibration required? (Yes/No)
			Yes/No				Yes/No
			Yes/No				Yes/No

CBased Sampling Method: M105 - Groundwater Sampling
Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)
Colour: C=Colourless, O=Orange, Bk = Black, Bn=Brown, Gn=Green, Gy = Grey (CIRCLE)
Flow Rate: Still → Trickle → Slow → Steady → Fast
Bottles: GP = Green Plastic, RP = Red Plastic, (filt. = filtered), PP = Purple Plastic, BP = Blue Plastic, YP = Yellow Plastic, OG = Orange Glass, PG = Purple Glass, BG = Brown Glass, MP = Maroon Plastic, PV = Purple Vial, ST = Sterile

Transport conditions ☐ Esky with Ice
☐ Other (Provide details)

GROUND WATER MONITORING

Client: Whitehaven Coal - Vickery Project

Sampled By: GD/BH

Project: Quarterly Groundwater Sampling (Jan, Apr, Jul, Oct)

Signed:

Site	Date	Time	Logger Downloaded	Logger Batteries Replaced	Bore Total Depth (m)	Standpipe TOC to Ground (m) height	Depth to Water (m)	Typical Depth (m)	Sampling Method	Field pH	Field EC	Temp. (°C)	Redox (mV)	Odour	Water Turbidity	Water Colour	Monitoring bore in good condition (note any damage under comments)	Photo taken	Bottles: 500ml GP	Bottles: RP (filt.)	Bottles: PP	Bottles: PG	Comments
SB02	22/4/25	1436			21.35	0.4	9.96	9.84	GS LF HF HS	7.48	6.87mS	23.1	-119	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
~~SB04~~						~~0.8~~		~~8.34~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
SB05	22-4-25	1135			-	0.75	8.44	7.10	GS LF HF HS	7.70	3.30mS	20.2	-103	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
SB06	22-4-25	1245			20.92	0.3	9.52	8.43	GS LF HF HS	8.12	2.93mS	21.0	-159	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	TO TURBID TO FILTER - LAB TO FILTER
~~SB07~~			~~WS - Y / N~~					~~8.01~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~SB08~~						~~0.6~~		~~8.73~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
SB09	22-4-25	1053			20.38	0.5	7.79	6.36	GS LF HF HS	7.55	1054uS	20.0	-22	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
SB10	22-4-25	1120			18.10	1	8.50	7.45	GS LF HF HS	7.49	1839uS	19.8	-27	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
SB11	22/4/25	1304			30.24	0.25	9.35	8.10	GS LF HF HS	7.61	1144uS	22.9	31	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
SB15	23/4/25	0829			32.25	0.8	9.55	8.18	GS LF HF HS	6.84	1032uS	20.1	22	NIL	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
~~TR18~~						~~0.87~~		~~13.04~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~TR30~~								~~12.44~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~TR35~~								~~18.16~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~TR7~~						~~0.72~~		~~9.85~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~VKY035C~~			~~WS - Y / N~~			~~0.51~~		~~42.37~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~VKY036C~~			~~WS - Y / N~~			~~0.68~~		~~49.23~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~VKY042C~~			~~WS - Y / N~~			~~0.75~~		~~42.68~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~VKY034C~~			~~WS - Y / N~~			~~0.78~~		~~39.79~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~VKY041C~~			~~RST (#101508 - SN 02023) Y / N~~	~~Y / N~~																			
			~~RST (#101340 - SN 02027) Y / N~~	~~Y / N~~																			
~~VKY043C~~						~~0.96~~		~~16.41~~	~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~VKY33C~~			~~RST (#2029) - Y / N~~	~~Y / N~~																			
			~~RST(#2087) - Y / N~~	~~Y / N~~																			
VKY3053C	24/4/25	1120	RST - Y N	Y / N																			

ML = Mini Logger
QL = Quattro Logger
VL = V-Logger
WS = Win Situ (Rugged Troll)
RST = RST Logger

GS=Grab Sample with Bailer,
LF=Low Flow Sampling,
HF=High Volume Pumping,
HS = Hydrasleeve (CIRCLE)

CBased Sampling Method: M105 - Groundwater Sampling
Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)
Colour: C=Colourless, O=Orange, Bk = Black, Bn=Brown, Gn=Green, Gy = Grey (CIRCLE)
Flow Rate: Still → Trickle → Slow → Steady → Fast
Bottles: GP = Green Plastic, RP = Red Plastic, (filt. = filtered), PP = Purple Plastic, BP = Blue Plastic, YP = Yellow Plastic, OG = Orange Glass, PG = Purple Glass, BG = Brown Glass, MP = Maroon Plastic, PV = Purple Vial, ST = Sterile

pH 7 buffer check required every 10 samples - if the Difference is over 0.2, recalibrate using Form F305 (2 point calibration)

Date	Time	pH reading	Recalibration required? (Yes/No)	Date	Time	pH reading	Recalibration required? (Yes/No)
			Yes/No				Yes/No
			Yes/No				Yes/No

Transport conditions ☐ Esky with Ice
☐ Other (Provide details)

GROUND WATER MONITORING

Client: **Whitehaven Coal - Vickery Project**

Sampled By: GO / BH

Project: **Quarterly Groundwater Sampling** (Jan, Apr, Jul, Oct)

Signed:

Site	Date	Time	Logger Downloaded	Logger Batteries Replaced	Bore Total Depth (m)	Standpipe TOC to Ground (m) height	Depth to Water (m)	Typical Depth (m)	Sampling Method	Field pH	Field EC	Temp. (°C)	Redox (mV)	Odour	Water Turbidity	Water Colour	Monitoring bore in good condition (note any damage under comments)	Photo taken	Bottles: 500ml GP	Bottles: RP (filt.)	Bottles: PP	Bottles: PG	Comments
VNW223	24/4/25	0856 (0856) 0858				0.74	21.44		GS LF HF HS	7.14	4.57mS	21.6		N/C	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
~~VNW390~~								9.38	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
~~VNW391~~								7.80	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
~~VNW392~~								6.25	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
~~VNW393~~								10.64	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
~~VNW394~~								8.73	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
~~VNW395~~			? - Y / N	Y / N		0.56		7.43	GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
~~VS049~~			ML - Y / N	Y / N																			
~~VS064~~			VL - Y / N	Y / N																			
~~VS056~~			ML (#1765) - Y / N	Y / N																			
			ML (#1771) - Y / N	Y / N																			
VS058	22.4.25	1334	VL Y N	Y N																			
~~VS059~~			VL - Y / N	Y / N																			
~~VS062~~			ML - Y / N	Y / N																			
WR-1	24/4/25	1240	Y / N	Y / N		1.05	14.43	13.37	GS LF HF HS	6.96	27.3mS	23.0		N/C	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
WR-2	24/4/25	1215	Y N	Y N		0.73	12.59	11.35	GS LF HF HS	6.99	26.1mS	23.0		N/C	C S T	C O Bk Bn Gn Gy	Y N	Y N	1	1	1	1	
GW036459																			1	1	1	1	No access - NSW Water locked bore
GW030051																			1	1	1	1	No access - NSW Water locked bore
GW030052																			1	1	1	1	No access - NSW Water locked bore

ML = Mini Logger
QL = Quattro Logger
VL = V-Logger
WS = Win Situ (Rugged Troll)
RST = RST Logger

GS=Grab Sample with Bailer,
LF=Low Flow Sampling,
HF=High Volume Pumping,
HS = Hydrasleeve (CIRCLE)

pH 7 buffer check required every 10 samples - If the Difference is over 0.2, recalibrate using Form F305 (2 point calibration)

Date	Time	pH reading	Recalibration required? (Yes/No)	Date	Time	pH reading	Recalibration required? (Yes/No)
			Yes/No				Yes/No
			Yes/No				Yes/No

CBased Sampling Method: M105 - Groundwater Sampling
Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)
Colour: C=Colourless, O=Orange, Bk = Black, Bn=Brown, Gn=Green, Gy = Grey (CIRCLE)
Flow Rate: Still → Trickle → Slow → Steady → Fast
Bottles: GP = Green Plastic, RP = Red Plastic, (filt. = filtered), PP = Purple Plastic, BP = Blue Plastic, YP = Yellow Plastic, OG = Orange Glass, PG = Purple Glass, BG = Brown Glass, MP = Maroon Plastic, PV = Purple Vial, ST = Sterile

Transport conditions ☐ Esky with Ice
☐ Other (Provide details)

GROUND WATER MONITORING

Client: **Whitehaven Coal - Vickery Project**

Sampled By: GR/GH

Project: **Quarterly Groundwater Sampling** (Jan, Apr, Jul, Oct)

Signed:

Site	Date	Time	Logger Downloaded	Logger Batteries Replaced	Bore Total Depth (m)	Standpipe TOC to Ground (m) height	Depth to Water (m)	Typical Depth (m)	Sampling Method	Field pH	Field EC	Temp. (°C)	Redox (mV)	Odour	Water Turbidity	Water Colour	Monitoring bore in good condition (note any damage under comments)	Photo taken	Bottles: 500ml GP	Bottles: RP (filt.)	Bottles: PP	Bottles: PG	Comments
~~GW4~~									~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~GW10~~									~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
~~GW15~~									~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~	~~Y / N~~	~~Y / N~~	~~1~~	~~1~~	~~1~~	~~1~~	
TANK GW971614	~~24/4/25~~	1449			N/A	N/A	N/A	N/A	~~GS~~ LF HF HS	7.42	681.6	22.8		NIL	C S T	C O Bk Bn Gn Gy	~~Y / N~~	~~Y / N~~	1	1	1	1	
GW971400																							
LANREEF	24/4/25	1447	—	—	HOUSE		10.71		—	—	—	—	—	—	—	—	—	—	—	—	—	—	DEP ONLY
QA Samples																							
~~VKY GW Duplicate 1~~			~~Duplicate 1 Taken From:~~						~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~			~~1~~	~~1~~	~~1~~	~~1~~	
VKY GW Duplicate 2	24/4/25		Duplicate 2 Taken From: GW11						GS LF HF HS	7.23	5.02mS	21.4		NIL	C S T	C O Bk Bn Gn Gy			1	0	1	1	
VKY GW Blank	24/4/25	0800								7.80	5.22mS			NIL	C S T	C O Bk Bn Gn Gy			1	0	0	0	
Split Duplicate samples to be split into two bottle sets. Please label one set as 'Split Dup (1/2) ALS' and one as 'Split Dup (1/2) Eurofins"																							
~~VKY GW Lab Split Dup 1~~			~~Site Split Duplicate 1 Taken From:~~						~~GS LF HF HS~~						~~C S T~~	~~C O Bk Bn Gn Gy~~			~~2~~	~~2~~	~~2~~	~~2~~	
VKY GW Lab Split Dup 2	24/4/25		Site Split Duplicate 2 Taken From: GW11						GS LF HF HS	6.33	4.92mS	22.5			C S T	C O Bk Bn Gn Gy			1	1	1	1	
																Total Bottles:			**56**	**56**	**56**	**56**	

ML = Mini Logger
QL = Quattro Logger
VL = V-Logger
WS = Win Situ (Rugged Troll)
RST = RST Logger

GS=Grab Sample with Bailer,
LF=Low Flow Sampling,
HF=High Volume Pumping,
HS = Hydrasleeve (CIRCLE)

CBased Sampling Method: M105 - Groundwater Sampling
Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)
Colour: C=Colourless, O=Orange, Bk = Black, Bn=Brown, Gn=Green, Gy = Grey (CIRCLE)
Flow Rate: Still → Trickle → Slow → Steady → Fast
Bottles: GP = Green Plastic; RP = Red Plastic, (filt. = filtered), PP = Purple Plastic, BP = Blue Plastic, YP = Yellow Plastic, OG = Orange Glass, PG = Purple Glass, BG = Brown Glass, MP = Maroon Plastic, PV = Purple Vial, ST = Sterile

pH 7 buffer check required every 10 samples - if the Difference is over 0.2, recallbrate using Form F305 (2 point calibration)

Date	Time	pH reading	Recalibration required? (Yes/No)	Date	Time	pH reading	Recalibration required? (Yes/No)
			Yes/No				Yes/No
			Yes/No				Yes/No

Transport conditions ☐ Esky with Ice
☐ Other (Provide details)

* NOTE MEGAN MARTEN REQUESTED GW971614 AND THE BORE CALLED LANREEF BE RECORDED SEPERATE. THEY ARE APPROX 50-70 MMS APART AND ON THE ~~WORK~~ SAME STREAM. WE CAN DEP LANREEK BUT CANT SAMPLE UNLESS FROM A GARDEN TAP. WE CAN SAMPLE GW971614 BUT CANT DEP.

CHAIN OF CUSTODY	HANDED OVER BY	HANDOVER DATE/TIME	REQUIRED TURNAROUND	RETURN EQUIPMENT	EDD FORMAT	PAGE 1 OF
232FA4Y	Cbased Environment al	2025-04-3014: 05	5 Working Days	N o	IN X	3

LAB USE ONLY	RECEIVED(DATE/TIME): 1/5/25 4:36	APPROPRIATELY SEALED?: YES NO	TEMPERATURE 3.8/C	JOB #:	SIGNED

ALS P10

LABORATORY	ALS Newcastle | 5/585 Maitland Road Mayfield West 2304 NSW
SAMPLERS	CBased Environmental
QUOTE #	SYBQ-403-21v4
PO #	

SITE	Vickery
PROJECT	Vickery Quarterly Groundwaters
PROJECT MANAGER	
COMPANY	CBased Environmental Pty Ltd | PO Box 245 Cessnock NSW 2325
CONTACT PERSON	Mamie Blake
CONTACT NUMBER	
CONTACT FAX	
CONTACT EMAILS	monitoringresults@cbased.com.au
INVOICING EMAILS	accounts@cbased.com.au
RESULT EMAILS	monitoringresults@cbased.com.au, inxpreservemail@whitehavencoal.com.au, vickeryenvironment@whitehavencoal.com.au

ANALYSIS REQUIRED

A. Ammonia as N
B. Bicarbonate Alkalinity as CaCO3
C. Carbonate Alkalinity as CaCO3
D. DO
E. EC
F. Hydroxide Alkalinity as CaCO3
G. Ionic balance
H. Nitrate as N
I. Nitrite + Nitrate as N
J. Nitrite as N
K. Oil and Grease
L. pH
M. Sodium (Dissolved)
N. TDS
O. Total Alkalinity as CaCO3

GENERAL INSTRUCTIONS

Environmental Division
Sydney
Work Order Reference
ES2512473

Telephone : +61-2-8784 8555

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	SAMPLE INSTRUCTIONS
1	GW-11	2025-04-24 09:15	CYFKMESA-1	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	GW-7	2025-04-24 13:05	CYFKMESA-2	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	GW-8	2025-04-24 11:05	CYFKMESA-3	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	GW-9	2025-04-22 13:53	CYFKMESA-4	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	GW01	2025-04-23 08:07	CYFKMESA-5	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	SB01	2025-04-22 10:41	CYFKMESA-6	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7	SB02	2025-04-22 14:36	CYFKMESA-7	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8	SB05	2025-04-22 11:35	CYFKMESA-8	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9	SB06	2025-04-22 12:45	CYFKMESA-9	3	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Too Turbid -Lab to Filter
10	SB09	2025-04-22 10:53	CYFKMESA-10	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11	SB10	2025-04-22 11:20	CYFKMESA-11	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12	SB11	2025-04-22 13:04	CYFKMESA-12	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13	SB15	2025-04-23 08:29	CYFKMESA-13	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14	VNW223/P-3	2025-04-24 08:56	CYFKMESA-14	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15	WR1	2025-04-24 12:40	CYFKMESA-15	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16	WR2	2025-04-24 12:15	CYFKMESA-16	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
17	GW971614	2025-04-24 14:49	CYFKMESA-17	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
18	VKY GW Duplicate 2	2025-04-24 00:00	CYFKMESA-19	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

18	VKY GW Duplicate 2	2025-04-24 00:00	CYFKMESA-19	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
19	VKY-GW-Blank	2025-04-24 08:00	CYFKMESA-20	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
20	VKY GW Lab Split Dup 2	2025-04-24 00:00	CYFKMESA-21	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		

CHAIN OF CUSTODY 232FA4Y	**HANDED OVER BY** Cbased Environment	**HANDOVER DATE/TIME** 2025-04-30 14:	**REQUIRED TURNAROUND** 5 Working Da	**RETURN EQUIPMENT** N	**EDD FORMAT** IN	**PAGE 3 OF**
Y	al	05	ys	o	X	3

ANALYSIS REQUIRED	**GENERAL INSTRUCTIONS**
AE. Iron (dissolved) AF. Lead (dissolved) AG. Magnesium (dissolved) AH. Manganese (dissolved) AI. Mercury (dissolved) AJ. Molybdenum (dissolved) AK. Nickel (dissolved) AL. Phosphorus (dissolved) AM. Potassium (dissolved) AN. Selenium (dissolved) AO. Silver (dissolved) AP. Strontium (dissolved) AQ. Sulfate as SO_4 - Turbidimetric (dissolved) AR. Tin (dissolved) AS. Zinc (dissolved)	

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	SAMPLE INSTRUCTIONS
1	GW-11	2025-04-24 09:15	CYFKMESA-1	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	GW-7	2025-04-24 13:05	CYFKMESA-2	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	GW-8	2025-04-24 11:05	CYFKMESA-3	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	GW-9	2025-04-22 13:53	CYFKMESA-4	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	GW01	2025-04-23 08:07	CYFKMESA-5	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	SB01	2025-04-22 10:41	CYFKMESA-6	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7	SB02	2025-04-22 14:36	CYFKMESA-7	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8	SB05	2025-04-22 11:35	CYFKMESA-8	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9	SB06	2025-04-22 12:45	CYFKMESA-9	3	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Too Turbid - Lab to Filter
10	SB09	2025-04-22 10:5[illegible]	CYFKMESA-10	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

19	VKY-GW-Blank	2025-04-24 08:00	CYFKMESA-20	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
20	VKY GW Lab Split Dup 2	2025-04-24 00:00	CYFKMESA-21	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

CHAIN OF CUSTODY	HANDED OVER BY	HANDOVER DATE/TIME	REQUIRED TURNAROUND	RETURN EQUIPMENT	EDD FORMAT	PAGE 2 OF
232FA4Y	Cbased Environment	2025-04-30 14:	5 Working Da	N	IN	3
Y	al	05	ys	o	X	

ANALYSIS REQUIRED	GENERAL INSTRUCTIONS
P. Total anions Q. Total Cations R. Total Phosphorus as P S. Alkalinity (total) T. Aluminium (dissolved) U. Antimony (dissolved) V. Arsenic (dissolved) W. Barium (dissolved) X. Boron (dissolved) Y. Cadmium (dissolved) Z. Calcium (dissolved) AA. Chloride AB. Chromium (dissolved) AC. Cobalt (dissolved) AD. Copper (dissolved)	

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	SAMPLE INSTRUCTIONS
1	GW-11	2025-04-24 09:15	CYFKMESA-1	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	GW-7	2025-04-24 13:05	CYFKMESA-2	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	GW-8	2025-04-24 11:05	CYFKMESA-3	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	GW-9	2025-04-22 13:53	CYFKMESA-4	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	GW01	2025-04-23 08:07	CYFKMESA-5	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	SB01	2025-04-22 10:41	CYFKMESA-6	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7	SB02	2025-04-22 14:36	CYFKMESA-7	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8	SB05	2025-04-22 11:35	CYFKMESA-8	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9	SB06	2025-04-22 12:45	CYFKMESA-9	3	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Too Turbid - Lab to Filter
10	SB09	2025-04-22 10:53	CYFKMESA-10	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11	SB10	2025-04-22 11:20	CYFKMESA-11	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12	SB11	2025-04-22 13:04	CYFKMESA-12	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13	SB15	2025-04-23 08:29	CYFKMESA-13	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14	VNW223/P-3	2025-04-24 08:56	CYFKMESA-14	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15	WR1	2025-04-24 12:40	CYFKMESA-15	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16	WR2	2025-04-24 12:15	CYFKMESA-16	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
17	GW971614	2025-04-24 14:49	CYFKMESA-17	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

		3																		
11	SB10	2025-04-22 11:20	CYFKMESA-11	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12	SB11	2025-04-22 13:04	CYFKMESA-12	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13	SB15	2025-04-23 08:29	CYFKMESA-13	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14	VNW223/P-3	2025-04-24 08:56	CYFKMESA-14	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15	WR1	2025-04-24 12:40	CYFKMESA-15	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16	WR2	2025-04-24 12:15	CYFKMESA-16	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
17	GW971614	2025-04-24 14:49	CYFKMESA-17	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
18	VKY GW Duplicate 2	2025-04-24 00:00	CYFKMESA-19	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
19	VKY-GW-Blank	2025-04-24 08:00	CYFKMESA-20	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
20	VKY GW Lab Split Dup 2	2025-04-24 00:00	CYFKMESA-21	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

CERTIFICATE OF ANALYSIS

Work Order	: **ES2512473**	Page	: 1 of 14
Client	: **CBASED ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: All Deliverables	Contact	: Jessica Chen
Address	: Unit 3 2 Enterprise Cres Singleton NSW 2330	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 6571 3334	Telephone	: +61-2-8784 8555
Project	: Vickery Quarterly Groundwaters	Date Samples Received	: 01-May-2025 16:36
Order number	: ----	Date Analysis Commenced	: 05-May-2025
C-O-C number	: ----	Issue Date	: 12-May-2025 17:11
Sampler	: ----		
Site	: Vickery		
Quote number	: SYBQ/403/21v4 and PLANNED EVENTS		
No. of samples received	: 20		
No. of samples analysed	: 20		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- EK067G/EK067FG: It is recognised that total phosphrous is less than filtered total phosphrous. However, the difference is within experimental variation of the methods.
- EK057G/EK059G: It is recognised that NOx is less than nitrite. The result has been confirmed by re-analysis from their respective bottles.
- TDS by method EA-015 sample 6 and 9 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GW-11 CYFKMESA-1	GW-7 CYFKMESA-2	GW-8 CYFKMESA-3	GW-9 CYFKMESA-4	GW01 CYFKMESA-5
				Sampling date / time	24-Apr-2025 09:15	24-Apr-2025 13:05	24-Apr-2025 11:05	22-Apr-2025 13:53	23-Apr-2025 08:07
Compound	CAS Number	LOR	Unit		ES2512473-001	ES2512473-002	ES2512473-003	ES2512473-004	ES2512473-005
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**6.32**	**8.55**	**7.61**	**7.44**	**7.08**
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**4890**	**4660**	**4210**	**475**	**223**
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**3040**	**2820**	**2320**	**346**	**167**
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	**73**	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**21**	**1080**	**875**	**126**	**76**
Total Alkalinity as CaCO3	----	1	mg/L		**21**	**1150**	**875**	**126**	**76**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		<1	**354**	**77**	**40**	**28**
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**1300**	**668**	**782**	**48**	**9**
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**218**	**15**	**116**	**28**	**12**
Magnesium	7439-95-4	1	mg/L		**50**	**154**	**93**	**6**	**7**
Sodium	7440-23-5	1	mg/L		**642**	**632**	**653**	**64**	**26**
Potassium	7440-09-7	1	mg/L		**10**	**316**	**10**	**11**	**3**
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**0.01**	<0.01	<0.01	**0.01**	**0.10**
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	**0.002**	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L		**0.113**	**0.012**	**0.190**	**0.015**	**0.019**
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		**0.002**	**0.029**	<0.001	**0.002**	**0.002**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	GW-11 CYFKMESA-1	GW-7 CYFKMESA-2	GW-8 CYFKMESA-3	GW-9 CYFKMESA-4	GW01 CYFKMESA-5
				Sampling date / time	24-Apr-2025 09:15	24-Apr-2025 13:05	24-Apr-2025 11:05	22-Apr-2025 13:53	23-Apr-2025 08:07
					ES2512473-001	ES2512473-002	ES2512473-003	ES2512473-004	ES2512473-005
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		<0.001	**0.002**	**0.003**	**0.002**	**0.006**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		**0.059**	<0.005	<0.005	<0.005	<0.005
Manganese	7439-96-5	0.001	mg/L		**1.06**	**0.021**	**0.104**	**0.866**	**0.206**
Molybdenum	7439-98-7	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L		**3.09**	**0.298**	**2.41**	**0.484**	**0.237**
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L		**0.14**	**0.20**	**0.08**	**0.11**	<0.05
Iron	7439-89-6	0.05	mg/L		**10.2**	<0.05	**1.21**	**0.87**	**0.12**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**1.97**	**0.78**	**0.78**	**0.94**	**0.15**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	**0.13**	<0.01	**0.05**	**0.01**
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.03**	**0.07**	**0.05**	<0.01	**0.65**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.03**	**0.20**	**0.05**	**0.03**	**0.66**
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L		<0.01	**0.03**	**0.22**	**0.08**	**0.19**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.01	**0.07**	**0.83**	**0.22**	**0.22**
EN055: Ionic Balance									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GW-11 CYFKMESA-1	GW-7 CYFKMESA-2	GW-8 CYFKMESA-3	GW-9 CYFKMESA-4	GW01 CYFKMESA-5
				Sampling date / time	24-Apr-2025 09:15	24-Apr-2025 13:05	24-Apr-2025 11:05	22-Apr-2025 13:53	23-Apr-2025 08:07
Compound	CAS Number	LOR	Unit		ES2512473-001	ES2512473-002	ES2512473-003	ES2512473-004	ES2512473-005
					Result	Result	Result	Result	Result
EN055: Ionic Balance - Continued									
ø Total Anions	----	0.01	meq/L		**37.1**	**49.2**	**41.1**	**4.70**	**2.36**
ø Total Cations	----	0.01	meq/L		**43.2**	**49.0**	**42.1**	**4.96**	**2.38**
ø Ionic Balance	----	0.01	%		**7.58**	**0.20**	**1.15**	**2.61**	**----**
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**8.7**	**8.9**	**5.5**	**8.2**	**8.6**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	SB01 CYFKMESA-6	SB02 CYFKMESA-7	SB05 CYFKMESA-8	SB06 CYFKMESA-9	SB09 CYFKMESA-10
				Sampling date / time	22-Apr-2025 10:41	22-Apr-2025 14:36	22-Apr-2025 11:35	22-Apr-2025 12:45	22-Apr-2025 10:53
					ES2512473-006	ES2512473-007	ES2512473-008	ES2512473-009	ES2512473-010
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.63	7.88	8.05	8.11	7.88
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		1630	7320	3440	3010	952
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		1060	4550	2100	2780	627
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		568	921	768	382	458
Total Alkalinity as CaCO3	----	1	mg/L		568	921	768	382	458
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		180	1110	380	359	59
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		167	1250	449	516	27
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		106	82	26	25	52
Magnesium	7439-95-4	1	mg/L		66	68	20	27	30
Sodium	7440-23-5	1	mg/L		226	1510	732	608	153
Potassium	7440-09-7	1	mg/L		2	2	<1	<1	2
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	0.01	<0.01	<0.01	<0.01
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L		0.002	0.010	0.004	0.004	<0.001
Barium	7440-39-3	0.001	mg/L		0.122	0.031	0.059	0.058	0.070
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	0.006	<0.001

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	SB01 CYFKMESA-6	SB02 CYFKMESA-7	SB05 CYFKMESA-8	SB06 CYFKMESA-9	SB09 CYFKMESA-10
				Sampling date / time	22-Apr-2025 10:41	22-Apr-2025 14:36	22-Apr-2025 11:35	22-Apr-2025 12:45	22-Apr-2025 10:53
					ES2512473-006	ES2512473-007	ES2512473-008	ES2512473-009	ES2512473-010
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.002**	**0.002**	<0.001	**0.003**	**0.001**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Manganese	7439-96-5	0.001	mg/L		**0.519**	**0.489**	**0.224**	**0.302**	**0.394**
Molybdenum	7439-98-7	0.001	mg/L		<0.001	**0.003**	**0.003**	**0.005**	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L		**2.17**	**2.15**	**0.633**	**0.904**	**0.982**
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L		**0.08**	**0.15**	**0.17**	**0.14**	**0.08**
Iron	7439-89-6	0.05	mg/L		**0.16**	**1.14**	**0.16**	<0.05	<0.05
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.05**	**0.12**	**0.08**	**0.14**	**0.17**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	**0.05**	**0.04**	**2.06**	**0.02**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	**0.05**	**0.04**	**2.06**	**0.02**
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L		**0.12**	**0.43**	**0.05**	**1.15**	**0.13**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.13**	**0.42**	**0.06**	**1.64**	**0.13**
EN055: Ionic Balance									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SB01 CYFKMESA-6	SB02 CYFKMESA-7	SB05 CYFKMESA-8	SB06 CYFKMESA-9	SB09 CYFKMESA-10
				Sampling date / time	22-Apr-2025 10:41	22-Apr-2025 14:36	22-Apr-2025 11:35	22-Apr-2025 12:45	22-Apr-2025 10:53
Compound	CAS Number	LOR	Unit		ES2512473-006	ES2512473-007	ES2512473-008	ES2512473-009	ES2512473-010
					Result	Result	Result	Result	Result
EN055: Ionic Balance - Continued									
ø Total Anions	----	0.01	meq/L		**19.8**	**76.8**	**35.9**	**29.7**	**11.1**
ø Total Cations	----	0.01	meq/L		**20.6**	**75.4**	**34.8**	**29.9**	**11.8**
ø Ionic Balance	----	0.01	%		**1.97**	**0.89**	**1.61**	**0.42**	**2.75**
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**8.3**	**8.7**	**8.7**	**7.6**	**8.4**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	SB10 CYFKMESA-11	SB11 CYFKMESA-12	SB15 CYFKMESA-13	VNW223/P-3 CYFKMESA-14	WR1 CYFKMESA-15
				Sampling date / time	22-Apr-2025 11:20	22-Apr-2025 13:04	23-Apr-2025 08:29	24-Apr-2025 08:56	24-Apr-2025 12:40
					ES2512473-011	ES2512473-012	ES2512473-013	ES2512473-014	ES2512473-015
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.81	7.93	7.72	7.74	7.23
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		1710	1050	999	4600	26400
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		1120	728	658	2660	19700
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		612	479	460	892	633
Total Alkalinity as CaCO3	----	1	mg/L		612	479	460	892	633
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		172	76	84	266	1120
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		159	35	34	823	8070
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		48	37	78	138	1180
Magnesium	7439-95-4	1	mg/L		37	25	44	104	794
Sodium	7440-23-5	1	mg/L		341	208	114	770	3880
Potassium	7440-09-7	1	mg/L		<1	2	<1	7	11
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	0.01	<0.01
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L		0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L		0.069	0.055	0.073	0.102	0.128
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	0.0002
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	0.005	0.002	0.014	2.35

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SB10 CYFKMESA-11	SB11 CYFKMESA-12	SB15 CYFKMESA-13	VNW223/P-3 CYFKMESA-14	WR1 CYFKMESA-15
				Sampling date / time	22-Apr-2025 11:20	22-Apr-2025 13:04	23-Apr-2025 08:29	24-Apr-2025 08:56	24-Apr-2025 12:40
Compound	CAS Number	LOR	Unit		ES2512473-011	ES2512473-012	ES2512473-013	ES2512473-014	ES2512473-015
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**0.004**
Nickel	7440-02-0	0.001	mg/L		<0.001	**0.001**	<0.001	**0.004**	**0.094**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	**0.005**	**0.011**	**0.038**	**0.018**
Manganese	7439-96-5	0.001	mg/L		**0.136**	**0.047**	**0.006**	**0.026**	**0.248**
Molybdenum	7439-98-7	0.001	mg/L		**0.001**	<0.001	<0.001	<0.001	**0.002**
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**0.002**
Strontium	7440-24-6	0.001	mg/L		**1.13**	**0.840**	**1.52**	**2.31**	**30.1**
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L		**0.11**	**0.08**	**0.07**	**0.08**	**0.18**
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	**0.0037**
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.06**	**0.02**	**0.01**	**0.02**	**0.42**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	**0.01**	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.03**	**0.31**	**0.28**	**4.70**	**0.05**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.03**	**0.31**	**0.28**	**4.71**	**0.05**
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L		**0.13**	**0.16**	**0.06**	**0.15**	**0.22**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.14**	**0.16**	**0.07**	**0.16**	**0.21**
EN055: Ionic Balance									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SB10 CYFKMESA-11	SB11 CYFKMESA-12	SB15 CYFKMESA-13	VNW223/P-3 CYFKMESA-14	WR1 CYFKMESA-15
				Sampling date / time	22-Apr-2025 11:20	22-Apr-2025 13:04	23-Apr-2025 08:29	24-Apr-2025 08:56	24-Apr-2025 12:40
Compound	CAS Number	LOR	Unit		ES2512473-011	ES2512473-012	ES2512473-013	ES2512473-014	ES2512473-015
					Result	Result	Result	Result	Result
EN055: Ionic Balance - Continued									
ø Total Anions	----	0.01	meq/L		**20.3**	**12.1**	**11.9**	**46.6**	**264**
ø Total Cations	----	0.01	meq/L		**20.3**	**13.0**	**12.5**	**49.1**	**293**
ø Ionic Balance	----	0.01	%		**0.05**	**3.43**	**2.35**	**2.66**	**5.33**
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**8.5**	**9.1**	**9.0**	**9.0**	**8.5**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	WR2 CYFKMESA-16	GW971614 CYFKMESA-17	VKY-GW-Blank CYFKMESA-20	VKY GW Lab Split Dup 2 CYFKMESA-21	VKY GW Duplicate 2 CYFKMESA-19
				Sampling date / time	24-Apr-2025 12:15	24-Apr-2025 14:49	24-Apr-2025 08:00	24-Apr-2025 00:00	24-Apr-2025 14:49
					ES2512473-016	ES2512473-017	ES2512473-019	ES2512473-020	ES2512473-021
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.40	7.47	6.04	7.15	7.14
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		25100	622	<1	5110	5050
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		18700	430	<10	3360	3260
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		540	267	<1	97	170
Total Alkalinity as CaCO3	----	1	mg/L		540	267	<1	97	170
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		1250	31	<1	3	4
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		7660	35	<1	1310	1360
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		1160	58	<1	217	203
Magnesium	7439-95-4	1	mg/L		636	25	<1	51	52
Sodium	7440-23-5	1	mg/L		3860	56	<1	689	751
Potassium	7440-09-7	1	mg/L		21	4	<1	12	12
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	0.01
Antimony	7440-36-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	0.002	<0.001
Barium	7440-39-3	0.001	mg/L		0.208	0.021	<0.001	0.110	0.108
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		0.001	<0.001	<0.001	<0.001	<0.001

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	WR2 CYFKMESA-16	GW971614 CYFKMESA-17	VKY-GW-Blank CYFKMESA-20	VKY GW Lab Split Dup 2 CYFKMESA-21	VKY GW Duplicate 2 CYFKMESA-19
				Sampling date / time	24-Apr-2025 12:15	24-Apr-2025 14:49	24-Apr-2025 08:00	24-Apr-2025 00:00	24-Apr-2025 14:49
					ES2512473-016	ES2512473-017	ES2512473-019	ES2512473-020	ES2512473-021
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS - Continued									
Copper	7440-50-8	0.001	mg/L		**0.002**	**0.013**	<0.001	**0.001**	**0.001**
Cobalt	7440-48-4	0.001	mg/L		**0.010**	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.220**	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		**0.015**	<0.005	<0.005	**0.007**	**0.012**
Manganese	7439-96-5	0.001	mg/L		**0.478**	**0.002**	<0.001	**1.01**	**0.974**
Molybdenum	7439-98-7	0.001	mg/L		**0.045**	<0.001	<0.001	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	7440-24-6	0.001	mg/L		**27.7**	**0.607**	<0.001	**3.11**	**3.17**
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L		**0.13**	<0.05	<0.05	**0.13**	**0.14**
Iron	7439-89-6	0.05	mg/L		**0.88**	<0.05	<0.05	**2.25**	**1.37**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**1.41**	**0.01**	<0.01	**1.88**	**2.10**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		**0.03**	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.20**	**0.32**	**0.07**	**0.03**	**0.03**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.23**	**0.32**	**0.07**	**0.03**	**0.03**
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L		**0.13**	**0.05**	<0.01	**0.01**	<0.01
EK067G: Total Phosphorus as P by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	WR2 CYFKMESA-16	GW971614 CYFKMESA-17	VKY-GW-Blank CYFKMESA-20	VKY GW Lab Split Dup 2 CYFKMESA-21	VKY GW Duplicate 2 CYFKMESA-19
				Sampling date / time	24-Apr-2025 12:15	24-Apr-2025 14:49	24-Apr-2025 08:00	24-Apr-2025 00:00	24-Apr-2025 14:49
Compound	CAS Number	LOR	Unit		ES2512473-016	ES2512473-017	ES2512473-019	ES2512473-020	ES2512473-021
					Result	Result	Result	Result	Result
EK067G: Total Phosphorus as P by Discrete Analyser - Continued									
Total Phosphorus as P	----	0.01	mg/L		**0.14**	**0.05**	**0.02**	**0.08**	<0.01
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**253**	**6.97**	<0.01	**39.0**	**41.8**
ø Total Cations	----	0.01	meq/L		**279**	**7.49**	<0.01	**45.3**	**47.4**
ø Ionic Balance	----	0.01	%		**4.85**	**3.61**	**----**	**7.53**	**6.21**
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**7.9**	**9.4**	**10.0**	**8.7**	**7.1**

GROUND WATER MONITORING

Client: **Whitehaven Coal - Vickery Project**

Sampled By: GS

Project: **Quarterly Groundwater Sampling** (Jan, Apr, Jul, Oct)

Signed:

Site	Date	Time	Logger Downloaded	Logger Batteries Replaced	Bore Total Depth (m)	Standpipe TOC to Ground (m) height	Depth to Water (m)	Typical Depth (m)	Sampling Method	Field pH	Field EC	Temp. (°C)	Redox (mV)	Odour	Water Turbidity	Water Colour	Monitoring bore in good condition (note any damage under comments)	Photo taken	Bottles: 500ml GP	Bottles: RP (filt.)	Bottles: PP	Bottles: PG	Comments
GW-4									GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW-10									GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW-15									GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
GW971614									GS LF HF HS						C S T	C O Bk Bn Gn Gy	Y / N	Y / N	1	1	1	1	
3=GW971400	2/5	0848	—	—	—	—	10.39	12mc	GS LF HF HS (BORG)	6.45	2159 uS	18.2	59	NIL	CST	C O Bk Bn Gn Gy	Y/N	Y/N	1	1	1	1	
QA Samples																							
VKY GW Duplicate 1			Duplicate 1 Taken From:.....						GS LF HF HS						C S T	C O Bk Bn Gn Gy			1	1	1	1	
VKY GW Duplicate 2			Duplicate 2 Taken From:.....						GS LF HF HS						C S T	C O Bk Bn Gn Gy			1	1	1	1	
VKY GW Blank															C S T	C O Bk Bn Gn Gy			1	1	1	1	
Split Duplicate samples to be split into two bottle sets. Please label one set as 'Split Dup (1/2) ALS' and one as 'Split Dup (1/2) Eurofins"																							
VKY GW Lab Split Dup 1			Site Split Duplicate 1 Taken From:.....						GS LF HF HS						C S T	C O Bk Bn Gn Gy			2	2	2	2	
VKY GW Lab Split Dup 2			Site Split Duplicate 2 Taken From:.....						GS LF HF HS						C S T	C O Bk Bn Gn Gy			2	2	2	2	
																	Total Bottles:		**56**	**56**	**56**	**56**	

ML = Mini Logger
QL = Quattro Logger
VL = V-Logger
WS = Win Situ (Rugged Troll)
RST = RST Logger

GS=Grab Sample with Bailer,
LF=Low Flow Sampling,
HF=High Volume Pumping,
HS = Hydrasleeve (CIRCLE)

CBased Sampling Method: M105 - Groundwater Sampling
Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)
Colour: C=Colourless, O=Orange, Bk = Black, Bn=Brown, Gn=Green, Gy = Grey (CIRCLE)
Flow Rate: Still → Trickle → Slow → Steady → Fast
Bottles: GP = Green Plastic, RP = Red Plastic, (filt. = filtered), PP = Purple Plastic, BP = Blue Plastic, YP = Yellow Plastic, OG = Orange Glass, PG = Purple Glass, BG = Brown Glass, MP = Maroon Plastic, PV = Purple Vial, ST = Sterile

pH 7 buffer check required every 10 samples - if the Difference is over 0.2, recalibrate using Form F305 (2 point calibration)

Date	Time	pH reading	Recalibration required? (Yes/No)	Date	Time	pH reading	Recalibration required? (Yes/No)
			Yes/No				Yes/No
			Yes/No				Yes/No

Transport conditions ☐ Esky with Ice
☐ Other (Provide details)

CHAIN OF CUSTODY	HANDED OVER BY	HANDOVER DATE/TIME	REQUIRED TURNAROUND	RETURN EQUIPMENT	EDD FORMAT	PAGE 1 OF
HG2UD6RU	Cbased Environmental	2025-05-05 14:33	5 Working Days	N	IN X	4

LAB USE ONLY	RECEIVED (DATE/TIME): 12/5/25 4pm	APPROPRIATELY SEALED?: YES NO	TEMPERATURE: 4·1 ice	JOB #:	SIGNED:

ALS PO

LABORATORY	ALS Newcastle | 5/585 Maitland Road Mayfield West 2304 NSW
SAMPLERS	CBased Environmental
QUOTE #	SYBQ-403-21 v4
PO #	

SITE	Vickery
PROJECT	Vickery Quarterly Groundwaters
PROJECT MANAGER	
COMPANY	CBased Environmental Pty Ltd | PO Box 245 Cessnock NSW 2325
CONTACT PERSON	Marnie Blake
CONTACT NUMBER	
CONTACT FAX	
CONTACT EMAILS	monitoringresults@cbased.com.au
INVOICING EMAILS	accounts@cbased.com.au
RESULT EMAILS	monitoringresults@cbased.com.au, inxpreservemail@whitehavencoal.com.au, vickeryenvironment@whitehavencoal.com.au

ANALYSIS REQUIRED	GENERAL INSTRUCTIONS
A. Ammonia as N B. Bicarbonate Alkalinity as CaCO3 C. Calcium (dissolved) D. Carbonate Alkalinity as CaCO3 E. DO F. EC G. Hydroxide Alkalinity as CaCO3 H. Ionic balance I. Nitrate as N J. Nitrite + Nitrate as N K. Nitrite as N L. Oil and Grease M. pH N. Sodium (Dissolved) O. TDS	

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	SAMPLE INSTRUCTIONS
1	GW971400	2025-05-02 08:48	KQZPJYVZ-1	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

pH/ec/alk @ EN rec: e.c 13/5 19:30

Rel: CM 1700 13.05

LAB OF ORIGIN:
NEWCASTLE

E-MAILED

Environmental Division
Sydney
Work Order Reference
ES2513704

Telephone : +61-2-8784 8555

CHAIN OF CUSTODY	HANDED OVER BY	HANDOVER DATE/TIME	REQUIRED TURNAROUND	RETURN EQUIPMENT	EDD FORMAT	PAGE 2 OF
HG2UD6RU	Cbased Environmental	2025-05-05 14:33	5 Working Days	N o	IN X	4

ANALYSIS REQUIRED	GENERAL INSTRUCTIONS
P. Total Alkalinity as CaCO3 Q. Total anions R. Total Cations S. Total Phosphorus as P T. Alkalinity (total) U. Aluminium (dissolved) V. Antimony (dissolved) W. Arsenic (dissolved) X. Barium (dissolved) Y. Boron (dissolved) Z. Cadmium (dissolved) AA. Calcium (dissolved) AB. Chloride AC. Chromium (dissolved) AD. Cobalt (dissolved)	

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	SAMPLE INSTRUCTIONS
1	GW971400	2025-05-02 08:48	KQZPJYVZ-1	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

LAB OF ORIGIN:
NEWCASTLE

E-MAILED

CHAIN OF CUSTODY	HG2UD6R	HANDED OVER BY	Cbased Environment	HANDOVER DATE/TIME	2025-05-05 14:	REQUIRED TURNAROUND	5 Working Da	RETURN EQUIPMENT	N	EDD FORMAT	IN	PAGE 3 OF
U		al		33		ys		o		X		4

ANALYSIS REQUIRED	GENERAL INSTRUCTIONS
AE. Copper (dissolved) AF. Iron (dissolved) AG. Lead (dissolved) AH. Magnesium (dissolved) AI. Manganese (dissolved) AJ. Mercury (dissolved) AK. Molybdenum (dissolved) AL. Nickel (dissolved) AM. Phosphorus (dissolved) AN. Potassium (dissolved) AO. Selenium (dissolved) AP. Silver (dissolved) AQ. Strontium (dissolved) AR. Sulfate as SO_4 - Turbidimetric (dissolved) AS. Tin (dissolved)	

#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	SAMPLE INSTRUCTIONS
1	GW971400	2025-05-02 08:48	KQZPJYVZ-1	4	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

LAB OF ORIGIN:
NEWCASTLE

E-MAILED

CHAIN OF CUSTODY	HG2UD6R	HANDED OVER BY	Cbased Environment	HANDOVER DATE/TIME	2025-05-05 14:	REQUIRED TURNAROUND	5 Working Da	RETURN EQUIPMENT	N	EDD FORMAT	IN	PAGE 4 OF
U		al		33		ys		o		X		4

						ANALYSIS REQUIRED														GENERAL INSTRUCTIONS
						AT. Zinc (dissolved)														
#	SAMPLE NAME	DATE/TIME	SAMPLE ID	CONTAINERS	MATRIX	AT														SAMPLE INSTRUCTIONS
1	GW971400	2025-05-02 08:48	KQZPJYVZ-1	4	Water	X														

LAB OF ORIGIN:
NEWCASTLE

E-MAILED

CERTIFICATE OF ANALYSIS

Work Order	: **ES2513704**	Page	: 1 of 5
Client	: **CBASED ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: All Deliverables	Contact	: Jessica Chen
Address	: Unit 3 2 Enterprise Cres Singleton NSW 2330	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 6571 3334	Telephone	: +61-2-8784 8555
Project	: Vickery Quarterly Groundwaters	Date Samples Received	: 12-May-2025 16:00
Order number	: ----	Date Analysis Commenced	: 13-May-2025
C-O-C number	: ----	Issue Date	: 16-May-2025 17:24
Sampler	: CBased Environmental		
Site	: Vickery		
Quote number	: SYBQ/403/21v4 and PLANNED EVENTS		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Christopher Cameron	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H+ to the Cations and Nitrate, SiO2 and Fluoride to the Anions.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GW971400 KQZPJYVZ-1	----	----	----	----
				Sampling date / time	02-May-2025 08:48	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2513704-001	--------	--------	--------	--------
					Result	----	----	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**7.35**	----	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**2050**	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**1440**	----	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**427**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**427**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**355**	----	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**312**	----	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**152**	----	----	----	----
Magnesium	7439-95-4	1	mg/L		**65**	----	----	----	----
Sodium	7440-23-5	1	mg/L		**267**	----	----	----	----
Potassium	7440-09-7	1	mg/L		**2**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		<0.01	----	----	----	----
Antimony	7440-36-0	0.001	mg/L		<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Barium	7440-39-3	0.001	mg/L		**0.041**	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.005**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GW971400 KQZPJYVZ-1	----	----	----	----
				Sampling date / time	02-May-2025 08:48	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2513704-001	--------	--------	--------	--------
					Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.017**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.005**	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.010**	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L		<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Silver	7440-22-4	0.001	mg/L		<0.001	----	----	----	----
Strontium	7440-24-6	0.001	mg/L		**1.40**	----	----	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	----	----	----	----
Boron	7440-42-8	0.05	mg/L		**0.06**	----	----	----	----
Iron	7439-89-6	0.05	mg/L		**0.06**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.01	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**2.06**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**2.06**	----	----	----	----
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L		**0.03**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.18**	----	----	----	----
EN055: Ionic Balance									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GW971400 KQZPJYVZ-1	----	----	----	----
				Sampling date / time	02-May-2025 08:48	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2513704-001	--------	--------	--------	--------
					Result	----	----	----	----
EN055: Ionic Balance - Continued									
ø Total Anions	----	0.01	meq/L		**24.7**	----	----	----	----
ø Total Cations	----	0.01	meq/L		**24.6**	----	----	----	----
ø Ionic Balance	----	0.01	%		**0.25**	----	----	----	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	----	----	----	----
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen	----	0.1	mg/L		**9.7**	----	----	----	----

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry / Biology).

(WATER) ED037P: Alkalinity by PC Titrator

(WATER) EA005P: pH by PC Titrator

(WATER) EA010P: Conductivity by PC Titrator

CHAIN OF CUSTODY DOCUMENTATION

Australian Laboratory Services Pty Ltd

CLIENT: CBased Environmental Pty Ltd | LABORATORY BATCH NO.:

POSTAL ADDRESS: PO Box 245 CESSNOCK NSW 2325 | SAMPLERS:

monitoringresults@cbased.com.au,inxpreservemail@whitehavenco al.com.au, AQuiroz@whitehavencoal.com.au, HMills@whitehavencoal.com.au | SEND INVOICE TO: accounts@cbased.com.au | PHONE: 0265713334 | E-MAIL: monitoringresults@cbased.com.au

DATA NEEDED BY: 5 working days | REPORT NEEDED BY: 5 working days | REPORT FORMAT: HARD: Yes | FAX: | DISK: | BULLETIN BOARD: | E-MAIL: Yes

PROJECT ID: Vickery Qly GW | QUOTE NO.: SYBQ-403-21v4 | QC LEVEL: QCS1: | QCS2: | QCS3: Yes | QCS4:

P.O. NO.: | COMMENTS/SPECIAL HANDLING/STORAGE OR DIPOSAL:

FOR LAB USE ONLY
COOLER SEAL
Yes ..... No .....
Broken ..... 0-5 Intact .....
COOLER TEMP: deg.C

Metals are field filtered unless indicated
All metals are dissolved - extra metals EG020F

INVIRON EDD required
Please enter site to enable INX upload

SAMPLE DATA				CONTAINER DATA		ANALYSIS REQUIRED																								
SAMPLE ID	INX Number	DATE	TIME	TYPE & PRESERVATIVE	NO.	pH	EC	TDS	NT-1	NT-2	NT-4	Ammonia	Total P	Oil & Grease	W-30	B, Co, Mn (diss)	Mo, Ag, Ba (diss)	Sb, Sn, Sr (diss)												NOTES
GW2	VPCGBNM5-3	16/04/2025	13:58	1x 500mL GP, 1x PP, 1x PG, 1x RP(filt)	4	X	X	X	X	X	X	X	X	X	X	X	X	X												
GW4	VPCGBNM5-27	16/04/2025	13:25	1x 500mL GP, 1x PP, 1x PG, 1x RP(filt)	4	X	X	X	X	X	X	X	X	X	X	X	X	X												
GW14	VPCGBNM5-2	16/04/2025	14:38	1x 500mL GP, 1x PP, 1x PG, 1x RP(filt)	4	X	X	X	X	X	X	X	X	X	X	X	X	X												
				TOTAL BOTTLES:																										

RELINQUISHED BY:

NAME : Nathan Law | DATE: 23/4/25
OF: CBased Environmental | TIME: 12:00
NAME : | DATE: 24/4/25
OF: | TIME:

RECEIVED BY

NAME : | DATE: 24/4/25
OF: AGS | TIME: 4:30
NAME : Varun | DATE: 24/4/25
OF: AGS | TIME: 1930

METHOD OF SHIPMENT
CONSIGNMENT NOTE NO.
TRANSPORT CO. NAME. AGS plu.

*Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinced Jar; S = Solvent Washed Acid Rinced Glass Bottle;
VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle;
O = Other.

pH/ec/alk

Environmental Division Sydney
Work Order Reference
ES2511850

Telephone : +61-2-8784 8555

CERTIFICATE OF ANALYSIS

Work Order	: **ES2511850**	Page	: 1 of 5
Client	: **CBASED ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: All Deliverables	Contact	: Jessica Chen
Address	: Unit 3 2 Enterprise Cres Singleton NSW 2330	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 6571 3334	Telephone	: +61-2-8784 8555
Project	: Vickery Qly GW	Date Samples Received	: 24-Apr-2025 16:43
Order number	: ----	Date Analysis Commenced	: 24-Apr-2025
C-O-C number	: ----	Issue Date	: 12-May-2025 11:56
Sampler	: ----		
Site	:		
Quote number	: SYBQ/403/21v4 and PLANNED EVENTS		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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- Analytical Results

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Signatories

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Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

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- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	GW2 VPCGBNM5-3	GW4 VPCGBNM5-27	GW14 VPCGBNM5-2	----	----
			Sampling date / time	16-Apr-2025 13:58	16-Apr-2025 13:25	16-Apr-2025 14:38	----	----
Compound	CAS Number	LOR	Unit	ES2511850-001	ES2511850-002	ES2511850-003	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.92**	**8.56**	**7.86**	**----**	**----**
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**1130**	**3200**	**4370**	**----**	**----**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**766**	**2030**	**2880**	**----**	**----**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	**----**	**----**
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	**82**	<1	**----**	**----**
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**489**	**1150**	**530**	**----**	**----**
Total Alkalinity as CaCO3	----	1	mg/L	**489**	**1240**	**530**	**----**	**----**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**22**	<1	**483**	**----**	**----**
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**92**	**358**	**860**	**----**	**----**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**89**	**5**	**190**	**----**	**----**
Magnesium	7439-95-4	1	mg/L	**31**	**4**	**88**	**----**	**----**
Sodium	7440-23-5	1	mg/L	**154**	**787**	**548**	**----**	**----**
Potassium	7440-09-7	1	mg/L	**2**	**4**	**2**	**----**	**----**
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	<0.01	**----**	**----**
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	<0.001	**----**	**----**
Arsenic	7440-38-2	0.001	mg/L	**0.002**	**0.004**	<0.001	**----**	**----**
Barium	7440-39-3	0.001	mg/L	**0.228**	**0.352**	**0.049**	**----**	**----**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	**----**	**----**
Chromium	7440-47-3	0.001	mg/L	**0.004**	<0.001	<0.001	**----**	**----**
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GW2 VPCGBNM5-3	GW4 VPCGBNM5-27	GW14 VPCGBNM5-2	----	----
				Sampling date / time	16-Apr-2025 13:58	16-Apr-2025 13:25	16-Apr-2025 14:38	----	----
Compound	CAS Number	LOR	Unit		ES2511850-001	ES2511850-002	ES2511850-003	--------	--------
					Result	Result	Result	----	----
EG020F: Dissolved Metals by ICP-MS - Continued									
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	----	----
Zinc	7440-66-6	0.005	mg/L		**0.008**	**0.012**	**0.077**	----	----
Manganese	7439-96-5	0.001	mg/L		**0.006**	**0.007**	**0.004**	----	----
Molybdenum	7439-98-7	0.001	mg/L		**0.001**	<0.001	<0.001	----	----
Silver	7440-22-4	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Strontium	7440-24-6	0.001	mg/L		**0.930**	**0.179**	**2.67**	----	----
Tin	7440-31-5	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Boron	7440-42-8	0.05	mg/L		**0.05**	**0.14**	**0.05**	----	----
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	<0.05	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.04**	**0.39**	**0.02**	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	**0.02**	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.47**	**0.03**	**0.94**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.47**	**0.03**	**0.96**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.03**	**0.09**	**0.05**	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**12.8**	**34.9**	**44.9**	----	----
ø Total Cations	----	0.01	meq/L		**13.7**	**34.9**	**40.6**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GW2 VPCGBNM5-3	GW4 VPCGBNM5-27	GW14 VPCGBNM5-2	----	----
				Sampling date / time	16-Apr-2025 13:58	16-Apr-2025 13:25	16-Apr-2025 14:38	----	----
Compound	CAS Number	LOR	Unit		ES2511850-001	ES2511850-002	ES2511850-003	--------	--------
					Result	Result	Result	----	----
EN055: Ionic Balance - Continued									
ø Ionic Balance	----	0.01	%		**3.46**	**0.06**	**5.02**	**----**	**----**
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	**11**	<5	**----**	**----**

CHAIN OF CUSTODY DOCUMENTATION

EUROFINS

CLIENT: CBased Environmental Pty Ltd

POSTAL ADDRESS: PO Box 245 CESSNOCK NSW 2325

monitoringresults@cbased.com.au,
AQuiroz@whitehavencoal.com.au, SEND INVOICE TO: accounts@cbased.com.au

DATA NEEDED BY: 5 working days REPORT NEEDED BY: 5 working days

PROJECT ID: Vickery Qtrly GW QUOTE NO.: **CBased-20230316-13**

P.O. NO.: COMMENTS/SPECIAL HANDLING/STORAGE OR DIPOSAL:

FOR LAB USE ONLY
COOLER SEAL
Yes ..... No .....
Broken ..... Intact .....

COOLER TEMP: deg.C

Metals are field filtered unless indicated

LABORATORY BATCH NO.:

SAMPLERS:

PHONE: 0265713334 E-MAIL: monitoringresults@cbased.com.au

REPORT FORMAT: HARD: Yes FAX: DISK: BULLETIN BOARD: E-MAIL: Yes

QC LEVEL: QCS1: QCS2: QCS3: Yes QCS4:

ANALYSIS REQUIRED

SAMPLE DATA				CONTAINER DATA		pH	EC	TDS	B11C	B11E	B19B	Ammonia	Total P	Oil & Grease	M12	B, Co, Mn (diss)	Ba, Sb, Sr (diss)	Al, Fe (diss)							NOTES
SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	NO.																				
~~VKY Lab Split Dup 1 Eurofins~~	~~Water~~			~~1x 500mL GP, 1x PP, 1x PG, 1x RP(filt)~~	~~4~~	X	X	X	X	X	X	X	X	X	X	X	X	X							
VKY Lab Split Dup 2 Eurofins	Water	21.9.25		1x 500mL GP, 1x PP, 1x PG, 1x RP(filt)	4	X	X	X	X	X	X	X	X	X	X	X	X	X							
				TOTAL BOTTLES:																					

RELINQUISHED BY:

NAME : M. Blank DATE: 2.5.25
OF: CBased Environmental TIME: 13.57.
NAME : DATE:
OF: TIME:

RECEIVED BY

NAME : DATE: 2/5/25
OF: TIME: 3.35.
NAME : DATE:
OF: TIME:

13.5

METHOD OF SHIPMENT
CONSIGNMENT NOTE NO.
TRANSPORT CO. NAME.

*Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinced Jar; S = Solvent Washed Acid Rinced Glass Bottle;
VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle;
O = Other.

1215424

Cbased Environmental Pty Ltd
Unit 3, 2 Enterprise Crescent
Singleton
NSW 2330

Attention: **Marni Blake**

Report **1215424-W**
Project name VICKERY QTRLY GW
Received Date May 02, 2025

Client Sample ID			**VKY Lab Split Dup 2 Eurofins**
Sample Matrix			**Water**
Eurofins Sample No.			**N25-My0008370**
Date Sampled			**Apr 24, 2025**
Test/Reference	LOR	Unit	
Ammonia (as N)	0.01	mg/L	2.0
Chloride	1	mg/L	1800
Conductivity (at 25 °C)	10	uS/cm	5000
Oil & Grease (HEM)	10	mg/L	11
pH (at 25 °C)	0.1	pH Units	7.1
Phosphate total (as P)	0.01	mg/L	0.03
Sulphate (as SO4)	2	mg/L	6.5
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	3300
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	140
Carbonate Alkalinity (as CaCO3)	20	mg/L	< 20
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20
Total Alkalinity (as CaCO3)	20	mg/L	140
Eurofins Suite B19B: NO3/NO2/NOx			
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05
Nitrate (as N)	0.02	mg/L	0.02
Nitrite (as N)	0.02	mg/L	< 0.02
Heavy Metals			
Aluminium (filtered)	0.05	mg/L	< 0.05
Antimony (filtered)	0.005	mg/L	< 0.005
Arsenic (filtered)	0.001	mg/L	< 0.001
Barium (filtered)	0.02	mg/L	0.11
Boron (filtered)	0.05	mg/L	0.16
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	0.001
Iron (filtered)	0.05	mg/L	2.3
Lead (filtered)	0.001	mg/L	< 0.001
Manganese (filtered)	0.005	mg/L	0.94
Mercury (filtered)	0.0001	mg/L	< 0.0001
Molybdenum (filtered)	0.005	mg/L	< 0.005
Nickel (filtered)	0.001	mg/L	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001
Silver (filtered)	0.005	mg/L	< 0.005

Client Sample ID			VKY Lab Split Dup 2 Eurofins
Sample Matrix			**Water**
Eurofins Sample No.			**N25-My0008370**
Date Sampled			**Apr 24, 2025**
Test/Reference	LOR	Unit	
Heavy Metals			
Strontium (filtered)	0.001	mg/L	3.1
Tin (filtered)	0.005	mg/L	< 0.005
Zinc (filtered)	0.005	mg/L	0.007
Eurofins Suite B11C: Na/K/Ca/Mg			
Calcium	0.5	mg/L	190
Magnesium	0.5	mg/L	50
Potassium	0.5	mg/L	12
Sodium	0.5	mg/L	700

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Ammonia (as N)	Melbourne	May 07, 2025	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Conductivity (at 25 °C)	Newcastle	May 05, 2025	28 Days
- Method: LTM-INO-4030 Conductivity			
Oil & Grease (HEM)	Melbourne	May 08, 2025	28 Days
- Method: LTM-INO-4180 Oil and Grease			
pH (at 25 °C)	Newcastle	May 05, 2025	6 Hours
- Method: LTM-GEN-7090 pH by ISE			
Phosphate total (as P)	Sydney	May 06, 2025	28 Days
- Method: E052 Total Phosphate (as P)			
Eurofins Suite B19B: NO3/NO2/NOx	Melbourne	May 07, 2025	14 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Heavy Metals (filtered)	Sydney	May 06, 2025	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals IWRG 621 : Metals M12 filtered	Sydney	May 06, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Sydney	May 06, 2025	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Sydney	May 06, 2025	28 Days
- Method: LTM-INO-4270 Anions by Ion Chromatography			
Sulphate (as SO4)	Sydney	May 05, 2025	28 Days
- Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph			
Alkalinity (speciated)	Sydney	May 06, 2025	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180 °C ± 2 °C	Newcastle	May 05, 2025	28 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofinsanz.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	+61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise	43 Detroit Drive	1277 Cameron Road
Penrose	Mount Wellington	Rolleston	Gate Pa
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Cbased Environmental Pty Ltd
Address: Unit 3, 2 Enterprise Crescent
Singleton
NSW 2330

Project Name: VICKERY QTRLY GW

Order No.:
Report #: 1215424
Phone: 02 6571 3334
Fax:

Received: May 2, 2025 3:35 PM
Due: May 9, 2025
Priority: 5 Day
Contact Name: Marni Blake

Eurofins Analytical Services Manager : Irem Haskara

Sample Detail						Aluminium (filtered)	Ammonia (as N)	Antimony (filtered)	Barium (filtered)	Boron (filtered)	Cobalt (filtered)	Conductivity (at 25 °C)	Iron (filtered)	Manganese (filtered)	Oil & Grease (HEM)	pH (at 25 °C)	Phosphate total (as P)	Strontium (filtered)	Metals IWRG 621 : Metals M12 filtered	Eurofins Suite B19B: NO3/NO2/NOx	Eurofins Suite B11E: Cl/SO4/Alkalinity	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180 °C ± 2 °C
Melbourne Laboratory - NATA # 1261 Site # 1254							X								X					X			
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X	X	X		X	X			X	X	X		X	X	
Mayfield West Laboratory - NATA # 1261 Site # 25079												X				X							X
External Laboratory																							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																		
1	VKY Lab Split Dup 2 Eurofins	Apr 24, 2025		Water	N25-My0008370	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Oil & Grease (HEM)	mg/L	< 10			10	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Eurofins Suite B19B: NO3/NO2/NOx							
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Method Blank							
Heavy Metals							
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Antimony (filtered)	mg/L	< 0.005			0.005	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Molybdenum (filtered)	mg/L	< 0.005			0.005	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Silver (filtered)	mg/L	< 0.005			0.005	Pass	
Strontium (filtered)	mg/L	< 0.001			0.001	Pass	
Tin (filtered)	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Eurofins Suite B11C: Na/K/Ca/Mg							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Ammonia (as N)	%	92			70-130	Pass	
Chloride	%	114			70-130	Pass	
Conductivity (at 25 °C)	%	101			70-130	Pass	
Oil & Grease (HEM)	%	118			70-130	Pass	
Phosphate total (as P)	%	101			70-130	Pass	
Sulphate (as SO4)	%	114			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Alkalinity (speciated)							
Total Alkalinity (as CaCO3)	%	118			70-130	Pass	
LCS - % Recovery							
Eurofins Suite B19B: NO3/NO2/NOx							
Nitrate & Nitrite (as N)	%	109			70-130	Pass	
Nitrite (as N)	%	93			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium (filtered)	%	94			80-120	Pass	
Antimony (filtered)	%	100			80-120	Pass	
Arsenic (filtered)	%	96			80-120	Pass	
Barium (filtered)	%	99			80-120	Pass	
Boron (filtered)	%	96			80-120	Pass	
Cadmium (filtered)	%	102			80-120	Pass	
Chromium (filtered)	%	99			80-120	Pass	
Cobalt (filtered)	%	97			80-120	Pass	
Copper (filtered)	%	96			80-120	Pass	
Iron (filtered)	%	96			80-120	Pass	
Lead (filtered)	%	100			80-120	Pass	
Manganese (filtered)	%	99			80-120	Pass	
Mercury (filtered)	%	106			80-120	Pass	
Molybdenum (filtered)	%	104			80-120	Pass	
Nickel (filtered)	%	97			80-120	Pass	
Selenium (filtered)	%	93			80-120	Pass	
Silver (filtered)	%	90			80-120	Pass	
Strontium (filtered)	%	97			80-120	Pass	
Tin (filtered)	%	100			80-120	Pass	
Zinc (filtered)	%	94			80-120	Pass	
LCS - % Recovery							
Eurofins Suite B11C: Na/K/Ca/Mg							
Calcium	%	95			80-120	Pass	
Magnesium	%	97			80-120	Pass	
Potassium	%	96			80-120	Pass	
Sodium	%	98			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S25-My0011543	NCP	%	79			70-130	Pass	
Chloride	N25-My0000195	NCP	%	99			70-130	Pass	
Phosphate total (as P)	N25-My0008370	CP	%	88			70-130	Pass	
Sulphate (as SO4)	N25-My0000195	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Eurofins Suite B19B: NO3/NO2/NOx				Result 1					
Nitrate & Nitrite (as N)	S25-My0011543	NCP	%	77			70-130	Pass	
Nitrite (as N)	S25-My0011543	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium (filtered)	N25-My0008370	CP	%	87			75-125	Pass	
Antimony (filtered)	N25-My0008370	CP	%	97			75-125	Pass	
Arsenic (filtered)	N25-My0008370	CP	%	88			75-125	Pass	
Barium (filtered)	N25-My0008370	CP	%	86			75-125	Pass	
Cadmium (filtered)	N25-My0008370	CP	%	92			75-125	Pass	
Chromium (filtered)	N25-My0008370	CP	%	86			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cobalt (filtered)	N25-My0008370	CP	%	83			75-125	Pass	
Copper (filtered)	N25-My0008370	CP	%	82			75-125	Pass	
Iron (filtered)	N25-My0008370	CP	%	86			75-125	Pass	
Lead (filtered)	N25-My0008370	CP	%	84			75-125	Pass	
Mercury (filtered)	N25-My0008370	CP	%	88			75-125	Pass	
Molybdenum (filtered)	N25-My0008370	CP	%	106			75-125	Pass	
Nickel (filtered)	N25-My0008370	CP	%	82			75-125	Pass	
Selenium (filtered)	N25-My0008370	CP	%	87			75-125	Pass	
Silver (filtered)	N25-My0008370	CP	%	87			75-125	Pass	
Tin (filtered)	N25-My0008370	CP	%	96			75-125	Pass	
Zinc (filtered)	N25-My0008370	CP	%	82			75-125	Pass	
Spike - % Recovery									
Eurofins Suite B11C: Na/K/Ca/Mg				Result 1					
Calcium	S25-My0010068	NCP	%	89			75-125	Pass	
Magnesium	S25-My0010068	NCP	%	90			75-125	Pass	
Potassium	S25-My0010068	NCP	%	90			75-125	Pass	
Sodium	S25-My0010068	NCP	%	89			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S25-My0011547	NCP	mg/L	240	240	2.0	30%	Pass	
Chloride	S25-My0004701	NCP	mg/L	57	58	1.0	30%	Pass	
Phosphate total (as P)	N25-My0008370	CP	mg/L	0.03	0.03	20	30%	Pass	
Sulphate (as SO4)	S25-My0004701	NCP	mg/L	84	86	1.0	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	N25-My0008370	CP	mg/L	140	140	1.0	30%	Pass	
Carbonate Alkalinity (as CaCO3)	N25-My0008370	CP	mg/L	< 20	< 20	<1	30%	Pass	
Hydroxide Alkalinity (as CaCO3)	N25-My0008370	CP	mg/L	< 20	< 20	<1	30%	Pass	
Total Alkalinity (as CaCO3)	N25-My0008370	CP	mg/L	140	140	1.0	30%	Pass	
Duplicate									
Eurofins Suite B19B: NO3/NO2/NOx				Result 1	Result 2	RPD			
Nitrate & Nitrite (as N)	S25-My0011547	NCP	mg/L	0.06	0.06	12	30%	Pass	
Nitrite (as N)	S25-My0011547	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium (filtered)	N25-My0000103	NCP	mg/L	1.6	1.7	3.0	30%	Pass	
Antimony (filtered)	N25-My0000103	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Arsenic (filtered)	N25-My0000103	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium (filtered)	N25-My0000103	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Boron (filtered)	N25-My0000103	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium (filtered)	N25-My0000103	NCP	mg/L	0.0004	0.0003	28	30%	Pass	
Chromium (filtered)	N25-My0000103	NCP	mg/L	0.005	0.005	13	30%	Pass	
Cobalt (filtered)	N25-My0000103	NCP	mg/L	0.001	0.001	9.0	30%	Pass	
Copper (filtered)	N25-My0000103	NCP	mg/L	0.007	0.007	2.0	30%	Pass	
Iron (filtered)	N25-My0000103	NCP	mg/L	0.23	0.26	12	30%	Pass	
Lead (filtered)	N25-My0000103	NCP	mg/L	0.011	0.011	3.0	30%	Pass	
Manganese (filtered)	N25-My0000103	NCP	mg/L	0.038	0.039	2.0	30%	Pass	
Mercury (filtered)	N25-My0000103	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Molybdenum (filtered)	N25-My0000103	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Nickel (filtered)	N25-My0000103	NCP	mg/L	0.010	0.010	4.0	30%	Pass	
Selenium (filtered)	N25-My0000103	NCP	mg/L	0.002	0.002	10	30%	Pass	
Silver (filtered)	N25-My0000103	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Strontium (filtered)	N25-My0000103	NCP	mg/L	0.028	0.028	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Tin (filtered)	N25-My0000103	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc (filtered)	N25-My0000103	NCP	mg/L	0.19	0.20	3.0	30%	Pass	
Duplicate									
Eurofins Suite B11C: Na/K/Ca/Mg				Result 1	Result 2	RPD			
Calcium	N25-My0008370	CP	mg/L	190	190	1.0	30%	Pass	
Magnesium	N25-My0008370	CP	mg/L	50	48	3.0	30%	Pass	
Potassium	N25-My0008370	CP	mg/L	12	12	2.0	30%	Pass	
Sodium	N25-My0008370	CP	mg/L	700	680	3.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

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Kirra Bailey	Senior Analyst-Inorganic
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Ryan Phillips	Senior Analyst-Inorganic

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Appendix D Quality Trigger Level Anlaysis

Vickery Extension Project Groundwater Monitoring Report

Quarterly Review February 2025 – April 2025

Whitehaven Coal Ltd

SLR Project No.: 640.031099.00001

25 June 2025

Table D-1: pH (Field) Trigger Level Review

Bore	Trigger Level		Oct/Nov-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25
GW01	6.90	8.30	7.33	7.20	7.14	7.2	7.16	7.10	7.33
GW02	7.20	8.60	7.59	7.79	7.14	7.23	7.42	6.63	7.74
GW03	6.10	8.10	7.19	7.16	7.05	7.36	7.22	7.08	7.17
GW-10	6.70	8.40	no data	no data	no data	no data	7.57	7.36	7.92
GW-11	7.00	9.30	7.36	6.93	6.55	6.09	7.17	7.03	7.15
GW-13	6.70	8.40	no data	no data	no data	no data	7.35	7.30	7.24
GW-14	6.90	8.30	no data	no data	no data	no data	6.95	6.53	6.94
GW-15	6.90	8.30	no data	no data	no data	no data	8.97	8.85	8.96
GW-2	6.90	8.30	no data	no data	6.85	no data	6.84	6.45	6.86
GW-4	6.70	8.40	no data	no data	no data	no data	7.92	7.84	8.11
GW-6	6.70	8.40	no data	no data	no data	no data	7.73	7.52	7.60
GW-7	7.70	8.50	8.89	8.82	8.79	8.67	8.3	7.76	8.91
GW-8	6.70	8.40	7.11	7.03	6.95	6.49	7.0	6.62	5.28
GW-9	6.60	8.20	7.94	6.68	6.81	6.76	6.68	5.40	7.52
GW971400	6.90	8.30	no data	no data	no data	no data	6.8	7.08*	6.25
GW971614	6.90	8.30	no data	no data	no data	no data	6.65	7.08	7.42
MD01	6.70	8.40	11.58	11.69	10.73	9.59	8.33	8.84	8.67
MD02	6.70	8.40	6.84	6.78	6.59	6.57	6.72	6.81	6.80
SB01	6.90	8.30	7.44	7.31	7.20	7.21	7.23	7.12	7.30
SB02	6.90	8.30	7.28	7.28	7.14	7.2	7.23	7.22	7.48
SB04	6.90	8.30	7.29	7.43	7.27	7.12	7.21	7.04	7.15
SB05	6.90	8.30	2.09	7.73	7.63	7.58	7.71	7.52	7.70
SB06	6.90	8.30	7.35	7.61	7.42	7.56	7.7	7.42	8.12
SB07	6.90	8.30	7.35	7.47	7.28	7.22	7.58	7.29	7.32
SB08	6.90	8.30	7.24	7.39	7.17	7.29	7.27	7.27	7.22
SB09	6.90	8.30	3.32	7.56	7.27	7.52	7.44	7.40	7.55
SB10	6.90	8.30	7.43	7.47	7.28	7.5	7.38	7.25	7.49
SB11	6.90	8.30	7.26	7.70	7.45	7.77	7.51	7.39	7.61
SB15	6.90	8.30	7.29	7.23	7.17	7.3	7.24	7.41	6.84
TR18	6.70	8.40	6.58	6.85	6.69	6.64	6.79	6.68	6.93
TR26	6.70	8.40	7.06	7.16	7.11	6.69	6.93	6.85	7.09
TR35	6.70	8.40	6.66	6.75	6.72	6.75	6.73	6.54	6.96
TR7	7.40	7.80	6.53	7.05	6.71	6.82	6.63	6.51	6.93

Bore	Trigger Level		Oct/Nov-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25
VKY034C	6.70	8.40	7.30	6.94	7.05	7.25	7.25	7.16	7.21
VKY035C	6.70	8.40	7.10	7.01	6.88	6.9	7.09	6.93	7.01
VKY036C	6.70	8.40	7.08	6.79	6.80	7.19	7.21	7.06	7.30
VKY042C	6.70	8.40	6.75	6.72	6.61	6.65	6.72	6.64	6.71
VKY043C	6.70	8.40	7.72	7.80	7.65	7.85	7.7	7.50	7.84
VNW223	6.90	7.40	7.25	no data	no data	no data	7.17	7.07	7.14
VNW390	6.70	8.40	6.92	7.13	6.59	6.84	6.81	6.96	6.84
VNW391	6.70	8.40	7.04	7.31	7.06	6.81	7.1	7.02	7.03
VNW392	6.70	8.40	6.74	6.74	6.66	6.51	6.74	6.47	6.67
VNW393	6.70	8.40	7.36	7.56	7.20	7.13	7.16	6.94	7.11
VNW394	6.90	8.30	7.13	6.92	6.94	6.62	7.07	6.87	6.84
VNW395	6.90	8.30	7.47	7.77	7.77	7.61	7.56	7.58	7.31
WR1	6.90	8.30	no data	no data	6.70	6.47	6.5	6.95	6.96
WR2	6.90	8.30	no data	no data	6.57	6.52	6.36	6.41	6.99

Note: Reported as field pH value. Values marked with an asterisk (*) are reported as Laboratory pH value. Red text shows exceedance of trigger level. Highlighted cell shows trigger level 1 as defined by TARP in the GWMP (**Appendix A**).

Table D-2: EC Trigger Level Review

Bore	Trigger Level	Oct/Nov-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25
GW01	10,083	1,042	1,265	1,384	1,052	738	1,244	244.0
GW02	969	731	971	926	1,065	1,016	992	872.0
GW03	811	862	888	862	947	1,004	983	872.0
GW-10	12,315	no data	no data	no data	no data	1,438	1,423	1808.0
GW-11	4,912	4,360	4,340	4,520	4,760	4,760	4,310	4750.0
GW-13	12,315	no data	no data	no data	no data	1,647	1,570	822.0
GW-14	10,083	no data	no data	no data	no data	3,840	4,260	3360.0
GW-15	10,083	no data	no data	no data	no data	638	644	680.0
GW-2	10,083	no data	no data	1,218	no data	1,226	1,339	1191.0
GW-4	12,315	no data	no data	no data	no data	2,980	2,970	2990.0
GW-6	12,315	no data	no data	no data	no data	1,459	1,256	1388.0
GW-7	5,378	4,300	4,490	4,560	4,710	4,470	4,690	4470.0
GW-8	12,315	4,290	3,950	4,000	4,100	3,930	4,350	4200.0
GW-9	12,740	6,110	3,320	5,630	1,591	1,099	1,544	487.0
GW971400	10,083	no data	no data	no data	no data	2,458	2,810*	2159
GW971614	10,083	no data	no data	no data	no data	651	608	681
MD01	12,315	1,799	1,786	1,283	1,505	1,787	1,519	1438.0
MD02	12,315	1,195	1,306	1,210	1,224	1,279	1,381	1232.0
SB01	10,083	1,541	1,716	1,698	1,756	1,869	1,851	1788.0
SB02	10,083	7,330	7,330	7,210	6,860	7,250	6,990	6870.0
SB04	10,083	2,680	3,360	1,868	2,390	2,289	3,420	2184.0
SB05	10,083	3,740	3,690	3,680	3,490	3,790	3,660	3300.0
SB06	10,083	3,280	3,460	3,410	3,440	2,790	3,160	2930.0
SB07	10,083	770	919	934	978	1,042	1,009	908.0
SB08	10,083	983	1,115	1,039	1,088	388	1,154	1035.0
SB09	10,083	949	1,014	973	1,013	1,130	1,045	1054.0
SB10	10,083	1,880	1,972	1,859	1,928	2,200	2,086	1839.0
SB11	10,083	1,080	1,021	1,048	461	1,266	1,209	1144.0
SB15	10,083	1,019	1,070	972	1,049	1,143	1,163	1052.0
TR18	12,315	13,400	13,640	12,730	15,350	13,820	13,810	13620.0
TR26	12,315	6,290	8,380	5,180	7,330	6,090	6,170	7290.0
TR35	12,315	15,300	17,330	16,740	17,260	16,690	18,320	16180.0
TR7	12,970	14,800	15,390	14,410	15,380	14,840^	15,520	15350.0

Bore	Trigger Level	Oct/Nov-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25
VKY034C	12,315	3,590	3,850	4,030	4,170	3,970	3,910	3840.0
VKY035C	12,315	3,110	3,340	3,230	3,290	3,330	3,220	3170.0
VKY036C	12,315	5,600	5,810	5,780	5,830	6,020	2,980	5720.0
VKY042C	12,315	5,420	5,430	5,480	5,990	5,850	5,590	5510.0
VKY043C	12,315	2,990	3,410	3,410	3,290	3,050	3,240	3510.0
VNW223	10,120	5,940	no data	no data	no data	5,360	4,390	4570.0
VNW390	12,315	2,300	2,376	2,291	2,473	2,431	2,629	2330.0
VNW391	12,315	2,530	2,471	2,352	2,458	2,424	2,550	2308.0
VNW392	12,315	3,690	3,310	3,480	3,510	3,410	3,480	3340.0
VNW393	12,315	2,740	2,830	2,840	3,090	3,140	3,210	3100.0
VNW394	10,083	5,520	5,410	5,400	5,620	5,420	5,480	5520.0
VNW395	10,083	463	1,395	1,681	1,832	1,834	2,153	2280.0
WR1	10,083	no data	no data	26,500	26,800	26,800	25,400	27300.0
WR2	10,083	no data	no data	25,340	26,600	26,600	27,900	26100.0

Note: Reported as field EC value in µS/cm. Values marked with an asterisk (*) are reported as Laboratory EC value. Red text shows exceedance of trigger level. Highlighted cell shows trigger level 1 as defined by TARP in the GWMP (**Appendix A**).
^Compared to the lab result, the field EC result at TR7 in the October 2024 monitoring round was updated from 1,484 µS/cm to 14,840 µS/cm due to a typo in the October 2024 field note. The EC values at TR7 have been a level 1 trigger since October 2024, as defined by the TARP.

Table D-3: Sulfate trigger level review

Bore	Trigger Level	Oct/Nov-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25
GW01	365	96	171	132	54	111	132	28
GW02	365	77	74	81	102	79	91	89
GW03	365	52	56	58	46	54	53	62
GW-10	86	no data	no data	no data	no data	7	21	<10
GW-11	365	<1	1	<1	1	<1	3	<1
GW-13	86	no data	no data	no data	no data	24	26	<10
GW-14	365	no data	no data	no data	no data	435	462	483
GW-15	365	no data	no data	no data	no data	28	28	34
GW-2	365	no data	no data	23	no data	26	23	22
GW-4	86	no data	no data	no data	no data	15	<1	<1
GW-6	86	no data	no data	no data	no data	<1	<1	<1
GW-7	86	364	385	399	380	396	414	354
GW-8	86	no data	100	109	72	82	109	77
GW-9	86	102	128	51	25	28	<1	40
GW971400	365	no data	no data	no data	no data	425	477	355
GW971614	365	no data	no data	no data	no data	32	30	31
MD01	86	22	23	26	36	14	33	32
MD02	86	28	29	28	29	29	28	33
SB01	365	182	183	190	148	193	216	180
SB02	365	1,120	no data	1,160	741	1,110	1,280	1110
SB04	365	284	394	220	195	208	413	269
SB05	365	735	551	520	595	496	447	380
SB06	365	372	362	362	324	307	366	359
SB07	365	74	74	78	66	71	89	85
SB08	365	86	87	88	79	74	97	77
SB09	365	71	63	70	62	67	78	59
SB10	365	190	188	196	168	198	238	172
SB11	365	85	72	93	80	85	106	76
SB15	365	90	79	95	53	98	119	84
TR18	86	702	620	592	622	626	630	552
TR26	86	194	230	180	198	195	229	217
TR35	86	660	651	622	624	624	526	562
TR7	365	508	714	501	518	563	458	507

Bore	Trigger Level	Oct/Nov-23	Jan-24	Apr-24	Jul-24	Oct-24	Jan-25	Apr-25
VKY034C	86	123	185	116	98	90	115	117
VKY035C	86	87	77	88	73	68	83	77
VKY036C	86	244	294	281	100	174	190	174
VKY042C	86	302	309	312	283	326	307	316
VKY043C	86	<1	<1	<1	<1	<1	<1	<1
VNW223	365	97	no data	no data	no data	164	91	266
VNW390	86	95	95	106	55	104	107	106
VNW391	86	88	88	96	52	86	101	97
VNW392	86	no data	284	296	263	314	300	266
VNW393	86	179	185	200	165	202	205	212
VNW394	365	no data	551	560	574	591	498	535
VNW395	365	14	61	143	91	131	147	151
WR1	365	no data	no data	1,320	901	1,280	1,490	1120
WR2	365	no data	no data	1,540	1,120	1,670	1,790	1250

Note: Sulfate as SO_4 in mg/L. Red text shows exceedance of trigger level. Highlight cell shows trigger level 1 as defined by TARP in the GWMP (**Appendix A**).

Table D-4: Metal trigger against ANZECC default guideline values

Bore ID	Date	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
Unit		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
DGV		0.055	0.009	0.013	0.94	0.0002	0.001	0.0014	0.0014	0.0034	1.9	0.0006	0.034	0.011	0.011	0.00005	0.008
GW01	Jan-24	<0.01	<0.001	<0.001	0.14	<0.0001	<0.001	<0.001	<0.001	<0.001	0.967	<0.0001	<0.001	0.013	<0.01	<0.001*	<0.005
GW01	Apr-24	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	<0.001	<0.001	0.063	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
GW01	Jul-24	<0.01	<0.001	<0.001	0.07	<0.0001	<0.001	<0.001	<0.001	<0.001	0.126	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
GW01	Oct-24	<0.01	<0.001	<0.001	0.07	<0.0001	<0.001	<0.001	<0.001	<0.001	0.155	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
GW01	Jan-25	<0.01	<0.001	<0.001	0.07	No data	<0.001	<0.001	No data	<0.001	0.24	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
GW01	Apr-25	0.01	<0.001	<0.001		<0.0001	<0.001	<0.001	0.002	<0.001	0.206	<0.0001	<0.001	0.006	<0.01	<0.001	<0.005
GW02	Jan-24	<0.01	<0.001	<0.001	0.1	<0.0001	<0.001	<0.001	0.002	<0.001	0.021	<0.0001	<0.001	0.375	<0.01	<0.001*	0.013
GW02	Apr-24	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	0.007	<0.001	0.026	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
GW02	Jul-24	<0.01	0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.003	<0.001	0.018	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.006
GW02	Oct-24	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	0.014	<0.001	0.005	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
GW02	Jan-25	<0.01	<0.001	<0.001	0.06	No data	<0.001	<0.001	No data	<0.001	0.006	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.005
GW02	Apr-25	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	0.001	<0.001	0.005	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.005
GW03	Jan-24	<0.01	<0.001	<0.001	0.09	<0.0001	<0.001	<0.001	<0.001	<0.001	0.014	<0.0001	<0.001	0.971	<0.01	<0.001*	<0.005
GW03	Apr-24	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.01	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
GW03	Jul-24	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	<0.001	<0.001	0.012	<0.0001	<0.001	0.002	<0.01	<0.001*	0.006
GW03	Oct-24	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.043	<0.0001	<0.001	0.001	<0.01	<0.001*	<0.005
GW03	Jan-25	<0.01	<0.001	<0.001	<0.05	No data	<0.001	<0.001	No data	<0.001	0.089	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
GW03	Apr-25	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001		<0.001	<0.001	0.119	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.005
GW-10	Oct-24	0.02	0.004	0.002	0.11	<0.0001	<0.001	<0.001	0.114	<0.001	0.033	<0.0001	0.002	0.005	<0.01	<0.001*	0.072
GW-10	Jan-25	<0.01	0.004	<0.001	0.14	No data	<0.001	<0.001	No data	<0.001	0.023	<0.0001	0.001	0.003	<0.01	<0.001*	0.116
GW-10	Apr-25	<0.01	0.011	0.006	0.17	<0.0001	<0.001	<0.001	0.141	<0.001	0.057	<0.0001	0.004	0.006	<0.01	<0.001	0.130

Bore ID	Date	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
GW-11	Jan-24	<0.01	<0.001	<0.001	0.13	<0.0001	<0.001	<0.001	<0.001	0.001	2.2	<0.0001	no data	0.00075	<0.01	<0.001*	0.0075
GW-11	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.224	<0.0001	no data	0.004	<0.01	<0.001*	0.012
GW-11	Jul-24	<0.01	<0.001	<0.001	0.13	0.0003	<0.001	<0.001	0.002	<0.001	1.06	<0.0001	<0.001	0.002	<0.01	<0.001*	0.043
GW-11	Oct-24	<0.01	<0.001	<0.001	0.14	<0.0001	<0.001	<0.001	0.019	<0.001	0.98	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.043
GW-11	Jan-25	<0.01	<0.001	<0.001	0.13	No data	<0.001	<0.001	No data	<0.001	1.04	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.034
GW-11	Apr-25	0.01	<0.001	<0.001	0.14	<0.0001	<0.001	<0.001	0.002	<0.001	1.06	<0.0001	<0.001	<0.001	<0.01	<0.001	0.059
GW-13	Oct-24	<0.01	0.001	0.001	0.08	<0.0001	<0.001	0.001	0.006	<0.001	0.161	<0.0001	<0.001	0.006	<0.01	<0.001*	0.019
GW-13	Jan-25	<0.01	<0.001	<0.001	0.08	No data	<0.001	<0.001	No data	<0.001	0.136	<0.0001	<0.001	0.005	<0.01	<0.001*	0.02
GW-13	Apr-25	0.02	0.005	<0.001	0.09	<0.0001	<0.001	0.002	0.035	<0.001	0.224	<0.0001	0.001	0.009	<0.01	<0.001	0.144
GW-14	Oct-24	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.026	<0.0001	<0.001	0.004	<0.01	<0.001*	0.095
GW-14	Jan-25	<0.01	<0.001	<0.001	<0.05	No data	<0.001	<0.001	No data	<0.001	0.008	<0.0001	<0.001	0.001	<0.01	<0.001*	0.031
GW-14	Apr-25	<0.01	<0.001	<0.001	0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.004	<0.0001	<0.001	<0.001	<0.01	<0.001	0.077
GW-15	Oct-24	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	0.002	<0.001	0.011	<0.0001	0.004	<0.001	<0.01	<0.001*	0.011
GW-15	Jan-25	<0.01	<0.001	0.002	<0.05	No data	<0.001	<0.001	No data	<0.001	0.01	<0.0001	0.003	<0.001	<0.01	<0.001*	<0.005
GW-15	Apr-25	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	0.002	<0.001	0.012	<0.0001	0.002	<0.001	<0.01	<0.001	<0.005
GW-2	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.224	<0.0001	<0.001	0.004	<0.01	<0.001*	0.012
GW-2	Oct-24	<0.01	<0.001	0.002	<0.05	<0.0001	0.003	<0.001	0.003	<0.001	0.005	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.006
GW-2	Jan-25	<0.01	<0.001	0.001	<0.05	No data	0.002	<0.001	No data	<0.001	0.009	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.016
GW-2	Apr-25	<0.01	<0.001	0.002	0.05	<0.0001	0.004	<0.001	<0.001	<0.001	0.006	<0.0001	0.001	<0.001	<0.01	<0.001	0.008
GW-4	Oct-24	<0.01	<0.001	0.002	0.12		<0.001	<0.001		<0.001	0.009	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.052
GW-4	Jan-25	<0.01	<0.001	0.002	0.14	No data	<0.001	<0.001	No data	<0.001	0.008	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.029
GW-4	Apr-25	<0.01	<0.001	0.004	0.14	<0.0001	<0.001	<0.001	<0.001	<0.001	0.007	<0.0001	<0.001	<0.001	<0.01	<0.001	0.012
GW-6	Oct-24	<0.01	<0.001	<0.001	0.07		<0.001	<0.001		<0.001	0.017	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.01
GW-6	Jan-25	<0.01	<0.001	<0.001	0.08	No data	<0.001	<0.001	No data	<0.001	0.029	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005

Bore ID	Date	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
GW-6	Apr-25	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	<0.001	<0.001	0.034	<0.0001	<0.001	<0.001	<0.01	<0.001	0.018
GW-7	Jan-24	<0.01	<0.001	<0.001	0.18	<0.0001	<0.001	<0.001	0.003	<0.001	0.011	<0.0001	0.002	0.002	<0.01	<0.001*	<0.005
GW-7	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.224	<0.0001	<0.001	0.004	<0.01	<0.001*	0.012
GW-7	Jul-24	<0.01	<0.001	<0.001	0.17	0.0002	<0.001	<0.001	0.016	0.002	0.024	<0.0001	0.001	0.005	<0.01	<0.001*	0.018
GW-7	Oct-24	<0.01	<0.001	<0.001	0.18	<0.0001	<0.001	<0.001	0.001	<0.001	0.03	<0.0001	<0.001	0.001	<0.01	<0.001*	<0.005
GW-7	Jan-25	<0.01	<0.001	<0.001	0.17	No data	<0.001	<0.001	No data	<0.001	0.04	<0.0001	<0.001	0.001	<0.01	<0.001*	<0.005
GW-7	Apr-25	<0.01	<0.001	<0.001	0.2	<0.0001	<0.001	<0.001	0.029	<0.001	0.021	<0.0001	<0.001	0.002	<0.01	<0.001*	<0.005
GW-8	Jan-24	<0.01	<0.001	<0.001	0.09	<0.0001	<0.001	<0.001	<0.001	<0.001	0.092	<0.0001	<0.001	0.001	<0.01	<0.001*	0.012
GW-8	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.224	<0.0001	<0.001	0.004	<0.01	<0.001*	0.012
GW-8	Jul-24	<0.01	<0.001	0.002	0.07	0.0001	<0.001	<0.001	<0.001	<0.001	0.089	<0.0001	<0.001	0.003	<0.01	<0.001*	0.01
GW-8	Oct-24	<0.01	<0.001	<0.001	0.07	<0.0001	<0.001	<0.001	<0.001	<0.001	0.176	<0.0001	<0.001	0.002	<0.01	<0.001*	<0.005
GW-8	Jan-25	<0.01	<0.001	<0.001	0.07	No data	<0.001	<0.001	No data	<0.001	0.132	<0.0001	<0.001	0.002	<0.01	<0.001*	<0.005
GW-8	Apr-25	<0.01	<0.001	0.002	0.08	<0.0001	<0.001	<0.001	<0.001	<0.001	0.104	<0.0001	<0.001	0.003	<0.01	<0.001	<0.005
GW-9	Jan-24	<0.01	<0.001	<0.001	0.05	0.0001	<0.001	0.00075	<0.001	<0.001	3.8	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.00825
GW-9	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.224	<0.0001	<0.001	0.004	<0.01	<0.001*	0.012
GW-9	Jul-24	<0.01	<0.001	<0.001	0.07	0.0001	<0.001	<0.001	<0.001	<0.001	1.71	<0.0001	<0.001	0.003	<0.01	<0.001*	0.008
GW-9	Oct-24	<0.01	<0.001	<0.001	0.05	<0.0001	<0.001	<0.001	0.002	<0.001	2.12	<0.0001	<0.001	0.001	<0.01	<0.001*	<0.005
GW-9	Jan-25	<0.01	<0.001	<0.001	<0.05	No data	<0.001	<0.001	No data	<0.001	2.6	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.008
GW-9	Apr-25	0.01	<0.001	<0.001	0.11	<0.0001	<0.001	<0.001	0.002	<0.001	0.866	<0.0001	<0.001	0.002	<0.01	<0.001	<0.005
GW971400	Oct-24	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	0.001	0.006	<0.001	0.024	<0.0001	<0.001	0.039	<0.01	<0.001*	<0.005
GW971400	Jan-25	<0.01	<0.001	<0.001	0.05	No data	<0.001	<0.001	No data	<0.001	0.024	<0.0001	<0.001	0.018	<0.01	<0.001*	<0.005
GW971614	Oct-24	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	0.001	<0.001	0.002	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
GW971614	Jan-25	<0.01	<0.001	<0.001	<0.05	No data	<0.001	<0.001	No data	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
GW971614	Apr-25	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	0.013	<0.001	0.002	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005

Bore ID	Date	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
Landreef Tap	Jan-25	<0.01	<0.001	<0.001	<0.05	No data	<0.001	<0.001	No data	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
MD01	Jan-24	0.58	0.001	<0.001	0.04	<0.0001	<0.001	<0.001	0.020	0.001	0.004	<0.0001	0.018	0.005	<0.01	<0.001*	0.31
MD01	Apr-24	0.28	<0.001	0.002	<0.05	<0.0001	<0.001	<0.001	0.006	0.001	<0.001	<0.0001	0.019	0.006	<0.01	<0.001*	0.213
MD01	Jul-24	0.04	0.002	0.001	<0.05	<0.0001	<0.001	<0.001	0.002	0.003	0.013	<0.0001	0.007	0.006	<0.01	<0.001*	0.106
MD01	Oct-24	0.02	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.022	<0.0001	0.008	0.004	0.01	<0.001*	0.049
MD01	Jan-25	0.04	<0.001	<0.001	<0.05	No data	<0.001	<0.001	No data	<0.001	0.017	<0.0001	0.002	0.002	<0.01	<0.001*	0.014
MD01	Apr-25	0.02	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.007	<0.0001	0.011	0.004	<0.01	<0.001	0.034
MD02	Jan-24	<0.01	<0.001	0.001	0.08	<0.0001	<0.001	<0.001	<0.001	<0.001	0.039	<0.0001	0.001	0.036	<0.01	<0.001*	<0.005
MD02	Apr-24	<0.01	<0.001	0.003	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.051	<0.0001	0.003	0.019	<0.01	<0.001*	<0.005
MD02	Jul-24	<0.01	<0.001	0.002	0.05	<0.0001	<0.001	<0.001	<0.001	0.002	0.044	<0.0001	0.002	0.012	<0.01	<0.001*	0.009
MD02	Oct-24	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.044	<0.0001	0.001	0.011	<0.01	<0.001*	<0.005
MD02	Jan-25	<0.01	<0.001	<0.001	<0.05	No data	<0.001	<0.001	No data	<0.001	0.05	<0.0001	0.001	0.01	<0.01	<0.001*	0.006
MD02	Apr-25	<0.01	<0.001	0.001	<0.5	<0.0001	<0.001	<0.001	<0.001	<0.001	0.074	<0.0001	0.002	0.012	<0.01	<0.001*	<0.005
SB01	Jan-24	<0.01	<0.001	<0.001	0.11	<0.0001	<0.001	0.003	<0.001	<0.001	0.39	<0.0001	<0.001	0.032	<0.01	<0.001*	<0.005
SB01	Apr-24	<0.01	<0.001	<0.001	0.05	<0.0001	<0.001	0.005	<0.001	<0.001	0.73	<0.0001	0.005	0.027	<0.01	<0.001*	<0.005
SB01	Jul-24	0.11	<0.001	0.004	0.08	<0.0001	0.004	0.024	<0.001	<0.001	1.65	<0.0001	<0.001	0.011	<0.01	<0.001*	0.01
SB01	Oct-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	<0.001	<0.001	0.211	<0.0001	<0.001	0.002	<0.01	<0.001*	0.011
SB01	Jan-25	<0.01	<0.001	<0.001	0.08	No data	<0.001	<0.001	No data	<0.001	0.153	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB01	Apr-25	<0.01	<0.001	0.002	0.08	<0.0001	<0.001	<0.001	<0.001	<0.001	0.519	<0.0001	<0.001	0.002	<0.01	<0.001*	<0.005
SB02	Jan-24	<0.01	<0.001	0.003	0.21	<0.0001	0.003	0.002	<0.001	<0.001	0.735	<0.0001	0.003	0.012	<0.01	<0.001*	0.007
SB02	Apr-24	<0.01	<0.001	0.001	0.07	<0.0001	<0.001	0.003	<0.001	<0.001	0.315	<0.0001	0.002	0.014	<0.01	<0.001*	<0.005
SB02	Jul-24	<0.01	<0.001	0.004	0.14	<0.0001	<0.001	0.002	<0.001	<0.001	0.68	<0.0001	0.003	<0.001	<0.01	<0.001*	<0.005
SB02	Oct-24	<0.01	<0.001	0.004	0.14	<0.0001	<0.001	0.001	<0.001	<0.001	0.696	<0.0001	0.002	0.001	<0.01	<0.001*	<0.005
SB02	Jan-25	<0.01	<0.001	<0.001	0.14	No data	<0.001	0.002	No data	<0.001	0.692	<0.0001	0.002	0.001	<0.01	<0.001*	<0.005

Bore ID	Date	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
SB02	Apr-25	0.01	<0.001	0.01	0.15	<0.0001	<0.001	<0.001	<0.001	<0.001	0.489	<0.0001	0.003	0.002	<0.01	<0.001*	<0.005
SB04	Jan-24	<0.01	<0.001	<0.001	0.16	<0.0001	<0.001	<0.001	<0.001	<0.001	0.38	<0.0001	0.001	<0.001	<0.01	<0.001*	<0.005
SB04	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	<0.001	<0.001	0.094	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB04	Jul-24	<0.01	<0.001	<0.001	0.09	<0.0001	<0.001	<0.001	<0.001	<0.001	0.076	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB04	Oct-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	<0.001	<0.001	0.061	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB04	Jan-25	0.56	<0.001	<0.001	0.11	No data	0.001	<0.001	No data	0.001	0.307	<0.0001	<0.001	0.002	<0.01	<0.001*	0.056
SB04	Apr-25	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.136	<0.0001	<0.001	<).001	<0.01	<0.001*	<0.005
SB05	Jan-24	<0.01	<0.001	0.004	0.21	<0.0001	<0.001	<0.001	<0.001	<0.001	0.233	<0.0001	0.004	0.002	<0.01	<0.001*	<0.005
SB05	Apr-24	<0.01	<0.001	0.004	0.13	<0.0001	<0.001	<0.001	<0.001	<0.001	0.405	<0.0001	0.005	0.002	<0.01	<0.001*	<0.005
SB05	Jul-24	<0.01	<0.001	0.008	0.15	<0.0001	<0.001	<0.001	<0.001	<0.001	0.516	<0.0001	0.003	<0.001	<0.01	<0.001*	<0.005
SB05	Oct-24	<0.01	<0.001	0.004	0.16	<0.0001	<0.001	<0.001	<0.001	<0.001	0.273	<0.0001	0.003	0.001	<0.01	<0.001*	<0.005
SB05	Jan-25	<0.01	<0.001	0.004	0.15	No data	<0.001	<0.001	No data	<0.001	0.703	<0.0001	0.002	<0.001	<0.01	<0.001*	<0.005
SB05	Apr-25	<0.01	<0.001	0.003	0.17	<0.0001	<0.001	<0.001	<0.001	<0.001	0.224	<0.0001	0.003	<0.001	<0.01	<0.001	<0.005
SB06	Jan-24	0.02	<0.001	0.003	0.19	<0.0001	<0.001	0.002	0.003	<0.001	1.18	<0.0001	0.002	0.002	<0.01	<0.001*	<0.005
SB06	Apr-24	<0.01	<0.001	0.003	0.12	<0.0001	<0.001	0.002	<0.001	<0.001	1.19	<0.0001	0.003	0.002	<0.01	<0.001*	<0.005
SB06	Jul-24	<0.01	<0.001	0.003	0.13	<0.0001	<0.001	0.001	<0.001	<0.001	0.771	<0.0001	0.002	<0.001	<0.01	<0.001*	0.006
SB06	Oct-24	0.01	<0.001	0.003	0.12	<0.0001	<0.001	0.002	<0.001	<0.001	0.493	<0.0001	0.003	0.003	<0.01	<0.001*	<0.005
SB06	Jan-25	<0.01	<0.001	0.002	0.13	No data	<0.001	<0.001	No data	<0.001	0.285	<0.0001	0.002	<0.001	<0.01	<0.001*	<0.005
SB06	Apr-25	<0.01	<0.001	0.004	0.14	<0.0001	<0.001	<0.001	0.006	<0.001	0.302	<0.0001	0.005	<0.001	<0.01	<0.001*	<0.005
SB07	Jan-24	<0.01	<0.001	<0.001	0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	0.07	<0.01	<0.001*	<0.005
SB07	Apr-24	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB07	Jul-24	<0.01	<0.001	0.001	0.08	0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	0.001	<0.01	<0.001*	0.009
SB07	Oct-24	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	0.004	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB07	Jan-25	<0.01	<0.001	<0.001	0.06	No data	0.001	<0.001	No data	<0.001	0.002	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005

Bore ID	Date	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
SB07	Apr-25	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	0.002	<0.001	0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.005
SB08	Jan-24	<0.01	<0.001	<0.001	0.1	<0.0001	<0.001	<0.001	0.004	<0.001	0.002	<0.0001	<0.001	0.063	<0.01	<0.001*	<0.005
SB08	Apr-24	<0.01	<0.001	<0.001	0.05	<0.0001	<0.001	<0.001	0.011	<0.001	0.001	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB08	Jul-24	<0.01	<0.001	0.001	0.09	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB08	Oct-24	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	<0.001	<0.001	0.002	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB08	Jan-25	<0.01	<0.001	<0.001	0.06	No data	<0.001	<0.001	No data	<0.001	0.007	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB08	Apr-25	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	<0.001	<0.001	0.046	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB09	Jan-24	<0.01	<0.001	<0.001	0.11	<0.0001	<0.001	<0.001	<0.001	<0.001	0.335	<0.0001	0.001	0.015	<0.01	<0.001*	<0.005
SB09	Apr-24	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.306	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.013
SB09	Jul-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	<0.001	<0.001	0.466	<0.0001	0.001	<0.001	<0.01	<0.001*	<0.005
SB09	Oct-24	<0.01	<0.001	<0.001	0.07	<0.0001	<0.001	<0.001	<0.001	<0.001	0.443	<0.0001	<0.001	0.001	<0.01	<0.001*	<0.005
SB09	Jan-25	<0.01	<0.001	<0.001	0.07	No data	<0.001	<0.001	No data	<0.001	0.615	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.013
SB09	Apr-25	<0.1	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	<0.001	<0.001	0.394	<0.0001	<0.001	0.001	<0.01	<0.001*	<0.005
SB10	Jan-24	<0.01	<0.001	0.001	0.16	<0.0001	<0.001	<0.001	<0.001	<0.001	0.074	<0.0001	0.002	<0.001	<0.01	<0.001*	<0.005
SB10	Apr-24	<0.01	<0.001	0.001	0.08	<0.0001	<0.001	<0.001	<0.001	<0.001	0.146	<0.0001	0.002	<0.001	<0.01	<0.001*	<0.005
SB10	Jul-24	<0.01	<0.001	0.001	0.1	<0.0001	<0.001	<0.001	<0.001	<0.001	0.024	<0.0001	0.001	<0.001	<0.01	<0.001*	<0.005
SB10	Oct-24	<0.01	<0.001	0.001	0.11	<0.0001	<0.001	<0.001	<0.001	<0.001	0.104	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB10	Jan-25	<0.01	<0.001	<0.001	0.1	No data	<0.001	<0.001	No data	<0.001	0.011	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB10	Apr-25	<0.01	<0.001	0.001	0.11	<0.0001	<0.001	<0.001	<0.001	<0.001	0.136	<0.0001	0.001	<0.001	<0.01	<0.001*	<0.005
SB11	Jan-24	<0.01	<0.001	<0.001	0.13	<0.0001	<0.001	<0.001	0.01	<0.001	0.023	<0.0001	<0.001	0.057	<0.01	<0.001*	<0.005
SB11	Apr-24	<0.01	<0.001	<0.001	0.05	<0.0001	<0.001	<0.001	0.021	<0.001	0.006	<0.0001	<0.001	0.002	<0.01	<0.001*	<0.005
SB11	Jul-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.003	<0.001	0.01	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB11	Oct-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.004	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB11	Jan-25	<0.01	<0.001	<0.001	0.08	No data	<0.001	<0.001	No data	<0.001	0.142	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005

Bore ID	Date	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
SB11	Apr-25	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.005	<0.001	0.047	<0.0001	<0.001	0.001	<0.01	<0.001*	0.005
SB15	Jan-24	<0.01	<0.001	<0.001	0.12	<0.0001	<0.001	<0.001	0.001	<0.001	0.008	<0.0001	<0.001	0.032	<0.01	<0.001*	<0.005
SB15	Apr-24	<0.01	<0.001	<0.001	0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.004	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.018
SB15	Jul-24	<0.01	<0.001	<0.001	0.07	<0.0001	<0.001	<0.001	<0.001	<0.001	0.02	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB15	Oct-24	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	0.008	<0.001	0.001	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB15	Jan-25	<0.01	<0.001	<0.001	0.06	No data	<0.001	<0.001	No data	<0.001	0.002	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
SB15	Apr-25	<0.01	<0.001	<0.001	0.07	<0.0001	<0.001	<0.001	0.002	<0.001	0.006	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.011
TR18	Jan-24	<0.01	<0.001	<0.001	0.11	<0.0001	<0.001	<0.001	0.07	<0.001	0.042	<0.0001	0.001	0.021	<0.01	<0.001*	<0.005
TR18	Apr-24	<0.01	<0.001	<0.001	0.05	<0.0001	<0.001	<0.001	0.032	<0.001	0.023	<0.0001	0.002	0.020	<0.01	<0.001*	0.009
TR18	Jul-24	<0.01	<0.001	<0.001	0.08	0.0001	<0.001	<0.001	0.033	<0.001	0.094	<0.0001	0.002	0.019	<0.01	<0.001*	0.008
TR18	Oct-24	<0.01	<0.001	<0.001	0.07	<0.0001	<0.001	<0.001	0.101	<0.001	0.043	<0.0001	0.001	0.013	<0.01	<0.001*	<0.005
TR18	Jan-25	0.03	<0.001	<0.001	0.07	No data	<0.001	<0.001	No data	<0.001	0.032	<0.0001	<0.001	0.011	<0.01	<0.001*	<0.005
TR18	Apr-25	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	0.873	<0.001	0.021	<0.0001	<0.001	0.013	<0.01	<0.001*	0.01
TR26	Jan-24	<0.01	<0.001	<0.001	0.14	<0.0001	<0.001	<0.001	0.01	<0.001	0.07	<0.0001	0.002	0.014	<0.01	<0.001*	<0.005
TR26	Apr-24	<0.01	<0.001	<0.001	0.07	<0.0001	0.002	<0.001	<0.001	<0.001	0.033	<0.0001	0.005	0.017	<0.01	<0.001*	0.012
TR26	Jul-24	<0.01	<0.001	<0.001	0.11	0.0001	<0.001	<0.001	<0.001	<0.001	0.053	<0.0001	0.002	0.004	<0.01	<0.001*	0.007
TR26	Oct-24	<0.01	<0.001	<0.001	0.1	<0.0001	<0.001	<0.001	<0.001	<0.001	0.106	<0.0001	0.001	0.004	<0.01	<0.001*	<0.005
TR26	Jan-25	<0.01	<0.001	<0.001	0.09	No data	<0.001	<0.001	No data	<0.001	0.105	<0.0001	<0.001	0.006	<0.01	<0.001*	<0.005
TR26	Apr-25	<0.01	<0.001	<0.001	0.10	<0.0001	<0.001	<0.001	0.002	<0.001	0.042	<0.0001	0.002	0.004	<0.01	<0.001	0.013
TR35	Jan-24	<0.01	<0.001	<0.001	0.12	0.0002	0.002	0.007	1.24	<0.001	1.72	<0.0001	0.011	0.713	<0.01	<0.001*	0.015
TR35	Apr-24	<0.01	<0.001	<0.001	0.06	0.0004	0.002	0.010	1.730	<0.001	1.76	<0.0001	0.017	0.558	<0.01	<0.001*	0.030
TR35	Jul-24	<0.01	<0.001	0.001	0.08	0.0003	<0.001	0.011	7.09	<0.001	1.51	<0.0001	0.009	0.435	<0.01	<0.001*	0.02
TR35	Oct-24	<0.01	<0.001	<0.001	0.09	0.0004	<0.001	0.01	8.23	<0.001	1.44	<0.0001	0.01	0.308	<0.01	<0.001*	0.017
TR35	Jan-25	<0.01	<0.001	<0.001	0.07	No data	<0.001	0.008	No data	<0.001	0.907	<0.0001	0.002	0.111	<0.01	<0.001*	0.009

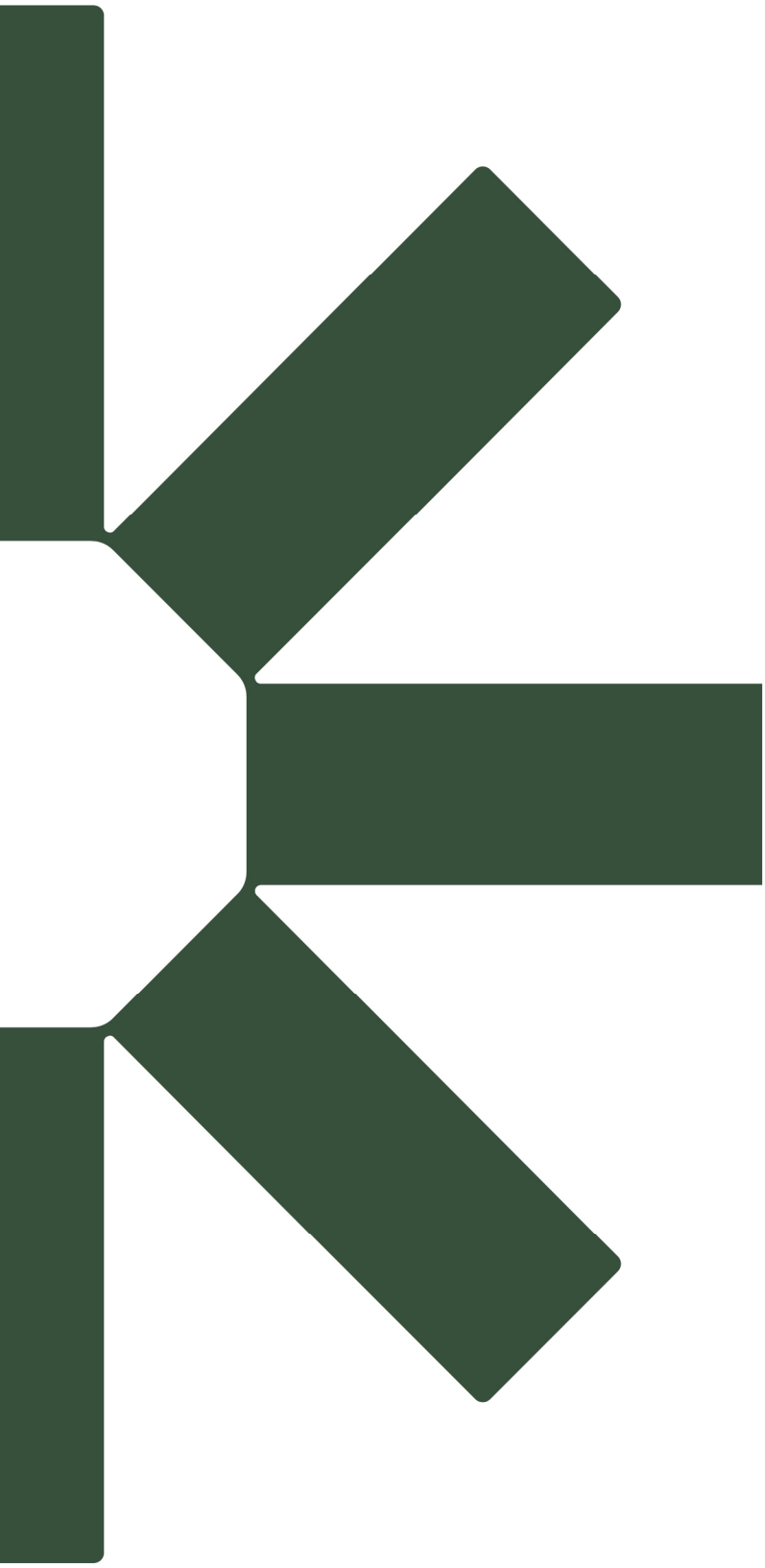
Bore ID	Date	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
TR35	Apr-25	<0.01	<0.001	<0.001	0.08	0.0002	<0.001	0.006	0.844	<0.001	0.789	<0.0001	0.004	0.067	<0.01	<0.001*	0.011
TR7	Jan-24	<0.01	<0.001	<0.001	0.1	<0.0001	<0.001	0.008	0.863	<0.001	0.637	<0.0001	0.002	0.39	<0.01	<0.001*	0.006
TR7	Apr-24	<0.01	<0.001	<0.001	<0.05	<0.0001	<0.001	0.004	0.346	<0.001	0.262	<0.0001	0.002	0.118	<0.01	<0.001*	0.006
TR7	Jul-24	<0.01	<0.001	<0.001	0.07	0.0001	<0.001	0.008	0.471	<0.001	0.526	<0.0001	0.003	0.272	<0.01	<0.001*	0.01
TR7	Oct-24	<0.01	<0.001	<0.001	0.07	0.0001	<0.001	0.004	1.59	<0.001	0.278	<0.0001	0.002	0.045	<0.01	<0.001*	<0.005
TR7	Jan-25	<0.01	<0.001	<0.001	0.07	No data	<0.001	0.005	No data	<0.001	0.381	<0.0001	<0.001	0.024	<0.01	<0.001*	0.006
TR7	Apr-25	<0.01	<0.001	<0.001	0.06	0.0002	<0.001	0.003	0.387	<0.001	0.193	<0.0001	0.001	0.053	<0.01	<0.001*	0.013
VKY034C	Jan-24	<0.01	<0.001	0.002	0.09	<0.0001	<0.001	<0.001	<0.001	<0.001	0.102	<0.0001	0.007	0.008	<0.01	<0.001*	<0.005
VKY034C	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.224	<0.0001	<0.001	0.004	<0.01	<0.001*	0.012
VKY034C	Jul-24	<0.01	<0.001	0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.003	<0.0001	<0.001	0.001	<0.01	<0.001*	0.005
VKY034C	Oct-24	<0.01	0.002	0.001	0.06	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	0.005	0.006	<0.01	<0.001*	0.023
VKY0034C	Jan-25	<0.01	<0.001	0.001	0.19	No data	<0.001	<0.001	No data	<0.001	0.008	<0.0001	0.003	0.003	<0.01	<0.001*	0.014
VKY0034C	Apr-25	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	<0.001	<0.001	0.002	<0.0001	0.003	0.004	<0.01	<0.001*	0.013
VKY035C	Jan-24	<0.01	<0.001	0.001	0.07	<0.0001	0.002	<0.001	<0.001	<0.001	0.329	<0.0001	0.007	0.006	<0.01	<0.001*	0.006
VKY035C	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.224	<0.0001	<0.001	0.004	<0.01	<0.001*	0.012
VKY035C	Jul-24	<0.01	<0.001	0.002	<0.05	<0.0001	0.002	<0.001	<0.001	0.001	0.32	<0.0001	0.008	0.005	<0.01	<0.001*	0.008
VKY035C	Oct-24	<0.01	<0.001	<0.001	<0.05	<0.0001	0.002	<0.001	<0.001	<0.001	0.32	<0.0001	0.007	0.003	<0.01	<0.001*	<0.005
VKY0035C	Jan-25	<0.01	<0.001	0.001	<0.05	No data	0.001	<0.001	No data	<0.001	0.308	<0.0001	0.006	0.006	<0.01	<0.001*	<0.005
VKY0035C	Apr-25	<0.01	<0.001	0.003	<0.05	<0.0001	0.002	<0.001	0.001	<0.001	0.321	<0.0001	0.007	0.012	<0.01	<0.001	0.023
VKY036C	Jan-24	<0.01	<0.001	<0.001	0.09	<0.0001	<0.001	<0.001	<0.001	<0.001	0.013	<0.0001	0.001	0.013	<0.01	<0.001*	<0.005
VKY036C	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.224	<0.0001	<0.001	0.004	<0.01	<0.001*	0.012
VKY036C	Jul-24	<0.01	<0.001	0.008	0.1	<0.0001	<0.001	<0.001	<0.001	<0.001	0.153	<0.0001	0.004	0.005	<0.01	<0.001*	<0.005
VKY036C	Oct-24	<0.01	<0.001	0.007	0.09	<0.0001	<0.001	<0.001	<0.001	<0.001	0.157	<0.0001	0.003	0.004	<0.01	<0.001*	<0.005
VKY0036C	Jan-25	<0.01	<0.001	0.006	0.09	No data	<0.001	<0.001	No data	<0.001	0.151	<0.0001	0.002	0.004	<0.01	<0.001*	<0.005

Bore ID	Date	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
VKY0036C	Apr-25	<0.01	<0.001	0.01	0.09	<0.0001	<0.001	<0.001	<0.001	<0.001	0.185	<0.0001	0.004	0.002	<0.01	<0.001*	<0.005
VKY042C	Jan-24	<0.01	<0.001	<0.001	0.1	0.0001	<0.001	<0.001	0.006	<0.001	0.223	<0.0001	0.002	0.015	<0.01	<0.001*	0.014
VKY042C	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.224	<0.0001	<0.001	0.004	<0.01	<0.001*	0.012
VKY042C	Jul-24	<0.01	0.002	<0.001	0.07	0.001	<0.001	0.004	0.008	<0.001	0.217	<0.0001	0.001	0.038	<0.01	<0.001*	0.033
VKY042C	Oct-24	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	0.001	<0.001	0.213	<0.0001	<0.001	0.003	<0.01	<0.001*	<0.005
VKY0042C	Jan-25	<0.01	<0.001	<0.001	0.06	No data	<0.001	<0.001	No data	<0.001	0.22	<0.0001	<0.001	0.003	<0.01	<0.001*	0.015
VKY0042C	Apr-25	<0.01	<0.001	<0.001	0.05	<0.0001	<0.001	<0.001	0.003	<0.001	0.216	<0.0001	<0.001	0.002	<0.01	<0.001*	0.013
VKY043C	Jan-24	<0.01	<0.001	<0.001	0.11	<0.0001	<0.001	<0.001	<0.001	<0.001	0.005	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
VKY043C	Apr-24	<0.01	<0.001	<0.001	0.06	<0.0001	<0.001	<0.001	<0.001	<0.001	0.004	<0.0001	<0.001	0.002	<0.01	<0.001*	0.006
VKY043C	Jul-24	<0.01	<0.001	<0.001	0.1	<0.0001	<0.001	<0.001	0.002	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001*	<0.005
VKY043C	Oct-24	<0.01	<0.001	<0.001	0.07	<0.0001	<0.001	<0.001	0.002	<0.001	0.004	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.006
VKY0043C	Jan-25	<0.01	<0.001	<0.001	0.06	No data	<0.001	<0.001	No data	<0.001	0.005	<0.0001	<0.001	0.001	<0.01	<0.001*	<0.005
VKY0043C	Apr-25	<0.01	<0.001	<0.001	0.07	<0.0001	<0.001	<0.001	0.001	<0.001	0.004	<0.0001	<0.001	<0.001	<0.01	<0.001	0.005
VNW223	Oct-24	<0.01	0.001	<0.001	0.07	<0.0001	<0.001	<0.001	0.011	<0.001	0.013	<0.0001	<0.001	0.003	<0.01	<0.001*	0.023
VNW223	Jan-25	<0.01	<0.001	<0.001	0.08	No data	<0.001	<0.001	No data	<0.001	0.007	<0.0001	<0.001	0.002	<0.01	<0.001*	0.027
VNW390	Jan-24	<0.01	<0.001	<0.001	0.14	<0.0001	<0.001	<0.001	0.005	<0.001	0.003	<0.0001	<0.001	0.002	<0.01	<0.001*	0.026
VNW390	Apr-24	<0.01	<0.001	0.002	0.09	<0.0001	<0.001	0.002	<0.001	<0.001	0.239	<0.0001	<0.001	0.002	<0.01	<0.001*	0.007
VNW390	Jul-24	<0.01	<0.001	0.002	0.12	0.0001	<0.001	0.003	<0.001	<0.001	0.298	<0.0001	0.005	0.036	<0.01	<0.001*	<0.005
VNW390	Oct-24	<0.01	<0.001	0.003	0.12	<0.0001	<0.001	0.002	<0.001	<0.001	0.321	<0.0001	0.002	0.016	<0.01	<0.001*	0.008
VNW390	Jan-25	<0.01	<0.001	0.001	0.11	No data	<0.001	0.002	No data	<0.001	0.227	<0.0001	0.003	0.024	<0.01	<0.001*	0.005
VNW390	Apr-25	<0.01	<0.001	0.002	0.11	<0.0001	<0.001	0.002	<0.001	<0.001	0.362	<0.0001	0.004	0.026	<0.01	<0.001*	<0.005
VNW391	Jan-24	<0.01	<0.001	<0.001	0.13	<0.0001	<0.001	<0.001	0.001	<0.001	0.006	<0.0001	<0.001	<0.001	<0.01	<0.001*	0.006
VNW391	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.225	<0.0001	0.001	0.007	<0.01	<0.001*	0.013
VNW391	Jul-24	<0.01	0.002	<0.001	0.11	0.0003	<0.001	<0.001	<0.001	0.002	0.246	<0.0001	<0.001	0.006	<0.01	<0.001*	0.018

Bore ID	Date	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
VNW391	Oct-24	<0.01	<0.001	<0.001	0.1	<0.0001	<0.001	<0.001	<0.001	<0.001	0.266	<0.0001	<0.001	0.004	<0.01	<0.001*	<0.005
VNW391	Jan-25	<0.01	<0.001	<0.001	0.1	No data	<0.001	<0.001	No data	<0.001	0.233	<0.0001	<0.001	0.004	<0.01	<0.001*	0.019
VNW391	Apr-25	<0.01	<0.001	0.001	0.1	<0.0001	<0.001	<0.001	<0.001	<0.001	0.264	<0.0001	<0.001	0.002	<0.01	<0.001*	0.005
VNW392	Jan-24	<0.01	<0.001	0.001	0.12	<0.0001	<0.001	0.003	<0.001	<0.001	0.333	<0.0001	0.002	0.02	<0.01	<0.001*	0.008
VNW392	Apr-24	<0.01	<0.001	0.001	0.07	<0.0001	<0.001	0.003	<0.001	<0.001	0.315	<0.0001	0.002	0.014	<0.01	<0.001*	<0.005
VNW392	Jul-24	<0.01	<0.001	0.002	0.1	<0.0001	<0.001	0.003	<0.001	<0.001	0.286	<0.0001	0.002	0.01	<0.01	<0.001*	0.007
VNW392	Oct-24	<0.01	<0.001	<0.001	0.09	<0.0001	<0.001	0.003	<0.001	<0.001	0.275	<0.0001	0.002	0.008	<0.01	<0.001*	<0.005
VNW392	Jan-25	<0.01	<0.001	<0.001	0.09	No data	<0.001	0.002	No data	<0.001	0.22	<0.0001	0.004	0.026	<0.01	<0.001*	0.009
VNW392	Apr-25	<0.01	<0.001	0.003	0.08	<0.0001	<0.001	0.003	<0.001	<0.001	0.51	<0.0001	0.001	0.005	<0.01	<0.001*	<0.005
VNW393	Jan-24	<0.01	<0.001	<0.001	0.1	<0.0001	<0.001	<0.001	<0.001	<0.001	0.092	<0.0001	0.003	<0.001	<0.01	<0.001*	<0.005
VNW393	Apr-24	<0.01	<0.001	<0.001	0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.15	<0.0001	0.005	0.005	<0.01	<0.001*	<0.005
VNW393	Jul-24	<0.01	<0.001	0.001	0.09	0.0001	<0.001	<0.001	<0.001	<0.001	0.181	<0.0001	0.004	0.006	<0.01	<0.001*	0.005
VNW393	Oct-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	<0.001	<0.001	0.193	<0.0001	0.005	0.01	<0.01	<0.001*	<0.005
VNW393	Jan-25	0.01	<0.001	<0.001	0.08	No data	<0.001	<0.001	No data	<0.001	0.176	<0.0001	0.005	0.013	<0.01	<0.001*	<0.005
VNW393	Apr-25	0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	<0.001	<0.001	0.195	<0.0001	0.004	0.006	<0.01	<0.001*	<0.005
VNW394	Jan-24	<0.01	<0.001	0.007	0.1	<0.0001	<0.001	0.011	<0.001	<0.001	2.12	<0.0001	0.003	0.035	<0.01	<0.001*	0.007
VNW394	Apr-24	<0.01	<0.001	0.006	<0.05	<0.0001	<0.001	0.002	<0.001	<0.001	1.27	<0.0001	0.003	0.006	<0.01	<0.001*	<0.005
VNW394	Jul-24	<0.01	<0.001	0.005	0.07	<0.0001	<0.001	0.002	<0.001	<0.001	0.982	<0.0001	0.002	0.007	<0.01	<0.001*	0.013
VNW394	Oct-24	0.02	<0.001	0.005	0.07	<0.0001	<0.001	0.002	0.001	<0.001	0.332	<0.0001	0.002	0.014	<0.01	<0.001*	0.007
VNW394	Jan-25	<0.01	<0.001	0.004	0.06	No data	<0.001	0.002	No data	<0.001	0.283	<0.0001	0.001	0.006	<0.01	<0.001*	0.005
VNW394	Apr-25	<0.01	<0.001	0.004	0.06	<0.0001	<0.001	0.002	<0.001	<0.001	0.353	<0.0001	0.002	0.008	0.01	<0.001	<0.005
VNW395	Jan-24	<0.01	<0.001	0.001	0.08	<0.0001	<0.001	<0.001	0.002	<0.001	0.032	<0.0001	<0.001	0.001	<0.01	<0.001*	<0.005
VNW395	Apr-24	<0.01	<0.001	0.001	0.0575	<0.0001	<0.001	0.00125	0.00625	<0.001	0.125	<0.0001	0.00575	0.2285	<0.01	<0.001*	0.007
VNW395	Jul-24	<0.01	<0.001	0.001	0.06	<0.0001	<0.001	0.001	0.007	0.002	0.071	<0.0001	0.008	0.371	<0.01	<0.001*	0.016

Bore ID	Date	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
VNW395	Oct-24	<0.01	0.001	<0.001	0.06	<0.0001	<0.001	<0.001	0.009	<0.001	0.006	<0.0001	0.004	0.347	<0.01	<0.001*	0.012
VNW395	Jan-25	<0.01	<0.001	<0.001	0.05	No data	<0.001	<0.001	No data	<0.001	0.056	<0.0001	0.001	0.14	<0.01	<0.001*	<0.005
VNW395	Apr-25	0.1	<0.001	<0.001	0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	0.122	<0.0001	<0.001	0.004	<0.01	<0.001*	<0.005
WR1	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.224	<0.0001	<0.001	0.004	<0.01	<0.001*	0.012
WR1	Jul-24	<0.01	<0.001	0.001	0.15	0.0003	<0.001	<0.001	0.001	0.002	0.122	0.0017	0.002	0.037	<0.01	<0.001*	0.014
WR1	Oct-24	<0.01	<0.001	0.002	0.16	0.0002	<0.001	<0.001	0.005	<0.001	0.065	0.0046	0.002	0.024	<0.01	0.001	0.007
WR1	Jan-25	<0.01	<0.001	<0.001	0.17	No data	<0.001	<0.001	No data	<0.001	0.08	0.0003	<0.001	0.024	<0.01	<0.001*	0.007
WR1	Apr-25	<0.01	<0.001	<0.001	0.18	0.0002	<0.001	0.004	2.35	<0.001	0.248	0.0037	0.002	0.094	<0.01	0.002	0.018
WR2	Apr-24	<0.01	<0.001	<0.001	0.08	<0.0001	<0.001	<0.001	0.001	<0.001	0.224	<0.0001	<0.001	0.004	<0.01	<0.001*	0.012
WR2	Jul-24	<0.01	<0.001	<0.001	0.09	0.0001	<0.001	0.008	<0.001	<0.001	0.724	<0.0001	0.022	0.118	<0.01	<0.001*	<0.005
WR2	Oct-24	<0.01	<0.001	0.001	0.11	<0.0001	0.001	0.018	<0.001	<0.001	1.73	<0.0001	0.008	0.087	<0.01	<0.001*	0.009
WR2	Jan-25	<0.01	<0.001	<0.001	0.12	No data	0.001	0.014	No data	<0.001	1.12	<0.0001	0.02	0.158	<0.01	<0.001*	0.011
WR2	Apr-25	<0.01	<0.001	<0.001	0.13	<0.0001	0.001	0.01	0.002	<0.001	0.478	<0.0001	0.045	0.220	<0.01	<0.001*	0.015

*Limit of reporting value is higher than DGV value. Red text shows exceedance of ANZECC Default Guideline Values. Highlighted cell shows trigger level 1 as defined by TARP in the GWMP (**Appendix A**).
In the January 2025 monitoring round, the bore (or location) Landreef Tap was reported and included in this table. However, this bore is not listed in Table 4-1 and Table 4-2 of the management plan (Whitehaven, 2023).
In the January 2025 monitoring round, bore GW97164 was reported but is considered to be a typo in the Chain of Custody (**Appendix C**). Therefore, it has been reported as GW971614.



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