MALABAR

ANNUAL REVIEW 2024

MAXWELL UNDERGROUND MINE

Annual Review 2024

Name of operation	Maxwell Underground Mine
Name of operator	Maxwell Ventures (Management) Pty Ltd
Development consent / project approvals	SSD 9526, DA 106-04-00
Name of holder of development consent / project approval	Maxwell Ventures (Management) Pty Ltd
Mining leases	A173, CL229, CL395, ML1531, ML1820, ML1822
Name of holder of mining leases	Maxwell Ventures (Management) Pty Ltd
Water licences	WAL41559, WAL41491*, WAL41234, WAL43166, WAL39739, WAL43160, WAL39792, 20BL171953, 20BL171954, 20BL171955, 20BL171956, 20BL171957, 20BL174016, 20BL174017, 20BL174018
Name of holder of water licences	Maxwell Ventures (Management) Pty Ltd *WAL 41491 is held by AGL Macquarie Pty Ltd
Forward Program start date	3 February 2024
Forward Program end date	2 February 2027
Annual Review start date	1 January 2024
Annual Review end date	31 December 2024

I, Rob Hayes, certify that this audit report is a true and accurate record of the compliance status of the Maxwell Underground Coal Mine Project for the period 1 January 2024 to 31 December 2024 and that I am authorised to make this statement on behalf of Maxwell Ventures (Management) Pty Ltd.

Note.

a) The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.
b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or $22,000, or both).

Name of authorised reporting officer	Rob Hayes
Title of authorised reporting officer	General Manager Development & Operations
Signature of authorised reporting officer	
Date	28 March 2025

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Tables

1 STATEMENT OF COMPLIANCE

A statement of compliance is provided in **Table 1** and further details regarding any non-compliance is provided in **Table 2**.

Table 3 includes the compliance status key as per the Annual Review Guideline published by the Department of Planning, Housing and Infrastructure (DPHI) in October 2015.

Table 1. Statement of compliance

Were all conditions of the relevant approvals complied with?	
SSD 9526	Yes
DA 106-04-00	Yes
CL229	Yes
CL395	Yes
ML1531	Yes
ML1820	Yes
ML1822	Yes
A173	Yes
EPL 1323	Yes
EPBC 2018/8287	No

Table 2. Non-compliance

Relevant approval	Condition	Condition description	Compliance status	Relevant section of the Annual Review
EPBC 2018/8287	2, 4, 17, 18 and 19	Failure to report non-compliance and failure to provide revised Water Management Plan to the Department of Climate Change, Energy, the Environment and Water (DEECCW) withing two business days.	Administrative non-compliance	11.3

Table 3. Compliance status key

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

2 ACRONYMS

Acronym	Definition
A	Authorisation issued under the *Mining Act 1973*
AC	Alternating current
ACHP	Aboriginal Cultural Heritage Management Plan
AQGGMP	Air Quality and Greenhouse Gas Management Plan
Antiene MOD1	Antiene Modification 1
ANZEC	Australia and New Zealand Environment Council
ANZG	Australian and New Zealand Guidelines
APZ	Asset Protection Zone
As	Arsenic
AS	Australian Standard
AWS	Automatic Weather Station
BAM	Biodiversity Assessment Methodology
bcm	Bank cubic metres
BCT	Biodiversity Conservation Trust
BFMP	Bushfire Management Plan
BMP	Biodiversity Management Plan
BOM	Bureau of Meteorology
BRMP	Bioremediation Management Plan
$CaCO_3$	Calcium carbonate
CCC	Community Consultative Committee
Cl	Chloride
CL	Coal Lease issued under the *Mining Act 1973.*
CMP	Contaminated Materials Protocol
CO_2	Carbon dioxide
dB(A)	A-weighted decibels
DA	Development Approval
DCCEEW	Federal Department of Climate Change, Energy, the Environment and Water
DEM	Digital Elevation Model
D/S	Downstream
DPHI	NSW Department of Planning, Housing and Infrastructure
EA	Drayton Mine Expansion Environmental Assessment 2007
EC	Electrical conductivity

Acronym	Definition
EIS	Environmental Impact Statement
EL	Exploration Licence
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
FY	Financial year (from 1 July to 30 June each year)
GHG	Greenhouse gas
g/m^2/month	Grams per square metre per month
GJ	Gigajoules
GW	Groundwater
ha	Hectares
HTE	High Threat Exotic weed
HVEC	Hunter Valley Energy Coal
IEA	Independent Environmental Audit
IPC	Independent Planning Commission
K	Potassium
$L_{A1\ (1\ min)}$	A-weighted sound pressure level that is exceeded for one per cent of the 1-minute measurement period
$L_{Aeq\ (time\ period)}$	A-weighted equivalent continuous sound pressure level over the time period
LEM	Landform Evolution Model
Ltd	Limited
m	Metres
m^2	Square metres
m³	Cubic metres
mAHD	Elevation in metres in respect to the Australian Height Datum
Mb	Molybdenum
MB	Monitoring bore
Mg	Magnesium
mg/L	Milligrams per litre
MEA	Mine entry area
MEG	Regional NSW – Mining, Exploration and Geoscience
MI	Maxwell Infrastructure
ML	Megalitres
ML	Mining Lease issued under the *Mining Act 1992*

Acronym	Definition
MLA	Mining Lease Application
Maxwell MOD1	Maxwell Modification 1
Maxwell MOD2	Maxwell Modification 2
m/s	Metres per second
MSC	Muswellbrook Shire Council
MSS	Maxwell Stewardship Site
Mt	Million tonnes
MP	Management Plan
NBMP	Noise and Blasting Management Plan
NC	No change
Na	Sodium
NGER	National Greenhouse and Energy Reporting
NM	Noise monitor
NR	Not reported
NSW	New South Wales
NTU	Nephelometric turbidity unit
PA	Project Approval
pH	Potential of hydrogen (a measure of acidity/alkalinity)
PM_{10}	Particulate matter 10 micrometres or less in diameter
$PM_{2.5}$	Particulate matter 2.5 micrometres or less in diameter
POEO Act	Protection of the Environment Operations Act 1997
Pty	Proprietary
Q	Quarter of a year
RCE	Rehabilitation Cost Estimate
RMP	Rehabilitation Management Plan
ROM	Run of mine
Sb	Antimony
SCMP	Spontaneous Combustion Management Plan
Se	Selenium
SEARs	Secretary's Environmental Assessment Requirements
SO_4	Sulphate
sp.	Species
SSD	State Significant Development
STP	Sewage treatment plant

Acronym	Definition
SW	Surface water
t	Tonnes
tCO_2-e	Tonnes of carbon dioxide equivalent
TDS	Total dissolved solids
TEOM	Tapered Element Oscillating Microbalance
TMP	Traffic Management Plan
TSP	Total suspended particulates
TSS	Total suspended solids
UG	Underground
$\mu g/m^3$	Micrograms per cubic metre
µS/cm	Microsiemens per cm
UHAQMN	Upper Hunter Air Quality Monitoring Network
U/S	Upstream
VIMP	Visual Impact Management Plan
VWP	Vibrating wire piezometer
WAL	Water Access Licence issued under the *Water Management Act 2000*
WMP	Water Management Plan

3 INTRODUCTION

Maxwell Ventures (Management) Pty Ltd, a wholly owned subsidiary of Malabar Resources Limited (Malabar) owns and operates the Maxwell Underground Mine (Maxwell UG Mine). The site is located in the Upper Hunter Valley of New South Wales (NSW), east-southeast of Denman and south-southwest of Muswellbrook. The site is approved to extract a maximum of 8 million tonnes of run-of-mine (ROM) coal per year over a period of 26 years. The seams targeted have the capacity to produce a high proportion of metallurgical coal for steel-making and other metals.

Construction of the Maxwell UG Mine commenced in May 2022 and first workings in the Whynot Seam commenced in March 2023. Drift construction in the Woodland Hill Seam commenced in July 2023 and was completed in November 2024.

The site consists of the following areas:

- underground area comprising the area of underground mining operations and the mine entry area (MEA) to support underground mining and coal handling activities and provide for personnel and materials access;
- Maxwell Infrastructure (formerly Drayton mine) comprising previous open cut mining areas, coal handling and preparation plant (CHPP), train load-out facilities and rail loop, Antiene rail spur and other infrastructure and services; and
- transport and services corridor between the MEA and Maxwell Infrastructure comprising the site access road, an overland conveyor (to be constructed), power supply and other ancillary infrastructure and services.

The area within and surrounding the site, which has previously been known as Mt Arthur South, Saddlers Creek and Drayton South, has long been identified as having a significant in-situ coal resource. The regional context of the site is shown in **Figure 1**.

Prospecting for coal commenced in the late 1940s, with exploration intensifying during the 1960s and 1970s. Open cut coal extraction and mining activities commenced at Maxwell Infrastructure in 1983 and ceased in October 2016. The previous open cut mining area is currently in the rehabilitation phase of the mine operations.

The site is bordered by Mt Arthur Coal to the west and AGL Macquarie's Bayswater Power Station and AGL Macquarie's de-commissioned Liddell Power Station adjoining the eastern and southern boundaries. The Antiene rural residential area exists to the north of the site. The relevant approval boundaries, lease boundaries and biodiversity offset areas for the site are shown in **Figure 2**.

The development consent for State Significant Development 9526 (SSD 9526) was granted on 22 December 2020 under clause 8A of the *State Environmental Planning Policy (State and Regional Development) 2011* and section 4.5(a) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The development consent was modified on 19 November 2021 (Maxwell MOD1) to allow for the repositioning of infrastructure primarily at the MEA and realignment of a section of the site access road. The development consent was further modified (Maxwell MOD2) on 19 October 2022 to allow for the following:

- re-orientation of the longwall panels in the Woodlands Hill, Arrowfield and Bowfield Seams resulting in a minor increase in the approved underground mining extent;
- reduction in the width of some of the longwall panels in the Woodlands Hill Seam;
- repositioning of the upcast ventilation shaft site and associated infrastructure with no increase of the total area disturbed; and
- other minor works and ancillary infrastructure components (e.g. access road and ancillary water management infrastructure for the repositioned ventilation shaft site) with no increase of the total area disturbed.

Development Consent DA 106-04-00 for the existing rail loop and Antiene Rail Spur was granted on 2 November 2000 under Section 76(A)9 and 80 of the EP&A Act and is still current. DA 106-04-00 was modified on 18 September 2023 (Antiene MOD1) to align with the approved operating life of the Maxwell Underground Project (i.e. until 2047).

This report details the compliance status of the site with respect to development consents and mining leases from 1 January 2024 to 31 December 2024. It has been prepared in accordance with the Annual Review Guideline published by the DPHI in October 2015. It also fulfils the Annual Review requirements under the conditions of development consent SSD 9526. These conditions and where they have been addressed in the report are listed in **Appendix 1**.

Names and contact details of the key personnel who are responsible for environmental management at the site are provided in **Table 4**.

Table 4. Site contacts

Name	Role	Contact details
Rob Hayes	General Manager Development and Operations	(02) 6542 0283 rhayes@malabarresources.com.au
Donna Tiananga	Environment, Community and Approvals Manager	(02) 6542 0283 dtiananga@malabarresources.com.au
Alex Newton	Environment and Approvals Coordinator	(02) 6542 0283 anewton@malabarresources.com.au
Teagan Rutter	Community Officer	(02) 6542 0283 trutter@malabarresources.com.au

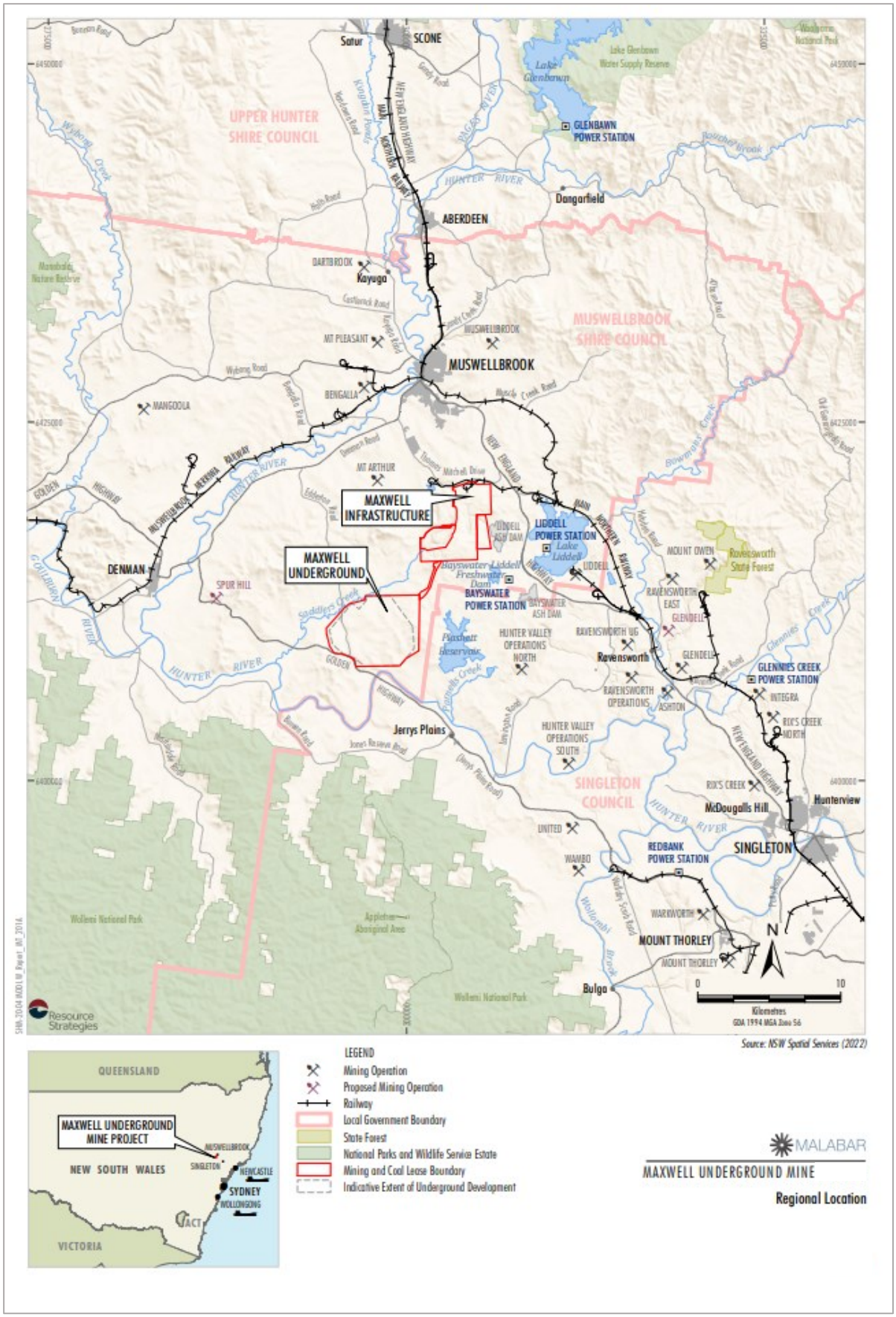

Figure 1. Regional context

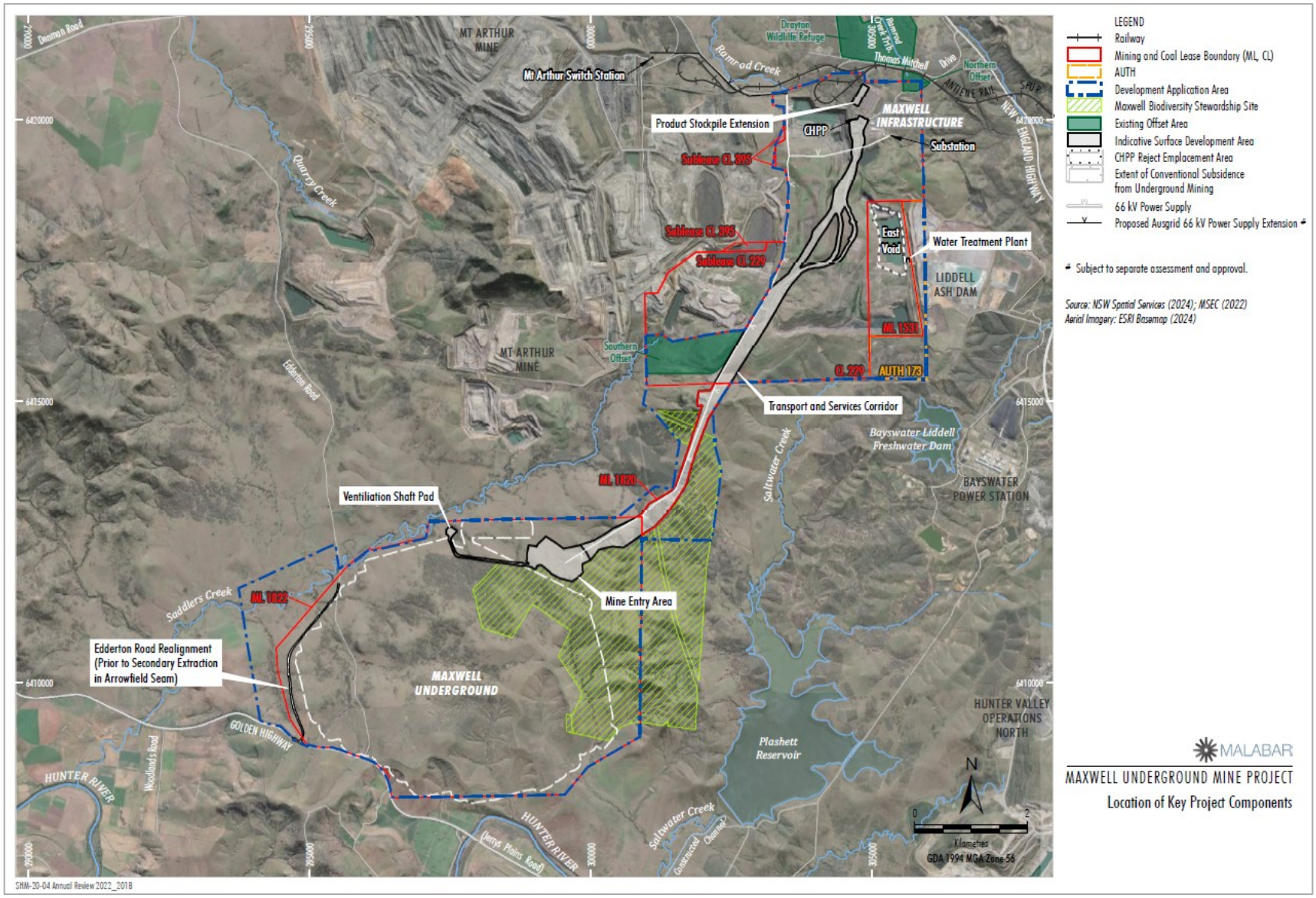

Figure 2. Maxwell UG Mine boundaries

4 APPROVALS

Operations at the Maxwell Infrastructure site commenced in 1983. A Development Consent granted by Muswellbrook Shire Council (MSC) in 2002 (DA 163/2002) allowed for the production of up to 5.5 million tonnes per annum (Mtpa) of ROM coal. The Antiene Rail Spur was utilised to transport export thermal coal to the Port of Newcastle via the Main Northern Railway.

On 1 February 2008, PA 06_0202 was granted for the extension of open cut mining operations with a maximum extraction rate of 8 Mtpa of ROM coal, and for the continued use and maintenance of surface infrastructure. A modification to PA 06_0202 was granted by the then Minister for Planning on 16 October 2009 to allow for an extension of the approved mining disturbance footprint and establishment of a new conservation area. A second modification to PA 06_0202 was granted by the then Minister for Planning and Infrastructure on 17 February 2012 to facilitate the development of an explosives storage facility and allow the disposal of tailings within the East Void.

Open cut mining at the Maxwell Infrastructure site ceased in October 2016 under the ownership of Anglo-American. Approval for coal extraction subsequently lapsed on 31 December 2017. On 26 February 2018, the ownership of the Maxwell Infrastructure site was formally transferred to Maxwell and PA 06_0202 was surrendered in July 2022.

In August 2018, Maxwell submitted a request to the DPHI for Secretary's Environmental Assessment Requirements for the Maxwell UG Mine. Maxwell proposed to develop an underground coal mine, targeting metallurgical quality coals and utilise substantial existing facilities at the Maxwell Infrastructure site. Development consent for the Maxwell UG Mine SSD 9526 was granted on 22 December 2020 under clause 8A of the *State Environmental Planning Policy (State and Regional Development) 2011* and section 4.5(a) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Maxwell MOD1 was approved on 19 November 2021 to allow for the following:

- repositioning of the underground portal;
- realignment of a small section of the proposed access road at the Maxwell Infrastructure site to utilise an existing haul road and minimise impacts to established mine rehabilitation;
- repositioning of an approved clean water diversion for the MEA;
- repositioning of the water treatment plant from the MEA to the Maxwell Infrastructure site; and
- other minor works and ancillary infrastructure components within the existing approved surface development areas (e.g. works associated with the reconfiguration of the MEA, pumps/pipelines associated with the water treatment plant).

Maxwell MOD2 was approved on 19 October 2022 to allow for the following:

- re-orientation of the longwall panels in the Woodlands Hill, Arrowfield and Bowfield Seams resulting in a minor increase in the approved underground mining extent;
- reduction in the width of some of the longwall panels in the Woodlands Hill Seam;
- repositioning of the upcast ventilation shaft site and associated infrastructure with no increase of the total area disturbed; and
- other minor works and ancillary infrastructure components (e.g. access road and ancillary water management infrastructure for the repositioned ventilation shaft site) with no increase of the total area disturbed.

The Antiene Rail Spur has been servicing the former Drayton Mine since 1983, the Mt Arthur Mine since 2001 and the Maxwell Underground Project since 2023. The Antiene Rail Spur is used to transport coal from these operations via the Main Northern Railway Line to the Port of Newcastle for export. Development Consent DA 106-04-00 for the existing rail loop and Antiene Rail Spur was granted on 2 November 2000 under Section 76(A)9 and 80 of the EP&A Act. DA 106-04-00 was modified on 18 September 2023 (Antiene MOD1) to align with the approved operating life of the Maxwell Underground Project (i.e. until 2047).

Maxwell holds Environment Protection Licence (EPL) 1323 for the Maxwell Underground Project. No variations were made to the EPL during the reporting period.

Open cut mining operations previously occurred within Mining Lease (ML) 1531, Coal Lease (CL) 229 and CL 395, targeting the Broughams, Grasstrees, Thiess, Puxtrees and Balmoral Seams within the Rowan Formation of the Greta Coal Measures. Maxwell now holds pre-existing leases CL 229, CL 395 and ML 1531. On 10 November 2021, Maxwell was granted ML 1820 for ancillary mining activities and ML 1822 was granted on 18 November 2021 for underground coal mining. Authorisation 171 was relinquished during the reporting period.

A sub-lease is executed between Maxwell and Hunter Valley Energy Coal (HVEC) and registered against a portion of CL 229 and CL 395. In accordance with the sub-lease, HVEC is responsible for the rehabilitation of the area under the sub-lease, and it is therefore excluded from the scope of this Annual Review.

On 19 August 2020, Maxwell received development consent SSD 9820 under the State Significant Development provisions of the EP&A Act for the Maxwell Solar Farm. The approved Maxwell Solar Farm activities include the development of a ground-mounted photovoltaic solar panels with an installed capacity of approximately 25 Megawatts (AC). The solar farm will be located on approximately 130 hectares (ha) of rehabilitated open cut mine land within the site.

Current development consents, leases and licences relevant to the site are listed in **Table 5**.

Table 5. Statutory approvals

Statutory Approval Reference	Description
SSD 9526	Development Consent issued under Section 4.36 of the *Environmental Planning and Assessment Act 1979* for the Maxwell UG Mine
DA 106-04-00	Development Consent issued under Section 4.55(2) of the *Environmental Planning and Assessment Act 1979* for use of the existing Drayton Rail Loop and Antiene Rail Spur.
CL229	Coal Lease issued under the *Mining Act 1973.*
CL395	Coal Lease issued under the *Mining Act 1973.*
ML1531	Mining Lease issued under the *Mining Act 1992.*
ML1820	Mining Lease issued under the *Mining Act 1992* for ancillary mining activities.
ML1822	Mining Lease issued under the *Mining Act 1992* for underground coal mining.

Statutory Approval Reference	Description
A173	Authorisation issued under the *Mining Act 1992.*
EPL 1323	Environment Protection Licence (EPL) issued under Section 55 of the *Protection of the Environment Operations Act 1997* (POEO Act) for mining for coal and coal works.
EPBC 2018/8287	Approval under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999*.
WAL41559	Water Access Licence issued under the *Water Management Act 2000* for aquifer water extraction.
WAL41491	Water Access Licence issued under the *Water Management Act 2000* for aquifer water extraction.
WAL41234	Water Access Licence issued under the *Water Management Act 2000* for aquifer water extraction.
WAL43166	Water Access Licence issued under the *Water Management Act 2000* for aquifer water extraction.
WAL39739	Water Access Licence issued under the *Water Management Act 2000* for aquifer water extraction.
WAL43160	Water Access Licence issued under the *Water Management Act 2000* for aquifer water extraction.
WAL39792	Water Access Licence issued under the *Water Management Act 2000* for aquifer water extraction.
20BL171953	Bore licence issued under the *Water Act 1912* for a test bore.
20BL171954	Bore licence issued under the *Water Act 1912* for a test bore.
20BL171955	Bore licence issued under the *Water Act 1912* for a test bore.
20BL171956	Bore licence issued under the *Water Act 1912* for a test bore.
20BL171957	Bore licence issued under the *Water Act 1912* for a test bore.
20BL174016	Bore licence issued under the *Water Act 1912* for a monitoring bore.
20BL174017	Bore licence issued under the *Water Act 1912* for a monitoring bore.
20BL174018	Bore licence issued under the *Water Act 1912* for a monitoring bore.

5 OPERATIONS SUMMARY

5.1 Mining Operations

The Maxwell UG Mine is an underground mining operation that will produce high-quality coal over a period of approximately 26 years. At least 75 per cent of product coal produced would be capable of being used in the making of steel (coking coals) and the production of other metals. The balance would be export thermal coals suitable for the new-generation High Efficiency, Low Emissions power generators. The Maxwell UG Mine is approved to extract up to 8 Mtpa of ROM coal from four seams within the Wittingham Coal Measures, using the following underground mining methods:

- underground bord and pillar mining with partial pillar extraction in the Whynot Seam; and
- underground longwall extraction in the Woodlands Hill Seam, Arrowfield Seam and Bowfield Seam.

Substantial existing infrastructure at the Maxwell Infrastructure site is used for the handling, processing and transportation of coal. This includes the existing CHPP, train load-out facilities and other infrastructure and services including water management infrastructure, administration buildings and workshops.

Construction of the Maxwell UG Mine continued during the reporting period including the following key activities:

- drilling of the upcast ventilation shaft;
- installation of the Woodlands Hill drift conveyor;
- sealing of the permanent access road to the MEA;
- installation of the water treatment plant and upgrading of the access road;
- installation of dams, temporary buildings and services to the MEA; and
- in-Situ waste rock was removed as part of construction works and used as cconstruction fill for hardstand areas, dam embankments and road construction.

Electrical, mechanical and structural repairs and improvements were also undertaken at the CHPP. Twenty trains were loaded with coal and left the site during the reporting period. Train movements are further discussed in **Section 7.7**.

First workings in the Whynot Seam (bord and pillar mining) continued during the reporting period on a 24-hours a day, seven days a week basis. The Whynot Seam Panels 2 to 5 Extraction Plan was submitted to DPHI during the reporting period and is expected to be approved during the next reporting period. Second workings will commence in the Whynot Seam during the next reporting period.

Drift construction in the Woodland Hill Seam commenced during the previous reporting period. This continued during the current reporting period and was completed in November 2024. First development coal is expected during the next reporting period. Longwall equipment continued to be progressively manufactured and delivered to site. An Extraction Plan for panels 1 to 4 in the Woodland Hill Seam will be submitted to DPHI during the next reporting period.

A production summary is presented in **Table 6.**

Table 6. Production summary (extraction)

Material	Approved limit	Previous reporting period (actual)	This reporting period (actual)	Next reporting period (forecast)
Waste rock / overburden (bcm)	N/A	715,354	54,344	15,000
ROM coal / ore (t)	8,000,000	109,862	340,501	1,180,000
Coarse reject (t)	N/A	22,518	65,878	158,000
Fine reject (tailings) (t)	N/A	20,056	99,945	311,000
Saleable product (t)	7,000,000 (by rail)	33,962	173,717	708,000

5.2 Other Operations

3D seismic reprocessing of the Maxwell UG Mine geological structure model was undertaken during the reporting period. In addition, a drilling program was undertaken within ML1822. Five exploration boreholes were drilled for the purpose of ground support design for the Woodlands Hill Operation. One of the boreholes was also used for coal quality analysis and another was used for gas content analysis of the Woodlands Hill Seam.

A total of 27 exploration trenches were also completed to target projected igneous intrusions across both the Woodlands Hill and Whynot Seams:

- one trench was completed targeting the D2 Dyke
- three trenches were completed targeting the D4 Dyke
- three trenches were completed targeting the D15 Dyke
- two trenches were completed targeting the D19 Dyke
- three trenches were completed targeting the V4 Plug
- four trenches were completed targeting the V5 Plug
- two trenches were completed targeting the V6 Plug
- three trenches were completed targeting the V9 Plug
- six trenches were completed targeting the J1 Dyke

Although open cut mining operations have ceased at the Maxwell Infrastructure site, rehabilitation of the completed mining areas along with ancillary activities, including upkeep of roads and maintenance of equipment continued during the reporting period. These works were focused on final landform development and rehabilitation and are discussed in more detail in **Section 9**.

5.3 Next Reporting Period

During the next reporting period, construction works will be focussed on earthworks and installation of the overland conveyor, construction of a reclaim tunnel, commissioning of the water treatment plant and installation of the ventilation fan for the Woodlands Hill seam operation.

Surface trenching, magnetic surveys, test pits and the drilling of cored and non-cored holes are proposed to be undertaken within ML 1822. These exploration activities will enhance the geological model and provide reservoir (gas testing) characterisation. A geochemistry assessment may also be undertaken.

6 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

DPHI provided a letter in September 2024 stating that they had reviewed the 2023 Annual Review and considered the report to generally satisfy the reporting requirements of Development Consent (SSD 9526) and the Department's *Annual Review Guideline* (October 2015).

Table 7. Actions required from previous reviews, regulatory notices, improvement actions and outstanding IEA actions

Action required	Requested by	Action taken	Section in Annual Review
Provide a progress report to detail the progress of the implementation of the measures identified in Direction 1, which includes the following: a. List of measures required and the progress of implementation for each measure, b. Verification of measures implemented, and c. Results of quality assurance and validation of measures implemented.	2023 Annual Review	Completed. Progress report provided to Resources Regulator in February 2024.	9.1
Real-time noise monitoring data will be calibrated with the attended noise monitoring data.	2023 Annual Review	The site was not audible during all meteorological conditions, including winter which is more prone to inversion layers. Therefore, this action was unable to be completed. Attended noise monitoring to continue during the next reporting period. The results from the BarnOwl will be compared to the attended measurements and inform the need to calibrate the BarnOwl.	7.2
In accordance with the SWMP, site specific triggers will be calculated from site data based on the ANZG (2018) method for guideline value derivation where 24 months of baseline observations are available.	2023 Annual Review	Less than 24 months discrete of baseline observations available. Therefore, this action was unable to be completed.	8.3

Action required	Requested by	Action taken	Section in Annual Review
Maxwell will complete the installation of noise mitigation measures at the remaining three privately owned receivers (landholder ID 402, 403 and 411) in accordance with Schedule 2, Condition D1 of Development Consent SSD 9526.	2023 Annual Review	Completed. Noise mitigation measures installed at the remaining three privately owned receivers during the reporting period.	7.2
Modem upgrades at remote monitoring stations (inclusive of the TEOMs and meteorological recording stations) will occur during the next reporting period.	2023 Annual Review	Completed. Modem upgrades completed during the reporting period.	7.4
The following actions were identified during the scheduled three yearly inspection and will be implemented during the next reporting period: • Signage for AHIMS coordinate locations of sites R5, R10, R15, R16 should be updated to include their respective site names. • AHIMS coordinates for sites R7, R11, R12, R13, and R14 should be updated on the AHIMS register to reflect the fenced areas. • Signage, including site name, for AHIMS coordinate location of site R8, R9 and R17 should be placed on the existing fencing.	2023 Annual Review	Completed. Signage updated and installed during the reporting period. AHIMS coordinates updated during the reporting period.	7.5
A Scoping Report for the Edderton Solar Project will be submitted to DPHI during the next reporting period.	2023 Annual Review	Completed. Scoping Report was submitted to DPHI in April 2024.	N/A

Action required	Requested by	Action taken	Section in Annual Review
During the next reporting period, the recently capped area at site 286 will be topsoiled and seeded.	2023 Annual Review	Completed. Recently capped area 286 was topsoiled and seeded during the reporting period.	7.13
Weed control program targeting Prickly Pear and exotic perennial grass species at the Southern Offset Area.	2023 Annual Review	Completed. Weed management works will continue to be ongoing.	7.14
Weed control targeting Spiny Rush and Prickly Pear at the Wildlife Refuge and Northern Offset Area.	2023 Annual Review	Completed. Weed management works will continue to be ongoing.	7.14
Incorporate an existing groundwater monitoring bore into the TARP assessment as a replacement to DD1025.	2023 Annual Review	Completed. Bore DD1025 recommended by hydrogeologist to be replaced in the TARP by DD1014. This will be included in the next update to the Ground Water Monitoring Program.	8.5
Conduct a VWP inspection investigation to confirm the status of all VWP sensors on site and recommend potential repair, replacement or decommissioning of each VWP sensor.	2023 Annual Review	Partially completed. Inspection completed during the reporting period. An additional data review was recommended to evaluate raw VWP data to confirm full VWP functionality. This data review will be completed during the next reporting period.	8.5
The groundwater model will be recalibrated in Q4-2024 (three years after the previous model calibration dataset).	2023 Annual Review	A recalibration of the model will occur during the next reporting period as part of the Woodlands Hill Longwalls 1-4 Extraction Plan. Therefore, this action has not yet been completed.	8.5

Action required	Requested by	Action taken	Section in Annual Review
Two tree planting programs consisting of approximately 8,000 tube stock to be planted on existing mine rehabilitation within the conceptual woodland corridor.	2023 Annual Review	Completed. Two tree planting programs undertaken during the reporting period.	9.2
A weed control program focussing on High Threat Exotic weed species.	2023 Annual Review	Completed. Weed management works will continue to be ongoing.	9.2
A kangaroo cull on rehabilitation areas to reduce the impact of grazing on vegetation.	2023 Annual Review	Not completed. A kangaroo cull is scheduled for early 2025.	9.2
Continued wild dog and fox controls in association with the Local Land Services.	2023 Annual Review	Completed. 1080 baiting program undertaken in June 2024 and October through to November 2024, simultaneously with AGL Macquarie and Mt Arthur Coal.	9.2
Continue to thin Golden Wreath Wattle (*Acacia saligna*) and Sugar Gum (*Eucalyptus cladocalyx*) on the Great North Tip where target native trees and shrubs are being suppressed.	2023 Annual Review	Completed. Thinning of Golden Wreath Wattle and Sugar Gum on North tip conducted during the reporting period.	9.2

7 ENVIRONMENTAL PERFORMANCE

The Environmental Management Strategy for the Maxwell UG Mine provides an overview of the site's environmental monitoring. Environmental monitoring is a significant indicator of the site's environmental performance.

The locations of all environmental monitoring sites are shown in **Appendix 2**.

7.1 Meteorological Monitoring

Management

Meteorological conditions such as wind speed, wind direction, temperature, rainfall, solar radiation and humidity are monitored at two automatic weather stations: AWS-1 and AWS-2.

Performance

During the reporting period, temperature trends were similar to previous years with a peak in summer and trough in winter. This is shown in **Figure 3** and **Figure 4**.

The monthly mean maximums at AWS-1 were on average higher than the previous five-year average, ranging from 2.0 degrees Celsius (°C) below the average in May, to 2.9°C above the average in November. May, June, July, September and October were below the previous five-year average, the remainder were above. The monthly mean minimums were above the average with the exception of January and September.

The monthly mean maximum temperatures for AWS-2 were also generally higher than the previous five-year monthly mean maximums, ranging from 1.7°C below the five-year mean maximum in April to 4.7°C above the five-year mean maximum in September. The monthly mean minimums at AWS-2 were less than the average for January, February, March, May, June, July, September and October and above the average for April, August, November and December.

These statistics were consistent with records from across NSW. Mean maximum temperatures in 2024 were above average to very much above across the state. NSW's area-averaged mean maximum temperature was 1.7°C above the 1961–1990 average, the seventh-warmest on record for all years since 1910. The state experienced the second warmest and third warmest years with respect to the area-averaged mean minimum and the area-averaged mean (source: Australian Government Bureau of Meteorology (BoM) Annual Climate Summary for NSW 2024).

A summary of wind monitoring over the reporting period is presented in **Figure 5** and **Figure 6**. Consistent with previous years, and consistent with the geography of the Hunter Valley, the predominant winds were from the south-east and north-west.

As in previous years, winds from the south-east dominated during the warmer months. Winds from the west-north-west and north-west generally dominated during the cooler months, although there was a significant proportion (19 per cent) of winds from the south-east during the April to September months. This was consistent with the onshore flows described below which created widespread high rainfall totals during April, May and June.

In total 93 per cent of wind speeds throughout the reporting period were up to 4 m/s (more than in 2022 and 2023) at AWS-1 and 60 per cent at AWS-2. At AWS-2 40 per cent of wind speeds were in excess of 4 m/s. These higher wind speeds at AWS-2 reflect the exposed location of the recording station at the top of a hill, whereas AWS-1 is situated in a wooded area in a less exposed location. The most common 45-degree wind sector at both AWS-1 and AWS-2 was from the southeast (29 per cent and 19 per cent respectively of winds).

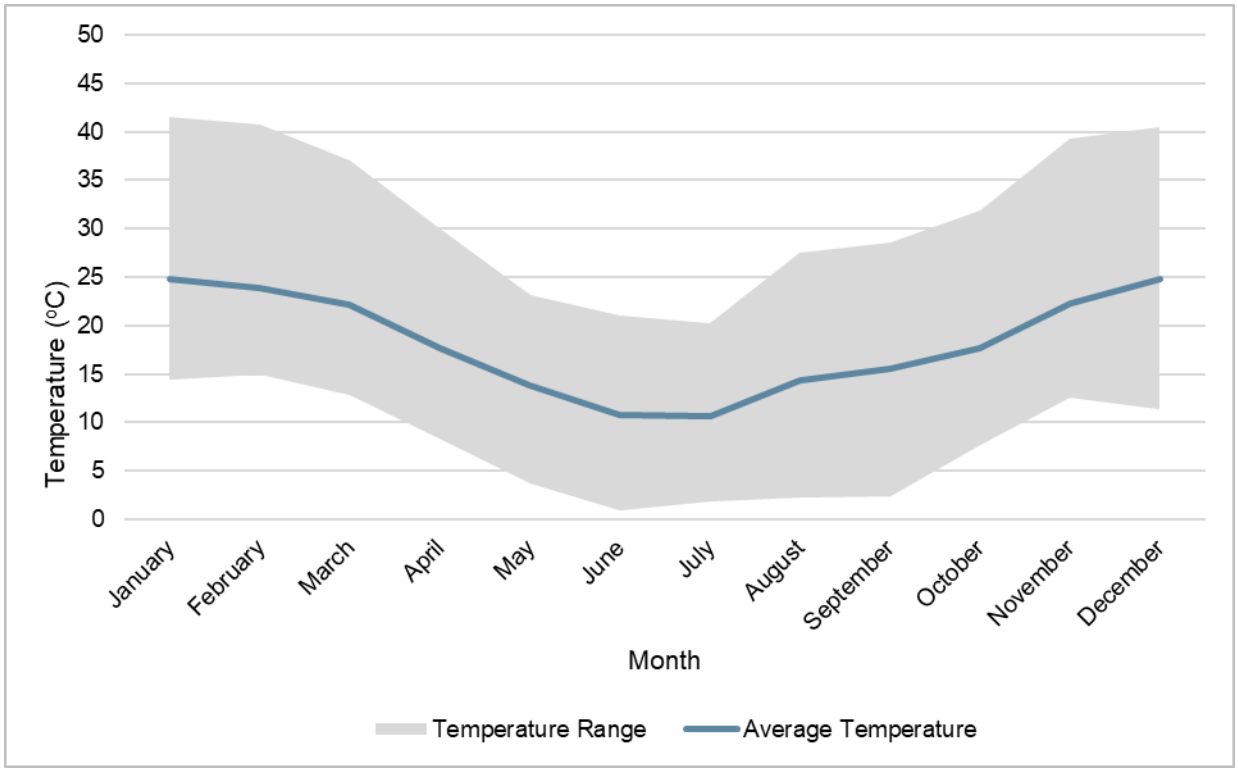

Figure 3. AWS-1 five-year average temperature and temperature range for the reporting period

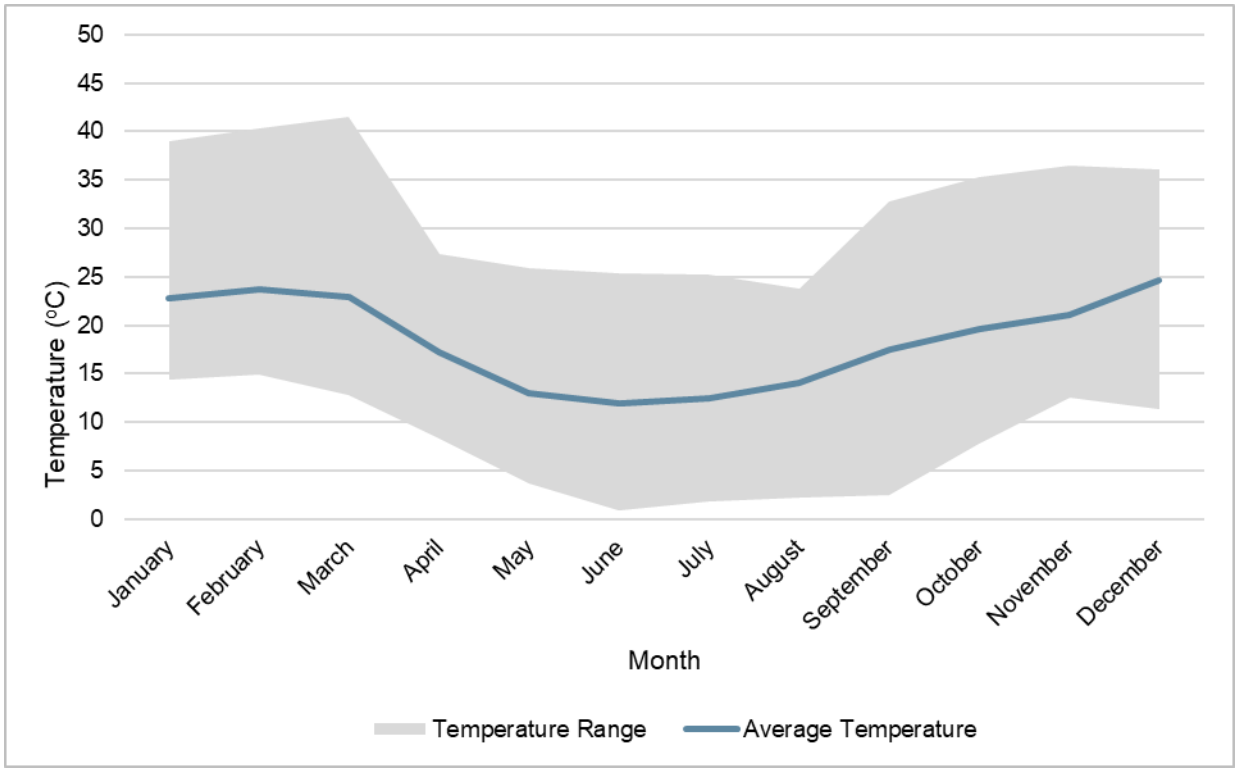

Figure 4. AWS-2 five year-average temperature and temperature range for the reporting period

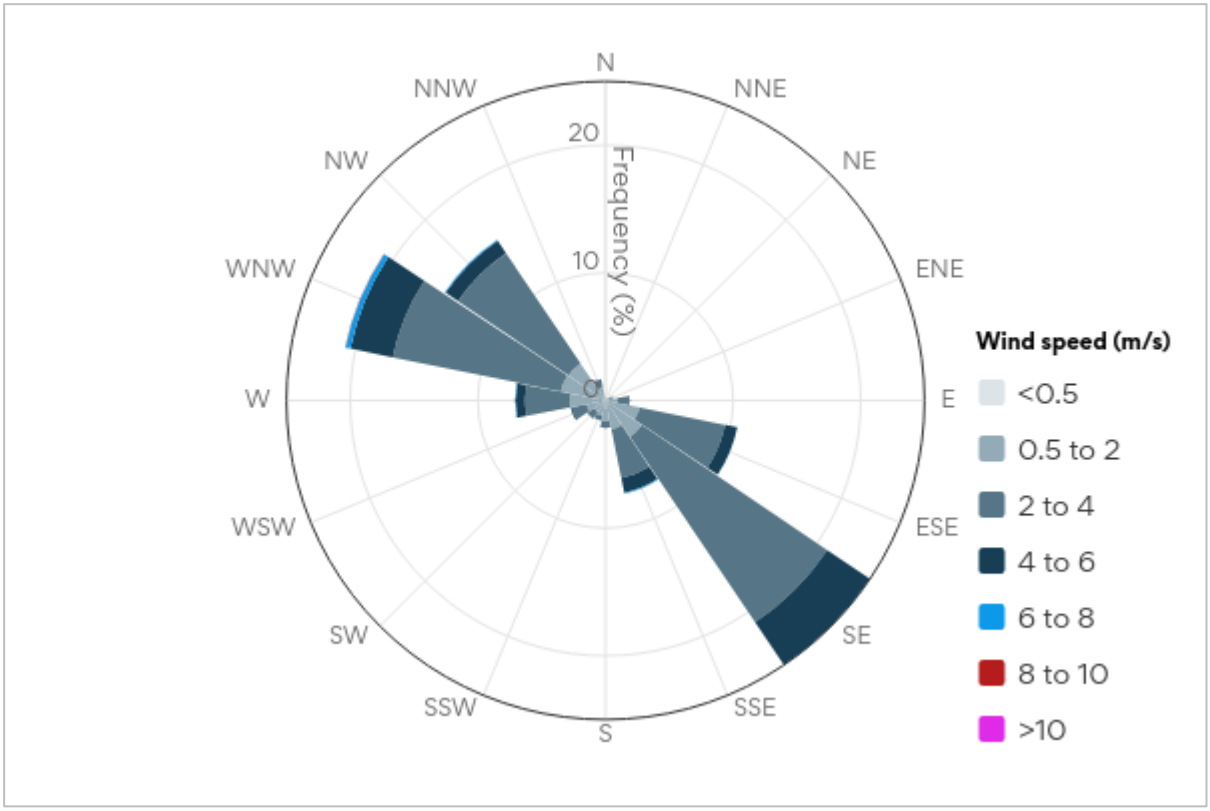

Figure 5. Wind speed and direction for the reporting period at AWS-1

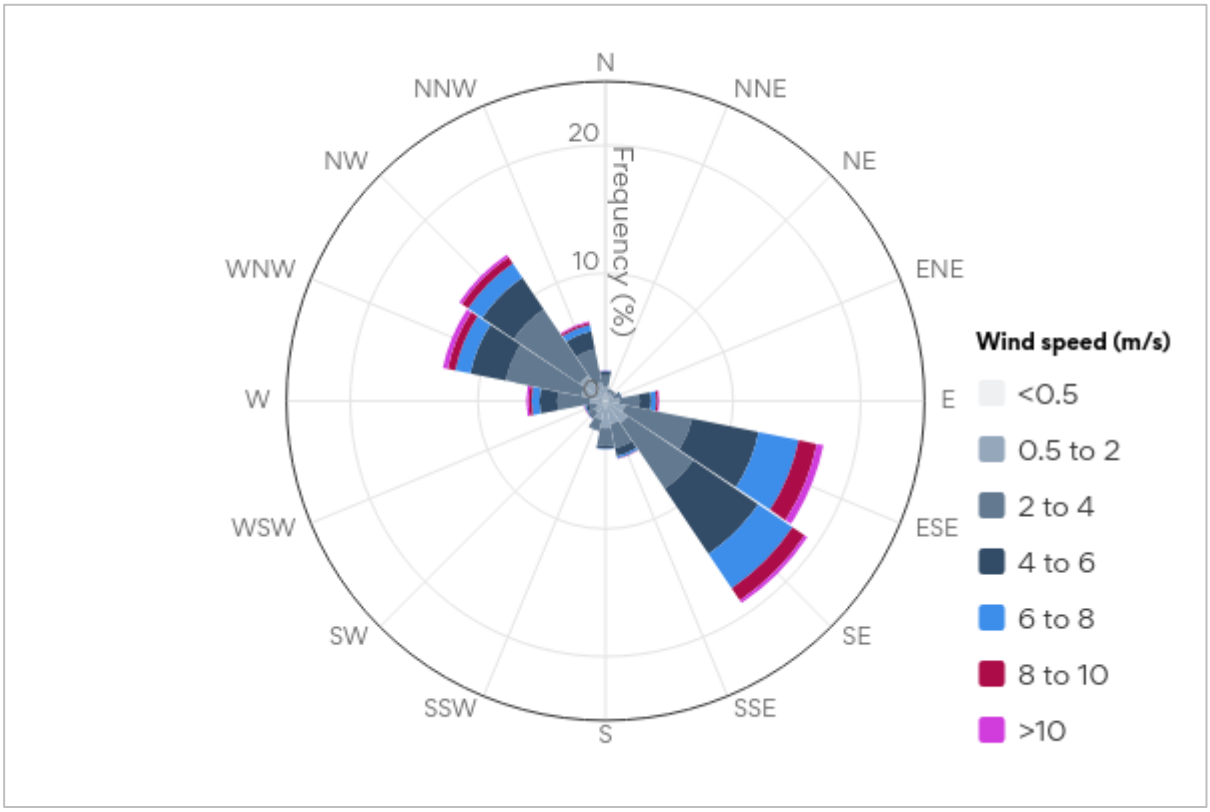

Figure 6. Wind speed and direction for the reporting period at AWS-2

Rainfall recorded during the reporting period was slightly above the 10-year average. At AWS-1 the annual total was 723 millimetres (mm), compared to the 10-year average to 2023 of 718mm. At AWS-2 the annual total was 670mm compared to the 10-year average to 2023 of 633mm.

These rainfall totals are consistent with observations made by the Australian Government Bureau of Meteorology in their Annual climate statement for 2024, which noted that NSW's area-averaged rainfall total in 2024 was 4.5 per cent above the 1961–1990 average.

Figure 7 shows monthly rainfall during the reporting period compared to the average monthly rainfall for the previous 10 years. It should be noted that the March, July and October long term averages in **Figure 7** are disproportionately affected by the record rainfalls of 2022, associated with the 2022–23 La Niña.

March 2024 was a notably dry month compared to the 10-year average. However, April, May and June were notably wetter than average. On 8 April 2024, the NSW coast experienced several days of widespread and heavy rainfall, reflecting a deep coastal trough with an embedded low-pressure system and a strong easterly flow. Many daily April rainfall records were set, and Flood Warnings were issued across coastal and inland areas of NSW.

In early May an upper low-pressure system developed over western NSW, moving eastwards towards the coast and combined with an onshore flow produced high rainfall totals, especially in the Illawarra district and several sites had their highest daily May rainfall on record. In mid-May an upper trough moved eastwards across western NSW, combined with onshore flow and generating widespread rainfall along the coast.

In June, a coastal low developed and deepened off the NSW coast generating widespread rainfall across coastal and adjacent inland areas. Flood watches and warnings were issued for the coast from the Hunter to the South Coast districts.

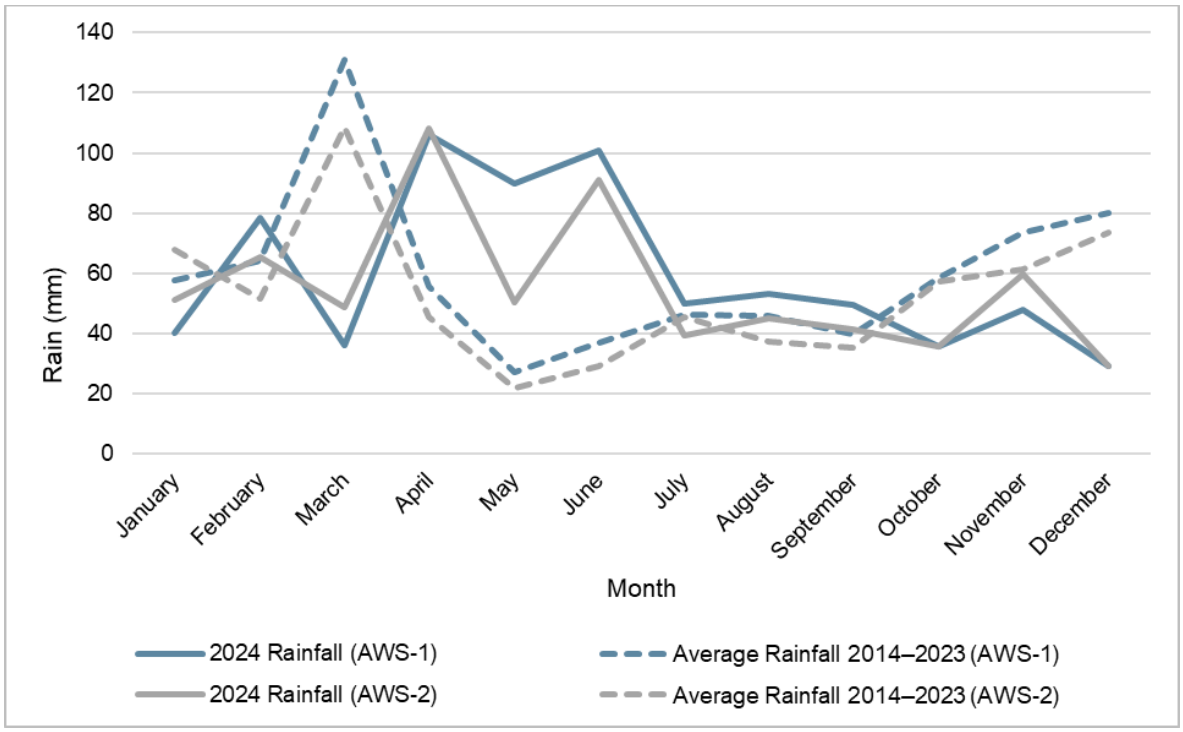

Figure 7. Rain for the reporting period with historic comparison

Proposed Improvements

There are no improvements identified for the next reporting period.

7.2 Noise

Management

Potential noise impacts from the site are managed in accordance with the Noise and Blasting Management Plan (NBMP) for the Maxwell UG Mine. In December 2024, the NBMP was updated following an extension request granted by the Planning Secretary to continue trucking ROM coal from the MEA to the CHPP until 31 December 2026. The update also included changes to clarify that the document does not apply to the Maxwell Solar Farm. The NBMP details statutory requirements and outlines the controls to be implemented for the management of noise associated with the site.

The noise monitoring program includes a combination of attended and real-time monitoring at locations representative of residential receivers. Attended monitoring is carried out in accordance with the relevant requirements set out in the Noise Policy for Industry (EPA 2017). Measurement of the noise environment for compliance assessment is conducted by an acoustic consultant. The compliance assessment for the remaining residential sites is determined by the acoustic consultant using the noise model to extrapolate from the measured values.

Real-time noise monitoring is undertaken for operational purposes only and currently involves the use of a BarnOwl directional noise monitoring system.

Performance

Attended noise monitoring and modelling was conducted during the reporting period to assess noise impacts and determine compliance to approval criteria. Monitoring was conducted every month at four locations (NM1 to NM4) in accordance with the NBMP. Noise impacts were assessed each month over three consecutive operating days for a minimum of 1.5 hours during the day, 30 minutes during the evening and 1 hour during the night. Results for the reporting period are summarised in **Appendix 3**.

As is shown in **Appendix 3**, noise generated by the site alone was audible at residential locations to the north however it was significantly lower than the noise criteria. Similarly, noise generated by the Rail Loop and Antiene Rail Spur was audible but below the criteria. This is below the EIS predictions but was expected given the location and nature of the construction activity (i.e., primarily at the MEA).

During the reporting period, Maxwell completed the installation of noise mitigation measures at three privately owned receivers (landholder ID 402, 403 and 411) in accordance with Schedule 2, Condition D1 of Development Consent SSD 9526. All works were undertaken in consultation with the landowner and the measures were consistent with the Voluntary Land Acquisition and Mitigation Policy (DPHI 2018).

Proposed Improvements

During the next reporting period, 15-minute attended measurements at the BarnOwl on each day of the attended survey will be conducted, when the site is audible. The results from the BarnOwl will be compared to the attended measurements and inform the need to calibrate the BarnOwl. Calibration will need to include results from multiple seasons, inclusive of winter, which are more prone to inversion layers.

7.3 Blasting

Management

Potential blast impacts from the site are managed in accordance with the NBMP for the Maxwell UG Mine. As noted above, in December 2024, the NBMP was updated following an extension request granted by the Planning Secretary to continue trucking ROM coal from the MEA to the CHPP until 31 December 2026. The update also included changes to clarify that the document does not apply to the Maxwell Solar Farm. The purpose of the NBMP is to detail statutory requirements and outline the controls to be implemented for the management of surface blasts associated with the site.

Any private landholder or occupier of any residence, who registers an interest in being notified about blasting activities at the site are notified of upcoming blast events. An early notification is provided approximately two days before a proposed blast and another notification is provided on the day of the proposed blast. Proposed blast times are also uploaded onto the MSC Blasting Announcements webpage to enable interested members of the public to get up-to-date information. A Pre-Blast Checklist is completed prior to each blast and includes a fume risk assessment and review of environmental conditions on the day of the blast.

Temporary blast monitors were installed at six locations in 2022. These monitors were removed in 2023 as no further construction surface blasting is proposed. Airblast overpressure and ground vibration are recorded in accordance with *AS 2187.2 – 2006 and ANZEC Guidelines*.

Performance

No construction surface blasts were conducted during the reporting period. Blasting criteria is shown in **Table 8**.

Table 8. Blasting criteria

Date	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Residence on privately owned land	120	10	0%
	115	5	5% of the total number of blasts over a calendar year
Electricity Transmission Lines	-	50	0%
Public Roads	-	100	0%
All other infrastructure, including the Liddell Ash Dam Wall	-	50	0%

Proposed Improvements

There are no improvements identified for the next reporting period.

7.4 Air Quality

Management

Potential air quality impacts from the site are managed in accordance with the Air Quality and Greenhouse Gas Management Plan (AQGGMP) for the Maxwell UG Mine. There were no updates to the AQGGMP during the reporting period. The purpose of the AQGGMP is to detail statutory requirements and outline the controls to be implemented for the management of air quality associated with the site.

The air quality management system includes a comprehensive set of both proactive and reactive control measures and monitoring tools to maintain compliance with the air quality criteria for particulate matter less than 10 µm (PM_{10}) and particulate matter less than 2.5 µm ($PM_{2.5}$). These measures and tools are designed to minimise the potential for generation of wind-blown dust from disturbed surfaces and mining activities, and to enable effective control of episodic dust events. In accordance with the AQGGMP, a combination of depositional dust gauges, E-Samplers and tapered element oscillating microbalance (TEOM) monitors were used for the site during the reporting period to:

- monitor air quality surrounding the site;
- assist in air quality management; and
- assess compliance to air quality impact limits specified by approval conditions.

During the reporting period, modem upgrades at remote monitoring stations (inclusive of the TEOMs and meteorological recording stations) occurred.

Performance

A summary of air quality monitoring results during the reporting period are presented below including an assessment of compliance to approval criteria, a comparison to predictions made in the Maxwell UG Mine EIS and consideration of long-term trends.

Total Suspended Particulates (TSP)

In accordance with the AQGGMP, TSP levels were calculated during the reporting period based on PM_{10} results recorded at each TEOM monitor. As shown in **Table 9**, the annual TSP level was lower than the impact assessment criterion and the highest maximum Maxwell MOD2 prediction for years 1 to 2 of operations at each TEOM.

Table 9. Monitoring summary – TSP (µg/m^3)

Monitor	Averaging period	Approval criterion	Highest maximum MOD2 year 1 to 2 Prediction	Current reporting period result (2024)
TEOM-1	Annual	90	42.6	33.6
TEOM-2	Annual		36.5	26.2

The long-term trend for the annual TSP levels, over a 10-year period, is shown in **Figure 8.** The data shows a slight uplift in concentrations at TEOM-1 relative to the most recent years. This in part reflects the very high rainfall in 2021 and 2022 as described in the Annual Reviews for those years which would have suppressed dust levels at TEOM-1. During the reporting period, rainfall was slightly above average, as described in **Section 7.1**. Annual TSP levels at TEOM-2 were slightly lower than 2023.

The TSP result recorded in 2018 was particularly high. An investigation at the time into the 2018 result found the elevated levels were being influenced by a lessee feeding cattle in an exposed area immediately adjacent to the monitor and were not attributable to impacts from the site nor indicative of regional conditions.

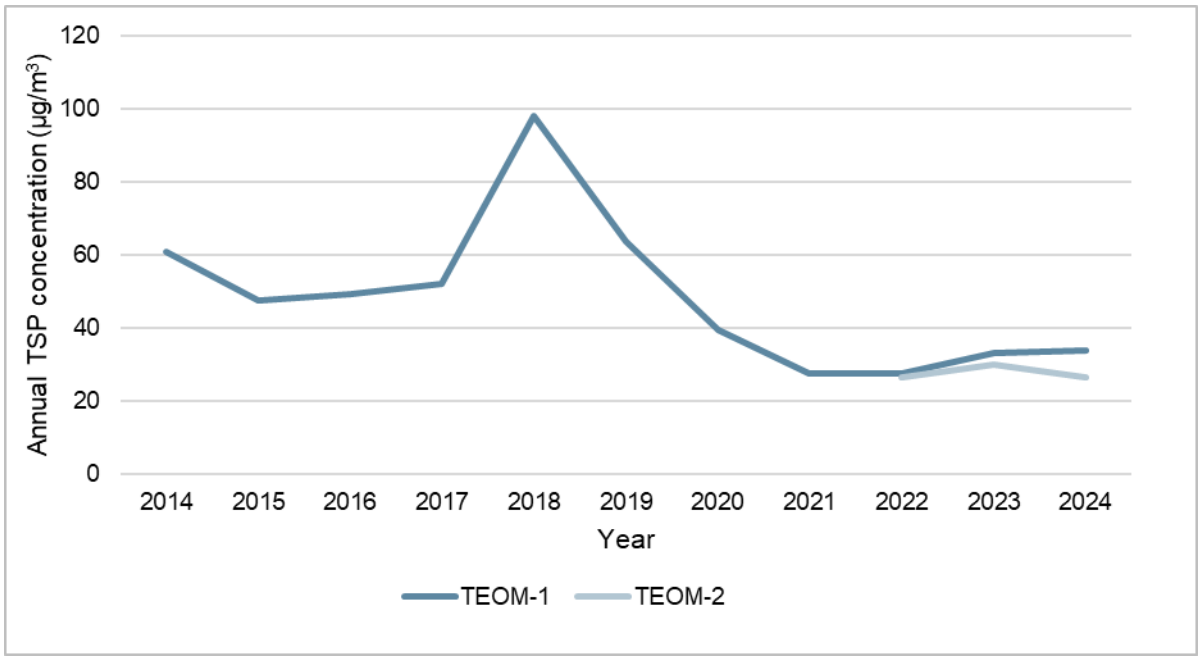

Figure 8. Long-term results for TSP calculated from PM_{10} results at TEOM-1 and TEOM-2

Note: Following investigations, it was determined that the elevated 2018 result was not attributable to impacts from the Maxwell Infrastructure site. Monitoring at TEOM-2 commenced in December 2021, hence the limited long-term trend shown above.

PM_{10}

As shown in **Table 10**, the annual PM_{10} level remained significantly below the impact assessment criterion and the Maxwell MOD2 prediction for years 1 to 2 of operations.

Annual average PM_{10} levels at TEOM-1 and TEOM-2 are shown in **Figure 9**, together with levels from two nearby Upper Hunter Air Quality Monitoring Network stations. The levels monitored by the UHAQMN have shown a similar trend across the region over the past 10 years, albeit lower concentrations at TEOM-1 and TEOM-2.

Table 10. Monitoring summary – annual PM_{10} concentrations (µg/m^3)

Monitor	Averaging period	Approval criterion	Highest maximum MOD2 year 1 to 2 prediction	Current reporting period result (2024)
TEOM-1	Annual	25	17.8	13.5
TEOM-2	Annual		13.2	10.5

All 24-hour PM_{10} levels for the reporting period are presented in **Appendix 4**. The 24-hour criterion of 50 micrograms per cubic metre (µg/m^3) was not exceeded on any day during the reporting period. On some occasions, for example due to scheduled equipment calibration, 24-hour averages were not available. **Appendix 4** describes the methodology by which the data is taken from nearby representative monitoring locations in these instances.

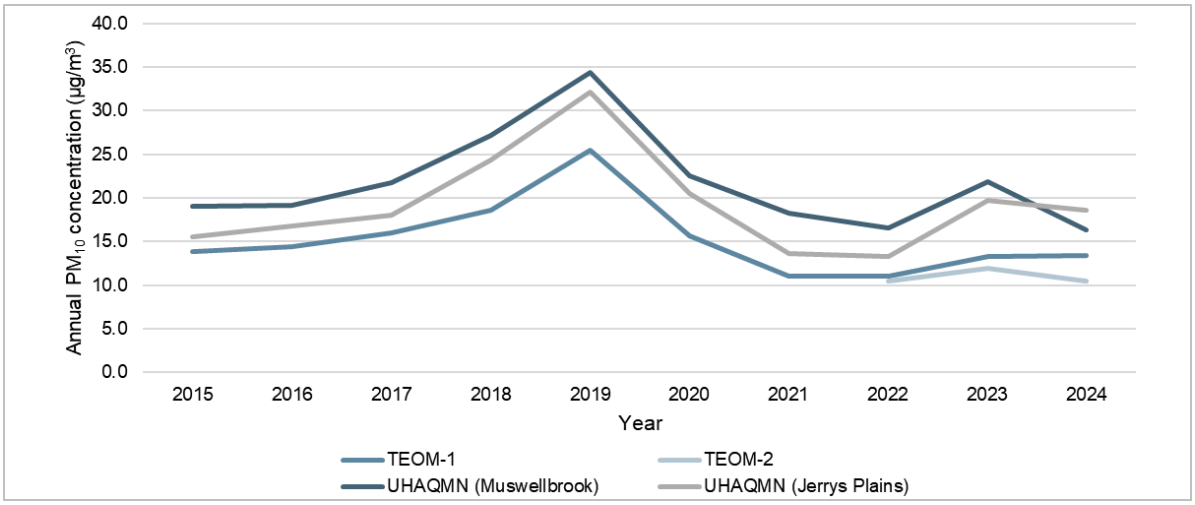

Figure 9. Long-term results for PM_{10} at TEOM-1 and TEOM-2 and at nearby Upper Hunter Air Quality Monitoring Network (UHAQMN)Stations at Muswellbrook and Jerrys Plains.

Note: Monitoring commenced at TEOM-2 in December 2021 and hence long-term trend information at this location is limited to three years.

$PM_{2.5}$

As shown in **Table 11**, the annual $PM_{2.5}$ level remained below the annual impact assessment criterion but slightly above the Maxwell MOD2 prediction for years 1 to 2 of operations. There are various reasons why the results might be slightly above the Maxwell MOD2 predictions including that the TEOM is over calculating true $PM_{2.5}$ concentrations, as the instrument corrects for the evaporation loss of semi-volatile particles, which are less prevalent in a rural environment. The results could also be influence by recent changes to other mining operations as well as contributions from localised and regional sources such as wood heaters, bushfires, or hazard reduction burns. All dust controls were in place during the reporting period, in accordance with the AQGGMP and no complaints were received regarding dust emissions.

As shown in **Figure 10,** monitoring of $PM_{2.5}$ commenced at TEOM-1 on 9 March 2021 and at TEOM-2 on 12 December 2021. As for PM_{10}, the increases since 2021 and 2022 are likely to be as a result of the very low concentrations during those years, reflecting the record rainfalls of those years. The levels monitored by the UHAQMN station in Muswellbrook have shown a similar trend.

Table 11. Monitoring summary – annual $PM_{2.5}$ concentrations (µg/m^3)

Monitor	Averaging period	Approval criterion	Highest maximum MOD2 year 1 to 2 prediction	Current reporting period result (2024)
TEOM-1	Annual	8	5.4	5.9
TEOM-2	Annual		4.9	5.6

All 24-hour $PM_{2.5}$ levels for the reporting period are presented in **Appendix 4**. The 24-hour criterion of 25 micrograms per cubic metre (µg/m^3) was not exceeded at either TEOM-1 or TEOM-2 during the reporting period.

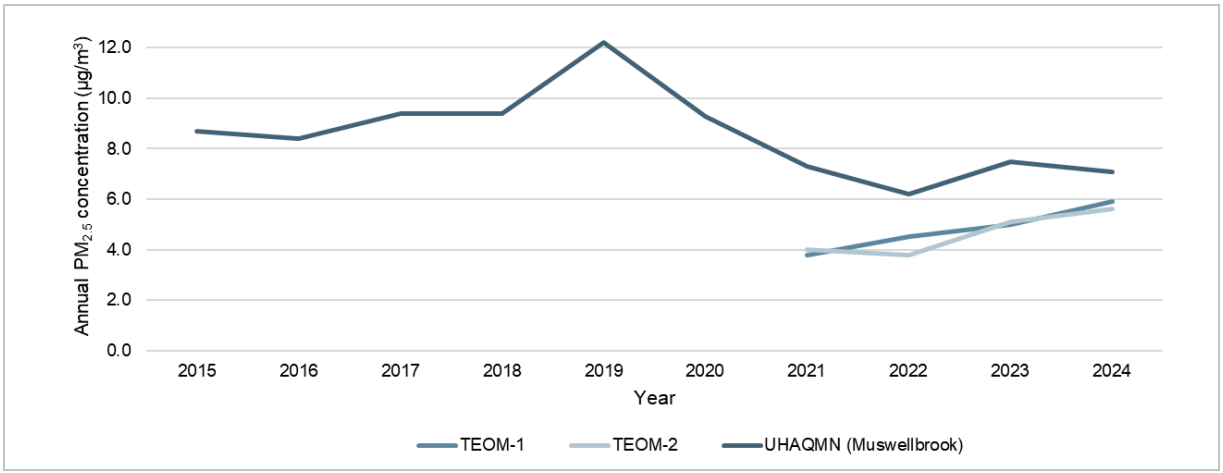

Figure 10. Long-term results for $PM_{2.5}$ at TEOM-1 and TEOM-2 and at the nearby Upper Hunter Air Quality Monitoring Network (UHAQMN)Station at Muswellbrook ($PM_{2.5}$ not recorded at Jerrys Plains).

Note: Monitoring of $PM_{2.5}$ at TEOM-1 commenced 9 March 2021 hence a 298-day average for 2021; Monitoring of $PM_{2.5}$ at TEOM-2 commenced 12 December 2021 hence a 20-day average for 2021.

Deposited Dust

Deposited dust results were significantly less than the impact assessment criteria for both the maximum increase in dust level and maximum total deposited dust. This can be seen in the summary of results presented in **Table 12** and **Table 13**.

The long-term trend in annual average deposited dust levels is shown in **Figure 11**. Like other air quality parameters, deposited dust has been trending downwards, reflecting recovery from the intense drought period during 2017 to 2020.

The exception is for site 2230 in 2021, for which the annual mean was heavily influenced by one result in July 2021 (11.8 g/m^2/month). Sampling notes from July 2021 indicate that this was a contaminated sample (contamination can include soil deposited by birds). Without this result, the annual mean would be 1.8 g/m^2/month.

Table 12. Monitoring summary – incremental deposited dust (g/m^2/month)

Monitor	Averaging period	Approval criterion	Previous reporting period result (2023)	Current reporting period result (2024)
2230	Annual	2	0.1	-0.1
2247			-0.1	0.0
2235			0.0	0.0
2175			-0.1	0.0

Table 13. Monitoring summary - total deposited dust (g/m^2/month)

Monitor	Averaging period	Approval criterion	EIS year 1 prediction	Current reporting period result (2024)
2230	Annual	4	1.6	1.3
2247			1.7	1.4
2235			1.7	1.4
2175			1.7	1.2

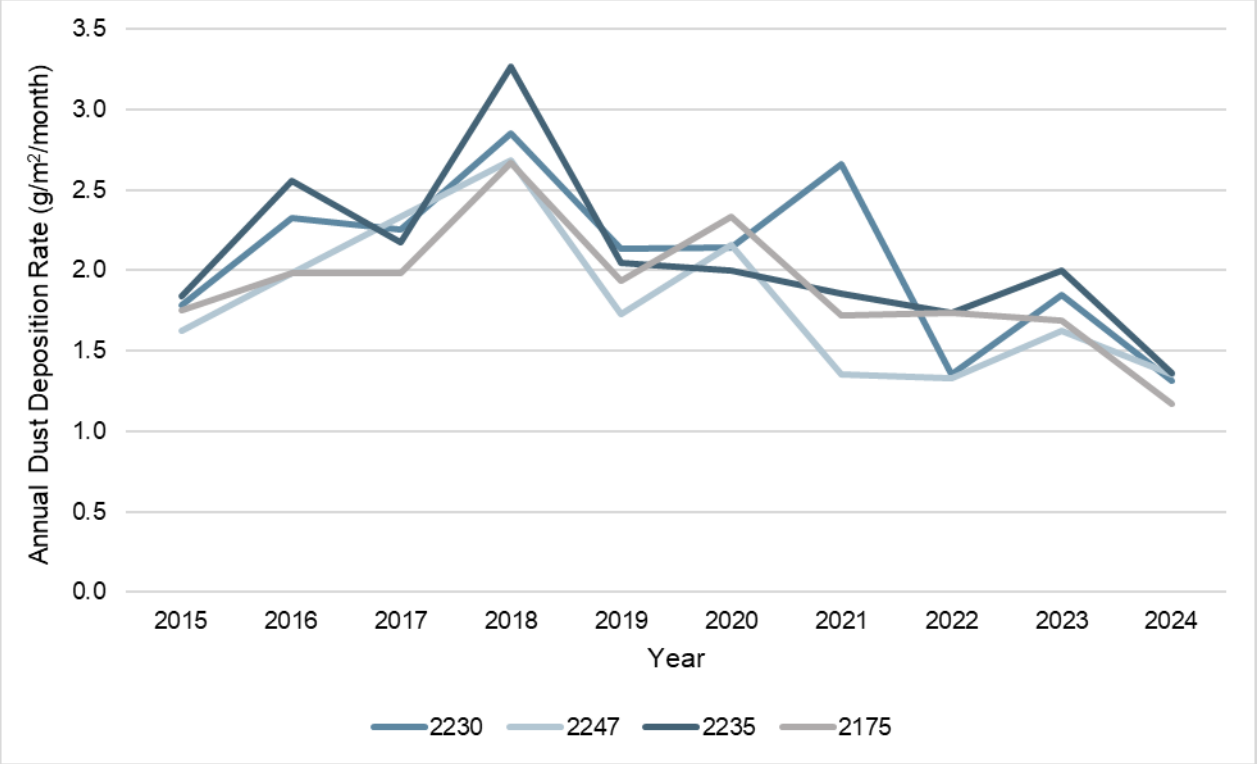

Figure 11. Long-term results for deposited dust

Proposed Improvements

There are no improvements identified for the next reporting period.

7.5 Aboriginal Cultural Heritage

Management

Aboriginal cultural heritage at the Maxwell UG Mine is managed in accordance with the Aboriginal Cultural Heritage Management Plan (ACHMP). In May 2024, during the development of the Whynot Seam Panels 2–5 Extraction Plan, the former ACHMP was updated into a single Heritage Management Plan (HMP) to include the management of both Aboriginal and historic heritage items. The revised HMP was approved by DPHI in August 2024.

The purpose of the HMP is to detail the statutory requirements and provide a framework for the management of Aboriginal cultural heritage associated with the site and accompanying offset areas.

Performance

During the previous reporting period, the scheduled three yearly inspection identified several improvement opportunities. These improvement opportunities were implemented during the reporting period and included:

- updating signage for AHIMS coordinate locations of sites R5, R10, R15 and R16 to include site names;
- updating of AHIMS coordinates for sites R7, R11, R12, R13, and R14 to reflect the fenced areas; and
- installation of signage, including site name, for AHIMS coordinate location of site R8, R9 and R17.

There were no archaeological salvages undertaken during the reporting period.

Proposed Improvements

Subsidence monitoring will be undertaken during the next reporting period to determine if any Aboriginal archaeological sites will be impacted above the underground mining area. This monitoring will be undertaken as part of the Whynot Seam Panels 2–5 Extraction Plan in preparation for the commencement of second workings.

7.6 Non-Aboriginal Heritage

Management

As noted above, in May 2024, the former ACHMP was updated into a single HMP to include the management of both Aboriginal and historic heritage items.

The land that comprises the Maxwell UG Mine and surrounds has primarily been used for pastoral activities since the early period of European settlement. The land within the Maxwell Infrastructure site was part of the historic Edinglassie Estate and originally part of Pringle's Station, owned by Robert Pringle and James White in 1839. The majority of the underground area was originally part of the historic Plashett Estate, with a small part to the east forming part of the historic Bowfield Estate. An Historic Heritage Assessment was undertaken for the Maxwell UG Mine EIS. The assessment noted that no items listed on local, regional, State or national historic registers are located within the site boundary.

Performance

The Maxwell UG Mine will not result in any material adverse impacts on any non-Aboriginal heritage places and as such no specific measures are required to manage or mitigate any impacts.

Proposed Improvements

There are no improvements identified for the next reporting period.

7.7 Transport

Management

The Antiene Rail Spur has been servicing the former Drayton Mine since 1983, the Mt Arthur Mine since 2001 and the Maxwell UG Mine since 2023. The Antiene Rail Spur is used to

transport coal via the Main Northern Railway Line to the Port of Newcastle for export. The section of the Antiene Rail Spur used to service the Maxwell UG Mine is approved to operate under Development Consent DA 106-04-00 until June 2047.

Performance

Twenty trains were loaded with coal and left the site during the reporting period. A further two empty trains were stowed on the rail loop during the November ARTC shut down. The number of train movements and the date and time of each train movement is provided in **Appendix 5**.

A number of activities associated with Development Consent DA 106-04-00 were undertaken during the reporting period including:

- site inspections of the rail loop;
- various corrective and preventative maintenance activities including lifting and repacking of the track, replacement of sleepers and ballast, repairs to drainage infrastructure, track grinding and vegetation and weed removal; and
- testing and condition assessments.

Preventative and corrective maintenance work on sections of the Antiene Rail Spur will continue to be undertaken during the next reporting period.

Proposed Improvements

There are no improvements identified for the next reporting period.

7.8 Visual Impact

Management

Potential visual impacts from the site are managed in accordance with the Visual Impact Management Plan (VIMP) for the Maxwell UG Mine. There were no updates to the VIMP during the reporting period. The purpose of the VIMP is to detail the statutory requirements and controls to be implemented for the management of visual amenity associated with the site.

A Landscape and Visual Impact Assessment was undertaken for the Maxwell UG Mine EIS and found that the site will have inherently low visual impacts because the mining operation is underground and the MEA is located in a natural valley. The assessment was updated to include the revised location of the ventilation shaft for Maxwell MOD2, with resulting impacts at the Edderton Homestead considered moderate.

The MEA tree screen (planted in 2019 along ridge lines and contours to the west of the MEA) is monitored on an annual basis for at least the first five years after planting. This includes an inspection of the tree screen to ensure the planted trees are establishing to become self-sustaining. The following information is recorded:

- An assessment of the survival rate;
- Tree height and tree width; and
- Any impacts from weeds, feral animals or grazing.

Once the tree screen has been established (i.e. five years after planting), additional monitoring will be undertaken from offsite locations to determine the effectiveness of the tree screen.

Night-time lighting inspections were undertaken on a monthly basis at monitoring locations VP7, VP9 and VP10 to determine if there were any direct lighting impacts. In addition, an annual lighting inspection was undertaken of the MEA, transport and services corridor and Maxwell Infrastructure.

Performance

The MEA tree screen was inspected during the reporting period. Similar to the last reporting period, the inspection found the tree screen was performing well with an estimated average 80 per cent survival rate across the various areas. Overall tree growth was good with the majority of trees being recorded at a height of between 3 to 4 metres. A summary of the monitoring results is provided in **Appendix 6**.

Favourable weather conditions during the reporting period have improved vegetation growth and coverage, therefore over time it is expected that this area will improve the visual amenity to complement the natural landscape.

No direct light was visible during the monthly night-time lighting inspections. Light spillage, shielding, type of light and direction of lighting were assessed as part of the annual inspection of the MEA, transport and services corridor and Maxwell Infrastructure however no issues were identified.

Proposed Improvements

There are no improvements identified for the next reporting period.

7.9 Greenhouse Gas and Energy Efficiency

Management

Greenhouse gas (GHG) and energy efficiency for the site are managed in accordance with the AQGGMP for the Maxwell UG Mine. There were no updates to the AQGGMP during the reporting period. GHG emissions attributable to the Maxwell UG Mine include emissions from fuel and energy consumption which are regularly quantified. This information is then used to manage GHG emissions and energy consumption to the minimum practicable level.

Performance

Greenhouse gas emissions from the Maxwell UG Mine have been estimated for Year 1 using the same methodology used for the EIS. In addition, a comparison with the latest National Greenhouse Accounts (NGA) Factors has been conducted. These factors are regularly updated (annually), including by the Department of Climate Change, Energy, the Environment and Water (DCCEEW).

Year 1 represents the continuation of the construction phase of the Project, development coal from the Whynot and Woodlands Hill portals and bord and pillar production coal from the Whynot operation. The emissions from Maxwell Infrastructure (i.e. diesel and electricity use in 2024) have also been added to the emissions from the mine.

The estimated total Scope 1 and 2 emissions for the reporting period were 51.5 kilotonnes of carbon dioxide equivalent (kt CO2-e) using the same methodology used for the EIS. Using the latest NGA Factors, the calculated Scope 1 and 2 emissions were 49.3 kt CO2-e. For comparative purposes, both are significantly less than the emissions of 170.5 kt CO2-e predicted for Year 1 in the EIS. This is primarily due to less ROM and product coal production, less diesel usage and less electricity consumed, than was assumed in the EIS. Scope 3 emissions were estimated to be 444 kt CO2-e using the EIS emission factors and 503 kt CO2-e using the latest NGA Factors. These are also less than the EIS predictions for Year 1 of 788 kt CO2-e.

In accordance with *National Greenhouse and Energy Reporting Act 2007* (NGER Act), Maxwell will quantify greenhouse gas emissions attributable to its operations, including emissions from fuel and electricity consumption. Maxwell would manage its contribution to Australian greenhouse gas emissions inventories through participation in other applicable Commonwealth of State requirements (e.g. the National Greenhouse and Energy Report Scheme and associated revised Safeguard Mechanism), as well as other applicable government initiatives and policies implemented to manage emissions at the national level under Australia's progressive Nationally Determined Contributions.

Emission reduction activities during the reporting period have included:

- minimising the re-handling of materials (where practical);
- maintaining equipment in good operating order;
- maximising truck payloads to maximise productivity and efficiency;
- reducing idling times and switching off equipment not in use;
- monitoring the consumption of fuel and regularly maintaining diesel powered equipment to ensure operational efficiency; and
- monitoring the total site electricity consumption and investigating avenues to minimise use.

Proposed Improvements

During the next reporting period, construction works will be focussed on earthworks and installation of the overland conveyor. Once installed, this will eliminate trucking of coal from the MEA to the CHPP, reducing GHG emissions. Variable speed drives will be installed on the new underground and above-ground conveyors, leading to significant energy savings.

Further in-seam monitoring and engineering works are underway in the Woodlands Hill Seam and will continue during the next reporting period. Key findings from this work will further inform the development of the Centralised Gas Management Plan for secondary workings in the Woodlands Hill Seam.

7.10 Waste

Management

Waste is managed at the Maxwell UG Mine in accordance with the Waste Management Procedure. In accordance with the waste hierarchy, the generation of waste is minimised and spent resources are reused or recycled in preference to being disposed of as waste. During the reporting period, the focus for waste management was maximising the recycling of materials where possible.

Performance

Waste and recycling streams are monitored on a monthly basis. Quantities of the major waste and recycling streams over the past 10 years are shown in **Figure 12**. This comparison shows that waste significantly reduced with the cessation of open cut mining in late 2016. This is commensurate with the reduction in resource use associated with the reduced operational activity at the site.

During the reporting period, there was an increase in most major waste streams compared to the previous reporting period. This is consistent with the commencement of operations in March 2023 combined with ongoing construction activities. The reduction in metal recycled was the exception, as this was a focus of the previous reporting period, when there were initiatives to collect scrap metal left by the previous mine owner. During the reporting period, recycling represented approximately 42 per cent of the total waste generated.

With the progressive ramp up of operations, the amount of waste generated and opportunities for further recycling will increase. The initiative to realise the value of cans and bottles via the NSW container deposit scheme Return and Earn resulted in continued contributions to a local charity.

No predictions were made in the EIS in relation to waste quantities.

The Maxwell UG Mine has a sewage treatment plant (STP) for effluent generated on-site. This is located at the Maxwell Infrastructure site. From the STP, treated effluent is pumped to settlement ponds. When flows are in excess of evaporation from the ponds the excess is applied to land via a spray field.

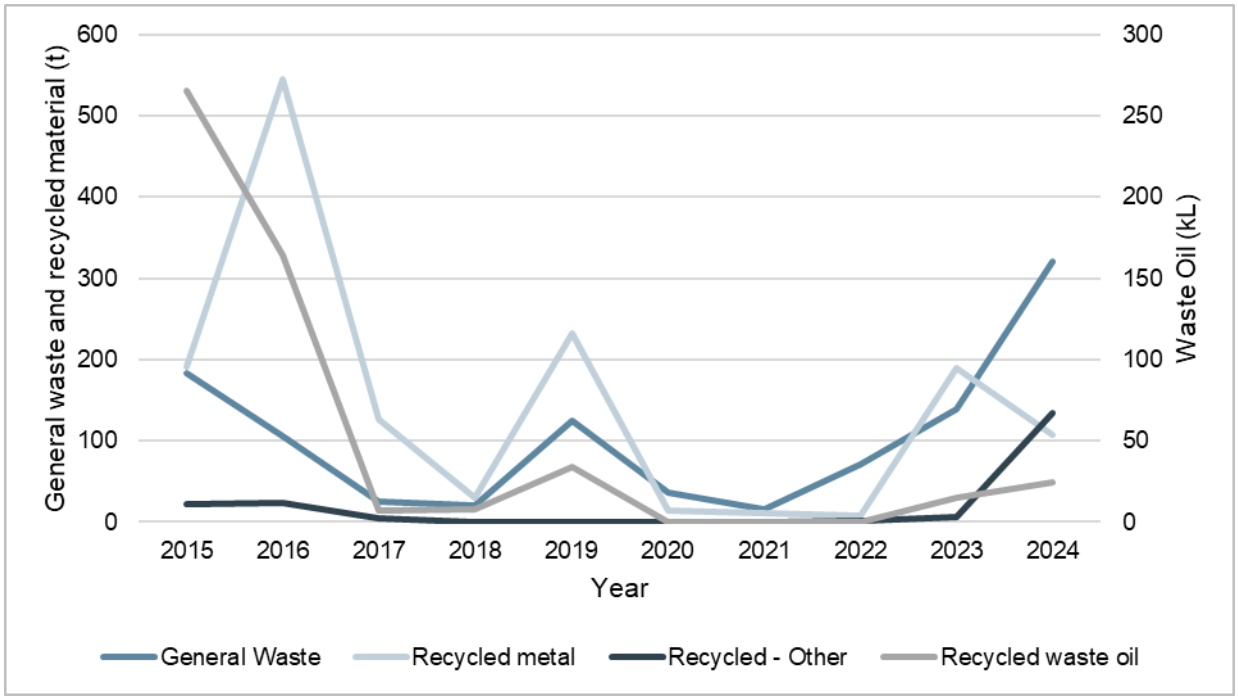

Figure 12. Long-term waste stream quantities

Proposed Improvements

There are no improvements identified for the next reporting period.

7.11 Contaminated Land

Management

Contaminated land is managed in accordance with the Contaminated Materials Protocol (CMP) for the Maxwell UG Mine. The purpose of the CMP is to describe the procedures to be implemented if potentially contaminated material is identified during construction and to outline the measures to ensure compliance with the requirements of SafeWork NSW and relevant guidelines.

Maxwell Infrastructure also maintains a bioremediation area for the remediation of material contaminated by hydrocarbons.

Performance

No new areas of contaminated land were identified during the reporting period.

The bioremediation area was utilised during the reporting period. Potentially contaminated soil from site was placed in the in the bioremediation cells. The material was generally sourced from sumps and non-destructive excavations.

Soil samples were taken from cells 4B and 5B prior to the reporting period and from cell 1A during November 2024. Analysis of the samples showed that the soil met the target criteria specified in the Bioremediation Management Plan. As such, these cells were emptied during the reporting period and the soil was placed in pit.

Proposed Improvements

There are no improvements identified for the next reporting period.

7.12 Bushfire

Management

Potential bushfire impacts from the site are managed in accordance with the Bushfire Management Plan (BFMP) for the Maxwell UG Mine. This plan was prepared in consultation with the Rural Fire Service. In September 2024, the BFMP was updated to capture changes to the site plans and consultation register. The purpose of the BFMP is to detail statutory requirements and outline the controls to be implemented to manage bushfires on the site.

Where possible a minimum 10 m Asset Protection Zone (APZ) is provided around all key infrastructure and along boundary fences (within approved disturbance areas) to act as a fire break. The vegetation in APZs is limited to grass that is mowed on a regular basis. Non-operational grassed areas are also mowed and/or grazed to reduce fuel loads. Access tracks that can be used as fire trails are monitored annually in August to assess if there are sufficient tracks for fire-fighting access and if tracks require maintenance.

Fire-fighting equipment is available on site and is available for use in the event of a bushfire. The equipment includes a fire trailer, mine site water cart, fire hose reels and pumps, fire extinguishers on a mobile plant and light vehicles.

Performance

There was one bushfire recorded at the Maxwell UG Mine during the reporting period. It occurred on 21 December 2024, on mine rehabilitation within the Southern Offset Area. RFS attended the site and the fire was extinguished. Whilst the ignition source of the fire was unknown, the surrounding area will be monitored for any evidence of spontaneous combustion.

All equipment was serviced and maintained in accordance with the relevant Australian Standards. Inspection and testing were performed by on-site personnel and appropriate service providers according to the electrical and mechanical maintenance management plans. Hand-held fire extinguishers were inspected by trained personnel and maintained by an external fire service provider.

Vegetation was maintained during the reporting period to minimise the risk of bushfire occurring. An inspection was undertaken in August 2024 of the APZ’s, access tracks and boundary fences prior to the commencement of the bushfire season. It was noted that the fuel load was low in all areas with the exception of one communication tower. Non-operational grassed areas were mowed on a regular basis.

Proposed Improvements

There are no improvements identified for the next reporting period.

7.13 Spontaneous Combustion

Management

Potential spontaneous combustion at the site is managed in accordance with the Spontaneous Combustion Management Plan (SCMP) for the Maxwell UG Mine. There were no updates to the SCMP during the reporting period. The purpose of the SCMP is to detail statutory requirements and outline the controls to be implemented for the management of spontaneous combustion associated with the site. The management of spontaneous combustion is focused on the monitoring of previously capped areas along with the capping of any new outbreaks.

Along with regular inspections conducted as part of the general site activities, formal monthly spontaneous combustion inspections are conducted. A thermal imaging camera is utilised to assist the identification of areas where ground surface temperatures are above background levels. The surface area exhibiting smoke or steam emissions is estimated for each detected outbreak. In addition, an annual aerial survey using a fixed wing aircraft fitted with infrared detection is used to identify the presence of hot spots on a site-wide basis. This survey was conducted on 20 June 2024.

Spontaneous combustion monitoring supports the planning of activities to prevent and remediate spontaneous combustion outbreaks. These management activities include reprofiling, track rolling and the application of inert capping.

Performance

Spontaneous combustion locations are categorised in accordance with the following intensity criteria:

- Minor - visible steam or smoke exists, however, the area affected is 200 m² or less.
- Moderate - exhibiting continuous visible smoke or steam and / or has an area of greater than 200 m².
- Major - exhibiting naked flames, regardless of the area affected.

During November 2024, two heated areas of a total of approximately 0.5 hectares (ha) at site 286 were capped with 1–2 metres of inert material. This area was topsoiled and seeded during same month. Sites 314 and 312, which are very small vents in rock drains, were also capped. As shown in **Figure 13**, all spontaneous combustion outbreaks identified during the reporting period were inactive or of a minor intensity. All locations continue to be monitored.

As shown in **Table 14,** approximately 3m^2 was estimated to be affected by spontaneous combustion outbreaks across the site at the end of the reporting period. This is a reduction from last year and generally consistent with the long-term downward trend. The annual aerial infrared survey in June 2024 allowed confirmation of the success of mitigation works to date, in addition to informing planning for future activity.

Table 14. Long-term area affected by spontaneous combustion

Year	Area Affected (m²)
2010	1,170
2011	1,070
2012	1,160
2013	1,180
2014	810
2015	870
2016	810
2017	1,150
2018	1,170
2019	320
2020	50
2021	55
2022	28
2023	37
2024	3

Proposed Improvements

There are no improvements identified for the next reporting period.

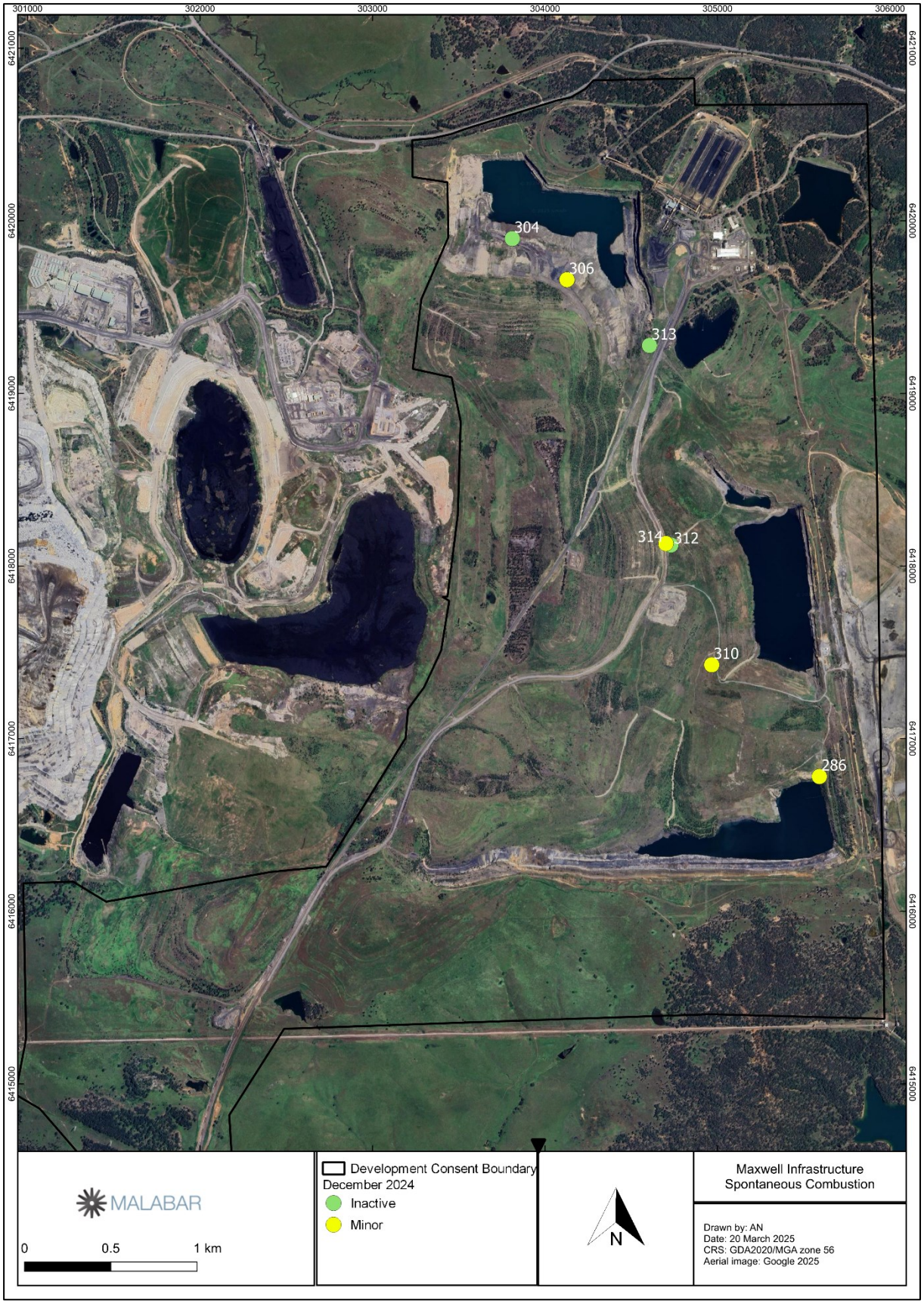

Figure 13. Locations affected by spontaneous combustion at the end of the reporting period

7.14 Biodiversity

Management

Biodiversity at the Maxwell UG Mine is managed in accordance with the Biodiversity Management Plan (BMP). In June 2024, the BMP was updated to include commitments from the Whynot Seam Panels 2-5 Extraction Plan. The BMP is expected to be approved by DPHI during the next reporting period. The purpose of the BMP is to detail statutory requirements and to outline the short, medium and long-term management measures for vegetation and fauna habitat within:

- the Drayton Wildlife Refuge, Northern Offset Area and Southern Offset Area (jointly referred to as the Maxwell Infrastructure Biodiversity Offset Areas) required under Schedule 2, Conditions B45 and B46 of Development Consent SSD 9526;
- the approved disturbance areas in accordance with Schedule 2, Condition A12 of Development Consent SSD 9526;
- study areas associated with the Whynot Seam Panels 2-5 Extraction Plan; and
- remnant vegetation and fauna habitat in areas not likely to be impacted by the project.

Routine ecological monitoring is conducted across the Maxwell UG Mine including the offset areas and rehabilitated lands. The ecological monitoring program is detailed within the Rehabilitation Management Plan (RMP).

Monitoring sites, as shown in **Appendix 2**, are located within woodland rehabilitation, pasture rehabilitation and offset areas. Sites located in offset areas are used as a reference site to measure remnant vegetation and fauna habitat in areas not likely to be impacted by mining. These sites are referenced against the woodland rehabilitation to provide ecological targets for ecosystem integrity and species diversity. Monitoring is undertaken annually, with each site monitored every second year.

Improvements within the reporting period included:

- planting 5,800 locally-occurring tree and shrub species targeted at specific vegetation communities as defined in Condition B50 of SSD-9526 over six hectares;
- placement of 50 logs and hollow timber on the ground throughout the Southern Offset Area; and
- weed control targeting Prickly Pear, Sharp Rush and exotic perennial grass species.

Maxwell Infrastructure Biodiversity Offsets

Existing offsets including the Drayton Wildlife Refuge, Northern Offset Area and Southern Offset Area (jointly referred to as the Maxwell Infrastructure Biodiversity Offset Areas) were already in place prior to Development Consent SSD 9526. These areas have been incorporated into the BMP and a conservation and biodiversity bond has been provided to DPHI for the continued management of these offsets.

Maxwell UG Mine Biodiversity Offsets

In accordance with Conditions B47, B48, B50A and B50B of Development Consent SSD 9526, Maxwell has a requirement to retire credits for Stage 1, Stage 2 (associated with the Edderton Road realignment), Maxwell MOD1 and Maxwell MOD 2.

During the previous reporting period, Maxwell established a land-based offset known as the Maxwell Stewardship Site (MSS) (ID number BS0129) under Part 5 Division 2 of the *Biodiversity Conservation Act 2016*. A Biodiversity Stewardship Agreement was finalised on 23 November 2023. A total of 3066 ecosystem and species credits were retired from the

MSS on 12 December 2023 for Development Consent SSD 9526. The MSS is currently in passive management (i.e. there are currently no ecological monitoring requirements).

In October 2024, Maxwell requested a minor variation to the Biodiversity Stewardship Agreement (ID number BS0129) to correct an administrative error in the Biodiversity Stewardship Site Management Plan. This was approved by the Assurance and Biodiversity Stewardship Branch - Nature Markets and Offsets Division later that month.

The remaining credits required for Development Consent SSD 9526 were retired in February 2024 through the purchase of 411 credits through the Biodiversity Conservation Fund and 4 credits through the Government's reverse auction process. These remaining credits satisfy the requirements of Conditions B47, B48, B50A and B50B of Development Consent SSD 9526.

Biodiversity Credit Reduction

In accordance with Condition B49 of Development Consent SSD 9526, Maxwell commissioned additional flora surveys and an expert report to demonstrate a reduction in credits. The supplementary surveys did not identify any of the target species within the Maxwell UG Mine areas, supporting the survey outcomes described in the Biodiversity Assessment Report (Hunter Eco, 2019). In addition, the expert report also concluded that *Diuris tricolor*, *Prasophyllum petilum* and *Pterostylis chaetophora* are unlikely to be present within the Maxwell UG Mine areas. As such, Maxwell requested that the biodiversity credit requirements for *Diuris tricolor*, *Ozothamnus tesselatus*, *Prasophyllum petilum*, *Pterostylis chaetophora* and *Thesium australe* be reduced to zero as these species are not likely to be impacted by the Maxwell UG Mine. DPHI reviewed and approved the request to reduce biodiversity credit requirements to the following:

- The offset requirements for stage 1 and stage 2 for *Pterostylis chaetophora*, *Ozothamnus tesselatus* and *Thesium australe* are reduced to zero.
- The offset requirements for stage 1 for *Diuris tricolor* are changed from 1,474 credits to 5 credits, and for *Prasophyllum petilum* are changed from 1,114 credits to 6 credits.
- The offset requirements for stage 2 for *Diuris tricolor* and *Prasophyllum petilum* are reduced to zero.

Performance

During the reporting period the following measures were implemented to improve biodiversity at the Maxwell UG Mine:

- Regular walkover inspections of rehabilitation.
- Tubestock infill planting within woodland vegetation communities of the Southern Offset Area and other areas of mine rehabilitation, totalling 9,800 plants over ten hectares.
- Maintenance of existing contour banks to ensure appropriate catchment flow.
- Culling of pest species, including pigs, hares/rabbits plus baiting targeting dogs and foxes in conjunction with NSW Local Land Services.
- Continuation of the grazing trial on mine pasture rehabilitation.
- Implementation of a targeted weed management program.
- Installation of woody debris within the Southern Offset Area and other areas of mine rehabilitation to improve fauna habitat within the Woodland Corridor.

Ecological monitoring was undertaken during November and December 2024. Monitoring consisted of BAM sampling, walkover inspections, fauna monitoring and assessment of pest animals.

The RMP defines rehabilitation into primary domains based on land management units with unique operational and functional purposes. The rehabilitation phases within each domain show the progress towards the post mining land use goals. All areas of existing pasture and woodland rehabilitation are currently within the ecosystem and land use establishment phase. All further rehabilitation activities will focus on enhancing the rehabilitation to meet the relevant phase objectives and completion criteria.

Biodiversity Assessment Methodology Sampling

BAM vegetation sampling was adopted during the 2021 ecological monitoring program to comply with the BMP. When entered into the BAM calculator, the sampling results are compared against a Vegetation Community Type description managed by DPHI. Attributes sampled include foliage cover, stem size, tree regeneration, length of logs and litter cover. The results provide a value for composition, structure and function for each site. A summary value of the three combined is provided as an integrity score, out of 100. The BAM sampling was undertaken at four woodland reference sites and eight woodland rehabilitation sites.

Results indicate that the woodland reference sites had an integrity score from between 46 and 69. These are low values for a reference site however representative of the surrounding woodland vegetation. No direct impact from mining activities was observed during the field surveys. No recommendations were provided to improve the woodland reference sites, other than continued weed and pest control.

The rehabilitated woodland and pasture sites showed significantly lower values to the reference sites, as expected in rehabilitation in Ecosystem Establishment Phase, with no direct impact as a result of mining activities observed. Integrity values from the woodland sites ranged from 3 to 37, with the older sites providing a higher value due to a developing canopy and litter cover. Pasture rehabilitation sites are progressing well towards closure criteria. Recommendations to continue weed and pest control were provided for woodland and pasture rehabilitation sites and grazing livestock is recommended for pasture sites.

Fauna Monitoring

Fauna monitoring occurred at three sites (two reference sites and one rehabilitation site) to measure the occurrence of terrestrial vertebrate animals, including bird, mammal, reptile and amphibian species.

A total of 64 fauna species were recorded during the 2024 monitoring program, including 40 bird species, 17 mammal species, four reptile species and three amphibian species. A total of four threatened species were recorded, being the spotted harrier (*Circus assimillis*), brush-tailed phascogale (*Phascogale tapoatafa*), eastern freetail-bat (*Mormopterus norfokesis*) and eastern bentwing-bat (*Miniopterus schreibersii oceanensis*).

Comparison of the average number of fauna species data showed a general increase in fauna species abundance in 2024, with no direct impact as a result of mining activities observed.

Pest Animals

Pest animals recorded in 2024 include hare, pig, eastern grey kangaroo, wild dog and European fox. Total pest animal numbers controlled (i.e. culled) include 78 pigs and 15 rabbits/hares. A total of 120 baits were laid during the Autumn 2024 baiting program and 132 baits during the Spring program, both with 17 per cent taken by target species (dogs and foxes). Eastern grey kangaroos were noted to be over-grazing rehabilitation areas and creating nesting beds under established trees and shrubs. It is recommended that a cull be undertaken during the next reporting period.

Pest animal control efforts (excluding kangaroos) are recorded in the FeralScan database – this is a third-party pest animal recording and management tool administered by the Centre for Invasive Species Solutions and supported by NSW Local Land Services.

Soil Assessment

Topsoil samples at the ten monitoring sites were analysed in accordance with the RMP, with results compared to DPI standards for the North Coast of NSW and the Environmental Analysis Laboratory.

The results of topsoil samples from reference sites show that the soils pH, Electrical Conductivity (EC), organic matter and plant limiting factors were in line with indicative guidelines, other analytes such as cation exchange capacity, exchangeable calcium, magnesium and potassium are lower than guidelines and the carbon-nitrogen ratio and sulphur were generally higher than the guidelines.

The pasture rehabilitation topsoil analysis indicates that results are generally in line with indicative guidelines and reference sites. The calcium-magnesium ratio is low and the carbon-nitrogen ratio is high however, these results are unlikely to restrict the growth of vegetation and are similar to previous year's results. The vegetation at these sites is in good condition with no evidence of impact from soil conditions.

The woodland rehabilitation sites topsoil analyses were generally in line with indicative guidelines, with low organic matter at one site and high carbon-nitrogen ration at two sites. It was identified that the alkaline soils may be contributing to the slow growth of tree and shrub vegetation due to less availability of micronutrients to plants in alkaline soils however, no recommendations were provided to improve the soil conditions. Increased organic matter over time will improve the acidity of the soil.

Proposed Improvements

Table 15 identifies the management measures planned for offset areas during the next reporting period. Measures planned for rehabilitation areas are discussed in **Section 9.3**.

Table 15. Measures planned for offset areas in the next reporting period

Location	Management measure
Southern Offset Area	Weed control program targeting Prickly Pear and Galenia.
Wildlife Refuge and Northern Offset Area	Weed control targeting Prickly Pear and Spiny Rush.

8 WATER MANAGEMENT

8.1 Water Take

Maxwell maintains a site water balance model incorporating surface and groundwater inputs and outputs. The model is used to interpret current conditions and forecast future mine water inventories and use. The model aligns to the Minerals Council of Australia Water Accounting Framework.

During the reporting period, the Maxwell UG Mine did not actively draw water from any ground or surface water sources. Maxwell holds Water Access Licence (WAL) 41559 and WAL41491 for the passive intake of aquifer water associated with the mine excavation at the Maxwell Infrastructure site.

Table 16 shows the calculated passive water take in accordance with the conditions of WAL41559 and WAL41491. The inflow of 11 Megalitres (ML), which is the maximum predicted inflow to the existing voids during mining, is less than the total entitlement of 1,387 ML held under the WALs for the New England Fold Belt Coast Groundwater Source.

The predicted peak inflow to the Maxwell Underground workings of 110 ML for the reporting period is less than the entitlement under WAL41234.

Table 16. Water take for the reporting period

Water Licence #	Water sharing plan, source and management zone	Entitlement (ML)	Passive take inflows (ML)	Active pumping (ML)	TOTAL (ML)
WAL 41559	Sharing Plan: North Coast Fractured and Porous Rock Groundwater Sources Water Source: New England Fold Belt Coast Groundwater Source	985	11[1]	0	11
WAL 41491		402			
WAL 41234	Sharing Plan: North Coast Fractured and Porous Rock Groundwater Sources 2016 Water Source: Sydney Basin-North Coast Groundwater Source	806	110[2]	0	110

[1] Source: Hydrosimulations, 2019. Maxwell Project: Groundwater Assessment. Table 6-1. Groundwater Licensing Summary. Predicted groundwater inflows to existing Maxwell Infrastructure area, Maximum during mining (ML/year).

[2] SLR Consulting Australia, 2022. Maxwell Underground Mine Project. Modification 2. Groundwater Review. Figure 9. Predicted Inflows to Maxwell Underground – Base case for the Modification and Approved Project. [Value for Year 2 of approximately 0.3 ML/day equating to 110 ML/year].

Water Licence #	Water sharing plan, source and management zone	Entitlement (ML)	Passive take inflows (ML)	Active pumping (ML)	TOTAL (ML)
WAL 43166	Sharing Plan: North Coast Fractured and Porous Rock Groundwater Sources 2016 Water Source: Sydney Basin-North Coast Groundwater Source	28	0	0	0
WAL 39739	Sharing Plan: North Coast Fractured and Porous Rock Groundwater Sources 2016 Water Source: Sydney Basin-North Coast Groundwater Source	23	0	0	0
WAL 39792	Sharing Plan: North Coast Fractured and Porous Rock Groundwater Sources 2016 Water Source: Sydney Basin-North Coast Groundwater Source	55	0	0	0
WAL 43160	Sharing Plan: Hunter Unregulated and Alluvial Water Sources 2009 Water Source: Jerrys Water Source.	50	0	0	0

8.2 Water Consumption

During the reporting period, the site consumed approximately 239 ML of raw water from dams on site. This water was primarily used for:

- dust suppression
- vehicle washdown bays
- construction activities
- fire water tanks
- washing coal at the CHPP

A total of 19.4 ML of potable water was used for:

- administration facilities

- fire and explosion hazard reduction underground
- cooling of machinery and dust management underground
- cement batching plant
- tree watering
- weed management

As **Figure 14** shows, water consumption has increased during 2024, reflecting the increase in personnel, ongoing construction activity and the progression of underground mining. Raw water usage is expected to continue to increase as construction continues and operational phases expand. Potable water is likely to decrease once the water treatment plant is commissioned in the next reporting period and following the demobilisation of the concrete batching plant in late 2024.

The calculated amount of water stored on site increased from 21,915 ML to 23,235 ML during the reporting period. This indicates that water consumption was well within the limits required to maintain the site's closed raw water system, with no active intake or output of water.

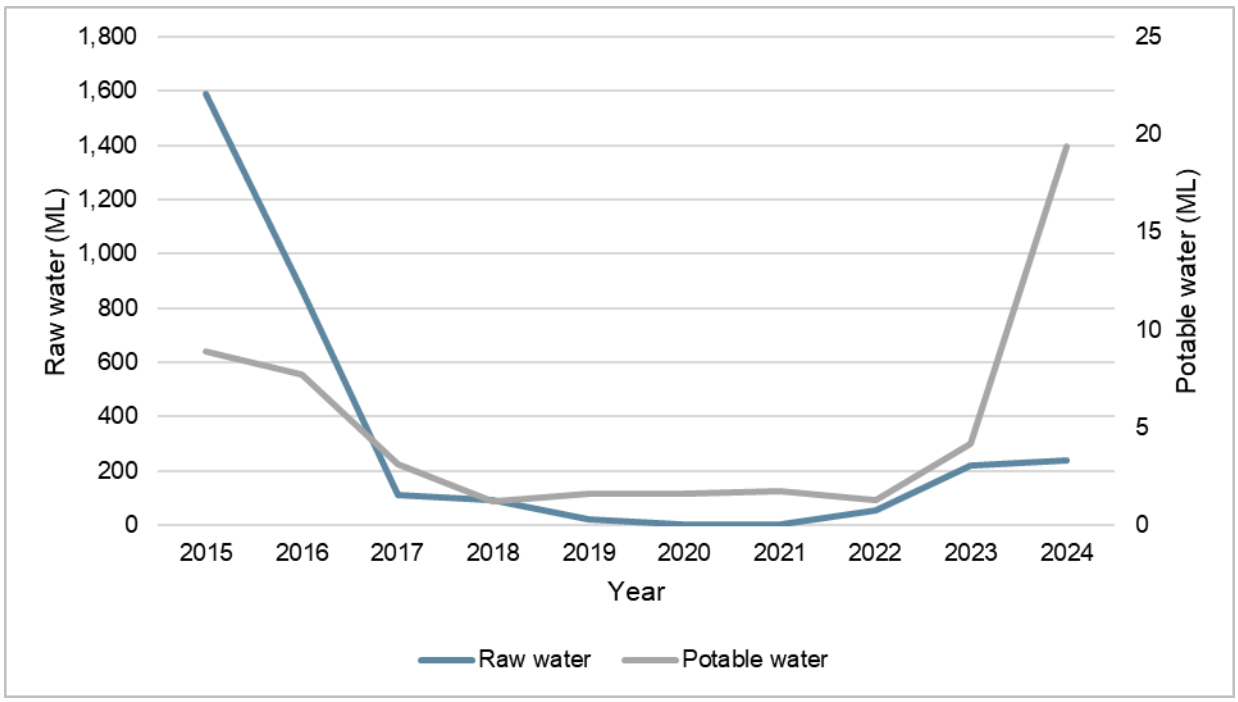

Figure 14. Long-term water consumption

8.3 Surface Water

Management

Surface water at the site is managed in accordance with the Water Management Plan (WMP) for the Maxwell UG Mine. In August 2024, the WMP was updated as a component of the Whynot Seam Panels 2–5 Extraction Plan. The WMP is expected to be approved by DPHI during the next reporting period.

The purpose of the WMP is to detail statutory requirements and outline the water management controls to be implemented for the site. This WMP includes the following sub-plans that are relevant to the management of surface water:

- Site Water Balance and Salt Balance
- Erosion and Sediment Control Plan

- Surface Water Management Plan (SWMP)

The SWMP includes the requirement for quarterly water quality monitoring and following rainfall events at specified downstream surface water monitoring locations as shown in **Appendix 2**. In addition, quarterly sampling is undertaken from mine water storage monitoring locations, for which the data collected is used for operational purposes and is reported internally as required.

Performance

In accordance with the current SWMP, the quality of downstream surface water monitoring locations is analysed quarterly and following rainfall events >25mm in a 24-hour period midnight to midnight. Annual average surface water quality results for the reporting period and over 5 years are provided as graphs in **Appendix 8**. Raw data is provide in the Quarterly Environmental Monitoring reports available on the Malabar Resources website[3].

During the reporting period, sites W3, Saltwater Downstream and SW3 were either dry or not flowing during all sampling occasions. This followed on from 2023 where all sites were either dry or not flowing throughout the year.

Results were within the long-term range for all concentrations for all variables during the reporting period.

When sites are flowing, downstream surface water monitoring results (median over three consecutive samples) are compared to the trigger values in the SWMP (which have been set using preliminary guideline values). A comparison against the trigger values is provided in the Quarterly Environmental Monitoring Reports on the Malabar Resources website. There were no exceedances of the trigger levels (median over three consecutive samples) at any of the monitoring sites during the reporting period.

When access to some surface water monitoring sites is difficult following heavy rain, alternative temporary monitoring locations, for example upstream of the same creek, closer to sealed roads or upgraded tracks, have been established with the monitoring contractor.

Proposed Improvements

If the downstream surface water monitoring locations are flowing at the time of sampling, in accordance with the SWMP, site specific triggers will be calculated from site data based on the ANZG (2018) method for guideline value derivation, during the next reporting period. This will be dependent on 24 months of baseline observations being available, following approval of the first version of the WMP in August 2021.

8.4 Stream Health

Management

Stream health impacts at the site are managed in accordance with the current WMP. This includes quarterly stream health monitoring at each of three locations along Saddlers Creek as shown in **Appendix 2**.

The extent of riparian vegetation, the extent of erosion and sedimentation deposits and Swamp Oak health is used as an indicator of stream health and to provide supplementary

[3] Malabar Resources website: https://malabarresources.com.au/corporate-governance/

information on potential geomorphic impacts to drainage lines. Monitoring is undertaken by taking photographs and recording observations at each site.

Performance

A summary of the results of the stream health monitoring are as follows.

The Saddlers Upstream site showed no changes in parameters when compared to the baseline study conducted in Q3 2020.

Site W3 (midway between Saddlers Upstream and Saddlers Downstream sites) showed no changes in parameters when compared to the baseline study conducted in Q3 2020.

The Saddlers Downstream site showed no changes in parameters when compared to the baseline study conducted in Q3 2020, with the exception of a decrease in pool water level due to a lack of rain however water still appears to be in good health.

Proposed Improvements

The Saltwater Creek site will commence monitoring for its baseline conditions and comparisons will during the next reporting period to quantify any changes.

8.5 Groundwater

Management

Groundwater at the site is managed in accordance with the WMP for the Maxwell Underground Mine. As noted above, the WMP was updated in August 2024 as a component of the Whynot Seam Panels 2–5 Extraction Plan. The WMP is expected to be approved by DPHI during the next reporting period.

The purpose of the WMP is to detail statutory requirements and outline the water management controls to be implemented for the site. The WMP includes the Groundwater Management Plan (GWMP).

In accordance with the GWMP:

- The observed groundwater levels from the Maxwell Underground Mine groundwater monitoring program have been reviewed against the model predictions.
- A suitably qualified hydrogeologist has determined when water levels deviate significantly from that predicted by the groundwater assessment for the Project EIS and determined the reason for this deviation.
- A comparison against TARP levels has been conducted.

The groundwater monitoring network is presented in **Table 17** and **Appendix 2**.

Table 17. Groundwater Monitoring Bore Network – Maxwell Underground Mine

Monitoring bore or VWP ID	Easting [1] (GDA94)	Northing [1] (GDA94)	Geology	Bore screen or VWP sensor depth (mBGL)	Status
Maxwell Infrastructure - (standpipes)					
DS1	305592	6420380	Shallow bedrock aquifer	15	Open
F1162	304256	6420755	Greta Coal Measures	274	Open

Monitoring bore or VWP ID	Easting [1] (GDA94)	Northing [1] (GDA94)	Geology	Bore screen or VWP sensor depth (mBGL)	Status
F1164	304223	6420406	Greta Coal Measures	190.5	Open
R4241	305893	6416205	Jurassic Volcanics	150	Open
GW01S	303391	6420683	Base Regolith	12–15	Problem [2]
GW01D	303386	6420691	Greta Coal Measures	29–32	Open
GW02S	305647	6428664	Base Regolith	8–14	Open
GW02D	305647	6418664	Greta Coal Measures	69–72	Open
GW04	304684	6415922	Permian Sequence	101–104	Open
Maxwell Underground – standpipes					
MB1 - Redbank	297930	6407453	Redbank Seam	51–57	Open
MB1 - Whybrow	297928	6407448	Whybrow Seam	25–28	Open
MB1A	297933	6407459	Hunter River Alluvium	8–11	Open
MB2R	295004	6411675	Regolith	20–29	Open
MB2A	294998	6411669	Saddlers Creek Alluvium	5–7	Open
MB3R	297328	6412729	Regolith	27–30	Open
MB3A	297269	6412850	Saddlers Creek Alluvium (upslope)	8.5–14.5	Open
MB4 - Coal	300302	6406234	JPS-Coal	42–47	Open
MB4A	300307	6406231	Hunter River Alluvium	10–18	Open
MB03	299649	6408297	Saltwater Creek Alluvium	5–8	Problem [2]
MW1	297254	6412760	Saddlers Creek Alluvium (upslope)	6–9	Open
MW2	294977	6411419	Saddlers Creek Alluvium	4–9.5	Open
MW3	297904	6407652	Hunter River Alluvium	2.9–6.9	Problem [3]
MB04	295755	6410371	Unnamed Creek Regolith	10–13	Open
MB05	292546.7	6409857	Saddlers Creek alluvium	1.8–3.8	Open
MB06_S	292980.2	6412335	Woodlands Hill Overburden	29–32	Open
MB06_D	292980.2	6412335	Bowfield Seam	95–101	Open
MB07	296070.3	6412297	Saddlers Creek Alluvium	3–5.5	Open
DD1005	298799	6410901	Blakefield Overburden	138.6	Open
DD1014	296799	6410864	Blakefield Overburden	90.5	Open
DD1015	298815	6409900	Blakefield Overburden	162.5	Problem [4]
DD1016	297801	6410882	Blakefield Overburden	126.4	Open
DD1025	298764	6411901	Blakefield Overburden	44.6	Problem [5]

Monitoring bore or VWP ID	Easting [1] (GDA94)	Northing [1] (GDA94)	Geology	Bore screen or VWP sensor depth (mBGL)	Status
DD1027	301133	6410960	Edderton Seam	252.8	Problem [6]
DD1032	297143	6412495	Piercefield Overburden	276.5	Open
DD1043	295200	6409458	Woodlands Hill Overburden	182–203	Open
DD1052	296274	6408513	Whynot Seam Overburden	105–127	Open
DD1057	295181	6410458	Arrowfield Overburden	164–188	Open
Maxwell Underground– Vibrating Wire Piezometers (VWPs)					
RD1189 (SD1_DD001)	299896	6412419	Woodlands Hill Seam	78.9	Problem [7]
			Arrowfield Seam	145.5	Problem [7]
			Warkworth Seam	186.2	Problem [7]
			Mount Arthur Seam	230	Problem [7]
			Piercefield Seam	255.5	Problem [7]
			Bayswater Seam	315	Problem [7]
			Wynn Coal Member	322	Problem [7]
RD1192 (RBR2)	296092	6409038	Wambo Seam	61.2	Problem [7]
			Redbank Seam	80	Problem [7]
			Blakefield Seam	148.5	Problem [7]
BLK6R12 (RD1220)	293653	6409558	WB2 Seam	25	Normal
			Redbank Seam	40.5	Normal
			Whynot Seam	86.5	Normal
			Blakefield Seam	148.5	Normal
VWP1 (RD1221) (RDW006A)	297926	6407444	Interburden	21	Normal
			Interburden	40	Normal
			Interburden	73	Normal
			Whybrow Seam	87	Normal
			Whynot Seam	109.2	Normal
			Blakefield Seam	138	Problem [8]
RBD1 (DD1170)	295178	6409246	Whybrow Seam	24.65	Normal
			Redbank Seam	33.55	Normal
			Whynot Seam	79.5	Normal
			Blakefield Seam	103.3	Normal
WND16 (DD1188)	298122	6408842	Wambo Seam	33.75	Normal
			Whynot Seam	59.25	Problem [9]
			Blakefield Seam	90.15	Problem [9]
			Blakefield Seam	110.5	Normal

Monitoring bore or VWP ID	Easting [1] (GDA94)	Northing [1] (GDA94)	Geology	Bore screen or VWP sensor depth (mBGL)	Status
WND26 (DD1187)	299487	6409044	Whybrow Seam	77.3	Normal
			Redbank Seam	84.6	Normal
			Wambo Seam	123.45	Normal
			Whynot Seam	144.25	Problem [9]

Notes:

1 Coordinates in metres (GDA 1994 MGA Zone 56).

2 GW01S did not have sufficient water present within the bore during 2024 to take a water quality sample. MB03 was reported as dry during 2024.

3 MW3 was last recorded dry; as per the recommendations in the 2023 Annual Review, it is proposed that MW3 be removed from the reporting, via a future version of the Management Plan.

4 DD1015 was reported blocked during the reporting period; DD1027 is deemed to bring no significant value to future groundwater assessments as it monitors the Edderton Seam which is not targeted by the Maxwell UG Mine. As per the recommendations in the 2023 Annual Review, it is proposed these monitoring locations be removed from the reporting, once the next version of the GWMP is approved. Maxwell Mine staff are reviewing the GWMP, as it requires consideration of the recommendations made in the 2022 and 2023 Annual Reviews, not currently included in the current GWMP.

5 DD1025 was decommissioned in December 2022 for safety reasons (to prevent inrush to the upcoming underground mining operations). As per the recommendations in the 2023 Annual Review, it is proposed that this site will be replaced by DD1014 for the purposes of the TARP, via a revised GWMP. Maxwell Mine staff are reviewing the GWMP, as it requires incorporation of the recommendations made in the 2023 Annual Review, not currently included in the current GWMP.

6 DD1027 Access to this bore poses safety concerns for sampling as it is in an isolated location, across a steep gully. The 2023 Annual Review recommended the removal of DD1027 from the Groundwater Monitoring Plan.

7 Historically, groundwater levels at RD1189 VWP2, VWP5 & VWP7 appear unstable and are not reported. A qualified hydrogeologist is conducting a VWP Investigation to determine if the sensors could be fixed since loggers have stopped recording readings since 13 June 2024. The results of the investigation will be available in the next reporting period.

8 VWP1 sensor 6 indicates no data and not reported. VWP2-5 indicated erratic spikes in data readings during Q3-2024. VWPs were inspected during May 2024 and found that the logger box was corroded and potentially affecting data readings. A recommendation was made to consider replacing the logger box; recommendations will be confirmed with the results of the VWP investigation due during the next reporting period (in 2025).

9 The following VWPs wires are considered disabled: WND16-VWP2 and WND16-VWP3 (unstable and disabled respectively), WND26-VWP4 (disabled).

Definitions:

VWP – vibrating wire piezometer mBGL – metres below ground level EX – Existing

A – Alluvium R – Regolith JPS – Jerry's Plain Subgroup

Open – Functional for pressure/water level measurements and/or quality sampling

Closed – Decommissioned/ To be removed

Problem – Blocked/Dry/Issue detected during monitoring period

Groundwater Impacts

Groundwater impacts associated with the approved operations at Maxwell UG Mine have been progressively assessed for the mine site by a suitably qualified hydrogeologist. Relevant reports are listed below (excluding quarterly monitoring and annual review reporting):

- HydroSimulations (2019). Maxwell Project: Groundwater Assessment. Prepared for Malabar Coal Limited. Report HS2018/44, 17 July 2019.
- HydroSimulations (2024). Maxwell Underground Mine, Whynot Seam Extraction Plan – Groundwater Review. Report MV104819, 3 May 2024.
- SLR Consulting Australia Pty Ltd (SLR) (2022). Maxwell Underground Mine Project Modification 2 Groundwater Review. Report MSEC1366, Revision 01, December 2022.
- SLR Consulting Australia Pty Ltd (SLR) (2024a). Maxwell Mine – Groundwater TARP Trigger Investigation 2024. Report 610.031922.00001-M01, 19 July 2024.

Performance

Groundwater Levels

Groundwater levels, measured twice daily with automatic data loggers and quarterly by using a water level meter, have mostly remained within historic groundwater level ranges with local decreases observed. Changes in groundwater level trends for the Maxwell site areas during the reporting period are discussed below in more detail. Groundwater hydrographs at monitoring locations are displayed in **Figure 15** to **Figure 21**, in combination with the cumulative rainfall departure (CRD). In the legend displayed on each groundwater hydrograph, the depth of the base of the screen and the associated aquifer monitored is also presented. **Appendix 9** presents the simulated (predicted) groundwater levels against the latest observations.

The CRD trend has been generated from SILO[4] (grid point: 32.40, 150.90, latitude and longitude) and average local weather station data (AWS-1 and AWS-2 site stations). Positive gradients on this curve confirm wetter conditions than normal, while negative gradients indicate dry conditions. If rainfall recharge is a significant source of groundwater, the temporal variability in recorded groundwater levels can be expected to mimic the pattern of the CRD curve. That is, natural fluctuations in the groundwater table result from temporal changes in rainfall recharge to groundwater systems. Typically, changes in groundwater elevation reflect the deviation between the long-term monthly average rainfall and the actual rainfall, illustrated by the CRD (HydroSimulations, 2019).

Maxwell Underground Mine

Groundwater levels in the Jerrys Plains Subgroup (that includes the Whynot, Woodlands Hill, Arrowfield and Bowfield seams which are being targeted by the Maxwell Underground Mine) have remained relatively stable overall during 2024. The exceptions are DD1005 and DD1032 that continued a decreasing trend (**Figure 15**). Groundwater levels in the upper Blakefield overburden aquifer (DD1014) remained stable during 2024, showing a general increase in groundwater levels since July 2022. The average groundwater level in D1014 was 136.0 mAHD. Groundwater levels in the mid-to-lower Blakefield overburden aquifer are monitored by DD1005 and DD1016. Groundwater levels in D1016 have remained stable during the reporting period, showing no significant change and had an average groundwater level of 136.0 mAHD in 2024. However, DD1005 has continued to show a consistent decreasing groundwater level trend since measurements started in October 2009 and have shown a decreasing trend since January 2024. Groundwater levels changed from 143.6 mAHD to 131.4 mAHD between January–December 2024 (12.2 m decrease). The reasons for these changes are described later below.

In the Whynot overburden (DD1052), groundwater levels decreased from 122.6 mAHD in January to 118.4 mAHD in April 2024 (4.2 m decrease). Levels remained stable between April and December 2024 and averaged 118.2 mAHD during this period. Groundwater levels in the Woodlands Hill overburden (DD1043) have decreased slightly by 0.5 m during 2024 and are observed at 127.7 mAHD in December 2024. In the lower aquifer, the groundwater levels in the Arrowfield overburden aquifer (DD1057) remained stable at approximately 123.4 mAHD.

In the deeper geological units, groundwater levels in the Piercefield overburden (DD1032) continued to show a long-term declining trend since measurements started in 2008. During the reporting period, groundwater levels remained stable during the first half of the year and decreased up to 4.4 m between July and December 2024. As shown from groundwater level changes in DD1005 and DD1032, the Blakefield overburden and Piercefield overburden units

[4] SILO database of Australian climate data: https://www.longpaddock.qld.gov.au/silo/

have shown decreases in groundwater levels. However, relatively stable trends were observed for the remaining monitoring bores in the other deeper geological units.

Monitoring bores MB06-S and MB06-D in the upper and lower Jerrys Plains Sub-Group, located between the indicative underground mining area and privately-owned bores (i.e. approximately 2.8km to GW029660, aim to understand groundwater conditions further in the upper and lower Jerrys Plains Sub-Group. Groundwater levels in MB06-S remained stable during the reporting period and averaged 119.2 mAHD. MB04 is located in the shallow regolith and showed level changes consistent with rainfall trends and had an average groundwater level of 128.8 mAHD. MB06-D showed a stable trend in groundwater level during the reporting period and averaged 121.5 mAHD.

Observed groundwater levels in the deep Jerry Plains Subgroup bores indicate possible regional depressurisation related to surrounding mining as well as localised site-specific mining activities during the reporting period. Bores DD1005 (138.6 m – Blakefield overburden), DD1015 (162.5 m – Blakefield overburden) (up to 2022), DD1032 (276.5 m – Piercefield overburden) and DD1057 (188 m – Arrowfield overburden) aimed at monitoring the deep Jerrys Plains Subgroup aquifers show a consistent decrease in groundwater levels with very limited response to rainfall condition since monitoring started in 2008. Localised site decreases are first noted during the 2024 for DD1005 and DD1032. DD1005 and DD1032 are located closest to the current active mining activities of the Woodlands mine drift workings and the Whynot mine and the Maxwell MOD2[5] predicted groundwater drawdown to occur during operations of the underground mine. The drawdown is expected to be localised to the active mining areas as groundwater levels in the other Jerrys Plains Subgroup monitoring bores remained stable.

[5] SLR Consulting Australia Pty Ltd (SLR) (2022). Maxwell Underground Mine Project Modification 2 Groundwater Review. Report MSEC1366, Revision 01, December 2022.

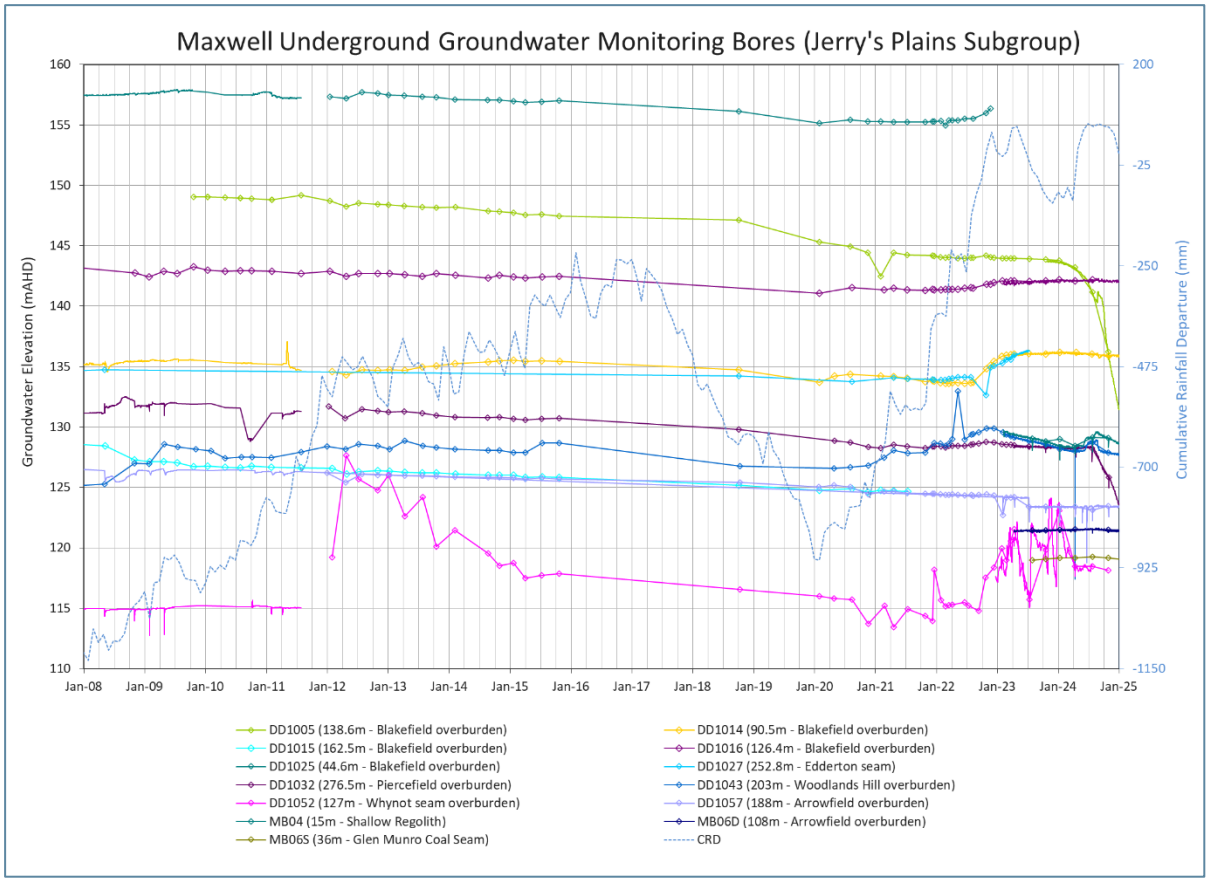

Figure 15 Groundwater Levels – Maxwell Underground Bores (Jerrys Plains Subgroup) (both manual measurements and datalogger recordings shown where applicable)

Note: Depth of the base of the screen and the associated aquifer shown in the legend; CRD = cumulative rainfall departure.

Saddlers Creek Catchment

In 2024, groundwater levels across the Saddlers Creek catchment have been responsive to variations in rainfalls conditions (**Figure 16**).

The standpipes MB3-Alluvial, MB3-Regolith, MB07 and MW1 located across the upper reach of Saddlers Creek and within the indicative extent of the underground development have responded to the seasonal fluctuation in rainfall in the range of 0.2–0.5 m (**Figure 16**). In 2024, all Saddlers Creek upper reach bores continued to show similar groundwater trends and correlated well to the CRD. In addition, a downward vertical gradient between MB3-Alluvial and MB3-Regolith remains during 2024, as observed during 2023, with a head separation of less than 0.13 m. This suggests that the shallow bedrock (regolith) is likely recharged by the overlain alluvium formation.

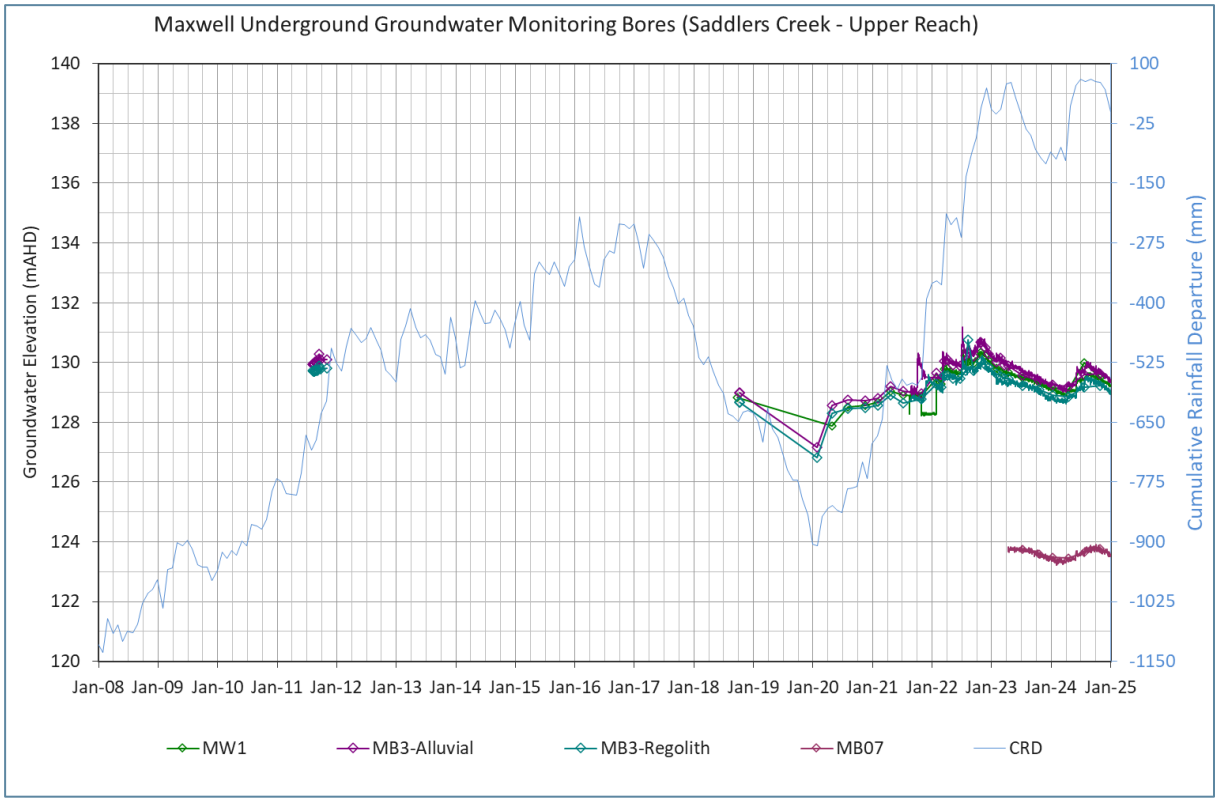

Figure 16 Groundwater Levels – Saddlers Creek (upper reach) (both manual measurements and datalogger recordings shown where applicable)

The standpipes MB2-Alluvial, MB2-Regolith, MB05, and MW2 are located along the mid-to-lower reaches of Saddlers Creek, approximately 2.4 km downstream to MB3-Alluvial. The Maxwell gauging station installed along Saddlers Creek is located approximately 2.3 km downstream from MB2-Alluvial. In 2024, groundwater levels observed along the mid reach of Saddlers Creek continue to show the same general groundwater trends and correlate well to the CRD (**Figure 17**). MB2-Regolith has shown a 0.2 m increase during the reporting period. The upward vertical head gradient between MB2-Alluvial and MB2-Regolith had a head separation of 2.3 m. This suggests that groundwater still flows from the shallow bedrock (regolith) to the alluvium formation and are less responsive to rainfall recharge compared to upstream groundwater sites (i.e. MB3-Alluvium and MB3-Regolith).

Saddlers Creek water levels recorded at the Maxwell gauge station is presented in **Figure 17** alongside the groundwater levels recorded at the nearest groundwater monitoring sites. Minimal flow was observed during 2024.

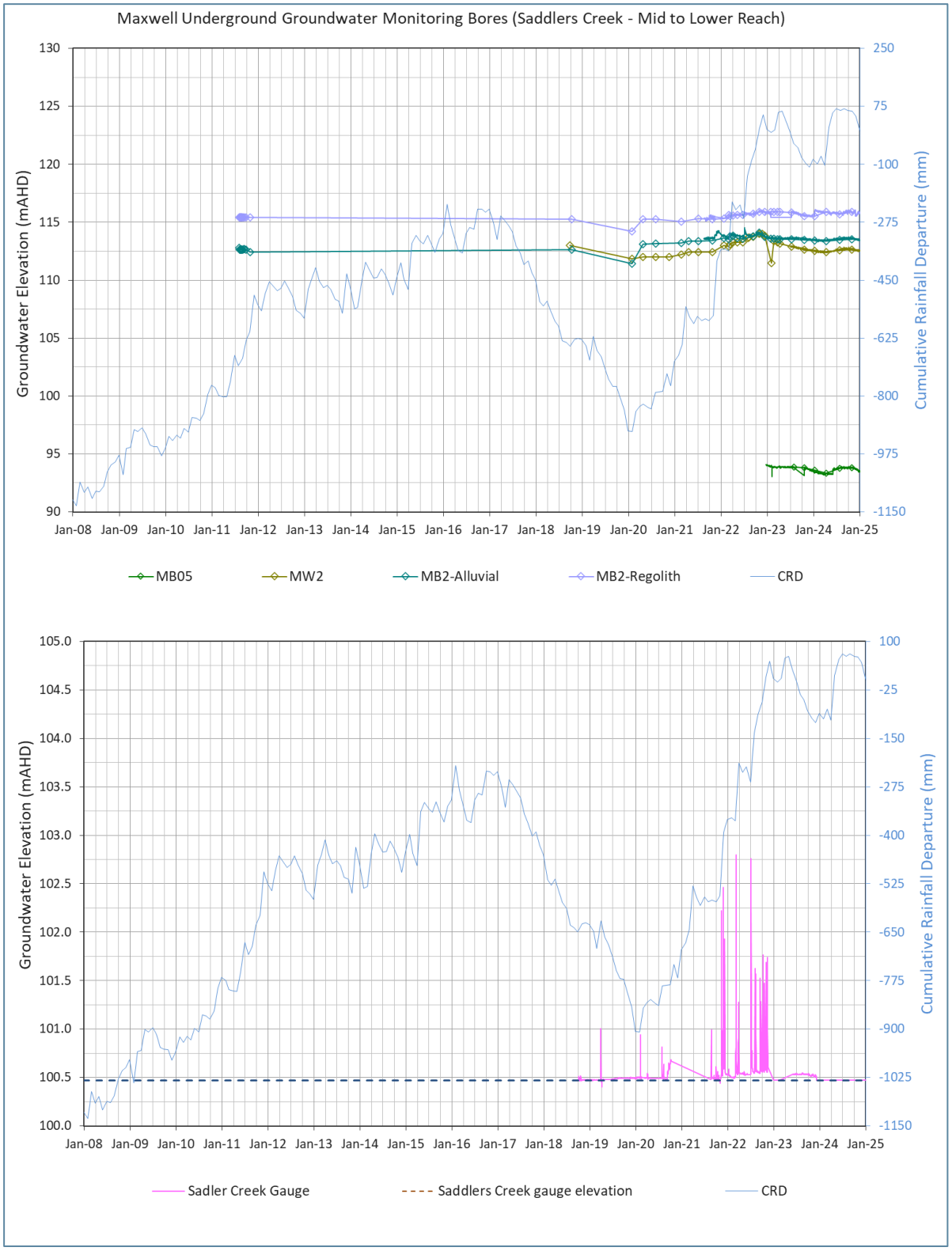

Figure 17 Groundwater levels at bores close to Saddlers Creek (mid-reach) and depth readings at the Saddlers Creek gauging station (both manual measurements and datalogger recordings shown where applicable)

Hunter River Catchment

Groundwater levels at groundwater monitoring sites located along the Hunter River responded to variation in rainfall conditions during 2024 and remained relatively stable (**Figure 18**).

Groundwater levels in MB1-Alluvial responded to variation in rainfall conditions and decreased by approximately 0.2 m during 2024. MB1-Whybrow and MB1-Redbank also showed a similar decreasing trend in groundwater levels of up to 0.5 m during 2024. It is noted a step decrease of up to 0.2 m is experienced after each quarterly water level/ sampling event and slowly recovers after this period. However, overall, the groundwater level trends are consistent with the CRD. The nested standpipes at sites MB1, located south of Maxwell site, indicated an upward vertical head gradient with a head separation of approximately 1.3 m between the alluvium and the Whybrow overburden and 1.9 m with the Redbank overburden. This suggests that during 2024 groundwater continued to flow from the Permian to the Hunter River alluvium as noted in 2023. MW3 was not monitored in 2024, as it had been recorded as dry since 2023.

Approximately 2.6 km downstream, MB4-Alluvial and MB4-Coal also show responses to variation in rainfall conditions during 2024. It was noted from changes in groundwater levels and the minor groundwater head separation between these two sites, that the Permian (MB4-Coal) is most likely recharged by groundwater in the alluvium formation, as observed in 2023.

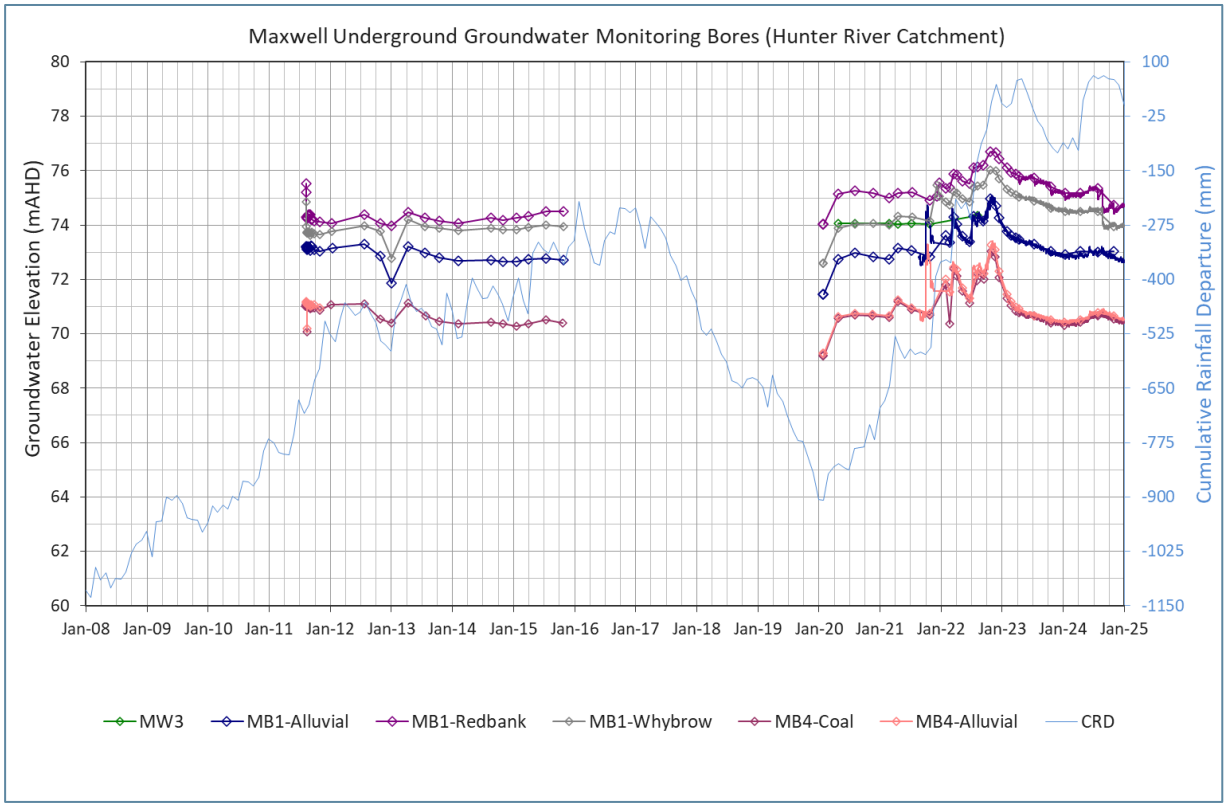

Figure 18 Groundwater Levels – Hunter River Catchment (both manual measurements and datalogger recordings shown where applicable)

Hydrometric analysis of groundwater-surface water interaction was undertaken using groundwater levels in bore GW080077 (which is screened in the Hunter River alluvium close to Denman) and Hunter River stage elevations at the Denman gauge (#210055) located approximately 18.5 km upstream from the Hunter River and Saddlers Creek confluence

(source of data: Water NSW[6]). The analysis is presented in **Figure 19**. In 2024, river water levels were consistently 3 m or more above adjacent groundwater levels, indicating a losing river surface water source with flow into the Hunter River alluvium at these locations; however, spatial and temporal changes in surface water and groundwater interactions along the Hunter River can be influenced by water abstraction from private users (i.e. irrigation). A similar groundwater trend was observed for Bore GW080077 as Maxwell monitoring bores with a general stable trend during 2024 with variations due to the CRD. No change in surface and groundwater interactions is observed along the Hunter River and upstream to the Maxwell Underground Mine during the review period.

Also, there is no evidence of observed groundwater depressurisation related to mining (i.e. neighbouring mines) along the Hunter River in the vicinity of the Maxwell Underground Mine in 2024.

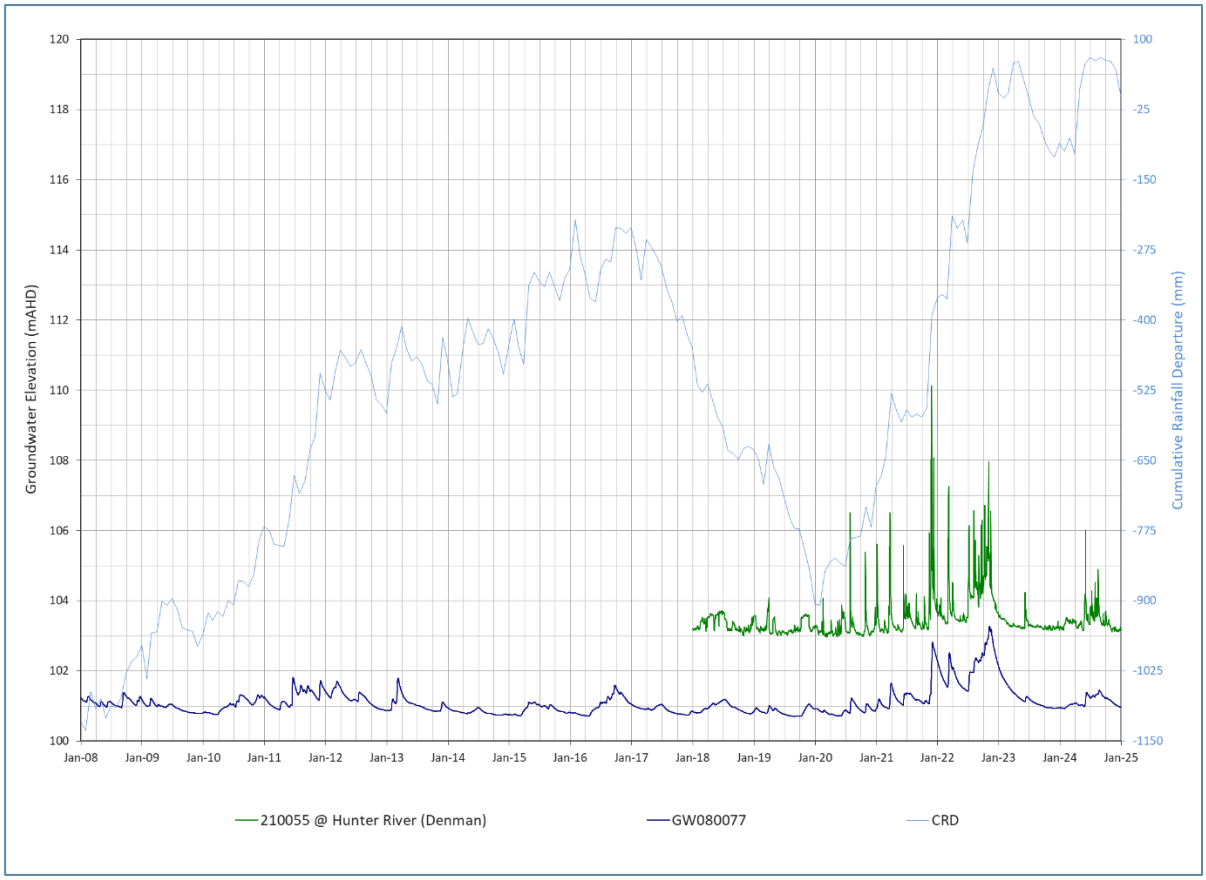

Figure 19 Groundwater Levels at GW080077 and Surface Water Level at 210055 (Hunter River)

Maxwell Infrastructure

Figure 20 presents the SE15 Void (known as the South Void) and ES27 Void (known as the East Void) water levels plotted alongside the groundwater levels recorded at the nearby groundwater monitoring sites GW04 and R4241 located south of the Maxwell Infrastructure and GW02S and GW02D located to the north of the ES27 Void.

[6] WaterNSW Real Time Data website: https://realtimedata.waternsw.com.au/

In 2024, SE15 and ES27 Void water levels increased by 1.8 m, continuing the increasing trend as observed in 2023. The two voids are known to be hydraulically connected, as is demonstrated by the same surface water level elevations.

R4241 is located approximately 1.2 km to the south of ES27 and 200 m to the south-east of SE15 Void. R4241 monitors groundwater levels in the Jurassic Volcanics, mapped to the south of the Maxwell Infrastructure. The groundwater level responses and low hydraulic conductivities of the Jurassic Volcanics (in the vicinity of R4241) likely results in limited interactions between the voids and groundwater present in the Jurassic Volcanics. Groundwater in the Jurassic Volcanics is considered as perched groundwater, likely disconnected from the Greta Coal Measures. Groundwater levels in R4241 remained approximately 35 m higher than the void water levels in 2024.

Groundwater levels in GW04 during 2024 were observed approximately 10 m above the void water levels, as observed in 2023. This suggests that in the southern edge of the Maxwell Infrastructure area, the two voids (ES27 and SE15) remained a groundwater sink in 2024.

Groundwater monitoring sites GW02S are considered appropriate groundwater monitoring sites to assess the interactions between groundwater and surface water in the ES27 Void. Data from GW02D was not considered in 2024, as a TARP Exceedance investigation[7] concluded that the GW02D water level responses were not representative of true aquifer conditions. GW02D is discussed in more detail in the TARP Assessment below.

Groundwater levels in the shallow regolith at GW02S remained stable during 2024, with fluctuations noticed as a result of the CRD. Groundwater levels in GW02S were observed to be 50 m above the ES27 Void water level which suggests that ES27 Void remained a groundwater sink with groundwater likely flowing into the voids during 2024.

[7] SLR Consulting Australia Pty Ltd (SLR) (2024a). Maxwell Mine – Groundwater TARP Trigger Investigation 2024. Report 610.031922.00001-M01. 19 July 2024.

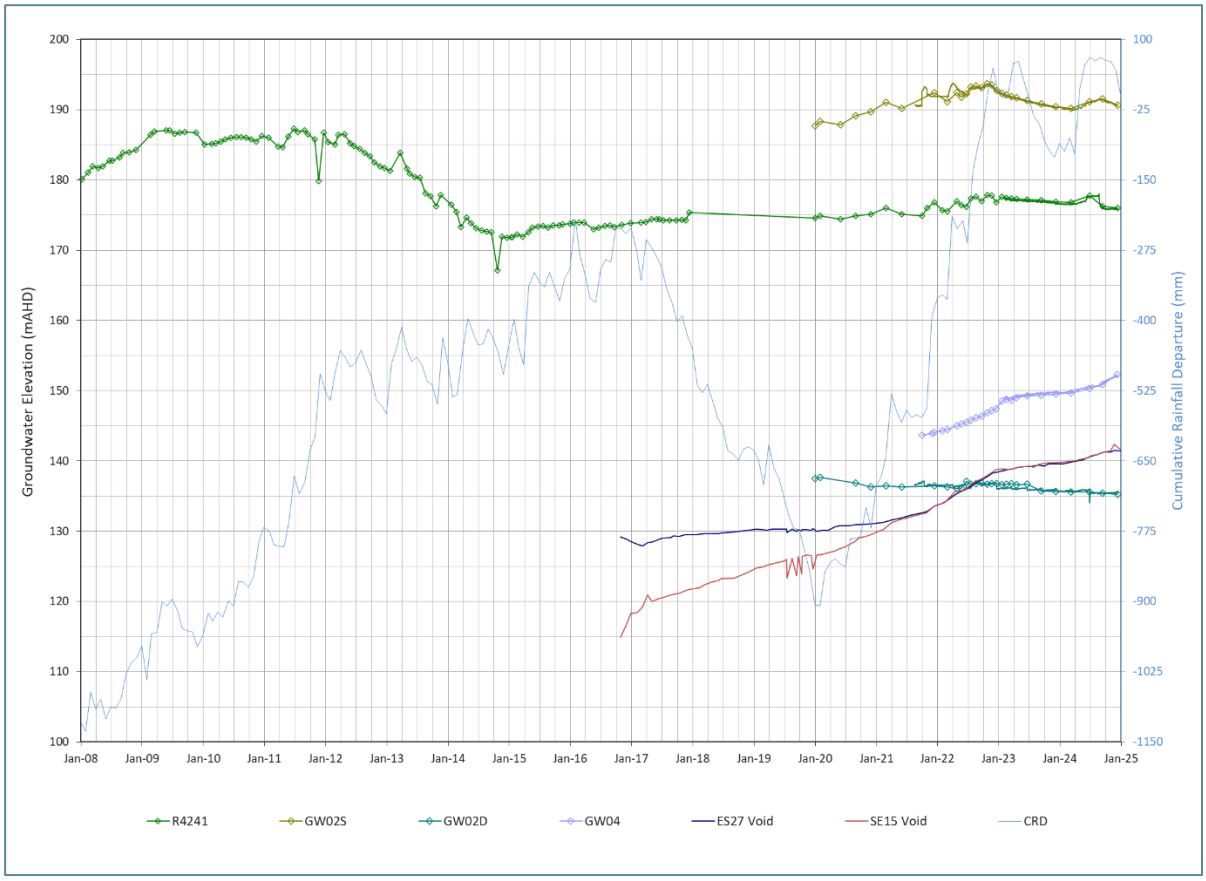

Figure 20 Groundwater Levels – Maxwell Infrastructure (in the vicinity of ES27 and SE15 Voids) (both manual measurements and datalogger recordings shown where applicable)

Figure 21 presents the NN Void (known as the North Void) surface water levels plotted alongside the groundwater levels recorded at the nearby groundwater monitoring sites DS1, F1162, F1164, GW01S and GW01D.

F1162 and F1164 are the closest groundwater monitoring sites to the NN Void and monitor the remaining unmined Greta Coal Measures. Groundwater levels at these two locations increased up to 2 m during 2024, following a similar increasing trend in surface water levels in the NN Void. Groundwater levels at F1162 and F1164 were consistent with measured surface water levels in NN Void during 2024. Further to the north-west, GW01S and GW01D are located approximately 830 m from the NN Void. GW01S and GW01D monitor groundwater in the upper and lower regolith. The groundwater levels at these two sites show a stable trend during 2024 with a minor upward vertical head gradient between GW01S and GW01D. GW01D water levels respond to the CRD and this variation is not observed in GW01S. It is noted from field notes in 2024 that GW01S could not be sampled due to insufficient water column present to take a sample. This indicates limited water column present in the bore during 2024 and practically being dry during 2024. Groundwater levels in GW01D remained approximately 55 m above the NN Void surface water levels. Hence in 2024, the NN Void continued to act as a groundwater sink with limited likelihood of groundwater discharge from the NN Void to Ramrod Creek.

The elevation of groundwater levels has remained at or above the elevation of the water surface in the voids, indicating that there is likely to be an inflow of aquifer water into the voids as predicted in the site EA.

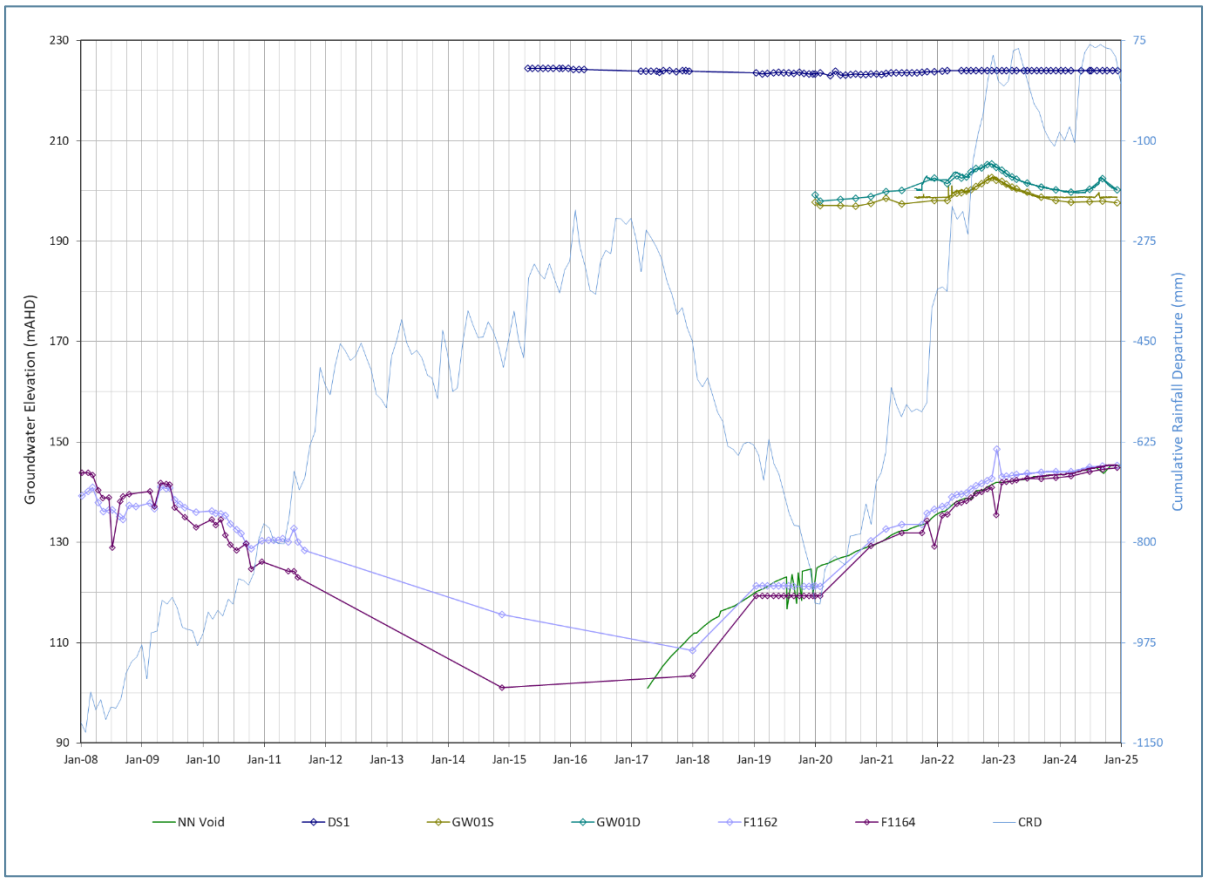

Figure 21 Groundwater Levels – Maxwell Infrastructure (in the vicinity of NN Void) (both manual measurements and datalogger recordings shown where applicable)

Groundwater Quality

The quality of groundwater at the site is analysed regularly in accordance with the current Groundwater Management Plan. Groundwater quality results for the reporting period are provided in the quarterly Environmental Monitoring Reports published on the Malabar Resources website[8]. A summary is as follows.

Electrical Conductivity and pH

Figure 22 presents electrical conductivity (EC) and pH recorded at the groundwater monitoring sites located along Saddlers Creek and along the Hunter River.

pH in the Saddlers Creek alluvium and shallow regolith has remained relatively stable during 2024, ranging between pH 7.1–7.9. EC recorded along Saddlers Creek in 2024 ranged from 5,200 µS/cm to 8,900 µS/cm, with the alluvium bores continuing to show higher salinity than the shallow regolith, consistent with 2023 measurements. EC in the Saddlers Creek alluvium and shallow regolith bores remaining stable during 2023.

[8] Malabar Resources website: https://malabarresources.com.au/corporate-governance/

In 2024, pH in the Hunter River alluvium and shallow regolith has also remained relatively stable and fluctuated between pH 7.1–8.1. EC in the Hunter River alluvium bores has remained stable during 2024, apart from MB1-Alluvial showing an increase by approximately 1,560 µS/cm and is consistent with concentrations within the deeper geological units. In the deeper geological units EC has remained stable at approximately ~6,000 µS/cm (MB1-Redbank and MB1-Whybrow).

Figure 23 presents EC and pH recorded at the groundwater monitoring sites located across Maxwell Underground and Maxwell Infrastructure.

pH in the Jerrys Plain Subgroup within the Maxwell Underground sites generally remained stable over 2024 ranging from pH 7.0–8.2. In 2024, EC recorded in the Jerrys Plain Subgroup ranged from 5,190–10,200 µS/cm, and shows no significant changes compared to previous years.

pH across the Maxwell Infrastructure groundwater monitoring sites has remained stable in 2024, ranging from pH 6.0–7.2. In 2024, groundwater EC across the Maxwell Infrastructure sites ranged from 1,820–14,500 µS/cm and remained relatively stable. The exceptions are:

- at GW01S no quality samples were able to be taken during 2024 as the bore did not have sufficient water column present; and
- at GW02D, EC continued to increase during 2024 from 13,500 µS/cm during December 2023 to 14,400 µS/cm in December 2024. The increase in EC and trigger exceedance was investigated and concluded to be most likely localised issues relating to the bore and not mining related activities. More detail is provided in the TARP Assessment below.

The raw groundwater quality results for the Maxwell Underground and Maxwell Infrastructure groundwater monitoring sites are presented in the quarterly Environmental Monitoring Reports; these are available on the Malabar Resources website[9], and hence are not repeated in this Annual Review. The quarterly reports include the 2024 average for each parameter at each groundwater monitoring site presented alongside the long-term average for comparison.

In 2024, groundwater quality including dissolved metal concentrations remained within baseline levels.

[9] Malabar Resources website: https://malabarresources.com.au/corporate-governance/

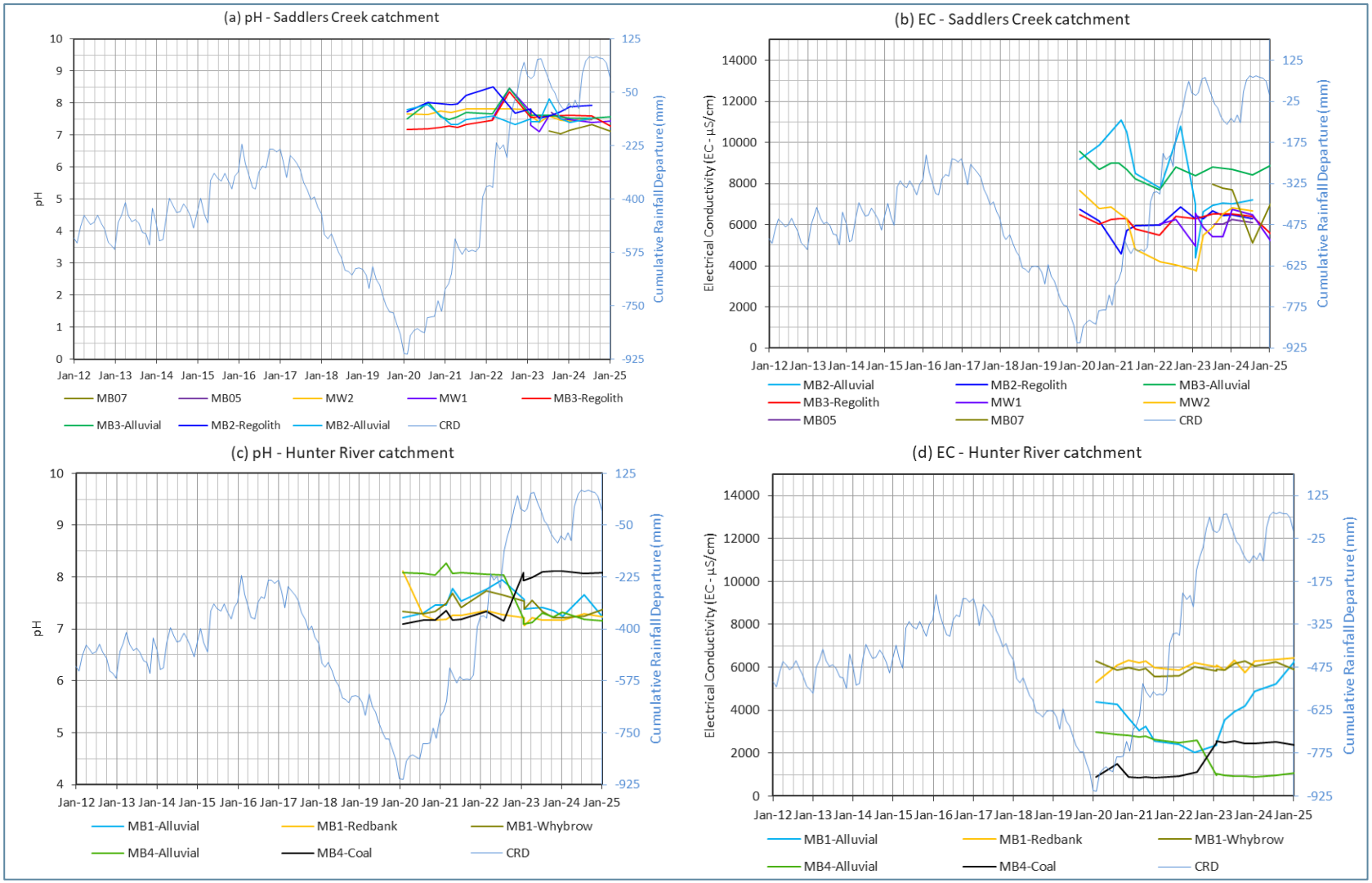

Figure 22 Groundwater pH and Electrical Conductivity (EC) along Saddlers Creek and the Hunter River

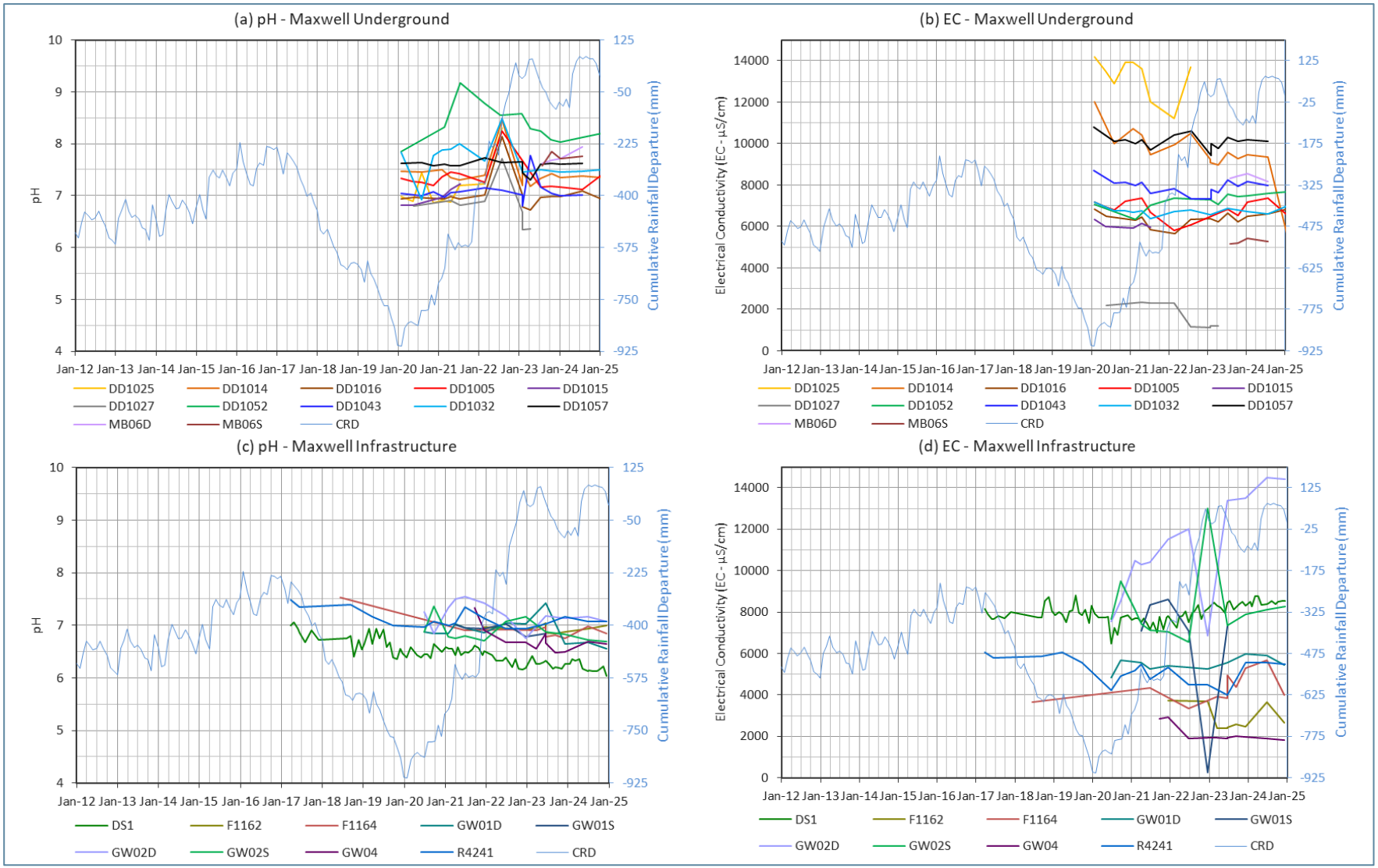

Figure 23 Groundwater pH and Electrical Conductivity (EC) across Maxwell Underground Mine and Maxwell Infrastructure

TARP Assessment

The following section assesses the groundwater data (i.e. groundwater levels and quality) against the Trigger Action Response Plan (TARP) trigger levels presented in the Groundwater Management Plan.

Groundwater Levels

Table 18 identifies any groundwater level trigger exceedances during the review period. The quarterly Environmental Monitoring Reports published on the Malabar Resources website provide hydrographs for groundwater levels and groundwater quality relative to the trigger levels[10].

Groundwater levels at the Maxwell Infrastructure groundwater monitoring sites R4241, GW01D, GW01S, GW02S and at the Maxwell UG Mine sites MB3-Alluvial and MB3-Regolith have not exceeded the trigger levels and hence are deemed at Normal status.

DD1032 continued to exceed the TARP Level 1 groundwater level trigger criteria over the reporting period. This exceedance is discussed in more detail in the study[11] that evaluated TARP exceedances, including DD1032. It was found that the observed decline in groundwater levels at bore DD1032 pre-dates the commencement of mining activities at Maxwell UG, which began in early 2023. Given the extensive and long-term mining activities in the surrounding area, particularly those at Mt Arthur Mine, it was judged more likely that regional mining operations have influenced the groundwater levels at DD1032 rather than the recent activities at Maxwell UG or changes in climatic conditions. The study recommended the removal of DD1032 from the TARP.

Additionally, DD1032 is expected to be decommissioned in 2024/2025 due to mining progression and its location within the indicative Maxwell UG mining area. Comparison between modelled and observed levels predicted depressurisation to occur at DD1032, and modelled[12] levels at the end of 2024 were predicted at 111.6 mAHD, which is much lower than observed groundwater levels during the reporting period. Average observed groundwater level for 2024 in DD1032 were 127.3 mAHD. The difference in the timing that may relate to how the model drain package represents actual mine progression at site and surrounding mining activities and will be addressed in future model updates. However, depressurisation and decrease in groundwater levels for bores within the indicative underground mining area are to be expected. The study[11] recommended existing monitoring bores pair MB06S and MB06D function as replacement of DD1032.

DD1025 was decommissioned in December 2022 for safety reasons (to prevent inrush to the upcoming underground mining operations) and was excluded from the TARP assessment for 2024. The 2023 Annual Review proposed that this site be replaced by a replacement bore for the purposes of the TARP assessment. DD1014 is considered a suitable replacement within the Maxwell Underground area, is located within the upper Blakefield overburden, and groundwater level responses are similar to that observed historically for DD1025. A study to

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[10] Malabar Resources website: https://malabarresources.com.au/corporate-governance/

[11] SLR Consulting Australia Pty Ltd (SLR), 2024a. Maxwell Mine – Groundwater TARP Trigger Investigation 2024. Report 610.031922.00001-M01. 19 July 2024.

[12] SLR Consulting Australia Pty Ltd (SLR), 2022. Maxwell Underground Mine Project Modification 2 Groundwater Review. Report MSEC1366, Revision 01. December 2023.

be conducted in the next reporting period will recommend an appropriate DD1014 Level 1 TARP trigger groundwater level.

GW02D exceeded the TARP Level 1 groundwater level trigger criteria from September 2024 after having short term exceedances earlier in the year. GW02D was evaluated for exceedance of the TARP EC criteria. Additionally, GW02D groundwater level monitoring data were also evaluated. Groundwater levels in GW02D gradually decreased over the monitoring period, with limited groundwater responses to rainfall (CRD) being observed, which continued during 2024.

An issue identified in GW02D was the accumulation of sediment at the bottom of the bore. Field sampling throughout 2023 noted that the logger was covered in mud. It was concluded that the generally decreasing groundwater levels trends, increasing EC concentration over the monitoring period, sediment and mud observations in the bore, and limited-to-no response to rainfall, that it was expected the groundwater quality and levels may not be representative of actual aquifer conditions in the vicinity of GW02D. The study recommended the removal of GW02D from the TARP.

Table 18. Groundwater Level Exceedances – shallow and deep standpipes

Bore	Trigger Level Exceedances											
	Jan 24	Feb 24	Mar 24	Apr 24	May 24	Jun 24	Jul 24	Aug 24	Sep 24	Oct 24	Nov 24	Dec 24
Maxwell Infrastructure	**Groundwater Management Plan (Feb 2023)**											
R4241	N	N	N	N	N	N	N	N	N	N	N	N
GW01D	N	N	N	N	N	N	N	N	N	N	N	N
GW01S	N	N	N	N	N	N	N	N	N	N	N	N
GW02D	Y	Y	N	Y	N	N	Y	Y	L1	L1	L1	L1
GW02S	N	N	N	N	N	N	N	N	N	N	N	N
Maxwell Underground Mine												
DD1025	*Decommissioned*											
DD1032	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1
MB3-Alluvial	N	N	N	N	N	N	N	N	N	N	N	N
MB3-Regolith	N	N	N	N	N	N	N	N	N	N	N	N
Private Bores												
GW029660	-	-	-	-	-	-	-	-	-	-	-	-
GW029647	-	-	-	-	-	-	-	-	-	-	-	-
GW029648	-	-	-	-	-	-	-	-	-	-	-	-

LX: maximum trigger level exceedances recorded N: Normal Level L1: TARP Level 1 L2: TARP Level 2 Y: "Yes", short term exceedance, less than 3 consecutive exceedances

"-" no data available for this period – no access due to Landowner permission not being obtained for the Private Bores.

Groundwater Quality

An assessment of groundwater quality (EC and pH) at each of the monitored bore locations against the TARP trigger levels has been undertaken. The quarterly Environmental Monitoring Reports published on the Malabar Resources website provide hydrographs for groundwater quality (EC and pH) relative to the trigger levels[13]. A summary is presented in **Table 19.**

No groundwater quality results were available for the private bores for the reporting period.

In 2024, EC and pH are all mostly within Normal levels. The exceptions are the exceedance of the EC trigger level at GW01D and MB3-Regolith. GW01D exceeded the EC TARP Level 1 trigger limit during Q2-2024 and Q3-2024. MB3-Regolith exceeded the EC TARP Level 1 trigger limit during Q1-2024, Q3-2024, and Q4-2024. These were short term exceedances of less than 3 consecutive measurements and did not trigger the TARP Level 1 or Level 2 criteria.

During 2024 GW02D continued to exceed the TARP Level 1 EC trigger criteria. The evaluation of the TARP Level 1 EC trigger criteria exceedance at GW02D concluded that when considering the generally decreasing groundwater levels trends over the monitoring period, increasing EC concentration over the monitoring period, sediment and mud observations in the bore, and limited-to-no response to rainfall, it was expected the groundwater quality and groundwater levels may not be representative of actual aquifer conditions in the vicinity of GW02D. Consequently, from the available monitoring data, it was concluded that the rising EC levels in GW02D were likely more associated with localised factors rather than external influences such as nearby mining activities. The study recommended the removal of GW02D from the TARP.

Table 19. Trigger Exceedances for pH and EC in 2024

Bore	Period	Trigger Level Exceedance		
		EC (µS/cm)	pH lower	pH upper
R4241	Q1-2024	N	N	N
	Q2-2024	N	N	N
	Q3-2024	N	N	N
	Q4-2024	N	N	N
GW01S	Q1-2024	-	-	-
	Q2-2024	-	-	-
	Q3-2024	-	-	-
	Q4-2024	-	-	-
GW01D	Q1-2024	N	N	N
	Q2-2024	Y	N	N
	Q3-2024	Y	N	N
	Q4-2024	N	N	N
GW02S	Q1-2024	N	N	N
	Q2-2024	N	N	N
	Q3-2024	N	N	N

[13] Malabar Resources website: https://malabarresources.com.au/corporate-governance/

Bore	Period	Trigger Level Exceedance		
		EC (µS/cm)	pH lower	pH upper
	Q4-2024	N	N	N
GW02D	Q1-2024	L1	N	N
	Q2-2024	L1	N	N
	Q3-2024	L1	N	N
	Q4-2024	L1	N	N
DD1025	Q1-2024	-	-	-
	Q2-2024	-	-	-
	Q3-2024	-	-	-
	Q4-2024	-	-	-
DD1032	Q1-2024	N	N	N
	Q2-2024	N	N	N
	Q3-2024	N	N	N
	Q4-2024	N	N	N
MB3-Alluvial	Q1-2024	N	N	N
	Q2-2024	N	N	N
	Q3-2024	N	N	N
	Q4-2024	N	N	N
MB3-Regolith	Q1-2024	Y	N	N
	Q2-2024	N	N	N
	Q3-2024	Y	N	N
	Q4-2024	Y	N	N
Private Bores	No data available	-	-	-

N: Normal Level L1: TARP Level 1 L2: TARP Level 2 Y: "Yes", short term exceedance, less than 3 consecutive exceedances

"-" no data available for this period – no access due to Landowner permission not being obtained for the Private Bores. DD1025 is decommissioned. GW01S did not contain sufficient water column to allow sampling in 2024.

Groundwater Actions for Next Review Period

Table 20 provides a summary of previous recommendations, from the previous Annual Reviews and other assessments, with a comment on their status as well as any new recommendations.

Table 20. Summary and Status of Groundwater Recommendations to Date

Recommendation	Cited	Comments/ Status
There are seven bores equipped with VWPs across the Maxwell UG Mine which includes RD1189, RD1192, VWP1, BKL6R12, WND16, WND26, RBD1. Some sensors and data loggers experienced data recording issues historically.	2023 Annual Review	A qualified hydrogeologist investigated[14] the functionality of sensors and associated logger boxes. An additional data review was recommended to evaluate raw VWP data to confirm full VWP functionality against install depth

[14] SLR Consulting Australia Pty Ltd (SLR), 2024b. Maxwell Mine – Field VWP Inspections. Report 610.031644.00001-R01. 10 December 2024.

Recommendation	Cited	Comments/ Status
It is first recommended the site conduct a VWP inspection investigation to confirm the status of all VWP sensors on site and recommend potential repair, replacement or decommissioning of each VWP sensor.		and piezometric levels before any recommendations are actioned. This data review assessment will be completed during the next reporting period.
It is also proposed to remove the following standpipes from the Groundwater Management Plan: • DD1015 due to a blockage of the bore, suspected to have collapsed • DD1025 as it was decommissioned in December 2022 due to the requirement to mitigate risks to the underground mine workings. • DD1027 as it monitors the Edderton Seam (i.e. not targeted by the Maxwell UG Mine). Groundwater data at this monitoring sites bring no significant value for future assessment in groundwater level and quality analysis for the Maxwell Project; in addition, access to this bore poses safety concerns for sampling as it is in an isolated location, across a steep gully. • MW3 as it is reported dry since early 2020	2023 Annual Review	The latest approved revision of the GWMP (26 August 2024) includes removal of bores DD1015, DD1025 and MW3. DD1027 will be removed from the next revision of the GWMP.
Replace DD1025 with DD1014 for the purposes of the TARP assessment.	2023 Annual Review	DD1025 was decommissioned in December 2022 for safety reasons (to prevent inrush to the upcoming underground mining operations). As per the recommendations in the 2023 Annual Review, it is proposed that this site will be replaced by DD1014 for the purposes of the TARP assessment. This will be included in the next revision of the GWMP.
Recalibration of the numerical groundwater model	2023 Annual Review	The site GWMP commits to periodic recalibration and independent peer review of the groundwater model every three years and if the monitoring data indicates significant deviation from the model predictions. It was recommended the model be recalibrated from Q4-2024 (three years after the previous model calibration dataset).

Recommendation	Cited	Comments/ Status
		A recalibration of the model will occur as part of the Woodlands Hill Extraction Plan during the next reporting period.
Removal of GW02D and DD1032 from TARP	2024 Groundwater Trigger Investigation[15]	Exceedances of the Level 1 TARP EC and/or groundwater level criteria for GW02D and DD1032 were investigated, and recommendations were to remove these bores from the TARP. GW06S and GW06D were recommended as replacement bores and will be included in the next revision of the GWMP.
New TARP bores and criteria levels for replacement bores	2024 Groundwater Trigger Investigation[15]	The investigation recommended the replacement of DD1032 with existing site bores MB06S and MB06D into the TARP. A study during the next reporting period will recommend appropriate TARP trigger levels for bores DD1014, DD1032, MB06D, and MB06S. These will be included in the next revision of the GWMP.
Update TARP Level 1 Criteria for Groundwater Levels after groundwater modelling update	Annual Review (2024)	After the numerical groundwater model has been updated as part of the Woodlands Hill Extraction Plan, the TARP Level 1 Criteria for groundwater levels for the TARP monitoring bores exceedance criteria should be set based on the predicted groundwater levels. As the underground mining activities progress within the underground mining area, drawdown in groundwater levels are anticipated and TARP criteria should reflect this predicted drawdown. Drawdown exceeding the predicted drawdowns should guide the site to potential impacts beyond predicted impacts, instead of a fixed TARP criteria level that will most likely be triggered constantly, especially within the mining area, as mining activities progress.

[15] SLR Consulting Australia Pty Ltd (SLR), 2024a. Maxwell Mine – Groundwater TARP Trigger Investigation 2024. Report 610.031922.00001-M01. 19 July 2024.

Recommendation	Cited	Comments/ Status
		The site should conduct a TARP criteria update investigation when the groundwater model is updated and update the GWMP and TARP accordingly.

9 REHABILITATION

9.1 Management

Rehabilitation at the Maxwell UG Mine is managed in accordance with the Rehabilitation Strategy, RMP and the Forward Program. The Rehabilitation Strategy was updated in January 2024 and describes the overall rehabilitation outcomes for the site in regard to mine closure, final landform and final land use.

Consistent with the requirements of the *NSW Mining Amendment (Standard Conditions of Mining Leases) – Rehabilitation Regulation 2021* under the *Mining Act 1992*, Maxwell also has a RMP for the site which provides further detail on final land use, rehabilitation implementation, ecological monitoring programs and research.

Each year an Annual Rehabilitation Report and Forward Program are prepared for Maxwell UG Mine and are submitted via the Resources Regulator Portal. The Annual Rehabilitation Report describes the key activities (operations and rehabilitation) that occurred during the reporting period and progress against the three-year forecast in the Forward Program.

Post Mining Land Use

Maxwell UG Project EIS describes a post-mining land use as a combination of agriculture and nature conservation. The rehabilitation objectives in Condition B76 of SSD 9526 describes the final land use features as woodland biodiversity corridors and areas proposed for agricultural or pastoral use.

The post mining land use goal is to deliver a safe, stable, non-polluting and sustainable post-mining landform that is consistent with the surrounding natural topography and fit for sustaining the intended post-mining land use. As an underground mine, any mining operations would result in minimal changes to the existing landforms. Consistent with previous approvals, the vision is to create a landscape with areas capable of productive land use, alongside woodland corridors to support biodiversity.

Final Landform and Rehabilitation Objectives

Rehabilitation objectives for the site are provided in the RMP and describe the outcomes required to achieve the post-mining land use. The rehabilitation objectives are consistent with the rehabilitation objectives outlined in Schedule 2, Condition B76 of SSD 9526 and apply to the entire site. These rehabilitation objectives take into account relevant strategic land use objectives in the region and the potential benefits of the post-mining land use to the environment, future landholders and the community.

Maxwell received feedback from the Resources Regulator in July 2024 on the Final Landform and Rehabilitation Plan (FLRP) and Rehabilitation Objectives Statement (ROBJ) for the Maxwell UG Mine. Following further discussions with the Resources Regulator, Maxwell amended the FLRP and ROBJ and these were approved in November 2024. A key change was the recognition of the Maxwell Solar Farm as final land use domain.

Completion Criteria

Completion criteria are objective target levels assigned to a variety of indicators which can be measured to demonstrate progress and ultimate success of rehabilitation. They provide a defined end point, at which rehabilitation can be deemed successful and the lease relinquishment process can proceed. These indicators and criteria will be refined over time as more information is obtained from monitoring programs or knowledge gained from industry and operational experience.

Targeted Assessment Program - Landform Establishment

On 2 March 2021, the Resources Regulator performed a planned inspection of landform establishment activities at Maxwell Infrastructure site. This targeted assessment was undertaken to identify risks and assess performance of controls associated with landform establishment activities, as well as assess compliance with statutory obligations. Based on the observations during the inspection, the Resources Regulator formed the view that there is a potential risk of adverse impact to the environment due to the uncertainty of the long-term erosional stability of the final landform.

Subsequently, on the 28 June 2021, Maxwell was issued with a notice under Section 240 of the *Mining Act 1992* (Section 240 Notice) to undertake an assessment of the long-term erosional stability of the final landforms that have been constructed as part of the rehabilitation of the mine and listed as Pasture and Woodland rehabilitation in Figure 14 of the Annual Environmental Management Report 2020. The notice also required Maxwell to undertake an assessment of the surface water management structures located in the rehabilitated landform. The assessment report was submitted to the Resources Regulator in January 2022.

In March 2022, Maxwell received a commencement of investigation letter from the Resources Regulator. Maxwell provided a response in April 2022. In November 2022, the Resources Regulator determined that no breach had occurred.

In December 2022, Maxwell was issued with a notice under Section 240 of the *Mining Act 1992* (Section 240 Notice) to engage a suitably qualified expert to undertake an assessment that sets out the design of modifications to the rehabilitated landform and surface water management structures on the rehabilitated landform to address the instability and erosion risks. The notice also included further directions to conduct a risk assessment, prepare a rehabilitation management plan, forward program and rehabilitation report. An Assessment Report to address Direction 1 of the Section 240 Notice was submitted to the Resources Regulator in May 2023.

During the reporting period, a progress report to address Direction 6 of the Section 240 Notice was submitted to the Resources Regulator. The report provided an update on the progress of implementation of the measures, verification of the measures implemented and results of quality assurance and validation of measures implemented.

Soil Amelioration

Due to historic site practices, good quality topsoil for use during rehabilitation is minimal. Previously on site, soil ameliorants have been used to increase soil organic matter, improve soil nutrient levels and promote vegetation growth.

Biosolids, which are a by-product of the wastewater treatment process, have been used on site as a soil ameliorant in pasture areas. Compost made up of garden organics and biosolids has also been used as a soil ameliorant in some woodland areas. Where required gypsum is also applied at a rate of five tonnes per hectare.

Approximately 602 cubic metres (m^3) of topsoil was stripped during the reporting period as part of construction activities. Topsoil stripped during the construction is recovered using dozers, excavators or scrapers. It is then placed into dedicated stockpiles. Where possible, stockpiles will be no greater than three metres in height and will be located away from drainage lines, operational areas and proposed disturbance areas. Surface drainage in the vicinity of stockpiles is diverted to minimise run-on and managed to minimise sediment laden run-off. All stockpiles are ripped and sown with a cover crop/pasture mix once their construction is completed.

A combination of topsoil, subsoil and ameliorants will be used for future rehabilitation. A soil balance is provided in **Table 21**. These numbers do not include topsoil and subsoil currently

in-situ. Maxwell considers that there is sufficient material for the rehabilitation of the Maxwell UG Mine.

Table 21. Soil balance (stockpiled)

Type	Estimated Amount (m^3)
Topsoil	186,108
Subsoil	1,0252,276

9.2 Performance

Approximately 838 hectares of previously open cut mined land associated with the Maxwell Infrastructure site had been rehabilitated at the start of the reporting. During the reporting period, an existing light vehicle track located on mine rehabilitation was upgraded and resurfaced to provide an all-weather access road to the new water treatment plant, resulting in a 1.8 hectare reduction to the total mine rehabilitation area. Approximately 836 hectares of rehabilitation was remaining at the end of the reporting period.

No buildings or infrastructure were decommissioned or demolished during the reporting period.

No new areas of rehabilitation were completed during the reporting period. Rehabilitation activities focussed on enhancing existing areas of rehabilitation. These activities included:

- infill planting in the woodland rehabilitation corridor to increase species diversity;
- targeted weed management across the site for High Threat Exotic weed species;
- management of pest animal species in consultation with the Local Land Services and near neighbours;
- continued cattle grazing on pastured rehabilitated paddocks; and
- widening of existing rock drain ID10.

The location of rehabilitation activities is shown in **Figure 24**. A summary of the rehabilitation status is provided in **Table 22.** These numbers have been reviewed and updated to align with the Resources Regulator Mine Rehabilitation Portal.

A Planned Inspection Program (PIP) was undertaken by the Resources Regulator in October 2024. The PIP focussed on whether rehabilitation is occurring as soon as reasonably practicable after surface disturbance, as required by clause 5 in Schedule 8A of Mining Regulation 2016. The PIP was completed and no immediate actions were identified however Maxwell are awaiting the final inspection assessment finding letter which will likely be received during the next reporting period.

All areas of rehabilitation are within the ecosystem and land use establishment phase. This phase incorporates revegetated lands and habitat augmentation, focusing on species selection, presence and growth, together with weed and pest animal management. Whilst the rehabilitation is progressing, no areas of rehabilitation have been formally signed off as meeting the land use objectives and completion criteria.

Table 22. Rehabilitation status

Mine Area Type	Previous reporting period (actual) Year 2023 (ha)	This reporting period (actual) Year 2024 (ha)	Next reporting period (forecast) Year 2025 (ha)
A. Total mine footprint[1a]	1,362	1,362	1,387
B. Total active disturbance[2]	524	526	551
C. Land being prepared for rehabilitation[3]	0	0	0
D. Land under active rehabilitation[4]	838	836	836
E. Completed rehabilitation[5]	0	0	0

Notes:

[1] Total mine footprint includes all areas within the mining lease that either have at some point in time or continue to pose a rehabilitation liability due to mining and associated activities.

[2] Total active disturbance includes all areas ultimately requiring rehabilitation.

[3] Land being prepared for rehabilitation includes the sum of mine disturbed land that is under the following rehabilitation phases – decommissioning, landform establishment and growth medium development.

[4] Land under active rehabilitation includes areas under rehabilitation and being managed to achieve relinquishment.

[5] Completed rehabilitation requires formal sign-off by the Resource Regulator that the area has successfully met the rehabilitation land use objectives and completion criteria.

[a] Excludes sublease area – surface disturbance activities and rehabilitation of the sublease is managed by Hunter Valley energy Coal Pty Ltd who operated the Mt Arthur Mine.

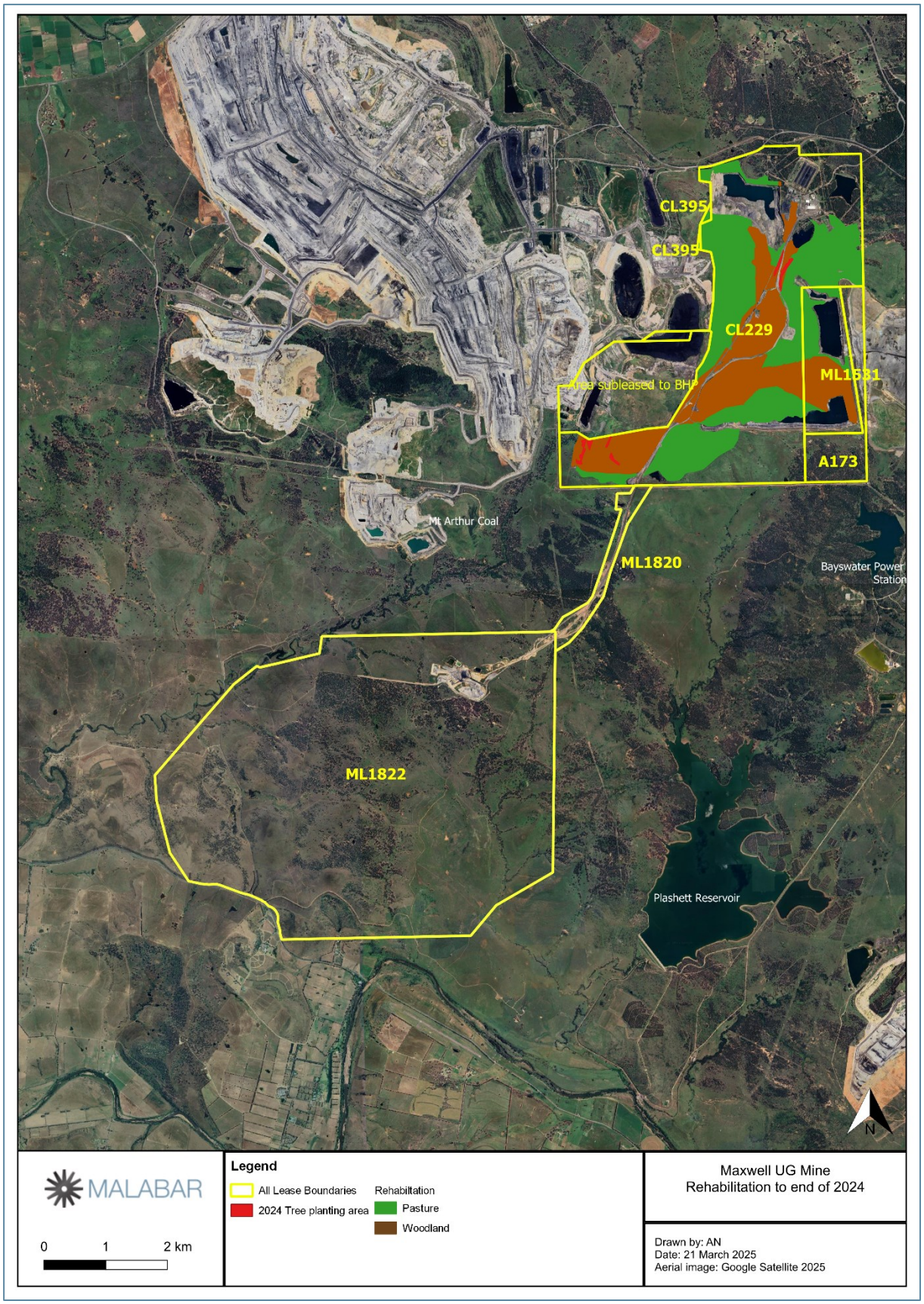


Figure 24. Location of rehabilitation activities

Other Rehabilitation Activities

Tree Planting

Two tree planting programs were undertaken during the reporting period, these were undertaken in autumn and spring. The programs targeted a total of ten hectares of existing mine rehabilitation within the conceptual woodland corridor. Ground preparation works for optimal tree propagation were undertaken and included:

- slashing of grass to safely define the work area as well as improve the success of spraying activities to prevent competition to tree growth;
- single deep rip lines (minimum 400 mm deep) to break up the surface to allow tube stock to be planted and establish. The rip lines also help capture water, reduce erosion and improve soil moisture levels; and
- spraying of rip lines with glyphosate to reduce competition for growth from grass species.

Tree and shrub species consistent with the Spotted Gum Ironbark Woodland, Red Gum Woodland and Yellow Box Woodland vegetation communities were planted. A total of 9,800 plants were installed using a growth promoting compound and a browsing deterrent applied directly to the plants to reduce impact of herbivores on plant success. Plants were thoroughly watered at the time of planting and follow up watering occurred for several weeks following the planting effort. Planting areas are monitored periodically and maintenance undertaken as required.

Weed Management

Weed management activities were undertaken during the reporting period as specified in the Annual Weed Action Plan. Areas targeted are shown in **Figure 25**. Weed control occurs during all seasons targeting specific weeds based on optimal time for control. Weed activities are undertaken in accordance with NSW Weed Control Handbook and Hunter Regional Strategic Weed Management Plan. Weed type, density, distribution and access were taken into account when planning weed management activities. Primary areas of focus were:

- offsets and conservation areas;
- areas adjacent to private land;
- areas of rehabilitation;
- tree planting areas;
- areas of high infestations of weeds of national significance; and
- areas identified for weed control in the annual Ecological Monitoring Reports, including Golden Wreath Wattle and Sugar Gum.

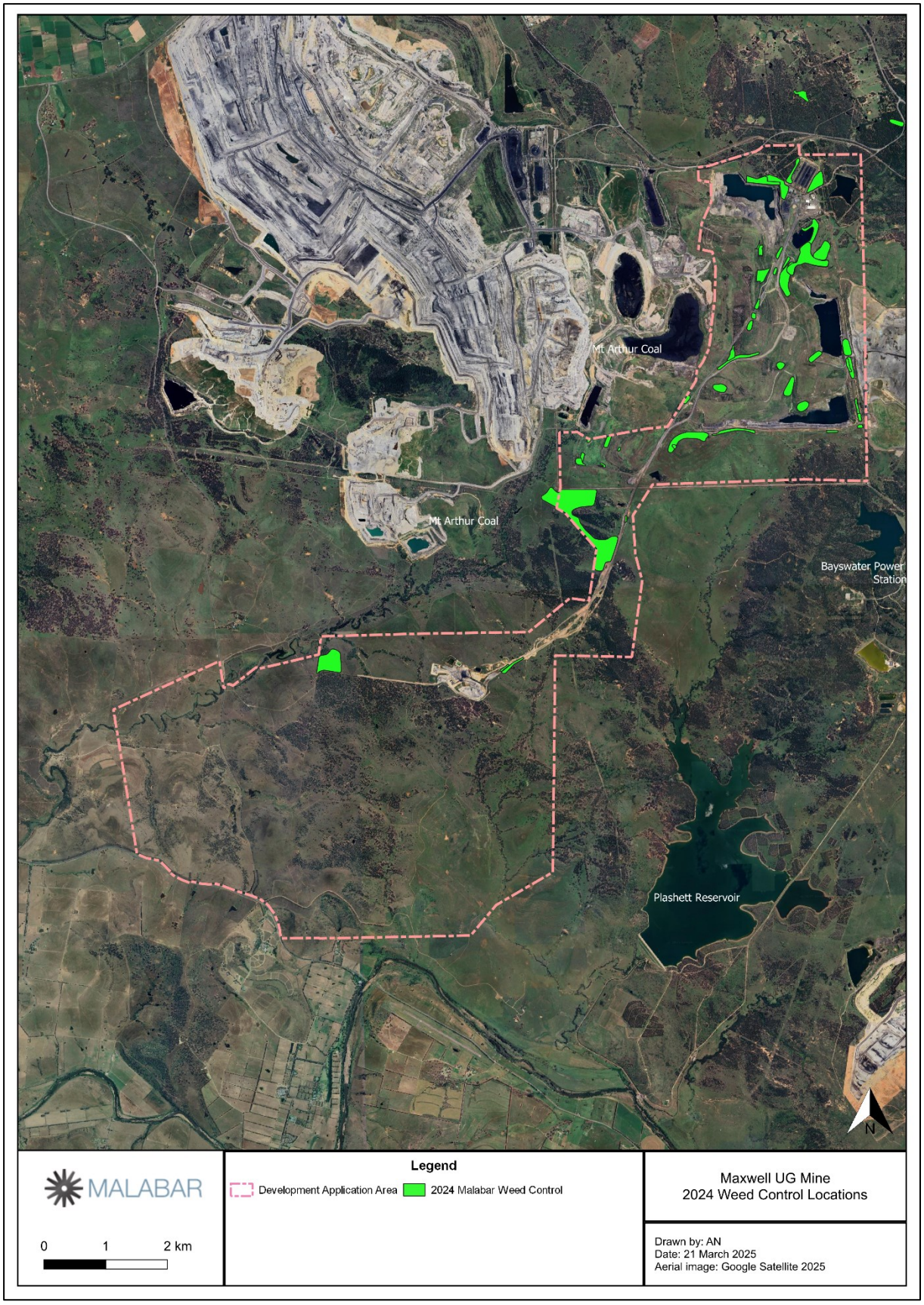


Figure 25. Weed control for the reporting period

Trials

Cattle Grazing Trial

A grazing trial commenced on rehabilitation at the Southern Tip in 2018. The trial continued throughout the reporting period. Cattle were strategically rotated between four paddocks of which three were located on mine rehabilitation. Some of the cattle were sold to market during the reporting period and the paddocks were rested (i.e. cattle removed or grazed at reduced numbers) during Spring and Summer to encourage new vegetation growth and diversity. Results so far are demonstrating that Maxwell can create a post mining landscape that is compatible with the surrounding landscape and capable of sustaining productive land use.

Native Grass Trial

A native grassland establishment trial was undertaken at Maxwell Infrastructure during 2013. The trial involved seeding a small area in the north with locally collected grassland species from Dartbrook. The seed mix was dominated by Red Grass (*Bothriochloa macra*) and Queensland Blue Grass (*Dichanthium sericeum*). The trial was monitored in 2013 and determined to be unsuccessful due to poor germination. A follow-up inspection during 2018 showed the area to be dominated by native grasses, particularly Lobed Bluegrass (*Bothriochla biloba*) and Queensland Bluegrass. Queensland Blue Grass was then included into the pasture mix as a trial on a 24-hectare parcel of land that was rehabilitated during 2018. Due to the dry conditions at the time, only a small number of Queensland Blue Grass was identified in the area.

The area was inspected by an ecologist in July 2022 and results showed evidence of native grass species such as Lobed Bluegrass (*Bothriochla biloba*), Queensland Bluegrass (*Dichanthium sericeum*) and Purple Wiregrass (*Aristida ramosa*). The area was inspected in April 2023 with results indicating poor cover of native grasses. This may have been due to dry conditions prior to the surveys. Further monitoring will be undertaken during the next reporting period.

9.3 Actions for the Next Reporting Period

The following activities will occur during the next reporting period:

- completion of rock drain ID10 widening;
- two tree planting programs consisting of approximately 10,000 tube-stock within the conceptual woodland corridor;
- a weed control program focussing on High Threat Exotic weed species;
- a kangaroo cull to reduce the impact on grazing on vegetation;
- continued wild dog and fox controls in association with the Local Land Services; and
- continued focus on thinning Golden Wreath Wattle (*Acacia saligna*) and Sugar Gum (*Eucalyptus cladocalyx*) on the Great North Tip where target native trees and shrubs are being suppressed.

10 COMMUNITY

10.1 Complaints

The Maxwell UG Mine maintains a 24-hour community hotline (1800 653 960) for any issues or enquiries. The community hotline number is advertised in the local newspapers and on the Malabar Resources website[16]. In addition to the community hotline, the Maxwell site can also be contacted by email (info@malabarresources.com.au). Complaints received are recorded on the Community Complaints register found on the Malabar Resources website, the register is updated on a monthly basis.

During the reporting period, there were no complaints received. This is consistent with the previous four years (as shown in **Figure 26**). The decrease in complaints from 2015 to 2016 corresponds with the cessation of open cut mining in October 2016.

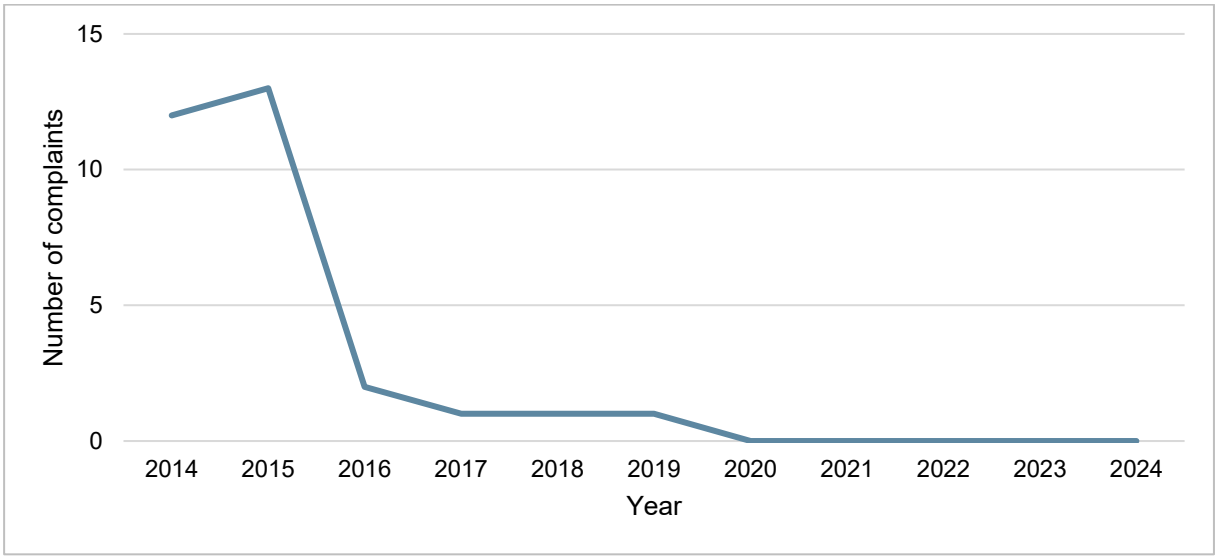


Figure 26. Long-term number of complaints

10.2 Engagement

Community Consultative Committees (CCCs) provide a forum for discussion between Maxwell and representatives of the local community, key stakeholder groups and the local council on issues relating directly to the Maxwell UG Mine. Although the CCC is not a decision-making or regulatory body, it performs an important advisory and consultative role.

The Maxwell CCC held meetings on four occasions during the reporting period including the 22 February 2024, 23 May 2024, 22 August 2024 and 14 November 2024. During the meetings the CCC reviewed the sites environmental performance and discussed community issues.

All meeting minutes, information on environmental management and performance, as well as relevant approvals, can be accessed by the community through the Malabar Resources website[16].

During the next reporting period, Maxwell will be looking to undertake a community engagement survey.

[16] Home - Malabar Resources https://malabarresources.com.au/

10.3 Contributions

Malabar donated to local community groups, charities, aged care, schools, scholarships and sporting teams within Muswellbrook, Denman, Scone, Singleton and the surrounding areas. Categories of the contributions are detailed below in **Figure 27**.

In accordance with the Voluntary Planning Agreement between Maxwell and MSC, a total of $133,653 was paid to MSC in May 2024. The money is to be used by MSC towards community, road and infrastructure initiates (at MSC's discretion) and for the appointment of an Environmental Officer.

Total contributions by Malabar at the end of 2024 are over $787,000.

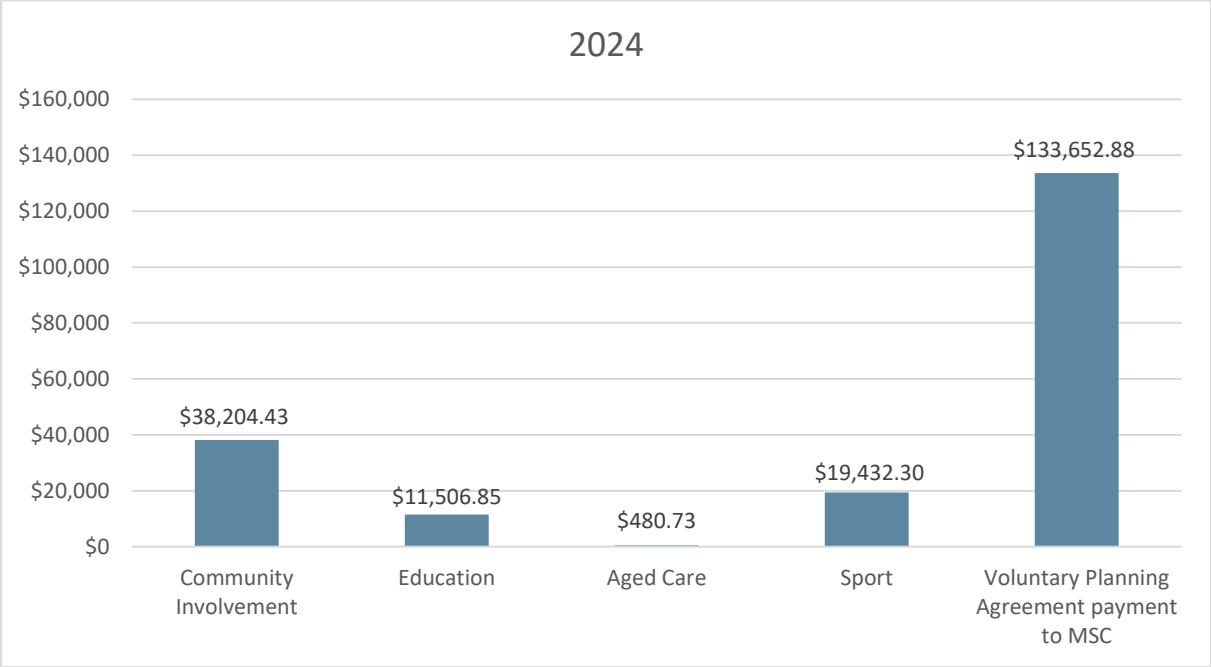


Figure 27. Community contributions for the reporting period

11 INCIDENTS AND NON-COMPLIANCES

11.1 Incidents

There were no incidents during the reporting period.

11.2 Exceedances

There were no exceedances during the reporting period.

11.3 Non-Compliances

In February 2024, Maxwell was issued with a compliance letter from DEECCW who believed that Maxwell had contravened conditions 2, 4, 17, 18 and 19 of EPBC Approval 2018/8287. The allegations were regarding two separate events.

The first event involved a pollution incident that occurred on site on 8 March 2022 which was reported to the EPA and DPHI at the time and was included in the 2022 Annual Review. The event was not reported to DEECCW or included in Annual Compliance Report for EPBC Approval 2018/8287.

The second event involved two updates to Maxwell's WMP in August 2022 and February 2023. Both updates were approved by DPHI however Maxwell failed to notify DEECCW of the proposed changes within two business days in accordance with EPBC Approval 2018/8287. On 24 March 2023, when Maxwell became aware of the abovementioned oversight, a copy of the revised WMP was provided to DEECCW promptly on the same day.

Maxwell responded to the show cause letter in March 2024 and committed to several actions to mitigate a recurrence of such events. At the completion of their investigation, DCCEEW determined that conditions of EPBC Approval 2018/8287 had been contravened and issued Maxwell with the following:

- three infringement notices for contravening conditions 17, 18 and 19; and
- a formal warning notice for contravening conditions 2 and condition 4.

12 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

The measures listed in **Table 23** will be implemented during the next reporting period to continue to improve the environmental and community performance at the Maxwell Infrastructure site.

Table 23. Improvement measures planned for next reporting period

Reference Number	Measure	Planned Timing
1	Commissioning of the site water treatment plant.	April 2025
2	Submission of the Woodlands Hill Longwalls 1 to 4 Extraction Plan.	April to May 2025
3	Commencement of second workings in the Whynot Seam.	June 2025
4	Construction works to commence on the conveyor trace (i.e. overland conveyor).	April 2025
5	Results from the BarnOwl will be compared to the attended measurements and inform the need to calibrate the BarnOwl.	December 2025
6	Completion of the widening of rock drain 10.	March 2025
7	Two separate tree planting programs on existing mine rehabilitation within the conceptual woodland corridor.	April 2025 and October 2025
8	A weed control program focussing on High Threat Exotic weed species.	December 2025
9	Continued to thin Golden Wreath Wattle (*Acacia saligna*) and Sugar Gum (*Eucalyptus cladocalyx*) on the Great North Tip	December 2025
10	A kangaroo cull on rehabilitation areas to reduce the impact on grazing on vegetation.	December 2025
11	Continued wild dog and fox controls in association with the Local Land Services and near neighbours.	December 2025
12	Undertake a community engagement survey.	August 2025

APPENDIX 1. APPROVAL CONDITIONS RELEVANT TO THE ANNUAL REVIEW

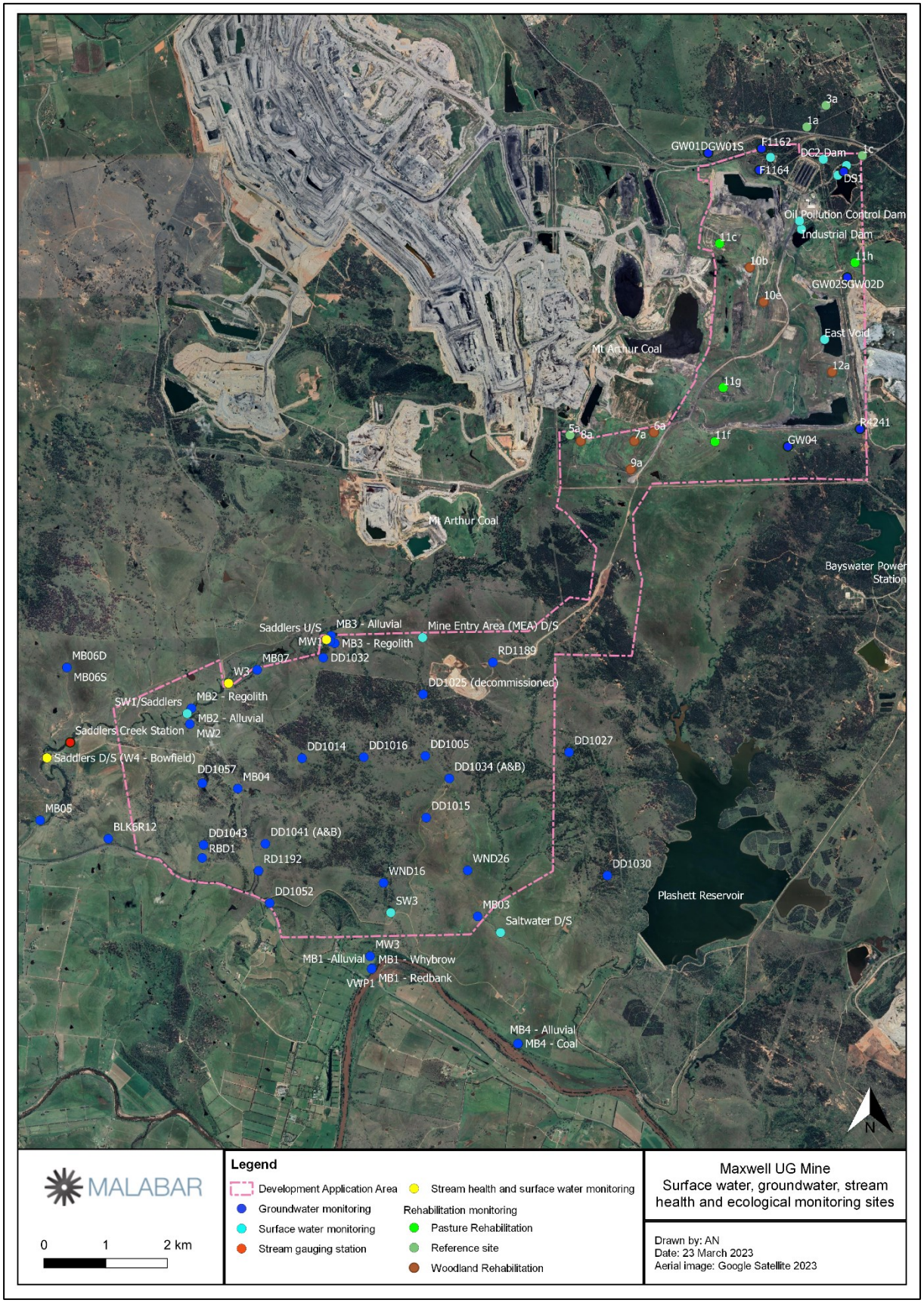
Condition	Description	Report Section
SSD 9526		
Schedule 2 Condition B28	The applicant must report on water captured, intercepted or extracted from the site each year (direct and indirect) in the Annual Review, including water taken under each water licence.	8.1 and Appendix 8
Schedule 2 Condition B64 (e)	The applicant must: (e) monitor and report on the effectiveness of the waste minimisation and management measures in the Annual Review referred to in condition E11.	7.10
Schedule 2 Condition B83	The Applicant must: keep accurate records of the: Amount of coal transported from the site (on a daily basis); and Date and time of each train movement generated by the development; and publish these results in the Annual Review.	7.7 and Appendix 5
Schedule 2 Condition E7	Within three months of: (b) the submission of an Annual Review under condition E11; The suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant	To be conducted within three months of the submission of this Annual Review

Condition	Description	Report Section
Schedule 2 Condition E11	By the end of March in each year after the commencement of the development, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. This review must:	2024 Annual Review to be submitted by 31 March 2025
	(a) describe the development (including any rehabilitation) that was carried out in the previous calendar year,	3, 9
	and the development that is proposed to be carried out over the current calendar year;	
	(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the:	7, 8, 9 Appendices 3–9
	(i) relevant statutory requirements, limits or performance measures/criteria;	
	(ii) requirements of any plan or program required under this consent;	
	(iii) monitoring results of previous years; and	
	(iv) relevant predictions in the document/s listed in condition A2(c).	
	(c) identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence;	11
	(d) evaluate and report on:	7
	(i) the effectiveness of the noise and air quality management systems; and	1, 7, 8, 9
	(ii) compliance with the performance measures, criteria and operating conditions of this consent;	7, 8, 9
	(e) identify any trends in the monitoring data over the life of the development;	7, 8, 9
	(f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the	
	potential cause of any significant discrepancies; and	7, 8, 9,
	(g) describe what measures will be implemented over the next calendar year to improve the environmental performance of the development.	12

Condition	Description	Report Section
E12	Copies of the Annual Review must be submitted to Council and made available to the CCC and any interested person upon request.	Copies of the Annual Review will be submitted to Council and made available to the CCC and any interested persons upon request.
E17(a)(xi)	Before commencement of construction until the completion of all rehabilitation required under this consent, the Applicant must: Make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this consent) publicly available on its website: (xi) the Annual Reviews of the development.	The Annual Review will be made publicly available on the Malabar Resources website.

APPENDIX 2. ENVIRONMENTAL MONITORING LOCATIONS

Air quality, noise, blasting and meteorological monitoring locations



Surface water, groundwater, stream health and ecological monitoring locations

APPENDIX 3. NOISE MONITORING RESULTS

Monitored and projected noise generated by the project alone for the reporting period.

Location	Maxwell Underground Mine Operational noise criteria (dB(A))				2024 maximum result (dB(A))			
	Day ($L_{Aeq\ (15\ min)}$) Years 1 to 3)	Evening ($L_{Aeq\ (15\ min)}$)	Night ($L_{Aeq\ (15\ min)}$)	Night (L_{max})	Day ($L_{Aeq\ (15\ min)}$)	Evening ($L_{Aeq\ (15\ min)}$)	Night ($L_{Aeq\ (15\ min)}$)	Night (L_{max})
390, 398, 402	44	39	39	52	<20	20	29	32
425, 427	40	37	37	52	<20	20	29	32
399	42	37	37	52	<20	<20	30	33
400	41	36	36	52	<20	<20	30	33
403	44	40	40	52	<20	<20	32	35
411	45	41	41	52	<20	28	31	34
418	44	39	39	52	<20	26	31	34
419, 420, 539	42	38	38	52	<20	24	31	34
421, 423	41	38	38	52	<20	23	31	33
424	42	39	39	52	<20	22	31	33
538	42	38	38	52	<20	<20	31	33
All other privately-owned properties	40	35	35	52	<20	<20	<20	<20

Monitoring summary - noise generated by the Rail Loop and Antiene Rail Spur for the reporting period

Location	Rail loop and Antiene Rail Spur development consent cumulative noise criteria (dB(A)			2024 maximum result (dB(A))		
	Day ($L_{Aeq\ (15\ min)}$)	Evening ($L_{Aeq\ (15\ min)}$)	Night ($L_{Aeq\ (15\ min)}$)	Day ($L_{Aeq\ (15\ min)}$)	Evening ($L_{Aeq\ (15\ min)}$)	Night ($L_{Aeq\ (15\ min)}$)
NM1[1]	40	40	40	39	37	36
NM2				<20	36	32
NM3				<20	<20	<20
NM4				<20	<20	<20

1. Incorporating distance, ground, and atmospheric losses totalling 22dB from the monitoring location NM1 to the more distant residential assessment point

APPENDIX 4. AIR QUALITY MONITORING RESULTS

PM_{10} and $PM_{2.5}$ 24-hour average concentrations in µg/m^3 for the reporting period.

See Notes below table.

Date	TEOM-1		TEOM-2	
Jan	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/01/2024	17.20	6.45	10.47	4.19
2/01/2024	18.80	7.05	14.41	5.71
3/01/2024	23.40	8.77	10.92	4.34
4/01/2024	28.10	10.53	8.60	5.32
5/01/2024	8.52	3.31	6.98	3.95
6/01/2024	15.20	5.70	9.50	3.58
7/01/2024	11.53	6.05	14.75	5.37
8/01/2024	20.90	7.84	7.10	2.29
9/01/2024	11.60	4.35	4.25	3.37
10/01/2024	8.19	4.48	9.26	4.70
11/01/2024	12.42	9.31	9.35	4.05
12/01/2024	6.97	2.50	8.44	2.58
13/01/2024	14.06	6.55	14.83	4.23
14/01/2024	8.40	3.57	5.70	3.46
15/01/2024	7.73	2.96	8.64	4.75
16/01/2024	8.44	3.18	14.62	4.79
17/01/2024	7.21	2.87	12.11	3.69
18/01/2024	6.20	2.46	5.96	2.82
19/01/2024	7.85	4.05	9.25	1.79
20/01/2024	11.40	6.28	18.07	4.34
21/01/2024	13.72	7.87	12.64	4.25
22/01/2024	19.58	11.62	20.22	5.27
23/01/2024	8.99	3.94	15.94	6.93
24/01/2024	11.91	6.64	14.19	4.76
25/01/2024	13.07	7.93	18.94	3.77
26/01/2024	17.42	9.91	24.41	5.60
27/01/2024	15.13	7.49	19.74	4.59
28/01/2024	13.63	5.56	16.24	3.92
29/01/2024	13.11	6.00	17.48	2.69
30/01/2024	14.37	7.39	19.04	5.21
31/01/2024	13.21	7.01	18.20	4.33

Date	TEOM-1		TEOM-2	
Feb	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/02/2024	13.47	7.41	12.80	4.82
2/02/2024	20.10	10.48	19.80	5.55
3/02/2024	24.35	9.80	26.32	4.71
4/02/2024	24.75	13.02	31.66	8.96
5/02/2024	14.74	7.63	26.51	8.69
6/02/2024	15.76	9.39	9.57	3.89
7/02/2024	6.97	1.95	5.85	0.77
8/02/2024	10.24	2.23	8.60	0.70
9/02/2024	14.41	6.32	9.73	1.19
10/02/2024	9.49	3.48	6.84	0.66
11/02/2024	13.36	2.50	14.89	3.33
12/02/2024	15.18	6.55	13.57	2.57
13/02/2024	12.51	5.32	9.56	1.89
14/02/2024	13.09	5.89	6.99	1.07
15/02/2024	15.92	7.99	4.92	1.46
16/02/2024	13.40	6.48	7.98	2.61
17/02/2024	13.26	5.85	9.58	2.28
18/02/2024	20.10	9.91	11.31	4.36
19/02/2024	15.40	6.85	6.60	1.88
20/02/2024	11.10	7.84	3.88	0.84
21/02/2024	14.40	6.01	6.81	1.80
22/02/2024	19.60	4.33	26.60	10.88
23/02/2024	24.00	5.62	17.60	7.20
24/02/2024	14.10	7.64	5.25	1.03
25/02/2024	22.40	9.36	9.06	0.89
26/02/2024	24.70	5.50	13.85	4.33
27/02/2024	19.60	8.74	8.32	1.58
28/02/2024	25.40	12.75	17.28	5.00
29/02/2024	35.17	21.58	11.35	2.96

Date	TEOM-1		TEOM-2	
Mar	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/03/2024	18.75	7.38	14.05	3.85
2/03/2024	25.80	8.91	11.01	2.88
3/03/2024	19.95	6.59	7.67	0.51
4/03/2024	25.43	8.43	13.78	3.34
5/03/2024	17.58	5.25	12.15	2.55
6/03/2024	18.42	4.46	10.23	1.26
7/03/2024	23.86	9.54	15.22	4.03
8/03/2024	11.88	4.09	7.51	1.36
9/03/2024	15.43	4.33	7.64	0.46
10/03/2024	13.95	4.20	9.12	1.03
11/03/2024	20.04	4.86	10.44	1.13
12/03/2024	24.67	8.38	14.38	3.42
13/03/2024	25.64	10.18	21.53	7.75
14/03/2024	23.36	7.25	17.49	5.44
15/03/2024	15.22	4.46	8.52	1.06
16/03/2024	15.96	3.91	10.94	1.82
17/03/2024	8.74	3.12	5.77	2.04
18/03/2024	8.30	4.04	5.05	2.38
19/03/2024	10.19	4.59	7.96	1.87
20/03/2024	13.73	4.42	7.31	2.08
21/03/2024	18.32	4.66	13.17	3.82
22/03/2024	13.47	3.94	10.65	4.73
23/03/2024	11.88	2.50	10.92	4.04
24/03/2024	13.97	5.68	12.68	5.07
25/03/2024	14.17	4.91	10.56	5.14
26/03/2024	19.43	9.22	18.28	6.87
27/03/2024	17.05	8.08	15.90	6.28
28/03/2024	18.74	8.60	14.35	6.45

Date	TEOM-1		TEOM-2	
Mar	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
29/03/2024	14.10	5.50	12.49	4.97
30/03/2024	18.10	7.06	15.56	7.03
31/03/2024	13.50	5.27	11.48	6.55

Date	TEOM-1		TEOM-2	
Apr	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/04/2024	17.60	6.86	14.51	7.24
2/04/2024	19.30	7.53	12.16	5.28
3/04/2024	16.90	6.59	9.45	4.23
4/04/2024	10.50	4.10	7.75	4.78
5/04/2024	7.10	2.77	3.21	2.32
6/04/2024	4.70	1.83	3.52	1.78
7/04/2024	11.20	4.37	6.70	5.17
8/04/2024	12.60	4.91	4.89	3.65
9/04/2024	12.20	4.76	6.93	5.02
10/04/2024	10.70	4.17	5.84	3.30
11/04/2024	10.36	5.11	8.39	4.64
12/04/2024	14.47	6.18	9.46	4.28
13/04/2024	14.72	6.82	10.77	5.75
14/04/2024	15.07	8.65	10.95	7.51
15/04/2024	14.48	8.02	17.79	9.29
16/04/2024	19.53	10.64	15.93	9.90
17/04/2024	15.55	9.46	15.96	9.81
18/04/2024	10.26	5.90	10.56	7.47
19/04/2024	18.55	8.52	12.00	7.05
20/04/2024	6.33	2.75	5.61	4.65
21/04/2024	8.73	2.98	7.88	3.85
22/04/2024	10.24	4.09	9.92	6.58
23/04/2024	10.26	4.41	8.01	6.36
24/04/2024	11.15	4.57	8.65	5.60

Date	TEOM-1		TEOM-2	
Apr	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
25/04/2024	20.88	6.73	15.00	6.05
26/04/2024	14.78	6.82	13.15	8.27
27/04/2024	17.04	10.19	10.58	6.84
28/04/2024	11.57	6.97	10.77	8.76
29/04/2024	12.04	5.38	11.56	10.19
30/04/2024	15.76	6.39	9.11	7.53

Date	TEOM-1		TEOM-2	
May	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/05/2024	7.35	3.63	8.38	7.48
2/05/2024	7.54	3.38	10.19	7.80
3/05/2024	8.43	4.04	8.94	6.69
4/05/2024	6.64	3.64	8.91	6.61
5/05/2024	4.22	2.21	7.89	7.75
6/05/2024	4.91	2.64	9.22	8.82
7/05/2024	8.54	3.28	11.47	8.29
8/05/2024	6.63	2.59	9.61	7.09
9/05/2024	8.68	3.87	12.80	9.13
10/05/2024	8.81	3.74	12.10	8.97
11/05/2024	4.99	2.99	9.17	9.10
12/05/2024	8.36	4.71	9.36	8.89
13/05/2024	7.66	3.44	9.61	8.90
14/05/2024	8.58	4.72	8.27	7.35
15/05/2024	13.86	6.94	13.26	9.06
16/05/2024	14.88	8.03	11.75	8.23
17/05/2024	14.96	9.94	14.30	6.33
18/05/2024	8.76	4.33	7.80	3.45
19/05/2024	8.06	2.53	8.40	3.72
20/05/2024	7.74	3.37	13.90	6.15
21/05/2024	8.35	3.05	7.38	4.12
22/05/2024	8.46	4.88	6.25	4.33
23/05/2024	9.67	5.34	5.76	4.21
24/05/2024	14.78	8.63	9.51	6.54
25/05/2024	14.36	8.08	7.42	4.62
26/05/2024	12.67	9.35	10.13	7.43
27/05/2024	12.67	7.01	8.24	6.01
28/05/2024	15.60	10.68	10.02	6.88
29/05/2024	14.36	8.73	11.04	8.98
30/05/2024	14.10	8.19	8.63	5.93
31/05/2024	11.35	5.26	10.45	6.76

Date	TEOM-1		TEOM-2	
Jun	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/06/2024	4.93	2.99	5.85	6.41
2/06/2024	4.18	2.42	6.82	6.89
3/06/2024	4.59	2.25	4.12	3.24
4/06/2024	7.54	3.75	3.45	2.73
5/06/2024	12.62	7.27	5.23	4.07
6/06/2024	9.92	6.23	6.23	5.44
7/06/2024	5.88	4.82	7.57	7.81
8/06/2024	5.34	3.53	4.18	4.06
9/06/2024	6.37	3.68	4.46	3.98
10/06/2024	9.50	3.83	4.42	3.92
11/06/2024	9.10	3.67	3.51	2.50
12/06/2024	9.58	3.57	4.21	2.76
13/06/2024	11.27	5.08	6.05	3.83
14/06/2024	13.99	6.26	6.35	3.93
15/06/2024	8.26	4.43	5.98	5.34
16/06/2024	6.10	3.64	3.99	3.53
17/06/2024	5.73	3.70	6.08	4.43
18/06/2024	8.19	4.59	4.39	3.79
19/06/2024	6.58	4.17	5.03	4.14

Date	TEOM-1		TEOM-2	
Jun	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
20/06/2024	8.53	5.05	5.98	4.22
21/06/2024	8.33	4.53	6.73	6.60
22/06/2024	7.62	4.52	6.24	5.21
23/06/2024	7.04	3.88	5.60	4.22
24/06/2024	7.58	5.17	3.76	3.48
25/06/2024	9.65	5.80	6.84	4.86
26/06/2024	11.45	6.65	6.56	5.28
27/06/2024	9.98	4.40	13.70	5.97
28/06/2024	8.32	3.91	13.00	5.67
29/06/2024	12.72	7.98	9.35	5.32
30/06/2024	6.05	3.98	4.59	2.48

Date	TEOM-1		TEOM-2	
Jul	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/07/2024	6.68	3.20	5.50	8.43
2/07/2024	5.61	2.25	3.78	1.23
3/07/2024	7.33	2.31	5.67	4.02
4/07/2024	8.46	2.66	6.72	9.76
5/07/2024	8.07	2.69	6.82	16.97
6/07/2024	6.08	2.27	5.71	11.01
7/07/2024	16.07	12.68	5.53	10.64
8/07/2024	8.76	5.54	8.79	12.11
9/07/2024	6.11	3.80	5.57	12.96
10/07/2024	4.37	2.46	3.10	19.27
11/07/2024	7.16	3.68	2.10	13.02
12/07/2024	8.50	4.79	5.71	8.33
13/07/2024	8.08	4.10	4.57	6.84
14/07/2024	6.76	3.29	5.96	7.74
15/07/2024	4.58	1.14	4.64	4.69
16/07/2024	5.92	1.71	4.10	8.37

Date	TEOM-1		TEOM-2	
Jul	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
17/07/2024	5.78	2.53	3.79	7.03
18/07/2024	7.03	3.20	5.78	9.68
19/07/2024	6.46	2.22	3.82	15.31
20/07/2024	10.75	3.86	9.14	18.47
21/07/2024	12.72	4.55	9.35	5.44
22/07/2024	7.50	3.41	6.07	1.94
23/07/2024	8.12	4.20	6.35	3.16
24/07/2024	8.57	4.45	5.67	3.34
25/07/2024	13.58	6.97	8.39	2.40
26/07/2024	6.37	3.09	6.70	2.21
27/07/2024	7.78	5.02	17.98	1.04
28/07/2024	3.86	1.57	9.57	2.70
29/07/2024	5.39	2.12	8.50	2.89
30/07/2024	10.15	5.59	9.08	3.48
31/07/2024	10.84	4.08	10.76	4.14

Date	TEOM-1		TEOM-2	
Aug	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/08/2024	11.76	4.45	12.34	8.43
2/08/2024	10.68	4.58	5.30	1.23
3/08/2024	10.44	6.98	5.58	4.02
4/08/2024	15.13	9.47	9.27	9.76
5/08/2024	14.28	9.07	15.45	16.97
6/08/2024	9.79	7.16	10.08	11.01
7/08/2024	10.78	6.85	9.82	10.64
8/08/2024	12.20	7.81	10.94	12.11
9/08/2024	11.82	7.33	11.74	12.96
10/08/2024	13.14	9.13	17.43	19.27
11/08/2024	17.14	12.47	38.05	13.02
12/08/2024	9.87	6.84	14.77	8.33
13/08/2024	9.14	4.51	6.33	6.84
14/08/2024	7.23	5.02	7.05	7.74
15/08/2024	10.26	4.01	4.33	4.69
16/08/2024	7.40	4.75	7.63	8.37
17/08/2024	5.96	3.54	6.47	7.03
18/08/2024	7.46	3.50	8.74	9.68
19/08/2024	11.90	4.31	13.94	15.31
20/08/2024	12.13	7.60	19.16	18.47
21/08/2024	19.53	10.75	9.79	5.44
22/08/2024	8.45	3.40	4.81	1.94
23/08/2024	12.82	4.87	11.59	3.16
24/08/2024	10.32	5.21	8.08	3.34
25/08/2024	13.49	7.95	5.09	2.40
26/08/2024	11.26	5.57	5.51	2.21
27/08/2024	6.19	2.87	3.95	1.04
28/08/2024	21.05	5.80	7.57	2.70
29/08/2024	17.04	5.12	9.48	2.89
30/08/2024	14.94	5.33	10.57	3.48
31/08/2024	18.19	5.42	11.33	4.14

Date	TEOM-1		TEOM-2	
Sep	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/09/2024	21.95	6.46	8.30	2.68
2/09/2024	16.60	4.55	10.31	2.10
3/09/2024	17.23	6.33	14.26	4.68
4/09/2024	18.70	8.12	12.98	5.05
5/09/2024	14.55	7.47	17.28	7.32
6/09/2024	15.21	8.60	16.65	6.82
7/09/2024	19.19	8.05	17.12	6.87
8/09/2024	16.61	6.33	9.89	4.40
9/09/2024	8.89	3.49	5.89	2.43
10/09/2024	11.83	5.27	12.51	4.12

Date	TEOM-1		TEOM-2	
Sep	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
11/09/2024	19.39	10.93	14.09	6.89
12/09/2024	8.76	5.30	10.59	4.47
13/09/2024	11.76	4.42	10.98	2.29
14/09/2024	9.91	4.63	6.70	3.09
15/09/2024	12.25	2.85	8.62	3.53
16/09/2024	10.73	3.81	8.58	2.80
17/09/2024	10.74	4.89	8.63	2.95
18/09/2024	8.96	4.40	6.10	2.40
19/09/2024	11.53	4.30	8.19	2.77
20/09/2024	14.86	4.54	10.72	4.83
21/09/2024	11.11	3.66	8.49	3.64
22/09/2024	11.58	3.52	7.92	3.67
23/09/2024	11.57	5.00	8.98	4.00
24/09/2024	13.78	6.56	21.53	7.34
25/09/2024	24.10	13.67	23.92	13.03
26/09/2024	14.08	8.21	9.35	7.31
27/09/2024	6.72	2.68	5.64	2.04
28/09/2024	6.78	2.95	7.67	3.07
29/09/2024	7.55	3.32	8.03	2.85
30/09/2024	10.34	4.95	8.47	3.98

Date	TEOM-1		TEOM-2	
Oct	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/10/2024	15.44	6.62	13.29	5.47
2/10/2024	15.30	7.54	13.33	4.84
3/10/2024	12.68	4.91	14.10	4.55
4/10/2024	12.28	4.85	21.00	8.14
5/10/2024	11.04	4.86	9.33	6.11
6/10/2024	16.33	4.96	9.27	4.82
7/10/2024	17.59	6.21	8.50	4.59

Date	TEOM-1		TEOM-2	
Oct	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
8/10/2024	18.68	7.95	13.85	5.51
9/10/2024	7.87	3.05	7.46	2.42
10/10/2024	7.35	3.41	9.22	4.25
11/10/2024	16.25	8.01	16.62	7.71
12/10/2024	19.58	8.25	15.74	6.48
13/10/2024	14.53	5.22	13.40	3.99
14/10/2024	11.63	4.71	9.36	3.63
15/10/2024	10.99	5.13	7.91	3.64
16/10/2024	12.77	4.77	11.25	4.31
17/10/2024	11.24	5.60	8.69	5.19
18/10/2024	12.49	6.55	10.70	6.52
19/10/2024	7.59	3.76	5.87	3.05
20/10/2024	14.71	7.79	13.13	5.89
21/10/2024	13.58	5.33	11.47	4.18
22/10/2024	15.95	5.95	14.72	4.90
23/10/2024	19.61	7.51	14.66	6.83
24/10/2024	17.71	8.43	15.47	7.17
25/10/2024	11.32	4.26	8.31	3.10
26/10/2024	17.20	5.85	16.73	3.62
27/10/2024	16.58	6.02	13.01	5.30
28/10/2024	14.61	6.03	14.98	5.87
29/10/2024	23.90	8.92	25.87	8.93
30/10/2024	20.87	9.03	17.93	8.48
31/10/2024	18.56	7.92	15.17	7.12

Date	TEOM-1		TEOM-2	
Nov	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/11/2024	15.61	7.88	9.59	7.19
2/11/2024	12.41	5.18	8.93	5.72
3/11/2024	17.68	6.98	11.90	6.65
4/11/2024	21.88	8.40	12.86	8.23
5/11/2024	20.32	8.30	10.95	9.22
6/11/2024	18.64	7.86	14.51	8.86
7/11/2024	22.43	9.81	13.69	7.45
8/11/2024	14.93	5.67	4.12	2.97
9/11/2024	21.05	7.85	12.80	7.65
10/11/2024	22.18	9.02	12.66	8.83
11/11/2024	21.18	8.02	11.21	7.58
12/11/2024	9.92	5.90	4.87	6.34
13/11/2024	11.16	6.76	7.19	5.83
14/11/2024	12.99	7.25	6.49	6.94
15/11/2024	11.13	3.95	9.14	6.23
16/11/2024	12.33	5.19	7.89	5.94
17/11/2024	11.40	4.02	6.68	5.31
18/11/2024	8.65	4.11	5.12	3.90
19/11/2024	16.95	6.13	11.48	6.47
20/11/2024	22.90	9.45	11.19	4.75
21/11/2024	10.31	3.63	8.00	3.03
22/11/2024	13.60	4.57	9.95	2.06
23/11/2024	12.71	4.92	14.67	5.73
24/11/2024	17.92	7.29	14.83	6.53
25/11/2024	21.61	7.16	15.57	7.12
26/11/2024	21.59	7.38	13.83	5.96
27/11/2024	26.40	8.16	11.79	6.61
28/11/2024	17.14	8.77	3.29	6.15
29/11/2024	22.55	15.72	5.94	11.55
30/11/2024	9.81	4.22	6.11	5.53

Date	TEOM-1		TEOM-2	
Dec	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
1/12/2024	10.86	4.43	5.21	4.63
2/12/2024	10.74	3.98	7.38	4.54

Date	TEOM-1		TEOM-2	
Dec	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
3/12/2024	11.80	5.88	6.40	5.72
4/12/2024	13.64	7.03	8.60	7.50
5/12/2024	14.86	8.16	8.80	6.56
6/12/2024	14.91	7.70	8.09	7.34
7/12/2024	12.52	5.43	6.53	5.18
8/12/2024	10.34	3.51	5.48	3.07
9/12/2024	14.68	5.87	12.23	6.76
10/12/2024	19.40	7.48	9.10	8.17
11/12/2024	20.50	6.94	15.65	8.03
12/12/2024	21.71	6.48	16.28	7.47
13/12/2024	25.71	9.34	16.41	11.64
14/12/2024	31.59	14.13	18.66	13.98
15/12/2024	29.74	14.17	19.23	15.34
16/12/2024	18.16	9.13	13.61	9.02
17/12/2024	19.17	4.49	11.74	6.39
18/12/2024	12.06	3.98	9.38	1.96
19/12/2024	15.39	4.67	12.59	4.63
20/12/2024	15.20	4.24	18.13	5.16
21/12/2024	20.49	7.00	13.90	5.28
22/12/2024	23.33	9.05	15.13	7.60
23/12/2024	22.88	6.14	13.06	4.85
24/12/2024	23.56	5.51	13.20	4.55
25/12/2024	10.33	4.05	8.09	2.74
26/12/2024	13.82	5.09	9.64	6.03
27/12/2024	25.95	7.20	20.87	7.88
28/12/2024	25.61	8.70	13.14	6.63
29/12/2024	23.02	7.31	16.46	7.22
30/12/2024	19.92	8.20	12.01	5.84
31/12/2024	19.77	9.20	16.95	7.88

Notes:

TEOM-1

*As was reported in the 2023 Annual Review, for the period **28/12/23 to 9/1/24**, extremely high ambient humidity following periods of rain and high temperatures resulted in the air-conditioning unit being overloaded and the power tripping on multiple occasions. This resulted in insufficient valid data being available to calculate the 24-hour average in accordance with the Validation Process.*

*Supplementary data has been obtained for this and subsequent missing data periods from the BHP monitoring station (DC07) located on Balmoral Road (2km to the northwest of TEOM-1) and are shown in **amber** in above Table. This approach of supplementing data with the data from a nearby monitoring station was agreed by the CCC during the CCC meeting of 13 September 2023. In this instance, a replacement air conditioner was installed, coincident with ambient humidity falling.*

*From **18/2/24 to 27/2/24**, a faulty TEOM resulted in a hire TEOM being installed. The faulty TEOM was returned to the supplier for investigation.*

*From **29/3/24 to 10/4/24**, the hire TEOM failed due to a failed motherboard and likely failed other electrics, potentially due to water ingress. A new TEOM was purchased and installed on 10/4/24.*

*From **10/6/24 to 11/6/24**, the TEOM internal computer froze, and the TEOM required a restart.*

*On **20/11/24**, a scheduled calibration by monitoring contractors resulted in insufficient data being available to calculate a valid 24-hour average.*

TEOM-2

*As for TEOM-1, and as reported in the 2023 Annual Review, where insufficient data is available to calculate a valid 24-hour average, data gaps are replaced by data from the nearby Jerrys Plains Station 1.7 km to the southeast and are shown in **amber** in the Table above. This approach was agreed at the Maxwell CCC meeting of 13 September 2023.*

*On **8/1/24** the main switch at the power pole tripped, requiring a restart.*

*On **22/2/24 and 23/2/24** the power was cut by contractors working on the river pump that is connected to the same circuit as the TEOM.*

*From **17/5/24 to 20/5/24** the TEOM internal computer froze and required a restart.*

*On **27/6/24 and 28/6/24** the annual calibration being conducted by the monitoring contractor required a zero filter to be applied which was removed 24-hours later. This resulted in insufficient data being available to calculate a valid 24-hour average for these days.*

*On **26/7/24** a scheduled replacement of the TEOM occurred, to replace the temporary TEOM that was installed during the previous reporting period.*

Some minor negative 24-hour $PM_{2.5}$ results were recorded at both TEOMs during the reporting period; however this is considered a normal function of the TEOM equipment and are not discounted.

All non-scheduled outages that result in insufficient data being available to calculate a valid 24-hour average are reported via the NSW Major Projects Portal.

APPENDIX 5. TRAIN MOVEMENTS

Date	Total train movements per day	Time of train movements (24 hour)	Total tonnage per day
01-Jan-24	0	-	0
02-Jan-24	0	-	0
03-Jan-24	0	-	0
04-Jan-24	0	-	0
05-Jan-24	0	-	0
06-Jan-24	0	-	0
07-Jan-24	0	-	0
08-Jan-24	0	-	0
09-Jan-24	0	-	0
10-Jan-24	0	-	0
11-Jan-24	0	-	0
12-Jan-24	0	-	0
13-Jan-24	0	-	0
14-Jan-24	0	-	0
15-Jan-24	0	-	0
16-Jan-24	0	-	0
17-Jan-24	0	-	0
18-Jan-24	0	-	0
19-Jan-24	0	-	0
20-Jan-24	0	-	0
21-Jan-24	0	-	0
22-Jan-24	0	-	0
23-Jan-24	0	-	0
24-Jan-24	0	-	0
25-Jan-24	0	-	0
26-Jan-24	0	-	0
27-Jan-24	0	-	0
28-Jan-24	0	-	0
29-Jan-24	0	-	0
30-Jan-24	0	-	0
31-Jan-24	0	-	0
01-Feb-24	0	-	0
02-Feb-24	0	-	0
03-Feb-24	0	-	0
04-Feb-24	0	-	0
05-Feb-24	0	-	0
06-Feb-24	0	-	0
07-Feb-24	0	-	0
08-Feb-24	0	-	0
09-Feb-24	0	-	0
10-Feb-24	0	-	0
11-Feb-24	0	-	0

Date	Total train movements per day	Time of train movements (24 hour)	Total tonnage per day
12-Feb-24	0	-	0
13-Feb-24	0	-	0
14-Feb-24	0	-	0
15-Feb-24	0	-	0
16-Feb-24	0	-	0
17-Feb-24	0	-	0
18-Feb-24	0	-	0
19-Feb-24	0	-	0
20-Feb-24	0	-	0
21-Feb-24	0	-	0
22-Feb-24	0	-	0
23-Feb-24	0	-	0
24-Feb-24	0	-	0
25-Feb-24	0	-	0
26-Feb-24	0	-	0
27-Feb-24	2	15:55	8,601.0
28-Feb-24	2	05:53	8,420.0
29-Feb-24	2	20:00	8,640.0
01-Mar-24	0	-	0
02-Mar-24	0	-	0
03-Mar-24	0	-	0
04-Mar-24	0	-	0
05-Mar-24	0	-	0
06-Mar-24	0	-	0
07-Mar-24	0	-	0
08-Mar-24	0	-	0
09-Mar-24	0	-	0
10-Mar-24	0	-	0
11-Mar-24	0	-	0
12-Mar-24	0	-	0
13-Mar-24	0	-	0
14-Mar-24	0	-	0
15-Mar-24	0	-	0
16-Mar-24	0	-	0
17-Mar-24	0	-	0
18-Mar-24	0	-	0
19-Mar-24	0	-	0
20-Mar-24	0	-	0
21-Mar-24	0	-	0
22-Mar-24	0	-	0
23-Mar-24	0	-	0
24-Mar-24	0	-	0
25-Mar-24	0	-	0
26-Mar-24	0	-	0

Date	Total train movements per day	Time of train movements (24 hour)	Total tonnage per day
27-Mar-24	0	-	0
28-Mar-24	0	-	0
29-Mar-24	0	-	0
30-Mar-24	0	-	0
31-Mar-24	0	-	0
01-Apr-24	0	-	0
02-Apr-24	0	-	0
03-Apr-24	0	-	0
04-Apr-24	0	-	0
05-Apr-24	0	-	0
06-Apr-24	0	-	0
07-Apr-24	0	-	0
08-Apr-24	0	-	0
09-Apr-24	0	-	0
10-Apr-24	0	-	0
11-Apr-24	0	-	0
12-Apr-24	0	-	0
13-Apr-24	0	-	0
14-Apr-24	0	-	0
15-Apr-24	0	-	0
16-Apr-24	0	-	0
17-Apr-24	0	-	0
18-Apr-24	0	-	0
19-Apr-24	0	-	0
20-Apr-24	0	-	0
21-Apr-24	0	-	0
22-Apr-24	0	-	0
23-Apr-24	2	17:20	8,453.4
24-Apr-24	2	13:55	8,465.6
25-Apr-24	0	-	0
26-Apr-24	0	-	0
27-Apr-24	0	-	0
28-Apr-24	0	-	0
29-Apr-24	0	-	0
30-Apr-24	0	-	0
01-May-24	0	-	0
02-May-24	0	-	0
03-May-24	0	-	0
04-May-24	0	-	0
05-May-24	0	-	0
06-May-24	0	-	0
07-May-24	0	-	0
08-May-24	0	-	0
09-May-24	0	-	0

Date	Total train movements per day	Time of train movements (24 hour)	Total tonnage per day
10-May-24	0	-	0
11-May-24	0	-	0
12-May-24	0	-	0
13-May-24	0	-	0
14-May-24	0	-	0
15-May-24	0	-	0
16-May-24	0	-	0
17-May-24	0	-	0
18-May-24	0	-	0
19-May-24	0	-	0
20-May-24	0	-	0
21-May-24	0	-	0
22-May-24	0	-	0
23-May-24	0	-	0
24-May-24	0	-	0
25-May-24	0	-	0
26-May-24	0	-	0
27-May-24	0	-	0
28-May-24	0	-	0
29-May-24	0	-	0
30-May-24	0	-	0
31-May-24	0	-	0
01-Jun-24	0	-	0
02-Jun-24	0	-	0
03-Jun-24	0	-	0
04-Jun-24	0	-	0
05-Jun-24	0	-	0
06-Jun-24	0	-	0
07-Jun-24	0	-	0
08-Jun-24	0	-	0
09-Jun-24	0	-	0
10-Jun-24	0	-	0
11-Jun-24	0	-	0
12-Jun-24	0	-	0
13-Jun-24	0	-	0
14-Jun-24	0	-	0
15-Jun-24	0	-	0
16-Jun-24	0	-	0
17-Jun-24	0	-	0
18-Jun-24	0	-	0
19-Jun-24	0	-	0
20-Jun-24	0	-	0
21-Jun-24	0	-	0
22-Jun-24	0	-	0

Date	Total train movements per day	Time of train movements (24 hour)	Total tonnage per day
23-Jun-24	0	-	0
24-Jun-24	0	-	0
25-Jun-24	2	15:03	8,397.4
26-Jun-24	2	10:07	8,667.8
27-Jun-24	0	-	0
28-Jun-24	0	-	0
29-Jun-24	0	-	0
30-Jun-24	0	-	0
01-Jul-24	0	-	0
02-Jul-24	0	-	0
03-Jul-24	0	-	0
04-Jul-24	0	-	0
05-Jul-24	0	-	0
06-Jul-24	0	-	0
07-Jul-24	0	-	0
08-Jul-24	0	-	0
09-Jul-24	0	-	0
10-Jul-24	0	-	0
11-Jul-24	0	-	0
12-Jul-24	0	-	0
13-Jul-24	0	-	0
14-Jul-24	0	-	0
15-Jul-24	0	-	0
16-Jul-24	0	-	0
17-Jul-24	0	-	0
18-Jul-24	0	-	0
19-Jul-24	0	-	0
20-Jul-24	0	-	0
21-Jul-24	0	-	0
22-Jul-24	0	-	0
23-Jul-24	0	-	0
24-Jul-24	0	-	0
25-Jul-24	0	-	0
26-Jul-24	0	-	0
27-Jul-24	0	-	0
28-Jul-24	0	-	0
29-Jul-24	0	-	0
30-Jul-24	0	-	0
31-Jul-24	0	-	0
01-Aug-24	0	-	0
02-Aug-24	0	-	0
03-Aug-24	0	-	0
04-Aug-24	0	-	0
05-Aug-24	0	-	0

Date	Total train movements per day	Time of train movements (24 hour)	Total tonnage per day
06-Aug-24	0	-	0
07-Aug-24	0	-	0
08-Aug-24	0	-	0
09-Aug-24	0	-	0
10-Aug-24	0	-	0
11-Aug-24	0	-	0
12-Aug-24	0	-	0
13-Aug-24	0	-	0
14-Aug-24	0	-	0
15-Aug-24	0	-	0
16-Aug-24	0	-	0
17-Aug-24	0	-	0
18-Aug-24	0	-	0
19-Aug-24	0	-	0
20-Aug-24	2	11:34	8,450.0
21-Aug-24	0	-	0
22-Aug-24	2 2	08:36 14:32	8,466.0 8,478.0
23-Aug-24	0	-	0
24-Aug-24	0	-	0
25-Aug-24	0	-	0
26-Aug-24	0	-	0
27-Aug-24	0	-	0
28-Aug-24	0	-	0
29-Aug-24	0	-	0
30-Aug-24	0	-	0
31-Aug-24	0	-	0
01-Sep-24	0	-	0
02-Sep-24	0	-	0
03-Sep-24	0	-	0
04-Sep-24	0	-	0
05-Sep-24	0	-	0
06-Sep-24	0	-	0
07-Sep-24	0	-	0
08-Sep-24	0	-	0
09-Sep-24	0	-	0
10-Sep-24	0	-	0
11-Sep-24	0	-	0
12-Sep-24	0	-	0
13-Sep-24	0	-	0
14-Sep-24	0	-	0
15-Sep-24	0	-	0
16-Sep-24	0	-	0
17-Sep-24	2	10:11	8,550.0
18-Sep-24	2	11:36	8,665.4

Date	Total train movements per day	Time of train movements (24 hour)	Total tonnage per day
19-Sep-24	0	-	0
20-Sep-24	0	-	0
21-Sep-24	0	-	0
22-Sep-24	0	-	0
23-Sep-24	0	-	0
24-Sep-24	0	-	0
25-Sep-24	0	-	0
26-Sep-24	0	-	0
27-Sep-24	0	-	0
28-Sep-24	0	-	0
29-Sep-24	0	-	0
30-Sep-24	0	-	0
01-Oct-24	0	-	0
02-Oct-24	0	-	0
03-Oct-24	0	-	0
04-Oct-24	0	-	0
05-Oct-24	0	-	0
06-Oct-24	0	-	0
07-Oct-24	0	-	0
08-Oct-24	0	-	0
09-Oct-24	2	08:42	8,676.0
10-Oct-24	0	-	0
11-Oct-24	0	-	0
12-Oct-24	0	-	0
13-Oct-24	0	-	0
14-Oct-24	0	-	0
15-Oct-24	0	-	0
16-Oct-24	0	-	0
17-Oct-24	0	-	0
18-Oct-24	0	-	0
19-Oct-24	0	-	0
20-Oct-24	0	-	0
21-Oct-24	0	-	0
22-Oct-24	0	-	0
22-Oct-24	0	-	0
23-Oct-24	0	-	0
24-Oct-24	0	-	0
25-Oct-24	0	-	0
26-Oct-24	0	-	0
27-Oct-24	0	-	0
28-Oct-24	0	-	0
29-Oct-24	0	-	0
30-Oct-24	0	-	0
31-Oct-24	0	-	0

Date	Total train movements per day	Time of train movements (24 hour)	Total tonnage per day
01-Nov-24	0	-	0
02-Nov-24	0	-	0
03-Nov-24	0	-	0
04-Nov-24	0	-	0
05-Nov-24	0	-	0
06-Nov-24	0	-	0
07-Nov-24	0	-	0
08-Nov-24	0	-	0
09-Nov-24	0	-	0
10-Nov-24	0	-	0
11-Nov-24	0	-	0
12-Nov-24	2 2	08:34 14:00	8,679.2 8,688.2
13-Nov-24	0	-	0
14-Nov-24	2	10:06	8,570.0
15-Nov-24	2	18:33	8,529.0
16-Nov-24	0	-	0
17-Nov-24	0	-	0
18-Nov-24	0	-	0
19-Nov-24	2	06:30	0
20-Nov-24	0	-	0
21-Nov-24	0	-	0
22-Nov-24	2	06:30	0
23-Nov-24	0	-	0
24-Nov-24	0	-	0
25-Nov-24	0	-	0
26-Nov-24	0	-	0
27-Nov-24	0	-	0
28-Nov-24	0	-	0
30-Nov-24	0	-	0
01-Dec-24	0	-	0
02-Dec-24	0	-	0
03-Dec-24	0	-	0
04-Dec-24	0	-	0
05-Dec-24	0	-	0
06-Dec-24	0	-	0
07-Dec-24	0	-	0
08-Dec-24	0	-	0
09-Dec-24	0	-	0
10-Dec-24	0	-	0
11-Dec-24	0	-	0
12-Dec-24	0	-	0
13-Dec-24	0	-	0
14-Dec-24	0	-	0
15-Dec-24	0	-	0

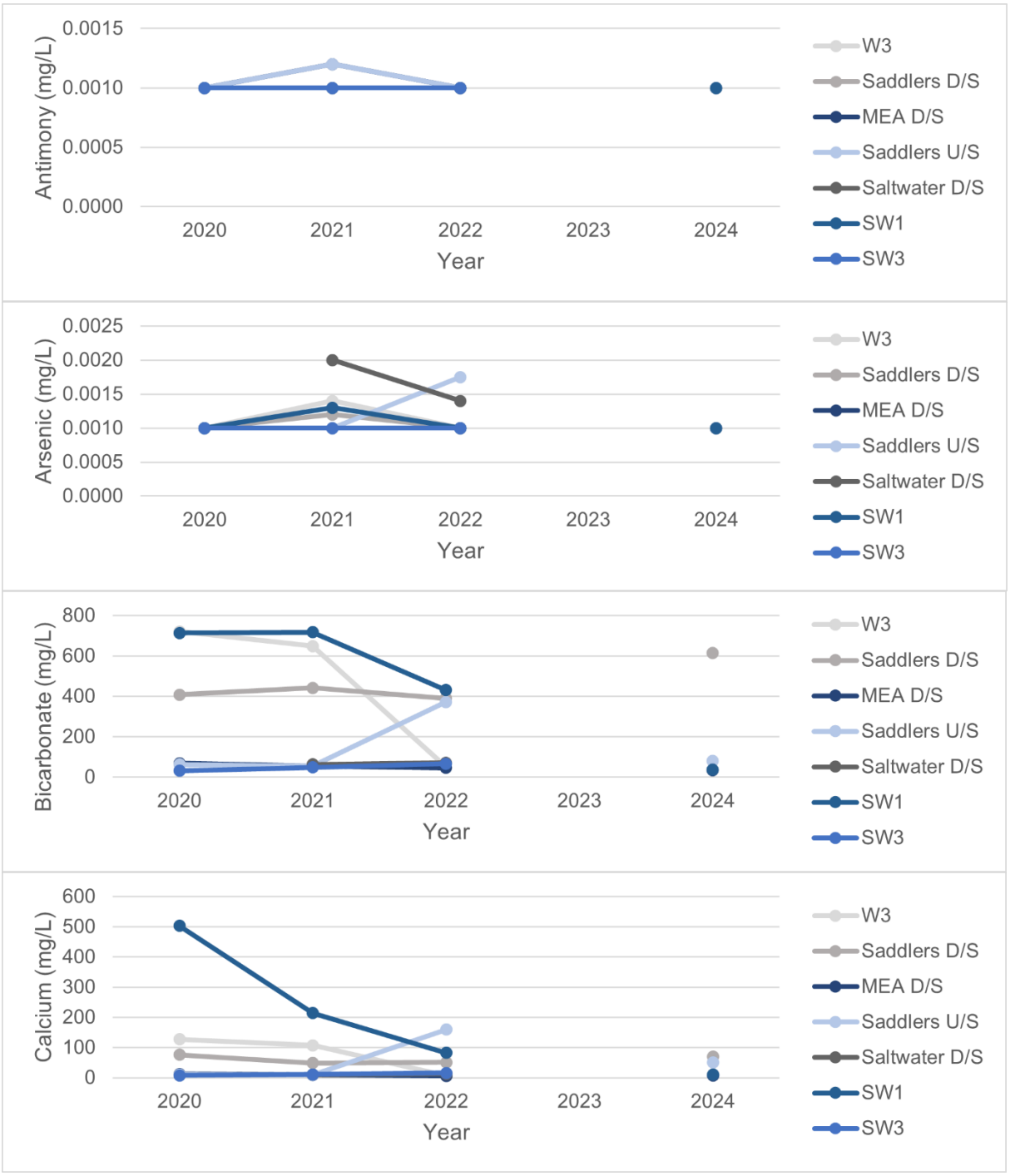
Date	Total train movements per day	Time of train movements (24 hour)	Total tonnage per day
16-Dec-24	0	-	0
17-Dec-24	0	-	0
18-Dec-24	2	12:05	8,350.2
19-Dec-24	2	08:30	8,261.2
20-Dec-24	2	09:50	8,521.2
21-Dec-24	0	-	0
22-Dec-24	0	-	0
23-Dec-24	0	-	0
24-Dec-24	0	-	0
25-Dec-24	0	-	0
26-Dec-24	0	-	0
27-Dec-24	0	-	0
28-Dec-24	0	-	0
29-Dec-24	0	-	0
30-Dec-24	0	-	0
31-Dec-24	0	-	0

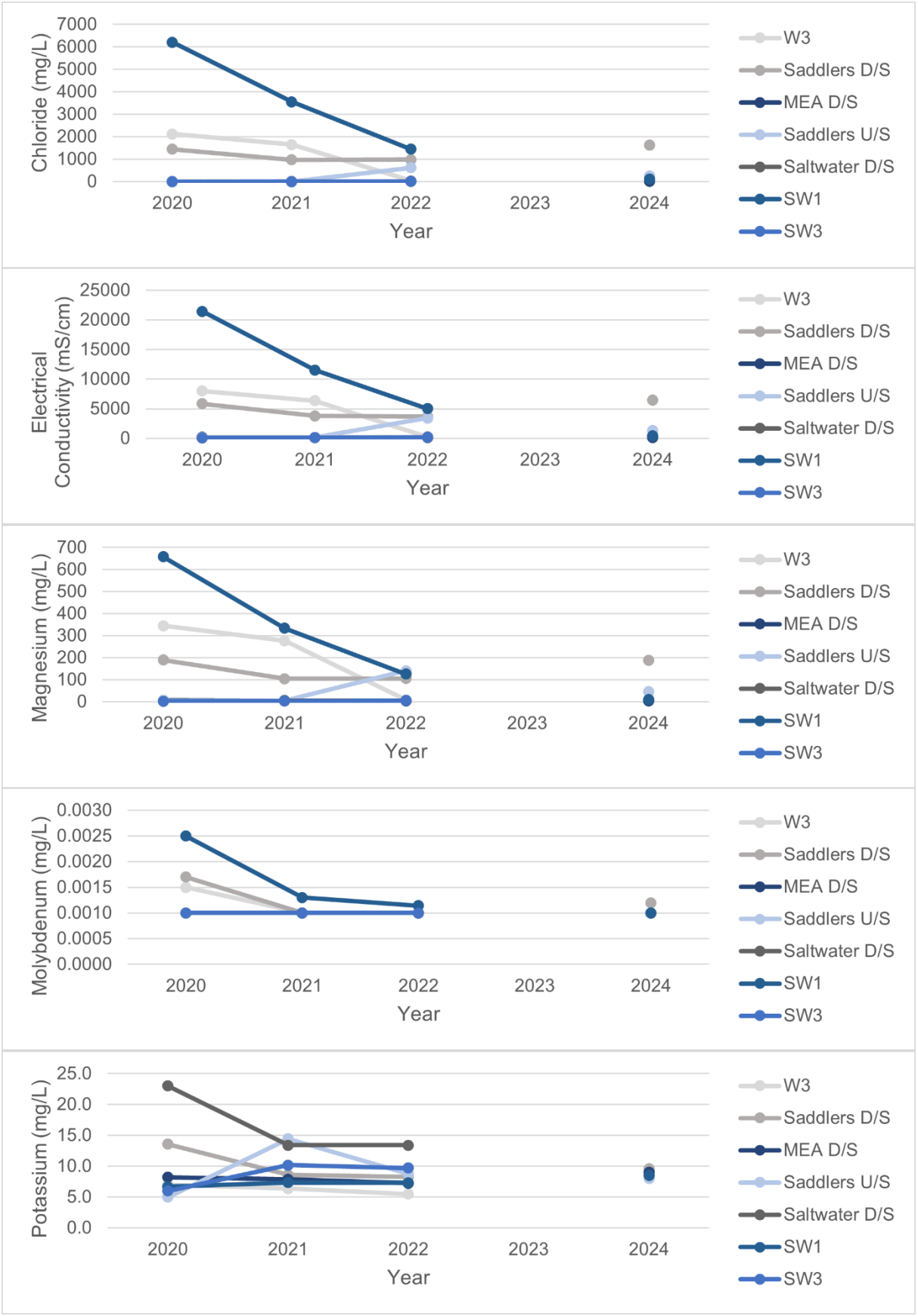
APPENDIX 6. VISUAL IMPACT RESULTS

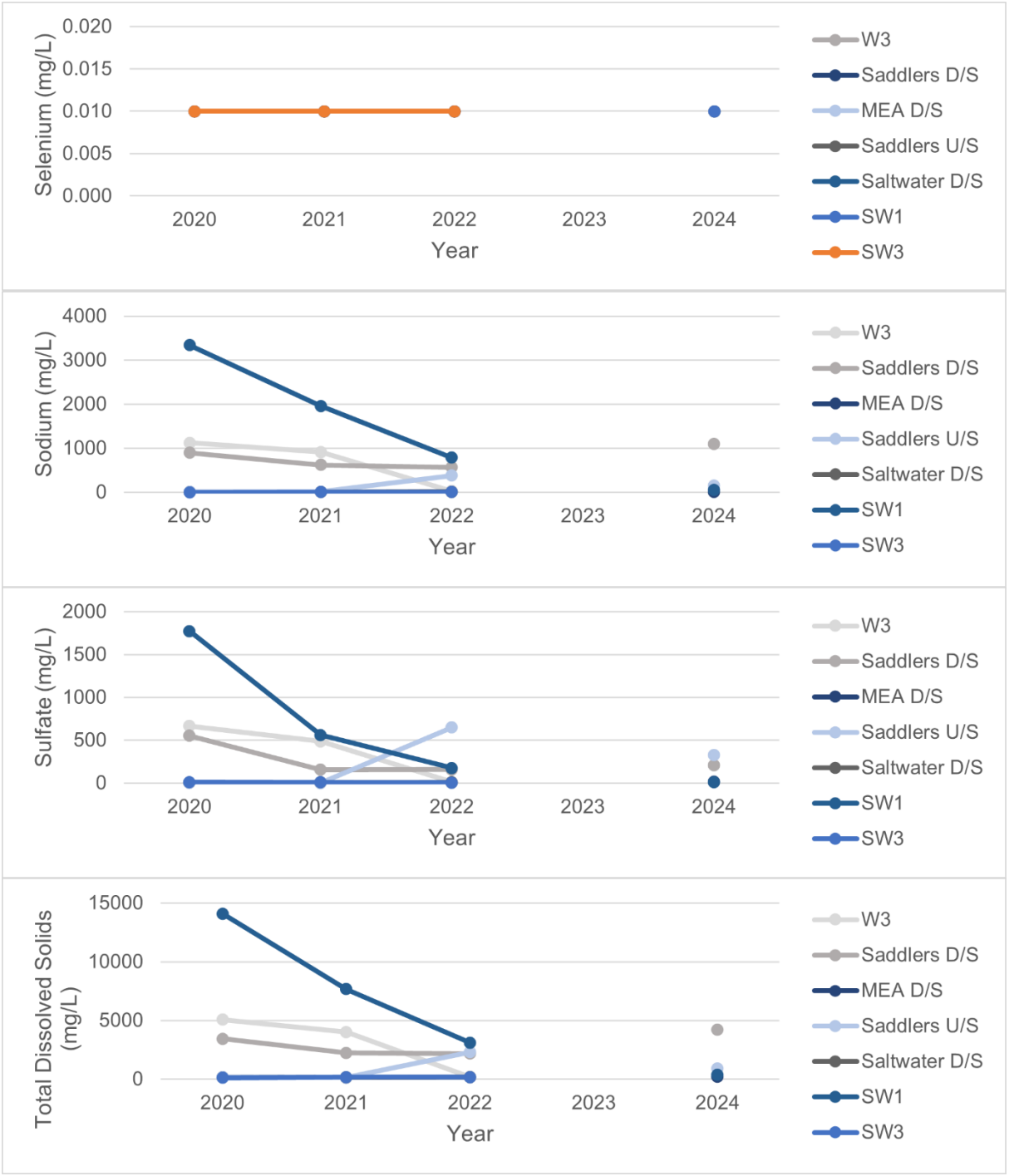
Plant ID No.	Year Planted	Plant Height (m) (2021)	Plant Height (m) (2022)	Plant Height (m) (2023)	Plant Height (m) (2024)	Plant Width (m) (2021)	Plant Width (m) (2022)	Plant Width (m) (2023)	Plant Width (m) (2024)
1	2019	2.0	2.2	2.5	3.5	0.8	1.0	2.3	2.0
2	2019	1.8	2.0	3.0	5.5	1.0	1.2	2.0	2.0
3	2019	2.1	2.3	2.5	5.0	1.7	1.9	2.4	3.0
4	2019	1.4	1.6	2.4	3.5	1.1	1.3	2.0	2.0
5	2019	1.5	1.7	2.4	4.0	0.9	1.0	2.2	2.0
6	2019	2.4	2.6	2.7	3.0	1.3	1.5	3.3	2.2
7	2019	0.8	1.0	2.0	4.0	0.5	0.7	1.9	2.5
8	2019	1.5	1.7	2.3	3.5	1.3	1.5	2.8	2.5
9	2019	1.6	1.8	2.5	4.0	0.9	1.0	2.0	3.0
10	2019	0.9	1.1	1.5	3.0	0.4	0.5	1.9	1.9
11	2019	2.2	2.4	3.3	3.5	1.5	1.7	2.5	2.5
12	2019	2.4	2.6	3.0	4.0	1.8	2.0	2.3	1.8
13	2019	1.6	1.8	2.8	4.0	1.1	1.2	2.4	2.4
14	2019	1.2	1.4	2.2	3.0	0.9	1.1	2.0	2.0
15	2019	1.6	1.8	2.5	4.5	1.0	1.2	2.4	2.5
16	2019	0.9	1.1	1.8	2.5	0.6	0.7	1.6	1.6
17	2019	1.5	1.7	3.0	3.5	0.8	0.9	3.4	3.0
18	2019	1.5	1.8	4.0	2.5	1.1	1.3	3.2	1.8
19	2021	0.4	1.6	2.0	3.5	0.1	0.2	1.6	1.6
20	2019	1.3	1.4	2.1	3.5	1.3	1.4	1.5	2.0
21	2019	1.8	2.0	2.6	3.5	1.2	1.3	1.8	1.8
22	2019	1.6	1.8	2.5	3.0	0.9	1.1	2.0	1.5
23	2019	1.6	1.8	2.4	2.0	1.3	1.5	2.2	1.8
24	2019	1.9	2.1	3.3	4.0	1.0	1.5	2.6	2.6
25	2019	2.3	2.5	2.7	4.5	1.4	1.5	2.0	2.0
26	2019	1.6	1.8	3.0	1.8	1.0	1.2	2.8	1.5
27	2019	1.0	1.1	2.2	2.5	0.5	0.8	2.1	2.0
28	2021	0.5	0.6	1.9	3.0	0.1	0.3	2.0	2.0
29	2019	1.3	1.5	2.0	3.0	0.4	0.6	1.8	2.0
30	2019	1.5	1.7	2.2	2.5	0.7	0.9	2.0	2.0
31	2019	0.8	1.0	1.8	3.5	0.3	0.5	2.0	2.0

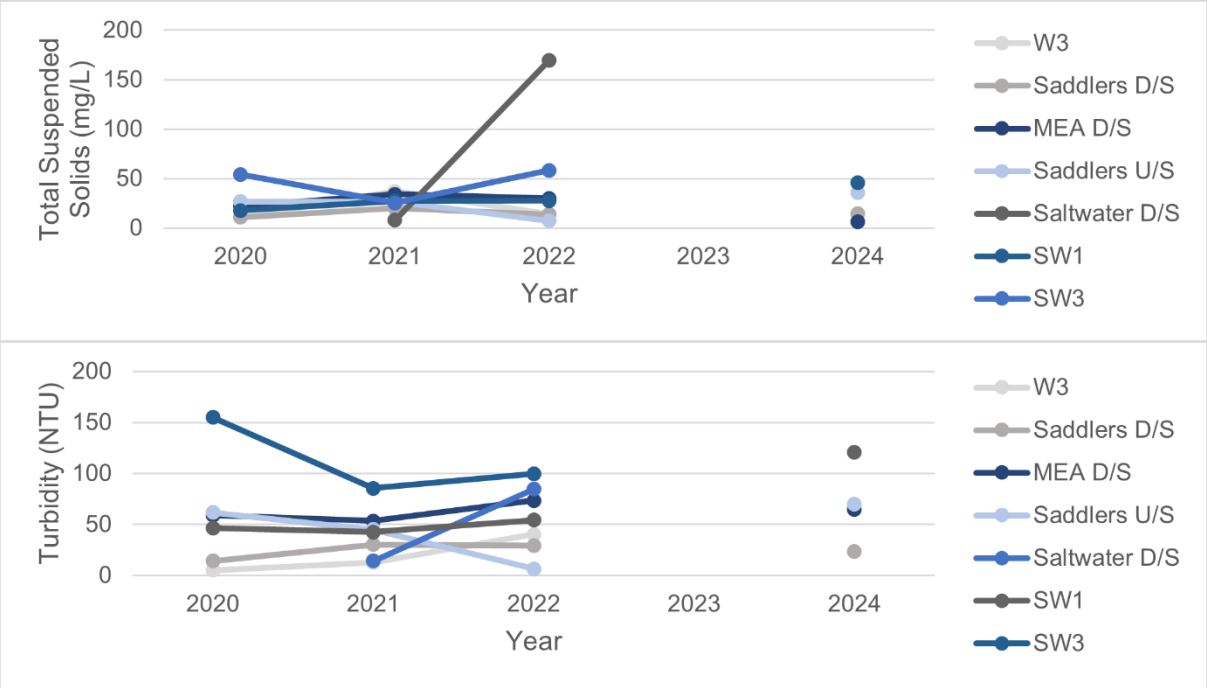
APPENDIX 8. SURFACE WATER QUALITY RESULTS

Downstream surface water concentrations over the past five years (no results in 2023 due to no-flow conditions)




Chloride (mg/L)
7000
6000
5000
4000
3000
2000
1000
0
2020
2021
2022
2023
2024
Year
W3
Saddlers D/S
MEA D/S
Saddlers U/S
Saltwater D/S
SW1
SW3
Electrical Conductivity (mS/cm)
25000
20000
15000
10000
5000
0
Magnesium (mg/L)
700
600
500
400
300
200
100
0
Molybdenum (mg/L)
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
Potassium (mg/L)
25.0
20.0
15.0
10.0
5.0
0.0


Selenium (mg/L)
0.020
0.015
0.010
0.005
0.000
2020
2021
2022
2023
2024
Year
W3
Saddlers D/S
MEA D/S
Saddlers U/S
Saltwater D/S
SW1
SW3
Sodium (mg/L)
4000
3000
2000
1000
0
Sulfate (mg/L)
2000
1500
1000
500
0
Total Dissolved Solids (mg/L)
15000
10000
5000
0



Notes:

Laboratory results only included. Field measurements are not included as these are deemed for use for investigatory purposes only and there are no trigger levels set.

Results include all sampling events including post-rainfall. As all downstream surface water monitoring locations were either dry or stagnant in 2023 during scheduled and post-rainfall sampling, no results for 2023 are presented here.

SW2 has not flowed since the commencement of monitoring and hence there are no results to present in these Tables.

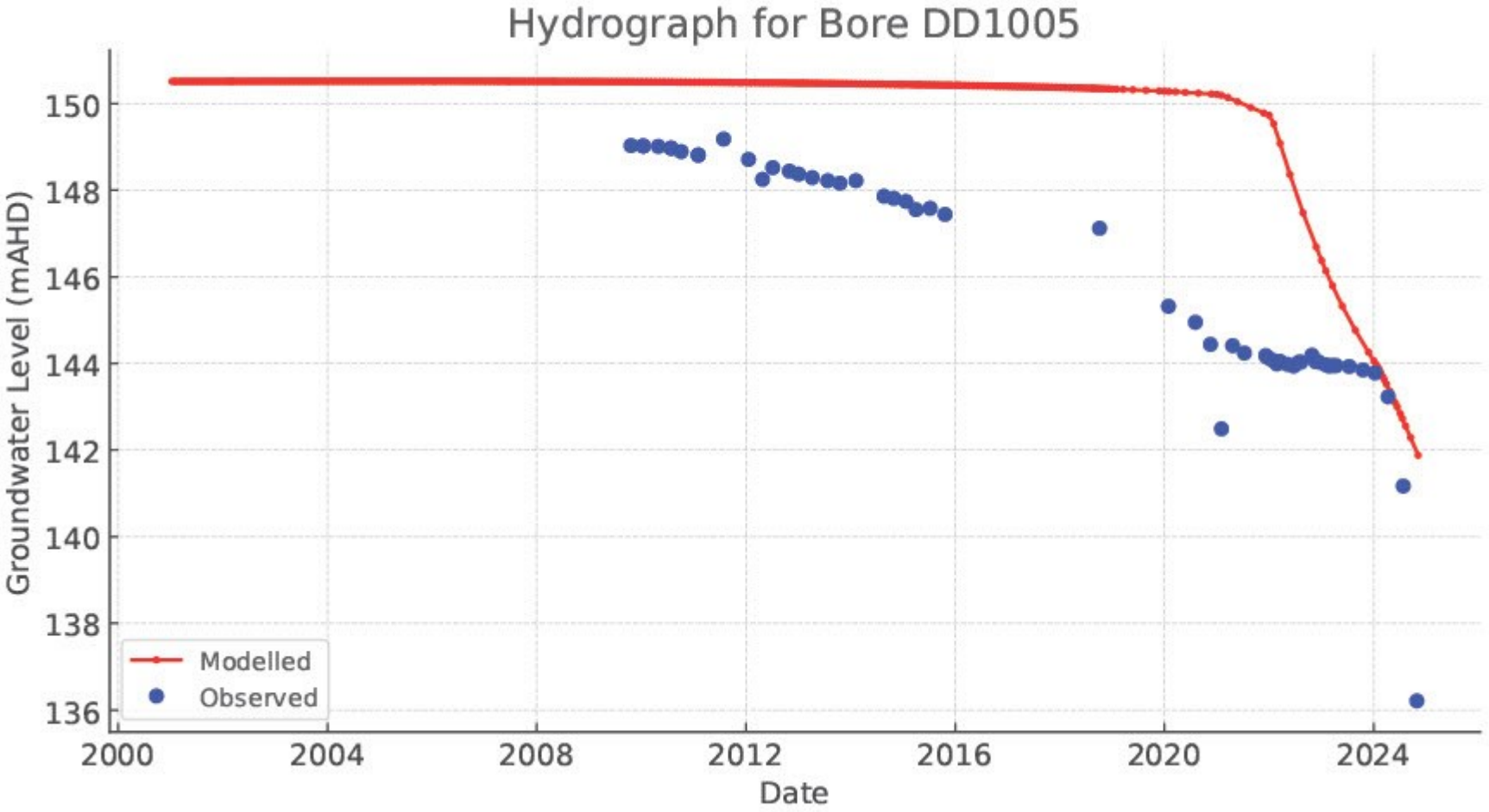
APPENDIX 9. GROUNDWATER RESULTS

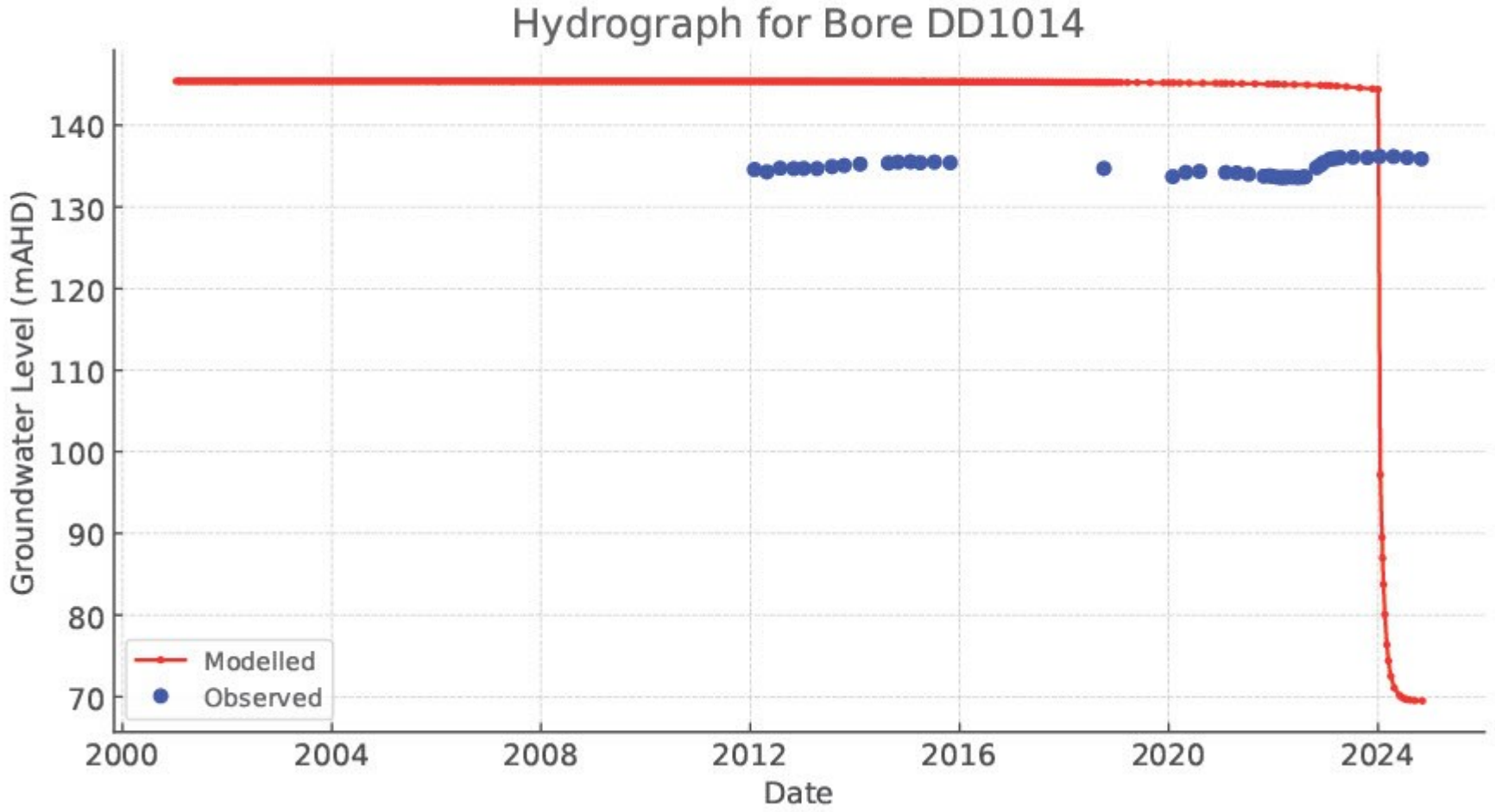
Appendix 9 provides simulated groundwater levels (for bores that were presented for Maxwell MOD2) against the latest observed groundwater levels for those bores.

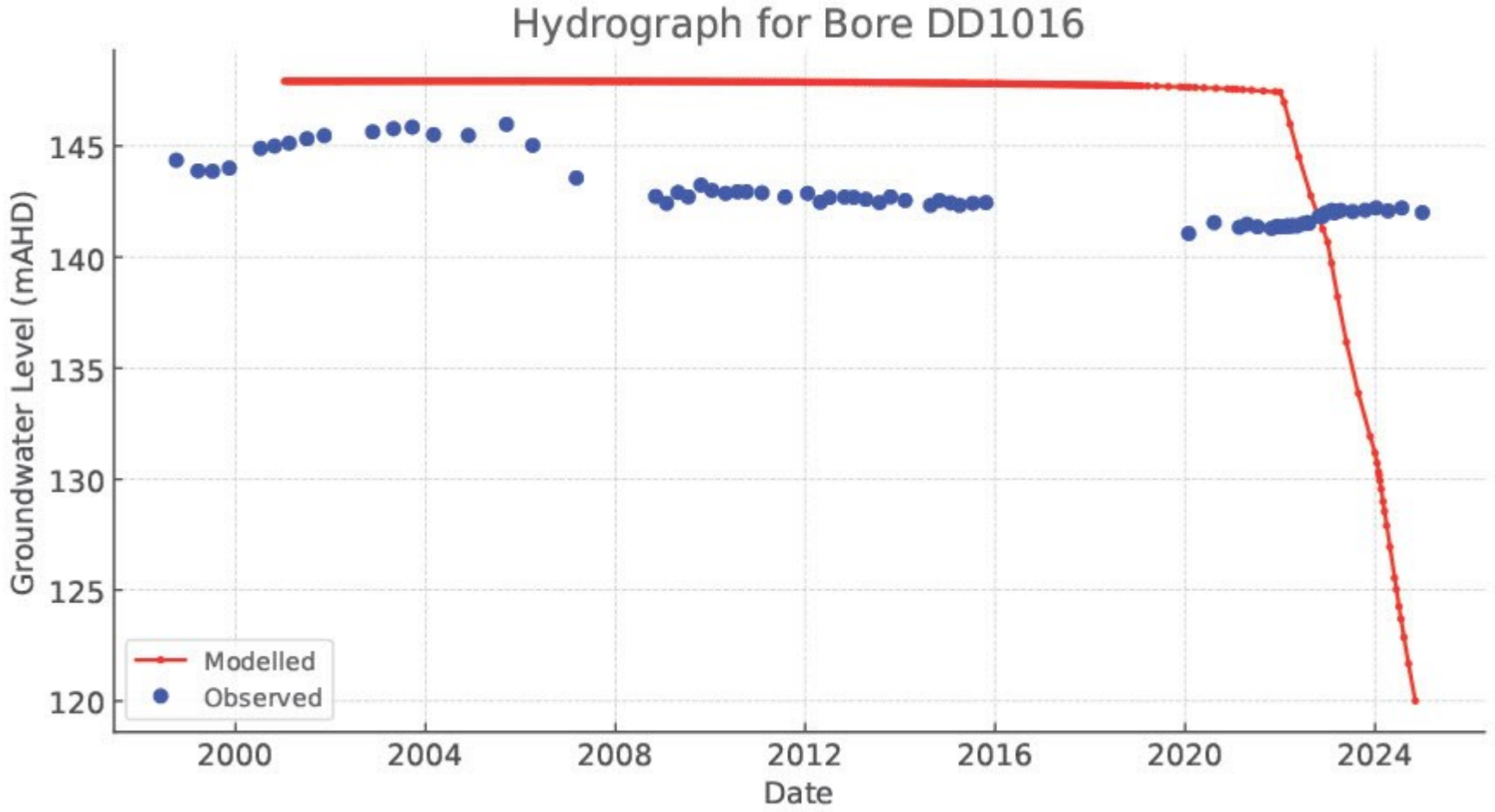
The exceptions are:

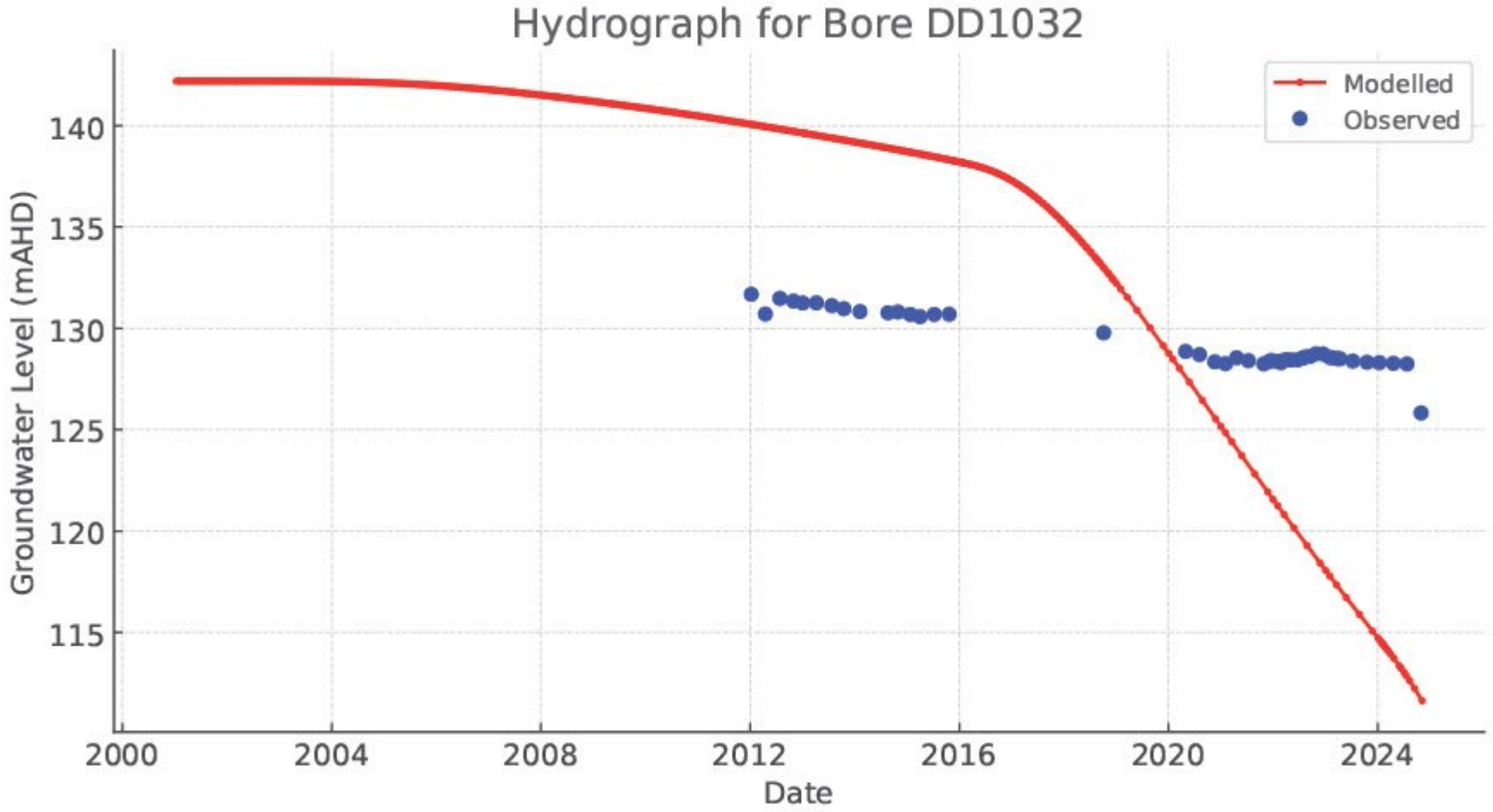
DD1004 and DD1030 - no observed data pre-2020 (and hence also not included in the Quarterly Environmental Monitoring Reports).

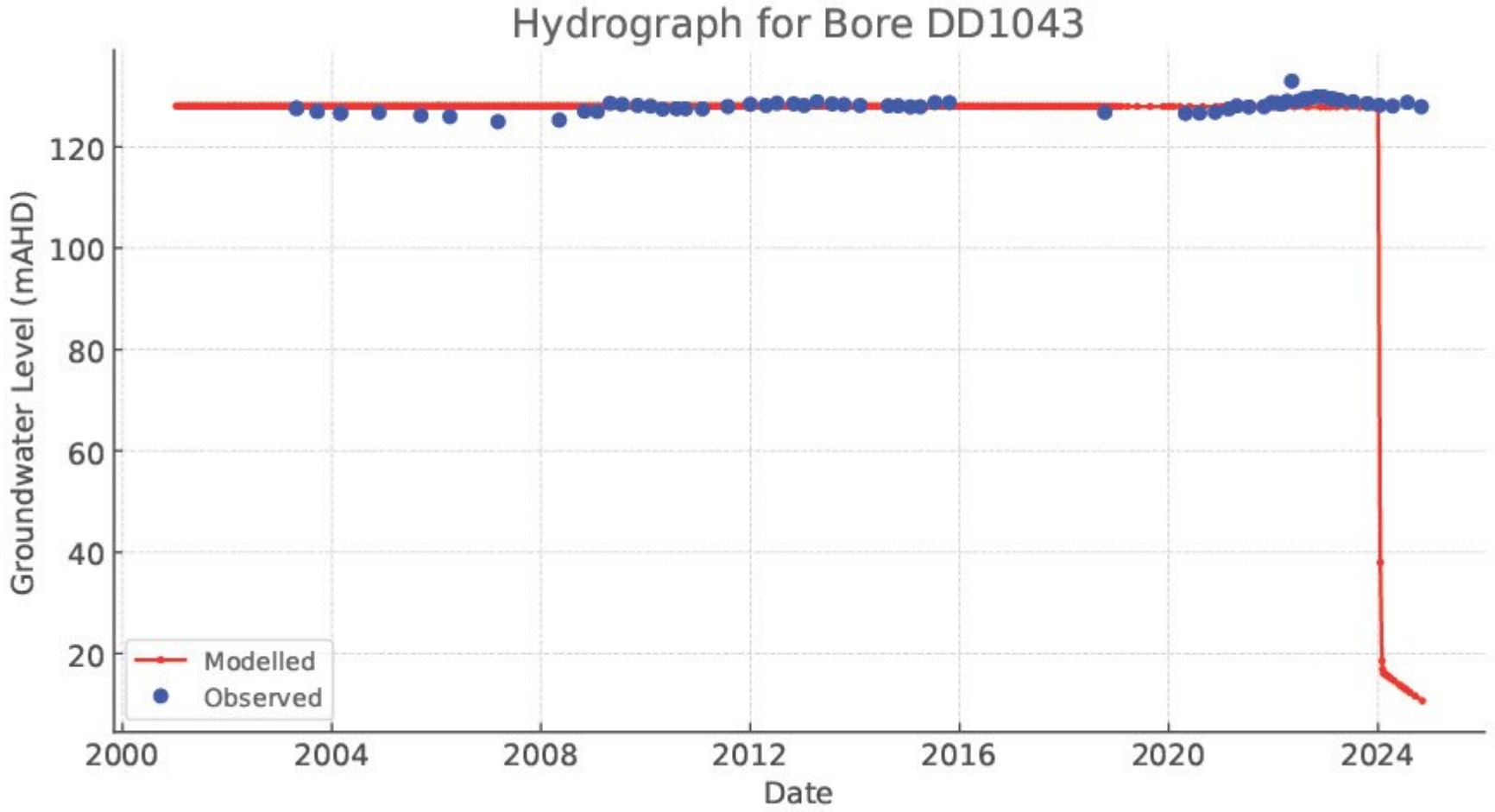
VWP bores RD1189 and RD1192 - these bores only had partial data for 2024 and are identified as problematic.

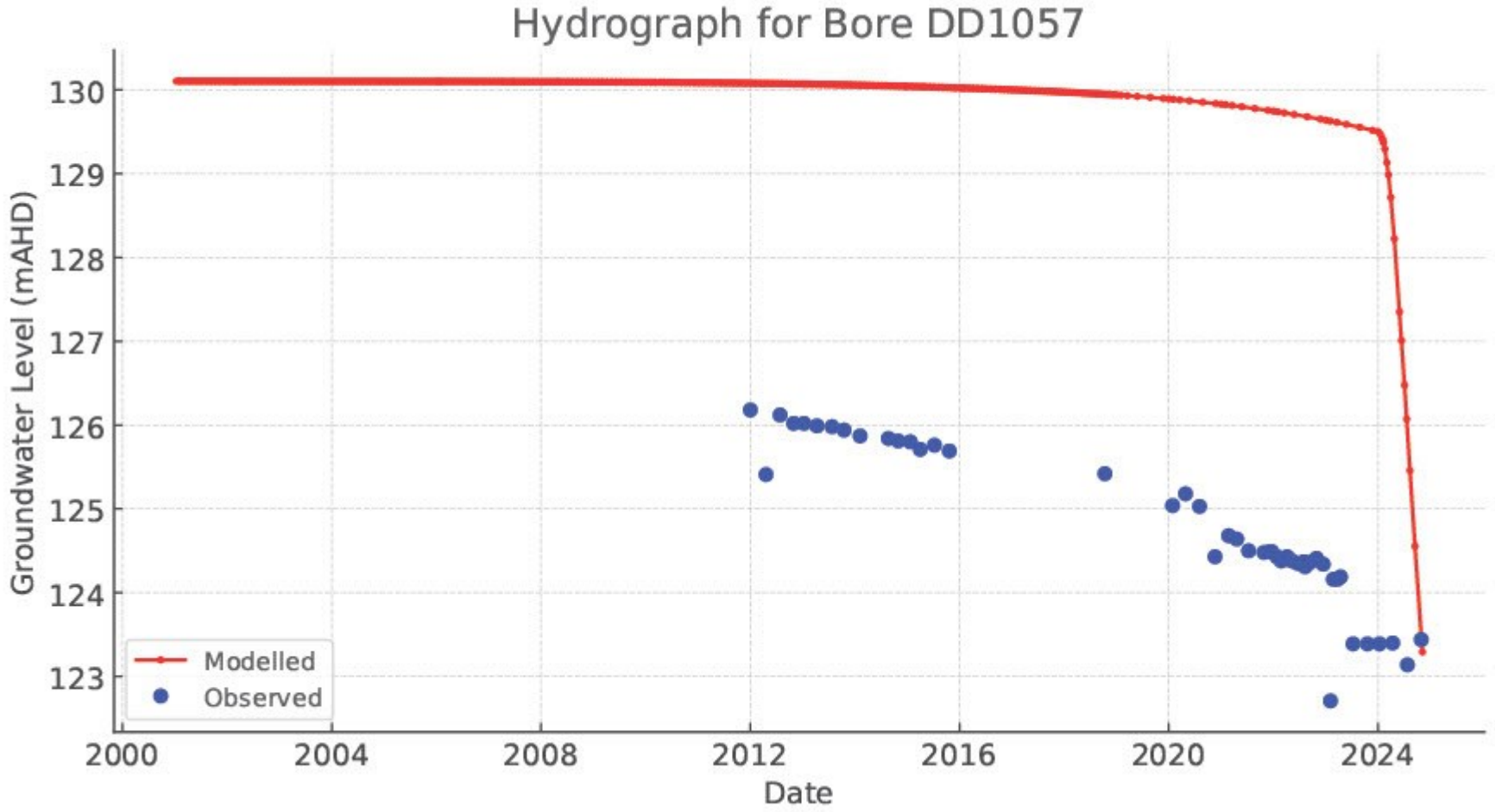

Hydrograph for Bore DD1005
Groundwater Level (mAHD)
150
148
146
144
142
140
138
136
2000
2004
2008
2012
2016
2020
2024
Date
Modelled
Observed

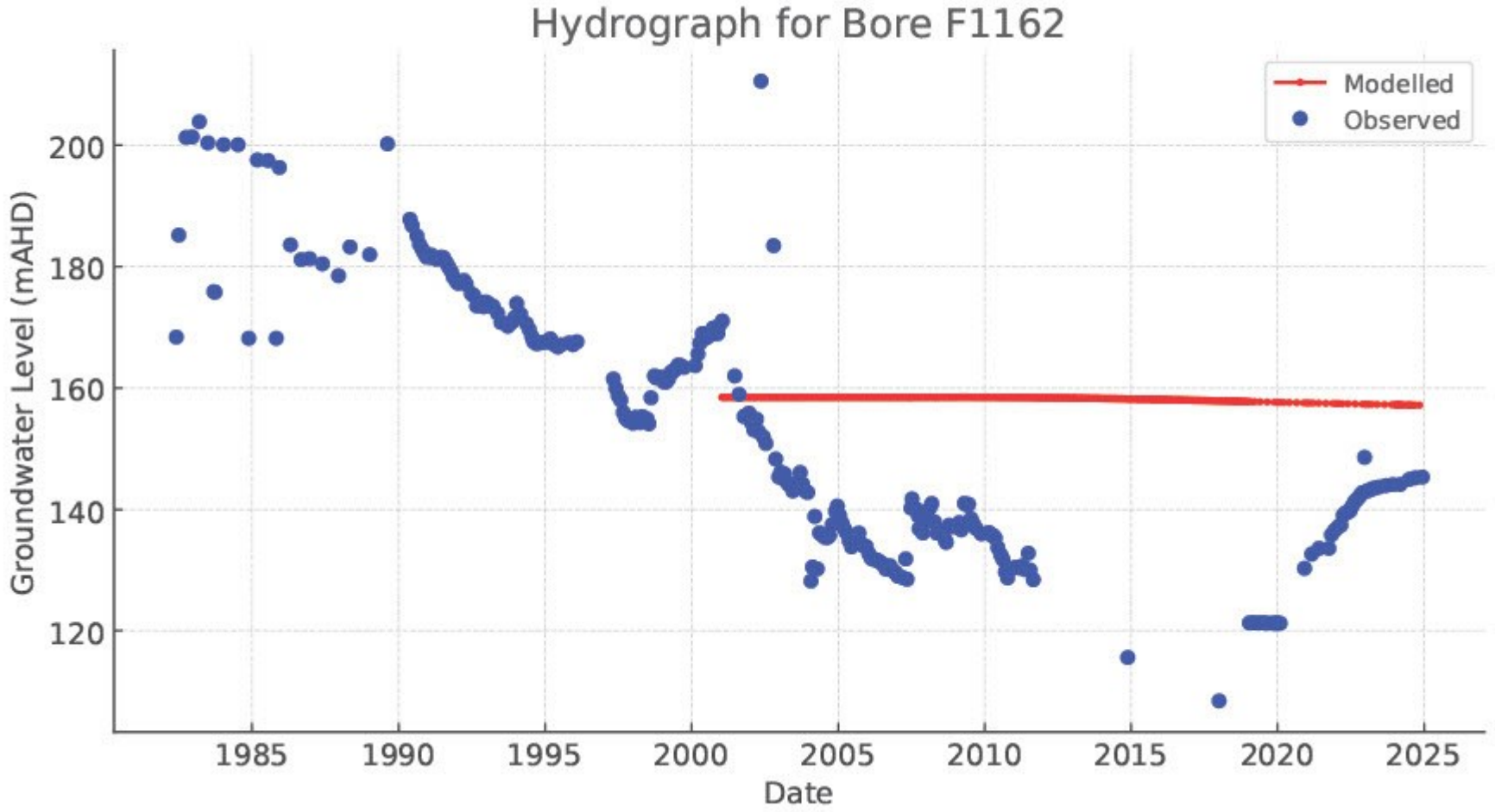

Hydrograph for Bore DD1014
Groundwater Level (mAHD)
140
130
120
110
100
90
80
70
2000
2004
2008
2012
2016
2020
2024
Date
Modelled
Observed

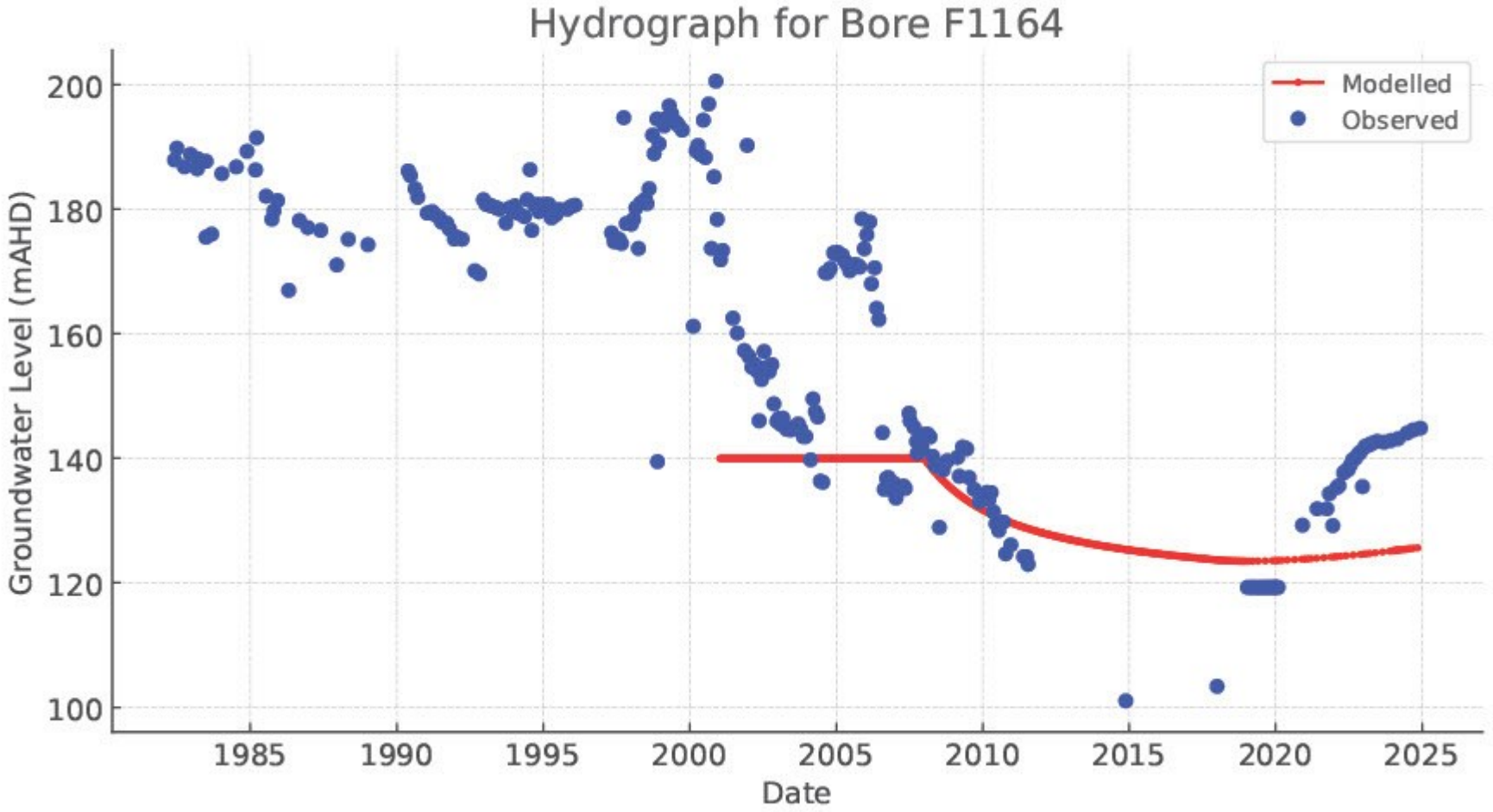

Hydrograph for Bore DD1016
Groundwater Level (mAHD)
145
140
135
130
125
120
2000
2004
2008
2012
2016
2020
2024
Date
Modelled
Observed

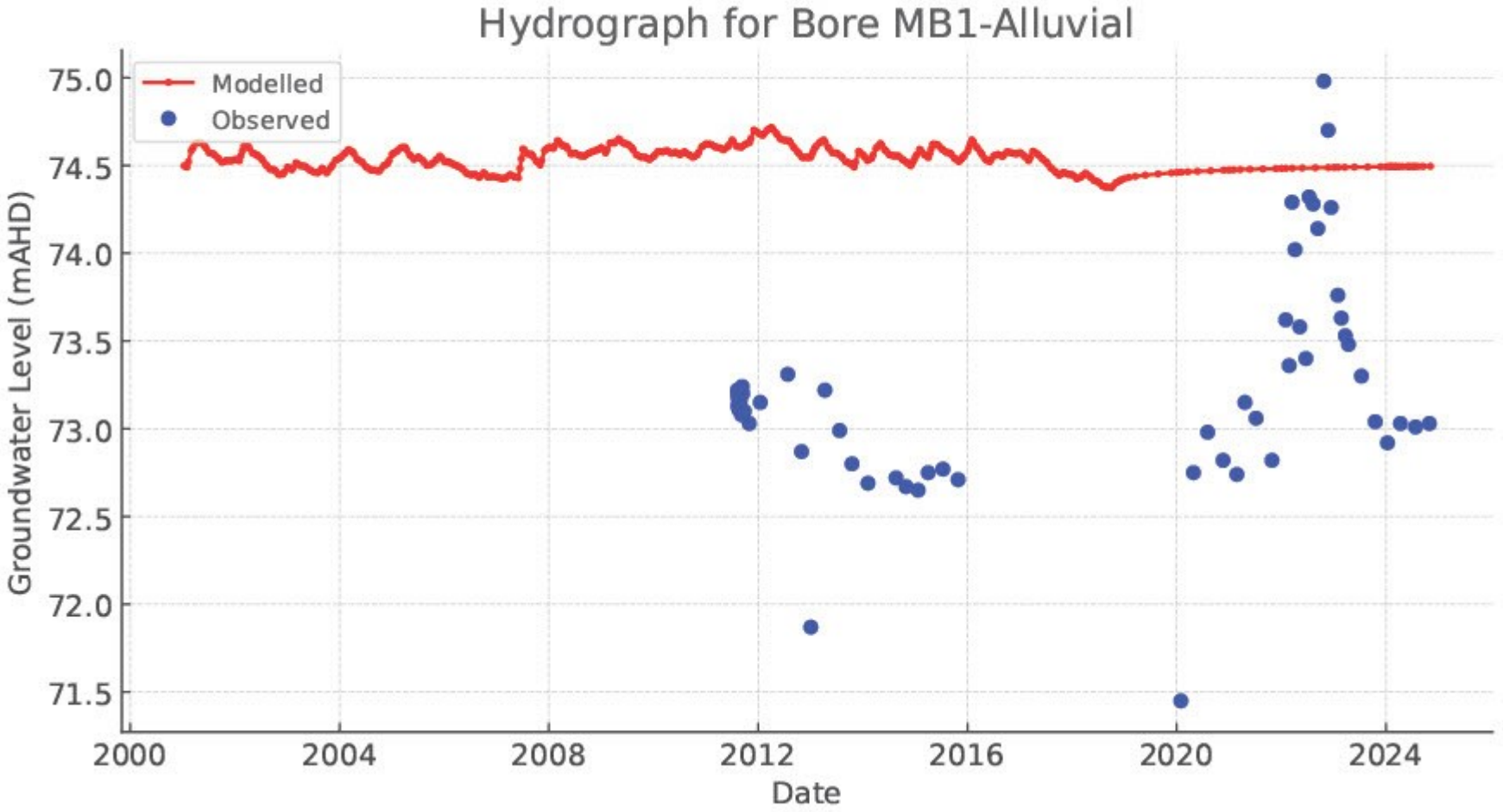

Hydrograph for Bore DD1032
Modelled
Observed
Groundwater Level (mAHD)
140
135
130
125
120
115
2000
2004
2008
2012
2016
2020
2024
Date

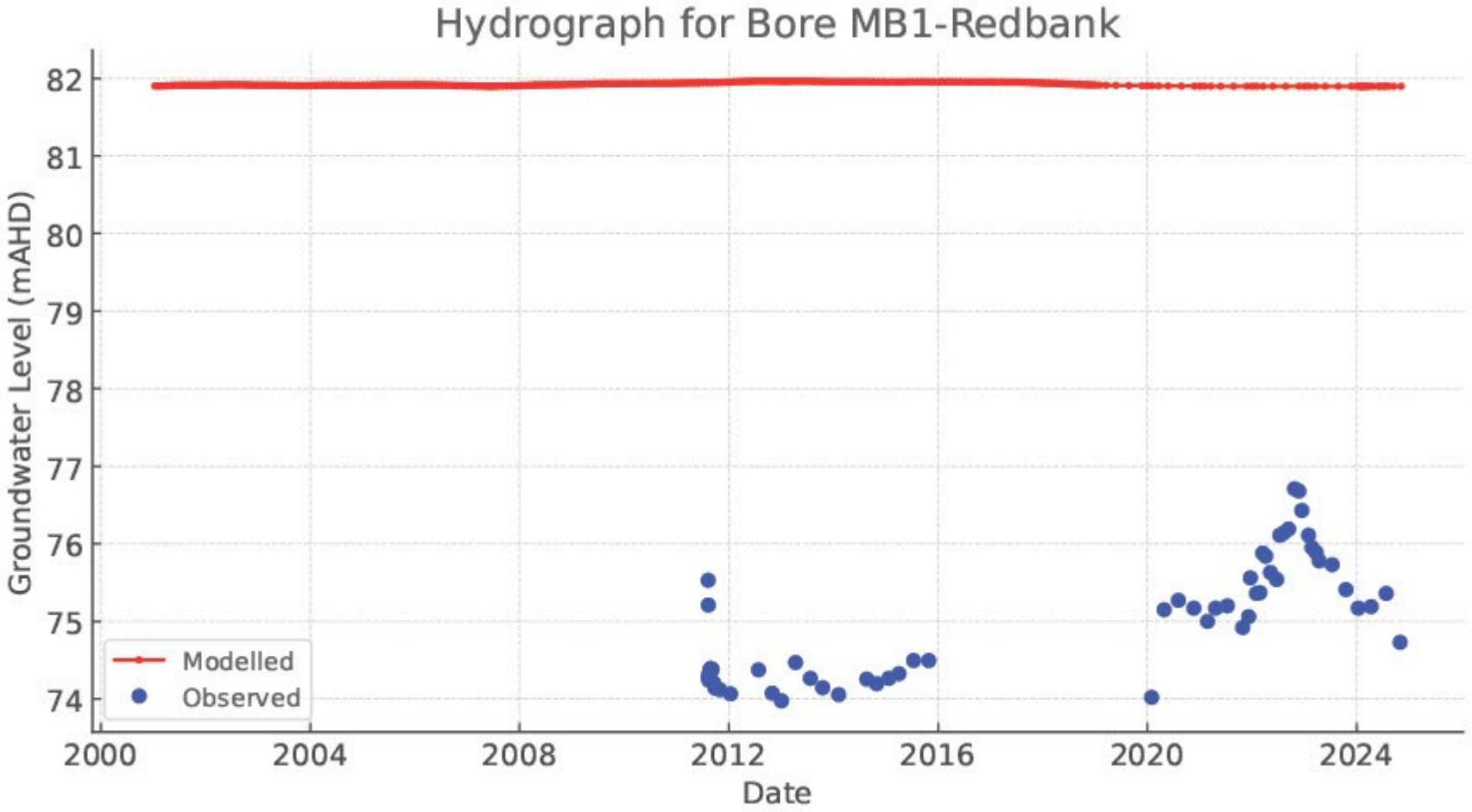

Hydrograph for Bore DD1043
Groundwater Level (mAHD)
120
100
80
60
40
20
Modelled
Observed
2000
2004
2008
2012
2016
2020
2024
Date

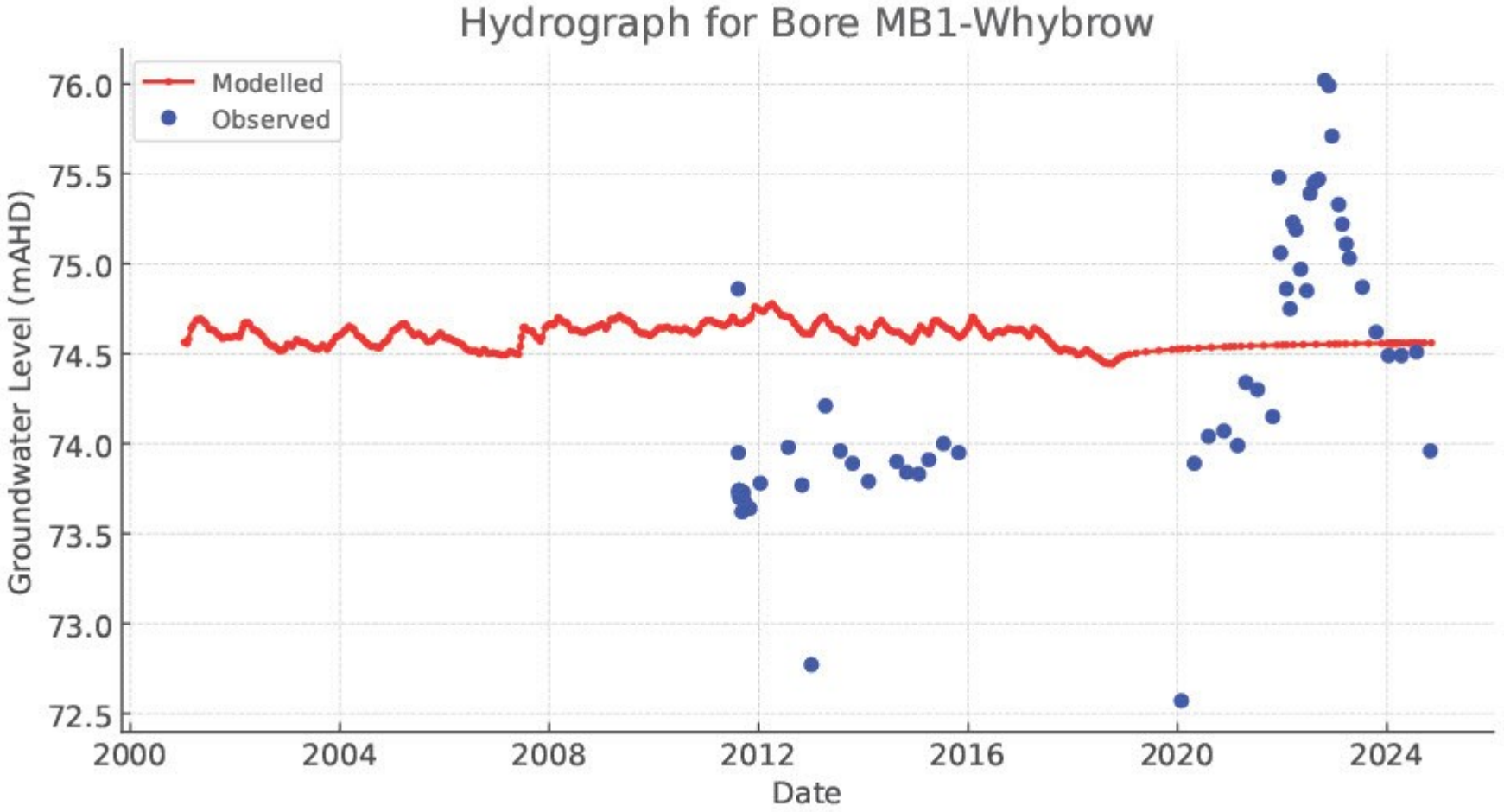

Hydrograph for Bore DD1057
Groundwater Level (mAHD)
130
129
128
127
126
125
124
123
2000
2004
2008
2012
2016
2020
2024
Date
Modelled
Observed

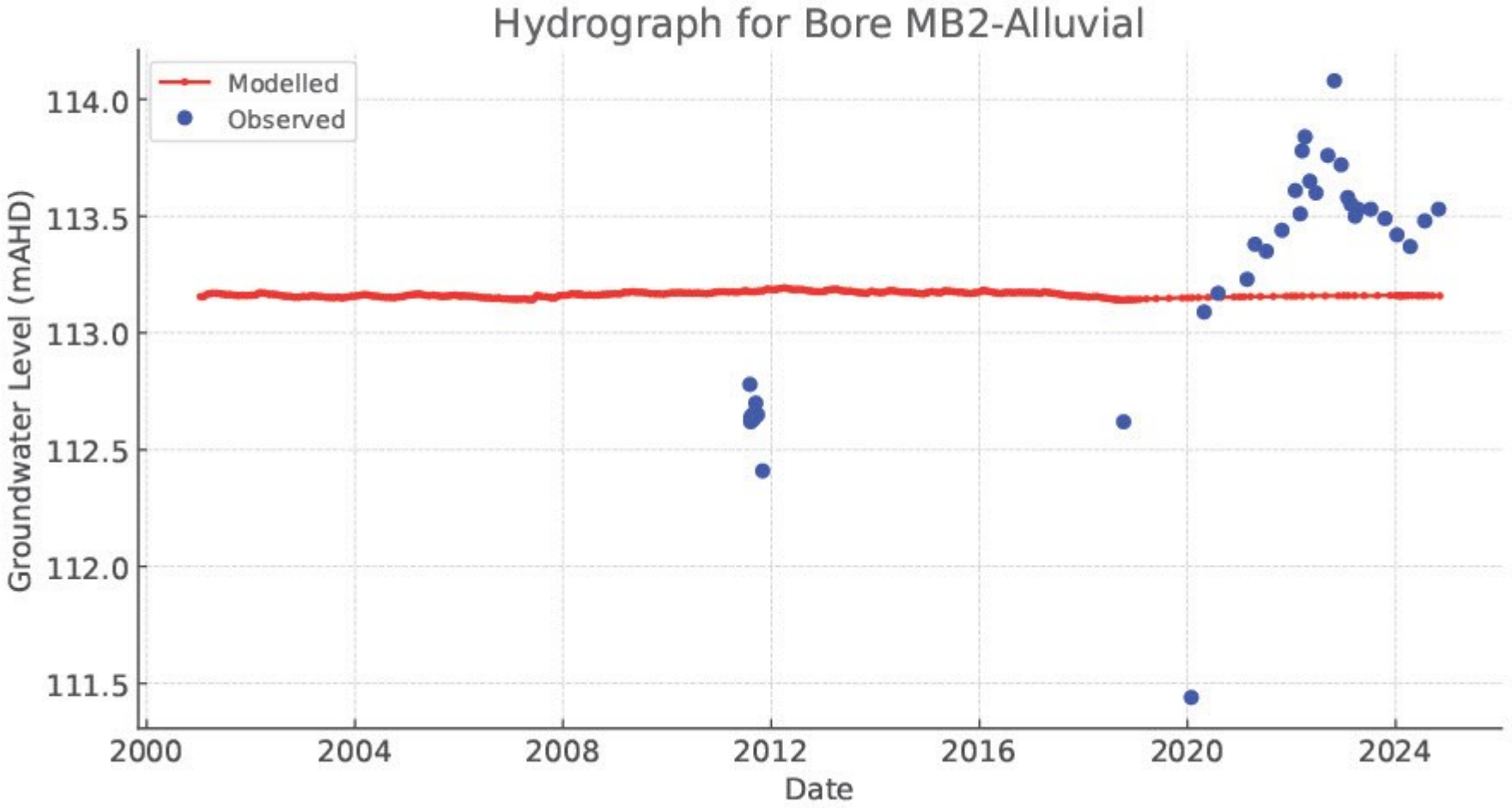

Hydrograph for Bore F1162
Modelled
Observed
Groundwater Level (mAHD)
200
180
160
140
120
1985
1990
1995
2000
2005
2010
2015
2020
2025
Date

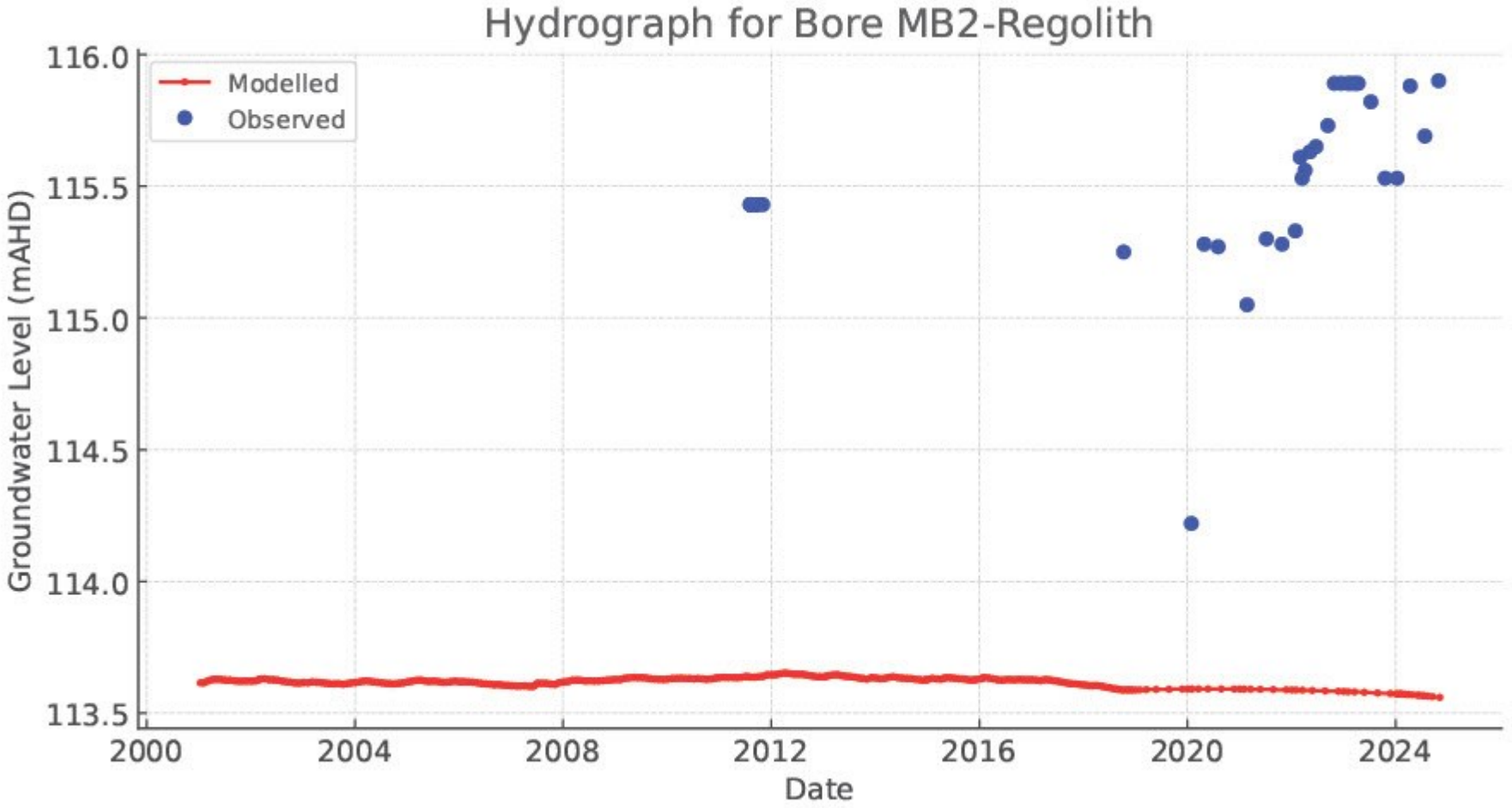

Hydrograph for Bore F1164
Modelled
Observed
Groundwater Level (mAHD)
200
180
160
140
120
100
1985
1990
1995
2000
2005
2010
2015
2020
2025
Date

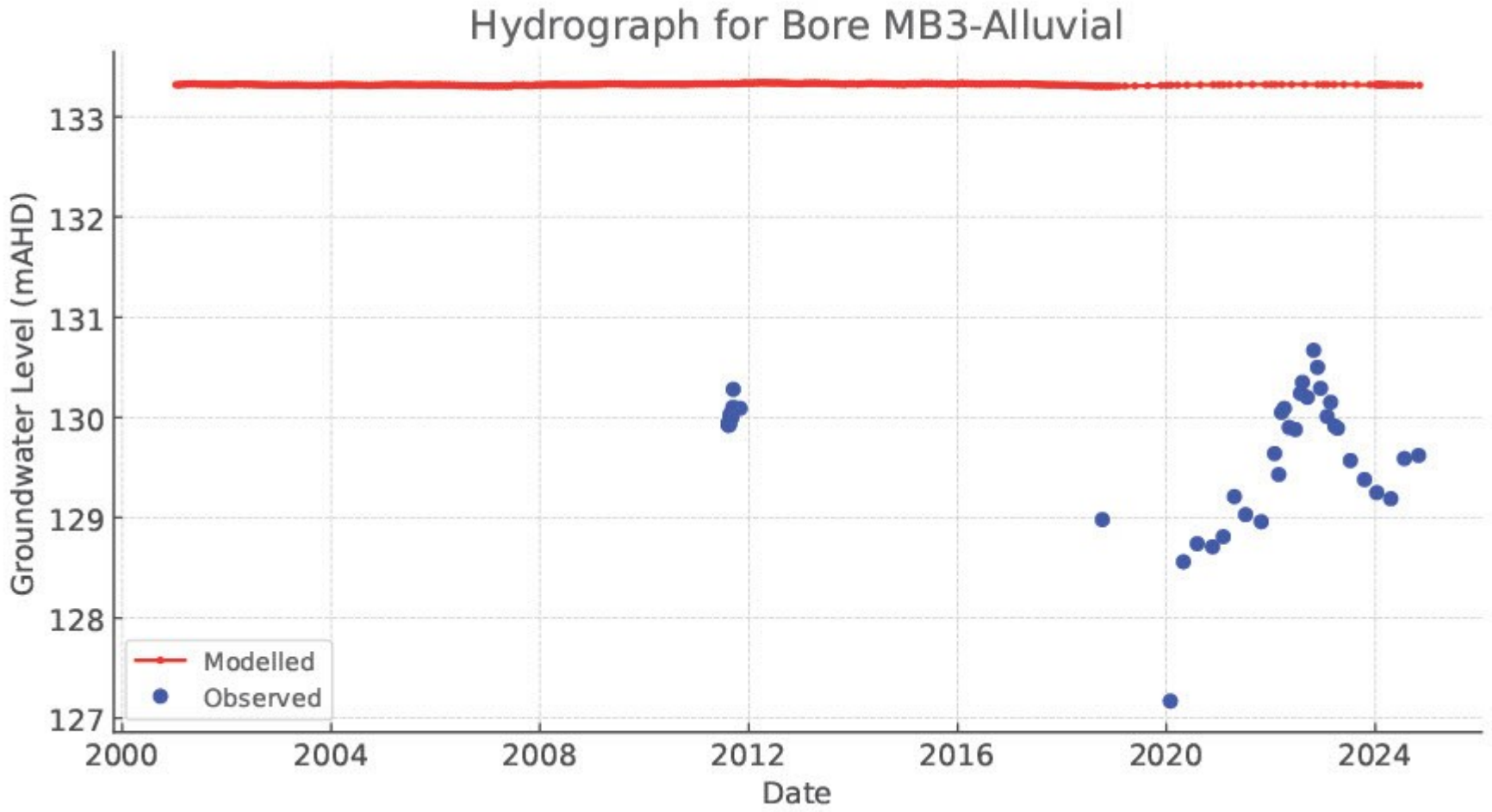

Hydrograph for Bore MB1-Alluvial
Modelled
Observed
Groundwater Level (mAHD)
75.0
74.5
74.0
73.5
73.0
72.5
72.0
71.5
2000
2004
2008
2012
2016
2020
2024
Date

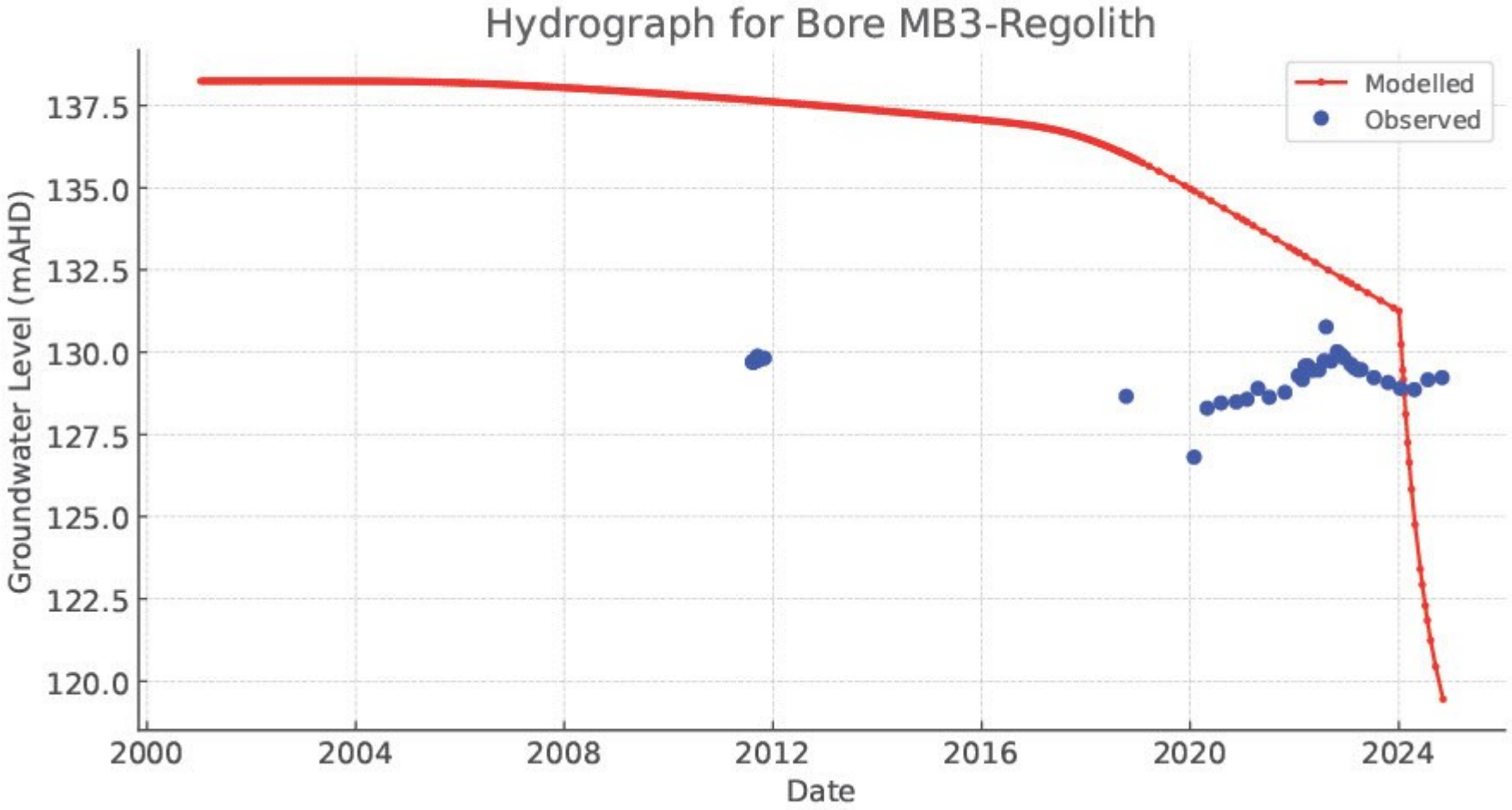

Hydrograph for Bore MB1-Redbank
Groundwater Level (mAHD)
82
81
80
79
78
77
76
75
74
Modelled
Observed
2000
2004
2008
2012
2016
2020
2024
Date

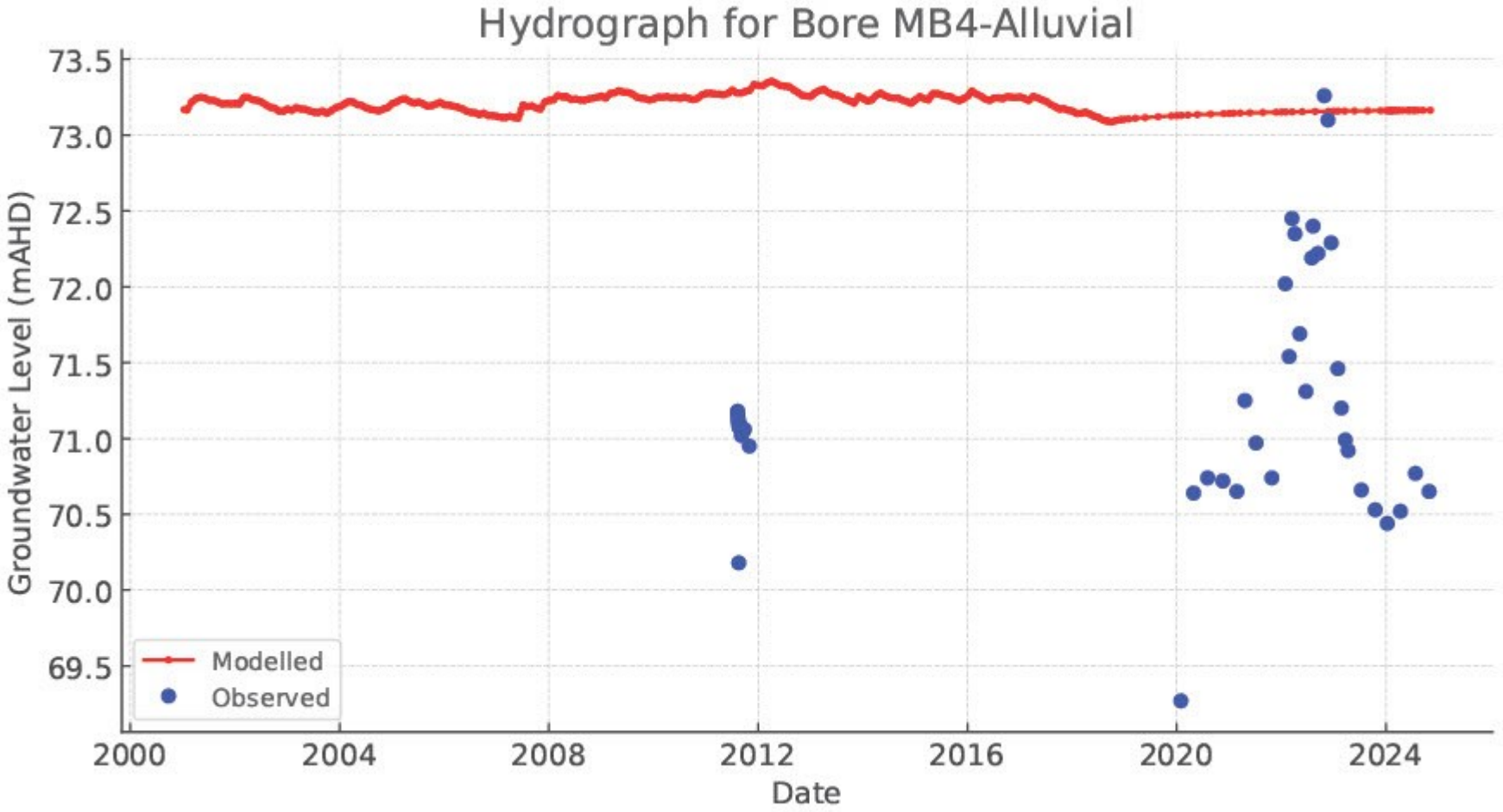

Hydrograph for Bore MB1-Whybrow
Modelled
Observed
Groundwater Level (mAHD)
76.0
75.5
75.0
74.5
74.0
73.5
73.0
72.5
2000
2004
2008
2012
2016
2020
2024
Date

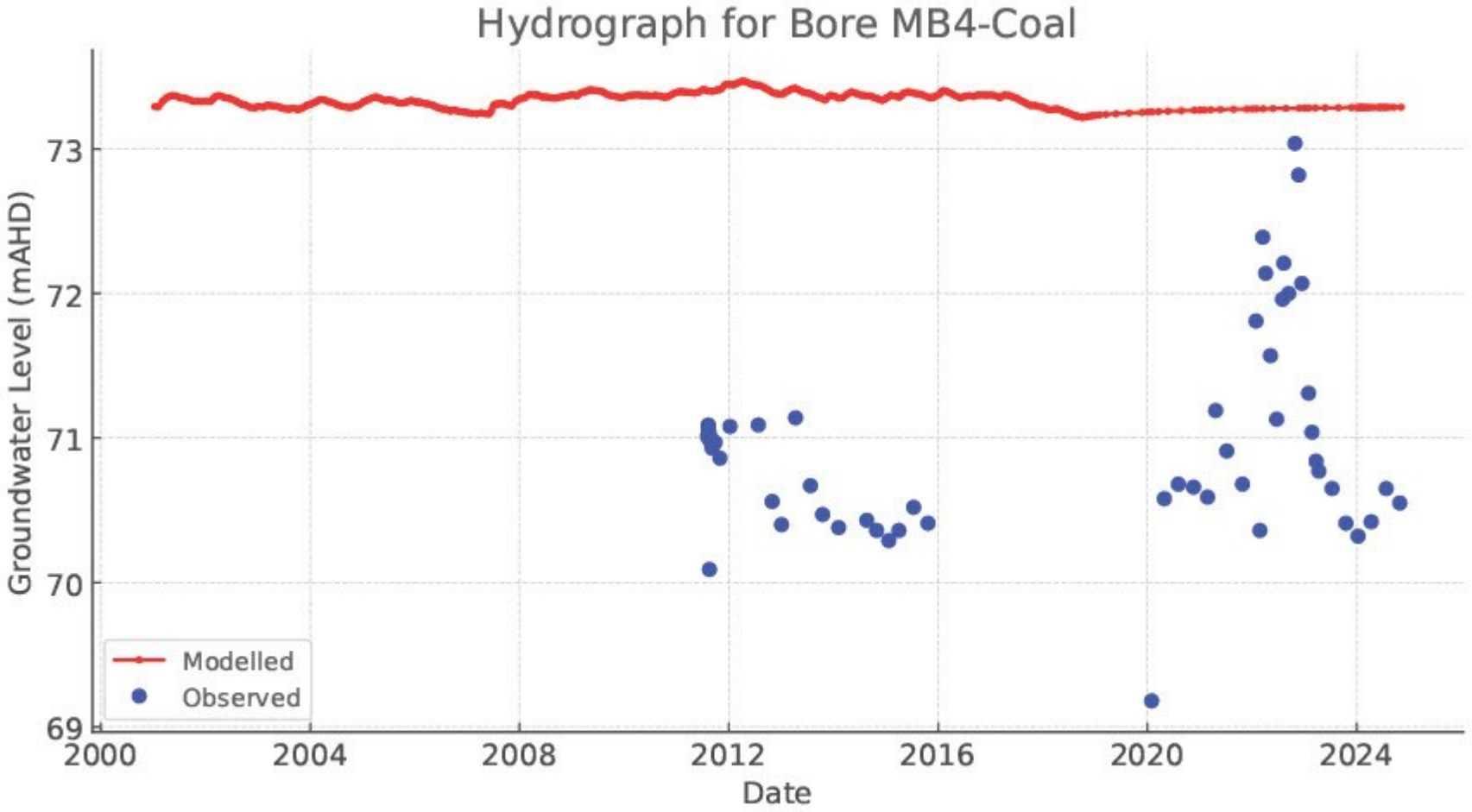

Hydrograph for Bore MB2-Alluvial
Modelled
Observed
Groundwater Level (mAHD)
114.0
113.5
113.0
112.5
112.0
111.5
2000
2004
2008
2012
2016
2020
2024
Date

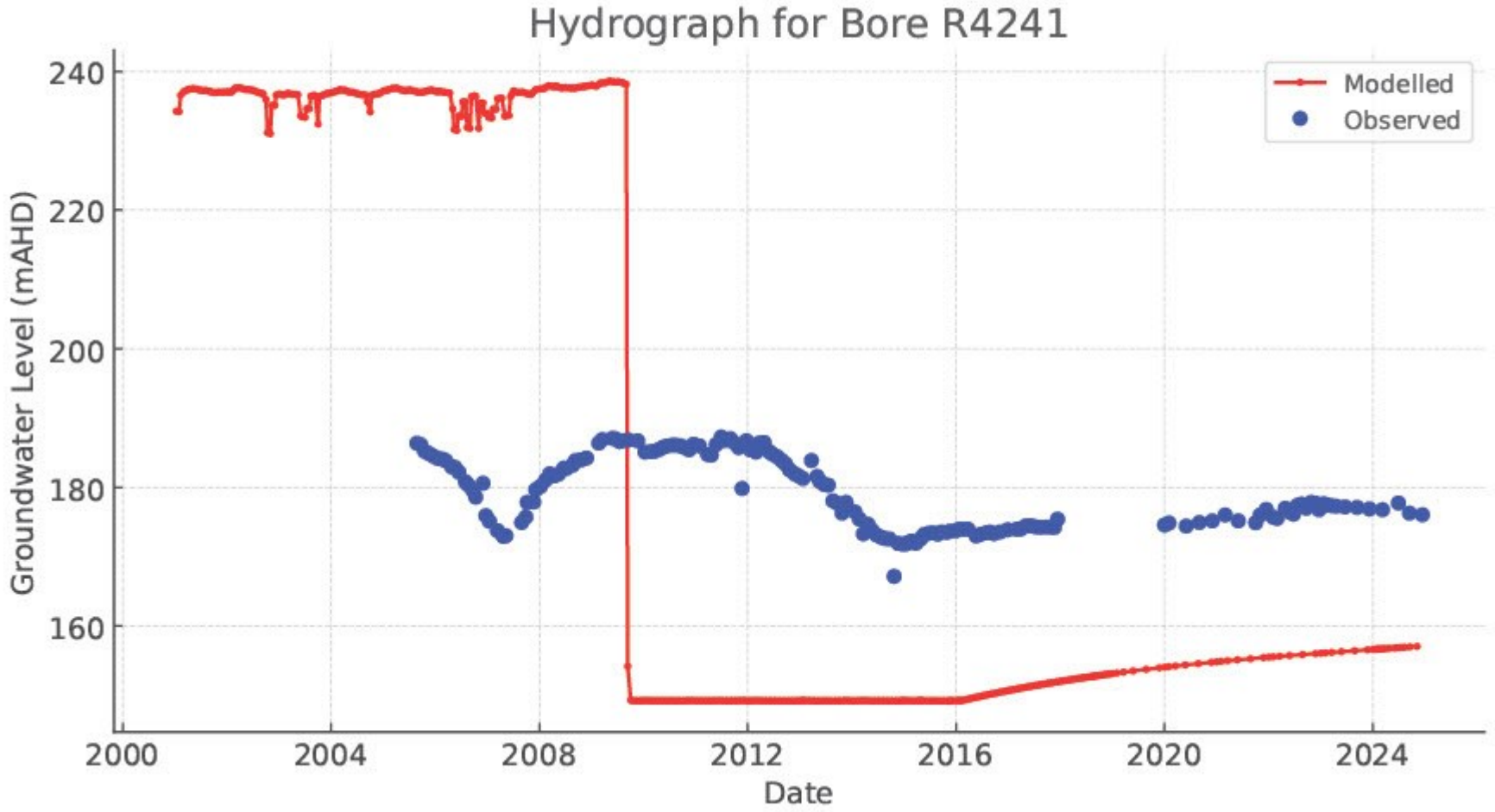

Hydrograph for Bore MB2-Regolith
Modelled
Observed
Groundwater Level (mAHD)
116.0
115.5
115.0
114.5
114.0
113.5
2000
2004
2008
2012
2016
2020
2024
Date


Hydrograph for Bore MB3-Alluvial
Groundwater Level (mAHD)
133
132
131
130
129
128
127
2000
2004
2008
2012
2016
2020
2024
Date
Modelled
Observed


Hydrograph for Bore MB3-Regolith
Modelled
Observed
Groundwater Level (mAHD)
137.5
135.0
132.5
130.0
127.5
125.0
122.5
120.0
2000
2004
2008
2012
2016
2020
2024
Date


Hydrograph for Bore MB4-Alluvial
Groundwater Level (mAHD)
73.5
73.0
72.5
72.0
71.5
71.0
70.5
70.0
69.5
Modelled
Observed
2000
2004
2008
2012
2016
2020
2024
Date


Hydrograph for Bore MB4-Coal
Groundwater Level (mAHD)
73
72
71
70
69
2000
2004
2008
2012
2016
2020
2024
Date
Modelled
Observed


Hydrograph for Bore R4241
Modelled
Observed
Groundwater Level (mAHD)
240
220
200
180
160
2000
2004
2008
2012
2016
2020
2024
Date