YANCOAL
兖煤澳大利亚有限公司

AUSTAR COAL MINE
PART OF THE YANCOAL AUSTRALIA GROUP

Austar Coal Mine Annual Review

July 2023 – June 2024

ANNUAL REVIEW 2024

Name of operation	Austar Coal Mine
Name of operator	Yancoal Mining Services Pty Ltd
Development consent / project approval #	DA 29/95 and PA 08_0111
Name of holder of development consent / project	Austar Coal Mine Pty Limited
Mining lease #	Refer **Table 3-1**
Name of holder of mining lease	Austar Coal Mine Pty Limited
Water licence #	Refer **Table 7-1**
Name of holder of water licence	Austar Coal Mine Pty Limited
RMP start date	21 September 2023
Forward Plan start date	1 July 2023
Forward Plan end date	30 June 2026
Annual Review start date	1 July 2023
Annual Review end date	30 June 2024

I, William Farnworth, certify that this audit report is a true and accurate record of the compliance status of Austar Coal Mine for the period 1 July 2023 to 30 June 2024 and that I am authorised to make this statement on behalf of Austar Coal Mine Pty Ltd.

Note.

a) The Annual Review is an 'environmental audit' for the purposes of section 9.39(2) of the Environmental Planning and Assessment Act 1979. Section 9.42 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	William Farnworth
Title of authorised reporting officer	Mining Engineering Manager
Signature of authorised reporting officer	
Date	25 September 2024

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1 STATEMENT OF COMPLIANCE

TABLE 1-1 STATEMENT OF COMPLIANCE

Were all the conditions of the relevant approval(s) complied with?	
Development Consent DA 29/95	Yes
Project Approval PA 08_0111	No
Environment Protection Licence EPL 416	No
CML 2	Yes
CCL 728	Yes
CCL 752	Yes
DSL 89	Yes
ML 1157	Yes
ML 1388	Yes
ML 1364	Yes
ML 1283	Yes
ML 1345	Yes
ML 1550	Yes
ML 1661	Yes
ML 1666	Yes
ML 1677	Yes
ML 1851	Yes
MPL 204	Yes
MPL 217	Yes
MPL 23	Yes
MPL 233	Yes
MPL 269	Yes
WAL 19181	Yes
WAL 41504	Yes
EL 6598	Yes

TABLE 1-2 NON-COMPLIANCES

Relevant Approval	Condition #	Condition Description (Summary)	Compliance Status	Comment	Where Addressed in this Annual Review
EPL 416 PA08_0111	L1.1 Schedule 4 Condition 8	Shall comply with s120 of the POEO Act (pollution of waters) The proponent shall not discharge any water from the site except as may be expressly provided by an EPL, or in accordance with s120 of the POEO Act 1997.	Non-compliant	6 April 2024 – Kitchener SIS Sediment Dam overflow. No environmental consequence or harm was caused. DPHI and EPA were notified immediately.	**Section 7.3.5 and Section 11**

TABLE 1-3 COMPLIANCE STATUS KEY FOR TABLE 1-2

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 INTRODUCTION

2.1 Scope

This Annual Review covers the annual reporting period from 1 July 2023 to 30 June 2024 (the reporting period). Austar Coal Mine Pty Limited (Austar) is required to prepare and submit an Annual Review that satisfies the annual reporting requirements under Development Consent DA 29/95, Project Approval PA 08_0111, Mining Leases, and management plans required under the various development consents. This Annual Review has been prepared in accordance with the NSW Government *Annual Review Guideline Post-approval requirements for State significant mining developments, October 2015*. Annual water take against water licences is also recorded in this document.

2.2 Background

Austar, a subsidiary of Yancoal Australia Limited (Yancoal), manages the Austar Coal Mine (Austar), a closed underground coal mine located approximately 10 kilometres (km) southwest of Cessnock in the Lower Hunter Valley in NSW. Austar incorporates the former Pelton, Ellalong, Cessnock No. 1 (Kalingo) and Bellbird South Collieries and includes facilities for coal extraction, handling, processing and rail and road transport. Pit top facilities are located on Middle Road, Paxton, and the Coal Handling and Preparation Plant (CHPP) is located at Wollombi Road, Pelton (**Figure 2-1**).

The mine was placed into closure on 26 February 2021, with Austar currently completing a Feasibility Study (FS) to address closure knowledge gaps and commence preparation of detailed decommissioning and rehabilitation execution plans.

Surface infrastructure at Austar has been divided into Closure Management Areas (CMA's) and includes:

- CMA 1 - Austar Pit Top facilities, including administration buildings, bathhouses, the main access drift (including the dolly cart and drift which was sealed in October 2022), coal conveyor bin, store, workshop, and laydown facilities;
- CMA 2 - the CHPP at Pelton, including coal handling and preparation plant, empty ROM and product coal stockpiles, train loading and railway infrastructure, coarse coal rejects and fine tailings emplacement areas, mine water management infrastructure, administration areas, Reverse Osmosis water treatment plant, overland conveyor and a number of heritage listed buildings in various states of repair;
- CMA 3 - No. 1 shaft, which was the second egress man winder, and was partially sealed in October 2022;
- CMA 4 - No. 2 shaft, including mine dewatering via a pipeline which pumps to Kalingo Dam, and on to Austar Dam and CHPP;
- CMA 5 - Kalingo Infrastructure Area (KIA), including ventilation fans and underground services, which were partially sealed during October 2022;
- CMA 6 - Kitchener Surface Infrastructure Site (SIS), including ventilation fans and shafts (temporarily sealed in March 2022), services borehole/drop hole (fully sealed in March 2022), along with water management dams, pipelines, and powerlines; and
- Coarse reject emplacement areas (CMA 7 - Aberdare Extended Emplacement Area (EEA) and CMA 8 - Bellbird Areas 12 and 13).
- CMA 9 – all other land owned by Austar.

The location of approved operations is shown in **Figure 2-1**.

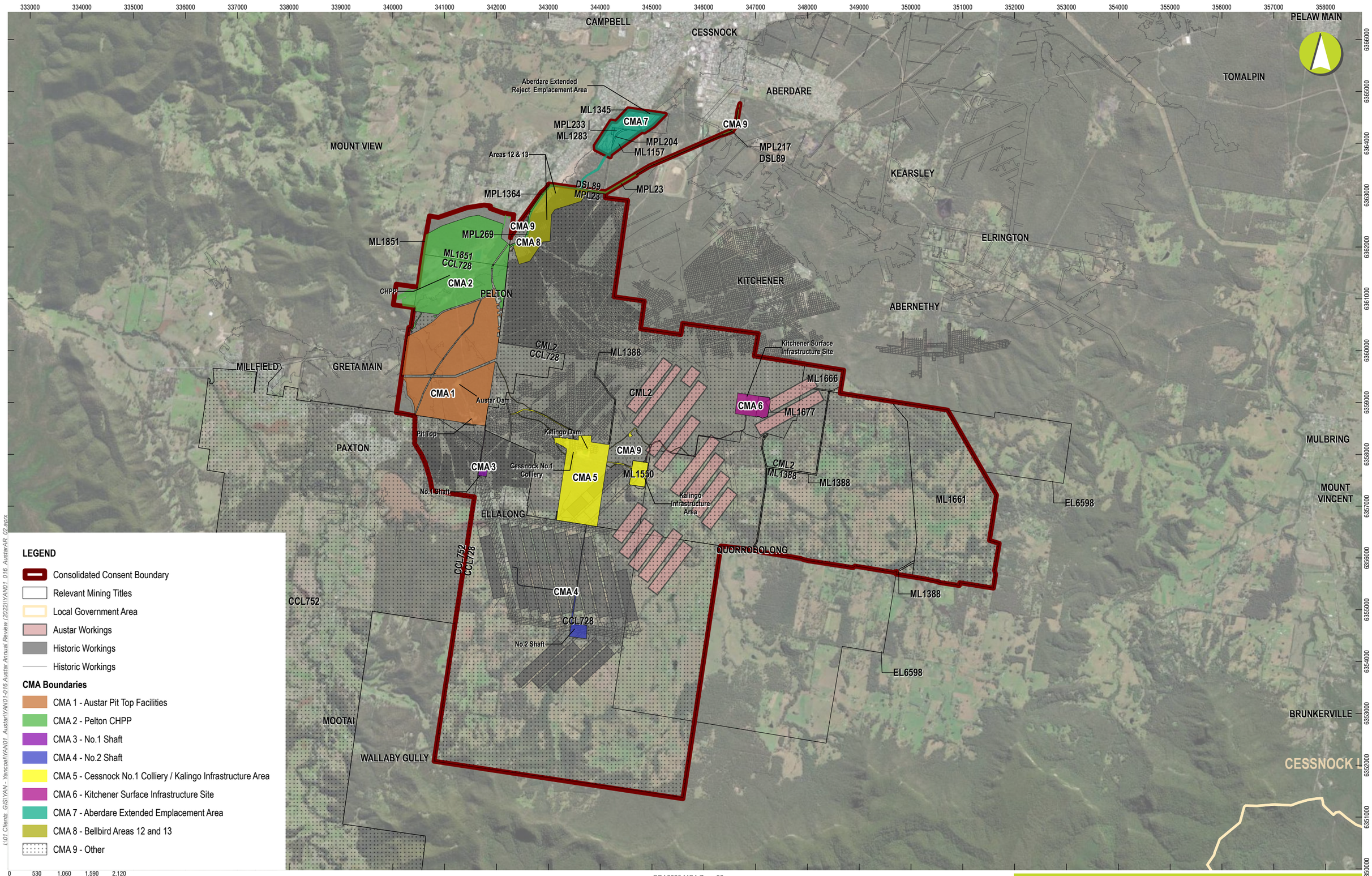
No mining was undertaken at Austar Coal Mine during the reporting period.

2.3 Mine Contacts

Table 2-1 outlines the contact details for site personnel responsible for closure, rehabilitation, environment, and community liaison at Austar.

TABLE 2-1 SITE PERSONNEL

Position	Name	Company	Contact Number
Closure Project Manager	Craig Reiss	Austar	0400 527 713
Mining Engineering Manager	William Farnworth	Austar	0409 023 031
Environment & Community Manager	Carly McCormack	Austar	0447 913 693



Austar Coal Mine Annual Review

Locality Plan and Complete Mining Operations

FIGURE 2-1

Sheet Size : A3

INTEGRATED ENVIRONMENTAL MANAGEMENT AUSTRALIA
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3 APPROVALS

Austar's operations are regulated through various leases, licences, permits and approvals as set out below.

3.1 Changes to Approvals during the Reporting Period

There were no changes to approvals during the reporting period.

3.2 Primary Approvals

3.2.1 Project Approvals and Development Consents

Austar operates under two major project approvals: Bellbird South (DA 29/95) and Stage 3 (PA 08_0111), along with numerous development consents issued by Cessnock City Council between 1974 and 2012.

Development Consent DA 29/95 was granted under Section 91 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 14 February 1996 and was most recently modified under Section 75W (repealed) of the EP&A Act on 25 August 2017. DA 29/95 relates primarily to the Bellbird South mining area and operational areas.

Approval to undertake mining operations under DA 29/95 lapsed on 14 February 2022. Under Schedule 2 Condition 5, this consent continues to apply in all other respects until rehabilitation of the site is carried out to the required standard. Austar continues to undertake rehabilitation activities and relevant monitoring in accordance with DA29/95 and all approved management plans.

Project Approval PA 08_0111 was granted under Section 75J of the EP&A Act on 6 September 2009 and was last modified under Section 75W of the EP&A Act in December 2013. PA 08_0111 relates primarily to the Stage 3 mining area. PA 08_0111 was declared State Significant Development (SSD) under Clause 6 of Schedule 2 to the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017* via Government Gazette on 15 November 2018.

A summary of Austar's project approvals and development consents is outlined in Austar's Environmental Management Strategy, found on the Austar website.

3.2.2 Mining Authorities

Details of the relevant mining authorities are summarised in **Table 3-1**.

TABLE 3-1 MINING AUTHORISATIONS HELD BY AUSTAR

Mining Title (Act)	Date Granted	Expiry Date	Area (ha)	Surface	Depth Restriction
EL 6598 (1992) *	13 Jul 2006	13 Jul 2024	3582.7	Yes	Various
Dam Site Lease 89 (1901)	04 Apr 1908	04 Apr 2030	3.961	Yes	Surface to 15.24 metres
Mineral Lease No. 1157 (1906)	8 Jul 1949	08 Jul 2028	10.24	Yes	Surface to 15.24 metres
Mineral Lease No. 1283 (1906)	13 Jul 1961	13 Jul 2042	1.973	No (sub-surface)	7.62 to 15.24 metres
Mining Purposes Lease No. 23 (1906)	17 May 1909	17 May 2030	2.421	Yes	Surface to 15.24 metres
Mining Purposes Lease No. 204 (1906)	03 Feb 1916	03 Feb 2039	1.2	Yes	Surface to 15.24 metres
Mining Purposes Lease No. 217 (1906)	12 Apr 1916	03 Feb 2039	0.6298	Yes	Surface to 15.24 metres
Mining Purposes Lease No. 233 (1906)	01 Aug 1916	01 Aug 2036	1.973	Yes	Surface to 7.62 metres
Mining Purposes Lease No. 269 (1906)	07 Dec 1917	07 Dec 2039	2.663	Yes	Surface to 6.1 metres below the level of the rails when laid
Mining Purposes Lease No. 1364 (1906)	28 Oct 1968	28 Oct 2029	0.4527	Yes	Surface to 15.24 metres
Consolidated Coal Lease No. 728 (1973)	10 Oct 1989	30 Dec 2044	3296	Various	Various
Consolidated Coal Lease No. 752 (1973)	23 May 1990	30 Dec 2044	3802	No (Sub-surface)	Various
Consolidated Mining Lease No. 2 (1992)	24 Mar 1993	06 Jul 2025	ML -3406 ha AMA - 2.528 ha	Various	Various
Mining Lease No. 1345 (1992)	23 Mar 1995	30 Dec 2044	ML - 41.9 ha AMA - 0.5659 ha	Yes	Surface to 900 metres depth
Mining Lease No. 1388 (1992)	02 Apr 1996	02 Apr 2038	15.12	No (sub-surface)	30.48 metres to unlimited depth
Mining Lease No. 1550 (1992)	24 Jun 2004	23 Jun 2025	14.11	Yes	Surface to 20 metres
Mining Lease No. 1661 (1992)	22 Nov 2011	22 Nov 2032	469.3	No (sub-surface)	20 to 900 metres

Mining Title (Act)	Date Granted	Expiry Date	Area (ha)	Surface	Depth Restriction
Mining Lease No. 1666 (1992)	25 Jan 2012	25 Jan 2033	34.13	No (sub-surface)	30.48 to 900 metres
Mining Lease No. 1677 (1992)	23 Aug 2012	22 Aug 2032	9.2	Yes	Surface to 30.48 metres
Mining Lease 1851 (1992)	16 May 2023	16 May 2044	115.1	Yes	Surface to 50 metres

*EL6598 renewal has been lodged in 2024.

3.2.3 Environment Protection Licence

Austar operates in accordance with Environment Protection Licence 416 (EPL 416), issued on 5 April 2000 and last updated on 15 December 2017 by the NSW Environment Protection Authority (EPA), under the authority of the *Protection of the Environment Operations Act 1997*.

3.3 Ancillary Approvals

3.3.1 Extraction Plans

A summary of Extraction Plan / Subsidence Management Plan (SMP) approvals for Bellbird South (LWB1-LWB7) and Stage 3 mining areas held by Austar is outlined in **Table 3-2**.

TABLE 3-2 SUBSIDENCE MANAGEMENT PLAN / EXTRACTION PLAN APPROVALS HELD BY AUSTAR

Description	Date	Expiry Date	Approval Authority	Approval Summary
Extraction Plan Approval	30 May 2013	31 Dec 2030	Department of Planning, and Environment (DPHI)	Extraction Plan approval for Austar Longwalls A7 to A10. The Extraction plan has been modified in accordance with PA08_0111 modifications.
SMP Approval 13/1876	3 Jun 2013	31 May 2020	Division of Resources and Energy (DRE)	Subsidence Management Plan approval for Austar Longwalls A7 to A10. The SMP has been varied twice in accordance with PA08_0111 modifications and variations in start and end positions of longwalls.
Extraction Plan LWB1 to LWB3	16 May 2016	Not specified	DPHI	Extraction Plan for Bellbird South Longwalls B1 to B3 was approved by DPHI on 4 July 2016.
Extraction Plan LWB4 to LWB7	1 Feb 2019	Not specified	DPHI	Extraction Plan for Bellbird South Longwalls B4 to B7 approved by DPHI on 20 September 2017. Updated to include the shortening of LWB4 was approved by DP&E on 18 September 2018 and again on 12 February 2019. Other variations to Longwalls B5-B7 were approved by DPHI on 7 August 2019.

3.3.2 Rehabilitation Management Plan and Rehabilitation Outcomes Documents

The Rehabilitation Management Plan, Rehabilitation Objectives (ROBJs), Final Landform and Rehabilitation Plan (FLRP), Annual Rehabilitation Report and Forward Program have been prepared in accordance with the Mining Act NSW 1992.

The Austar ROBJs and FLRP were approved by the NSW Resources Regulator in August 2023.

3.3.3 Environmental Management Plans

In accordance with DA 29/95 and PA 08_0111, Austar has developed and implemented environmental management plans. **Table 3-3** outlines the environmental management plans required by each relevant development consent, the determining authority, and their approval status.

TABLE 3-3 ENVIRONMENTAL MANAGEMENT PLANS

Plan	DA Requirement	Approval Authority	Approval Date
Environmental Management Strategy, March 2024	DA 29/95 – Schedule 5 Condition 1 PA 08_0111 - Schedule 7 Condition 1	DPHI	8 March 2024
Landscape Management Plan – Kitchener SIS, April 2021	PA 08_0111 – Schedule 6 Condition 4	DPHI	4 April 2024
Site Water Management Plan, May 2024	DA 29/95 – Schedule 3 Condition 6-11 PA 08_0111 – Schedule 4 Condition 9	DPHI	4 June 2024
Noise and Vibration Management Plan, August 2024	DA 29/95 – Schedule 3 Condition 13-16 PA 08_0111 – Schedule 4 Condition 2-3	DPHI	25 June 2018
Air Quality and Greenhouse Gas Management Plan, March 2024	DA 29/95 – Schedule 3 Condition 17-20 PA 08_0111 – Schedule 4 Condition 6-7	DPHI	8 March 2024
Aboriginal Cultural Heritage Management Plan, January 2023	PA 08_0111 – Schedule 3 Condition 4 and Schedule 4 Condition 10	DPHI	26 April 2023
Historic Heritage Management Plan, April 2021	PA 08_0111 – Schedule 4 Condition 11	DPHI	30 Jun 2021

4 OPERATIONS SUMMARY

During the reporting period, activities at Austar have been associated with rehabilitation and closure technical studies and site investigations, as well as closure early works, including infrastructure decommissioning, dam decommissioning, and preparation for demolition. Activities have been as detailed in this section and in the *Austar Coal Mine Forward Program - Saturday 1 July 2023 to Tuesday 30 June 2026 (Forward Program)* prepared in accordance with the requirements of the Mining Act.
General site maintenance activities including weed control, environmental monitoring and waste and water management have been ongoing as required.

A summary of the progress of closure planning and execution works is included in **Section 4.1**. General operations are summarised in **Section 4.2**.

4.1 Closure Works

4.1.1 Mine Closure Planning Update

Since the closure of the mine in 2021, technical studies and site investigations have been undertaken, focused on identifying conceptual final landform(s) and rehabilitation outcomes that:

- provide a future beneficial land use,
- are safe, stable, and non-polluting, and
- achieve relevant regulatory requirements to facilitate mining lease relinquishment.

In September 2023, Austar completed the Pre-Feasibility Study (PFS) including knowledge gap assessments, risk assessments, site sampling and analysis and technical studies. PFS identified the go-forward options for:

- Preferred final land uses
- Conceptual final landforms
- Demolition strategy with consideration to heritage values
- Approvals pathways to execute closure.

In March 2024, a mine closure Feasibility Study (FS) commenced to prove and refine the preferred go forward rehabilitation and closure option(s). The FS includes additional site investigations to fill knowledge gaps identified in PFS technical studies and address PFS recommendations. The FS is scheduled for completion in late 2025.

4.1.2 FS Site Investigation

In March 2024, Austar commenced a mine closure FS detailed site investigation program based on the recommendations of the PFS. The site investigations included the drilling of boreholes, excavation of test pits and laboratory testing of selected samples. The drilling program was generally completed in June 2024 with laboratory analysis and reporting underway.

The data obtained from the site investigations will inform the mine sealing, geotechnical, geochemical, and contamination studies with the outcomes used to refine the rehabilitation and closure designs and strategies including landform design, contamination remediation and rejects and tailings management and capping designs.

4.1.3 Early Works

As mine closure planning is being advanced, early works are being undertaken to progress the decommissioning and demolition phases of closure and prepare the site for full rehabilitation and closure execution. Key early works undertaken in the reporting period are discussed in more detail below.

4.1.3.1 Decommissioning and demolition activities

During the reporting period, decommissioning and removal of surface infrastructure has continued including:

- disconnection and recovery / removal of accessible equipment in the CHPP
- the removal and sale of transportable assets and buildings
- progress decommissioning and/ removal of above ground conveyors and electricity services
- de-energising and decommissioning of No. 2 Shaft site in preparation for disassembly and demolition.
- decommissioning of No. 3 Shaft Fan site and isolation of the 33kV Switchyard in preparation for disassembly
- relocation of the workforce from Pit Top to CHPP in preparation for demolition of the Pit Top.

No demolition was undertaken in the reporting period; however, Austar has undertaken extensive planning and preparation works for the demolition of non-heritage significant infrastructure. Early works demolition is scheduled to commence in October 2024 (refer **Section 4.3**).

4.1.3.2 Kalingo Dam decommissioning and desilting work

Kalingo Dam is a declared dam and has been underutilized since the mine was sealed. Austar has undertaken a decommissioning options assessment to clean and decommission the dam, deregister the declared dam status and achieve final landform.

During the reporting period, the Kalingo Dam has been dewatered and desilting works have been progressed to allow for the decommissioning and rehabilitation of the dam. Approximately 13,500m^3 of sediment was removed and transported to the East Pit Reject Emplacement Area during the reporting period, with approximately 25% of sediment remaining. Once this work is completed, the dam wall will be removed allowing the dam to be downgraded from a declared dam status.

Further detail on closure planning works is provided in **Section 4.3** .

4.2 Mining Operations

4.2.1 Exploration

There were no exploration activities undertaken during the reporting period. Austar is progressing through an audit of historically drilled holes and developing a rehabilitation process for any drilled holes that require rehabilitation.

An exploration report for Exploration Licence EL6598 is prepared annually covering the period 13 July – 12 July. The report describes exploration and rehabilitation activities carried out on or within EL6598 and was lodged with DPHI on 12 August 2024.

4.2.2 Production Summary

During the reporting period, no coal was mined or transported at Austar or processed at the Austar CHPP.

4.2.3 Waste Management

Waste collected during the reporting period is summarised and compared to the previous reporting periods in **Table 4-1**.

TABLE 4-1 WASTE MANAGEMENT DATA (TONNES)

Year	Paper & Cardboard	Chemical Anchors	Oily Filters	Oily Water	Waste Oil	Timber	Medical & Sanitary	Oily Rags	Mixed Solid Waste	Scrap Metal	Printer Cartridges
2023-24	1.29	-	-	21.9	0.85	-	0.17	0.02	65.96	39.35	-
2022-23	0.21	0.79	0.16	34	3.8	-	0.08	-	45.52	47.2	-
2021-22	4.92	-	0.25	23.19	4.6	-	0.11	0.69	71.45	173.03	-
2020-21	3.7	0.09	0.14	4.53	13.44	0.46	0.14	0.17	116.33	289.63	-
2019-20	6.39	1.2	1.05	73.5	24.5	0.62	0.17	0.24	274.36	217.62	0.06
2018-19	7.88	1.35	0.97	32.25	28.8	-	0.2	0.18	249.75	166.89	0.17

Waste generation can be seen to be decreasing as the site is gradually cleaned up and items removed. It is likely that waste generation will increase over the next reporting period as early works demolition is undertaken and demolition waste is removed from the site.

Waste contractors undertake regular inspections of waste bins, oil storage areas and spill kits and report any issues to Austar staff. If cross-contamination is an ongoing issue, or a waste improvement opportunity is identified, employees and contractors can be educated through toolbox talks and inductions.

4.3 Planned Activities Next Reporting Period

Activities in the next reporting period will be as detailed in this section and in the *Austar Coal Mine Forward Program - Friday 1 July 2024 to Monday 30 June 2027* (Forward Program) prepared in accordance with the requirements of the Mining Act. Activities will be associated with continued technical studies to inform rehabilitation and closure planning, early works, and demolition.

4.3.1 Mine Closure Planning Technical Studies

During the next reporting period, Austar will continue the FS stage of mine closure. The FS is scheduled for completion in late 2025. Following FS, Austar will develop a mine closure Execution Plan with closure execution scheduled to commence in 2026.

4.3.2 Early Works

Austar will conduct early works where permissible in accordance with existing development consents and/or as authorised under relevant State Environmental Planning Policy (e.g. Resources SEPP). Early works projects are outlined below.

4.3.2.1 Decommissioning

Progressive decommissioning will continue during the next reporting period and may include:

- Decommissioning and removal of redundant mining equipment from the site (non-heritage significant) for sale and beneficial re-use elsewhere;
- Progress the decommissioning, de-declaring, and rehabilitation of the Kalingo Dam (CMA 5);
- Progress decommissioning and/or removal of buried electricity and data services and potable water pipelines;
- Progress decommissioning and/or removal of above ground conveyors and electricity services;
- Dismantling and removal of redundant components of the mine water management system including pumping infrastructure, mine water pipelines and boreholes; and
- Dismantle the RO plant and store within the CHPP workshop.

4.3.2.2 Mine Sealing

All shafts are sealed from the atmosphere, with either a permanent plug at the base (No. 1, 3 and 4 Shafts), a temporary pressure-rated cap (No. 5 and 6 Shafts), or through water sealing (No. 2 shaft is sealed from atmosphere as it is partially filled with water). No. 2 Shaft will remain open until water studies are completed during the next phase of mine closure planning.

Exploration borehole sealing and rehabilitation will continue in the next reporting period.

4.3.2.3 Demolition

During the next reporting period, early works demolition activities are scheduled to include:

- Demolition of redundant, non-heritage significant mining infrastructure in CMA's 1, 2, 4 and 5;
- Demolition waste management and;
- Hazardous and contaminated materials clean up (as required) during the demolition project.

4.3.3 Rehabilitation Maintenance and Monitoring

Based on the Forward Program, the following actions are proposed for the 2024-25 reporting period:

- Progress the mine closure planning strategy, and continue FS technical studies;
- Disconnection, decommissioning and demolition of some items of surface equipment; and
- Maintain use of existing rehabilitated areas at Aberdare Extended Emplacement Area, Bellbird Areas 12 and 13 and Cessnock No.1/Kalingo Collieries.

5 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

DPHI reviewed the 2022-2023 Annual Review and 'considers it to generally satisfy the reporting requirements of the consents and the Department's *Annual Review Guideline* (October 2015)'.

Actions committed to by Austar in the 2022-2023 Annual Review and current status of each action item are provided in **Table 5-1**.

TABLE 5-1 ACTIONS REQUIRED FROM PREVIOUS REVIEW

Action Required from Previous Annual Review	Requested by	Status	Action taken by Austar
Progress the mine closure planning strategy as documented **Section 4.1.**	2022-2023 Annual Review.	Progressing, refer to **Section 4.1** for detail.	The Mine Closure Feasibility Study is progressing well and is scheduled to be completed in the next reporting period.
Conduct the 2023 Independent Environmental Audit and commence addressing actions as required.	2022-2023 Annual Review.	Complete.	The 2023 Independent Environmental Audit was completed in October 2023. All associated actions are closed out. Refer to **Section 10.**
Continue to close outstanding actions from Extraction Plans.	2022-2023 Annual Review.	Progressing.	There are four outstanding actions from Extraction plans required to be closed out, including reinstating survey marks, and removing redundant signage from roadways.
Continue to maintain existing rehabilitated areas at Aberdare Extended Emplacement Area, Bellbird Areas 12 and 13 and Cessnock No 1/Kalingo Colliery.	2022-2023 Annual Review.	Progressing.	Weed management has continued during the reporting period as detailed in **Section 6.5**. Extensive works to limit trespassing in rehabilitated areas has been undertaken and is ongoing.
Commence an endemic seed collection program to establish a seed storage bank for future rehabilitation activities.	2022-2023 Annual Review.	Complete.	Seed Collection, preparation and storage has been undertaken during the year by experienced contractors. refer to **Section 8** for detail.
Undertake a rehabilitation trial to evaluate the performance of alternative growth mediums.	2022-2023 Annual Review.	Progressing, refer to **Section 8.4** for detail.	Rehabilitation trial plots were constructed during current reporting period and are being monitored quarterly by a qualified consultant.
Disconnection, decommissioning and demolition of some items of surface equipment.	2022-2023 Annual Review.	Progressing.	During the reporting period, the disconnection and decommissioning of surface infrastructure has commenced in preparation for Demolition See section 4.1.3.

6 ENVIRONMENTAL PERFORMANCE

6.1 Environmental Performance Summary

Table 6-1 outlines the key environmental performance or management aspects encountered at Austar and details how they have been addressed, as well as the implementation of any management measures from the reporting period and proposed improvements for the following years.

Where practical, environmental management of the key environmental aspects managed at Austar have been discussed in **Table 6-1**. Where tabulating the information is not practical, further detail is included in the following sections of this report.

TABLE 6-1 ENVIRONMENTAL PERFORMANCE SUMMARY

Aspect	Approval Criteria / EIS Prediction	Performance During the Reporting Period	Trend / Key Management Implications	Implemented / Proposed Management Actions
Air Quality (**Section 6.3**)	Refer **Section 6.3** for detail on approval criteria and background levels.	Compliant with DA 29/95 and PA 08_0111.	Austar was compliant with the relevant criteria and monitoring results were generally consistent with previous years.	Air Quality will continue to be managed in accordance with the AQGHGMP.
Biodiversity	Biodiversity monitoring required under relevant Extraction Plans has been completed. Through the work permit process, any closure actions that may require clearing or disturbance are properly authorised with the	Compliant with DA 29/95 and PA 08_0111. Prior to commencement of FS Site Investigations and proposed Early Works demolition inspections with work groups and, where necessary, ecologists were	Works during the period avoided any areas of high biodiversity value.	No ongoing monitoring is currently required.

Aspect	Approval Criteria / EIS Prediction	Performance During the Reporting Period	Trend / Key Management Implications	Implemented / Proposed Management Actions
	support of a qualified ecologist as required.	undertaken to ensure works were done to minimise any potential environmental or biodiversity impact.		
Vibration and Blasting	There are no operational vibration criteria provided in DA29/95 or PA08_0111.	As Austar is in closure, no vibration or blast monitoring was required during the reporting period. There were no surface closure and rehabilitation activities undertaken with the potential to cause vibration impacts.	-	No actions required.
Noise (**Section 6.4**)	Refer to **Section 6.4** for detail on approval criteria.	There were no exceedances of relevant noise criteria at the CHPP, Kitchener SIS or Kalingo Infrastructure Area during the reporting period.	There has been a period of minimal noise impact since March 2020, however Austar is aware that decommissioning activities (particularly in remote infrastructure areas) may have short term impacts on nearby neighbours.	Noise monitoring and management will continue in accordance with the NVMP. Austar will continue to consider noise impacts of specific closure execution activities on nearby neighbours and implement noise controls as applicable. Following confirmation of proposed demolition plant and equipment Austar will undertake noise modelling to assess noise impacts and confirm proposed noise

Aspect	Approval Criteria / EIS Prediction	Performance During the Reporting Period	Trend / Key Management Implications	Implemented / Proposed Management Actions
				controls are in place to comply with relevant criteria.
Aboriginal Cultural Heritage	The Aboriginal Cultural Heritage Management Plan (ACHMP) provides a consolidated framework and process for managing Aboriginal cultural heritage responsibilities at Austar.	During the reporting period, Austar completed Aboriginal cultural heritage due diligence surveys for two projects, being feasibility study investigations and historic mine entry and land stability surveys. Surveys were undertaken with an Archaeologist and RAPs in accordance with the approved ACHMP.	Two Aboriginal artefacts were discovered during the FS Investigation surveys completed in early 2024. These artefacts were left in situ with the surrounding area fenced. There were no incidents or complaints regarding cultural heritage during this period.	Continue to assess and undertake operations in accordance with the ACHMP.
Mine Subsidence	All recorded subsidence in Stage 3 and Bellbird South is complete.	Compliant with DA 29/95 and PA 08_0111.	Subsidence has been deemed to be complete in approved mining areas. No further mitigation is required.	No further subsidence monitoring is required under the SMP or Extraction Plans.

Aspect	Approval Criteria / EIS Prediction	Performance During the Reporting Period	Trend / Key Management Implications	Implemented / Proposed Management Actions
Water – Surface Water (**Section 7.3)**	Refer **Section 7.3** for detail on approval criteria and background levels.	There were no discharges from LDPs SW1 or SW6 during the reporting period. Water quality monitoring results for the reporting period were within historic ranges at upstream and downstream locations. One unlicensed discharge event was recorded at the Kitchener SIS on 6 April 2024. Details of the incident is presented in **Section 7.3.5** and **Section 11.**	Monitoring of the Investigation Drainage Line at the CHPP continued in accordance with the EPL PRP. Surface water quality trends indicate no adverse mining impacts on the water quality of Quorrobolong and Cony Creeks. There have been no community complaints made to Austar in relation to water quality during the reporting period. No TARPs under the SWMP were triggered.	Surface water monitoring and management will continue in accordance with the SWMP.
Water – Groundwater (**Section 7.4**)	Refer **Section 7.4** for detail on approval criteria and background levels.	Compliant with DA 29/95 and PA 08_0111.	The predictions in groundwater impact assessments from the DA 29/95 MOD6 EA, and the DA 29/95 MOD7 EA have, in general, been validated by measurements.	Groundwater monitoring and management will continue in accordance with the SWMP.
Erosion and Sediment Control	PA 08_0111 requires an Erosion and Sediment Control Plan as part of the SWMP.	Desilting of Kitchener SIS sediment dams was also completed during the reporting period along with the desilting of surrounding drains and maintenance of erosion and	Erosion and sediment control is undertaken according to the SWMP. A range of erosion and sediment control measures have been implemented across the mining complex with the	Erosion and sediment controls will continue to be managed in accordance with the SWMP.

Aspect	Approval Criteria / EIS Prediction	Performance During the Reporting Period	Trend / Key Management Implications	Implemented / Proposed Management Actions
		sediment controls in the Kitchener SIS area.	aim of preventing soil erosion and the entry of sediments into surrounding water bodies. Monthly environmental inspections are undertaken to monitor the sediment control structures for capacity, structural integrity, and effectiveness.	
Hydrocarbon management	Not applicable.	There were no reportable incidents in relation to hydrocarbon management during the reporting period. The hydrocarbon remediation area was managed to ensure no contamination to nearby areas. Spill kits in all hydrocarbon storage areas are monitored regularly by the waste contractor and replenished as necessary. Bunded hydrocarbon storage areas are also monitored by the waste	Hydrocarbon management systems are designed and installed generally in accordance with Australian Standards and EPA guidelines. There have been no hydrocarbon related incidents during the reporting period.	Hydrocarbon management will continue to be undertaken in accordance with internal procedures and general good management practices.

Aspect	Approval Criteria / EIS Prediction	Performance During the Reporting Period	Trend / Key Management Implications	Implemented / Proposed Management Actions
		contractor and pump out is scheduled as required.		
Weed and Feral Animal Management and Control (refer to **Section 6.5**)	Not applicable.	A Weed Action Plan is being executed across Austar lands which implements weed control operations in a systematic manner. The primary targeted weeds which were controlled during the reporting period included Lantana, Mother of Millions, Tobacco Bush, Green Cestrum and Thistles. Details of weed management are discussed in **Section 6.5**.	Weed infestations are managed according to the Weed Action Plan. During the next reporting period, weeds will continue to be monitored in monthly inspections and controlled as per the Weed Action Plan recommendations. Signs of feral animal presence are monitored for during monthly inspections. Ad hoc sightings of feral animals are also reported by operational personnel. Feral animal management is undertaken on an as needs basis.	Weeds and feral animals will continue to be managed in accordance with the Weed Action Plan, and good land management practices.
Visual Amenity and Lighting	Reject emplacement areas will be constructed to minimise visual impacts upon residents in the vicinity and from roads.	There were no community complaints or non-compliances related to visual impacts or lighting during the reporting period. Unnecessary lighting is turned off since many parts of	Visual impacts and lighting will continue to be managed according to the EMS, guidelines, and internal procedures as appropriate. Most closure work is	Visual Amenity and Lighting will continue to be managed consistent with current good practice and commitments made in relevant EIS's.

Aspect	Approval Criteria / EIS Prediction	Performance During the Reporting Period	Trend / Key Management Implications	Implemented / Proposed Management Actions
	Emplacement areas may include bunds and buffer zones to minimise visual impact. Screening will be used as required. Lighting will be positioned to shine into the Kitchener SIS and light shields will be used where practical.	the site are non-operational at night. Only sufficient lighting for security purposes is operational.	conducted during daytime hours only.	
European Heritage	Austar implements a Historic Heritage Management Plan (HHMP).	Austar has several buildings, remnant structures and features located within heritage curtilages listed on the Cessnock Local Environment Plan (LEP). Prior to proposed early works demolition, Austar has undertaken historic heritage due diligence assessments to demonstrate that the structures proposed for demolition do not form part of the heritage item under the LEP and demolition will not	Austar will continue to consult with Cessnock Council regarding the findings of the Heritage assessments and seek appropriate heritage approvals prior to demolition of heritage items (if applicable).	Management of historic heritage items will comply with the relevant approvals.

Aspect	Approval Criteria / EIS Prediction	Performance During the Reporting Period	Trend / Key Management Implications	Implemented / Proposed Management Actions
		have a negative impact on heritage values. The Early Works demolition program does not include any element / structure within the curtilage of a local heritage item that has been assessed to contribute to the heritage values.		
Spontaneous Combustion	Monitoring and response procedures will be used to minimise spontaneous combustion issues.	There were no spontaneous combustion events during the reporting period.	Spontaneous combustion is managed through the reject haulage and emplacement area procedure and routine inspections. Reject emplacement areas continue to be monitored and managed during closure. The ROM and clean coal stockpiles have been cleared and remain empty.	Monitoring for outbreaks of spontaneous combustion will continue and outbreaks will be responded to as required.
Bushfire	Maintain Asset Protection Zones (APZs) and Strategic Fire Advantage Zones (SFAZs) in accordance with Bushfire Management Plan.	Austar continued to monitor and maintain access tracks, APZs and SFAZs around its key operations. Slashing of APZs is undertaken on a routine basis.	Austar continues to maintain the area around its operations, including pit top facilities, CHPP, remote infrastructure areas and emplacement areas.	Austar will continue to implement the actions identified in the Bushfire Management Plan.

6.2 Meteorological Data

In accordance with DA 29/95, PA 08_0111 and EPL 416, Austar operates and maintains a meteorological station located at the CHPP.

Table 6-2 summarises the meteorological data for the 2023-2024 reporting period.

TABLE 6-2 WEATHER SUMMARY, 2023-2024

Month	Rainfall (mm)	Rain days (>0.2mm)	Maximum temperature (°C)	Minimum Temperature (°C)	Mean wind speed (km/hr)	Max wind speed (km/hr)	Dominant wind direction
Jul	13.0	8	25.4	0.7	1.23	11.67	SW
Aug	26.2	6	33.8	3.5	1.32	9.64	SSW
Sep	31.2	5	34.2	6	1.69	11.53	S
Oct	37.2	8	37	10	1.37	12.08	SW
Nov	118.2	11	41.3	13.2	1.5	12.03	E
Dec	96.0	7	40.3	13.7	1.29	6.11	SW
Jan	36.2	12	39.8	15.7	1.4	7	E
Feb	73.6	14	36.9	11.4	1.14	6.14	SW
Mar	20.8	8	29.7	9.6	1.4	7.58	E
Apr	199	12	16.8	12	2.35	5.58	SW
May	137.6	15	20.6	0.6	1.38	8.64	SW
Jun	76.8	15	14.3	8.7	2.34	4.94	SW
Total	**865.8**	**121**	-	-	-	-	-

The total monthly rainfall, number of rain days and cumulative rainfall during the reporting period is shown in **Table 6-2** and **Figure 6-1**. An annual wind rose is provided in **Figure 6-2.**

A total rainfall of 865.8 mm was recorded during the 2023-2024 reporting period. This represents a decrease of 87.8 mm from the previous reporting period and is approximately 19% greater than the annual average rainfall for the Cessnock area (729.4mm) (Bureau of Meteorology Cessnock Airport AWS 1968 - 2020). Four months reported rainfall above their long-term average being November, April, May, and June. April recorded the highest rainfall of any month in the reporting period being 199mm, or 310% of the long-term monthly average. Between July and October however, rainfall exhibited a downward trend, with July 2023 recording 13mm, representing 37% of the long-term monthly average.

Predominant winds were on average from the southwest for the reporting period.

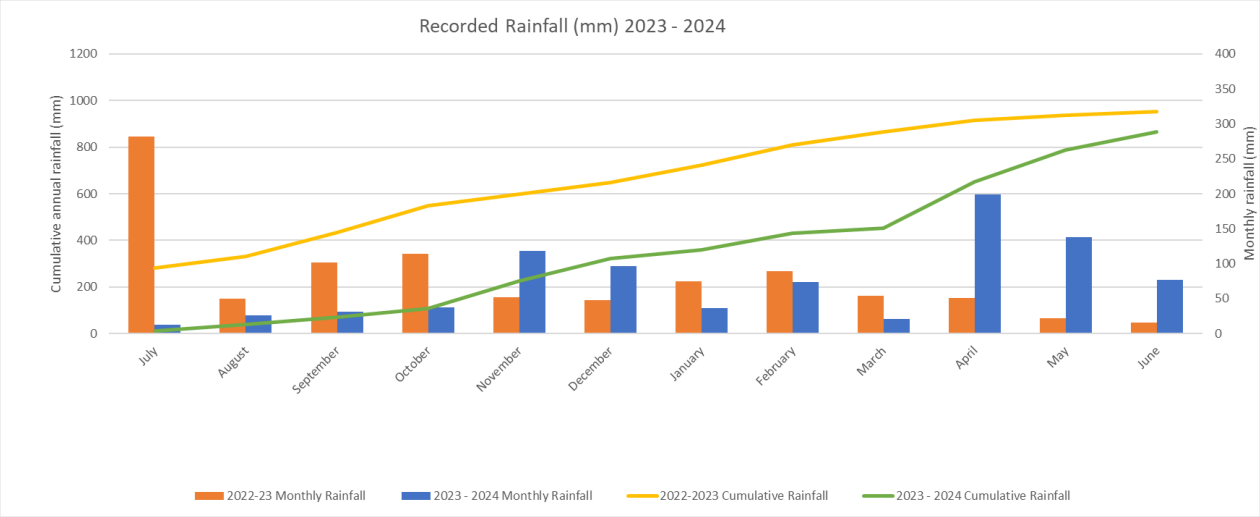

FIGURE 6-1 RECORDED RAINFALL (MM) AT AUSTAR METEOROLOGICAL STATION 2023-2024

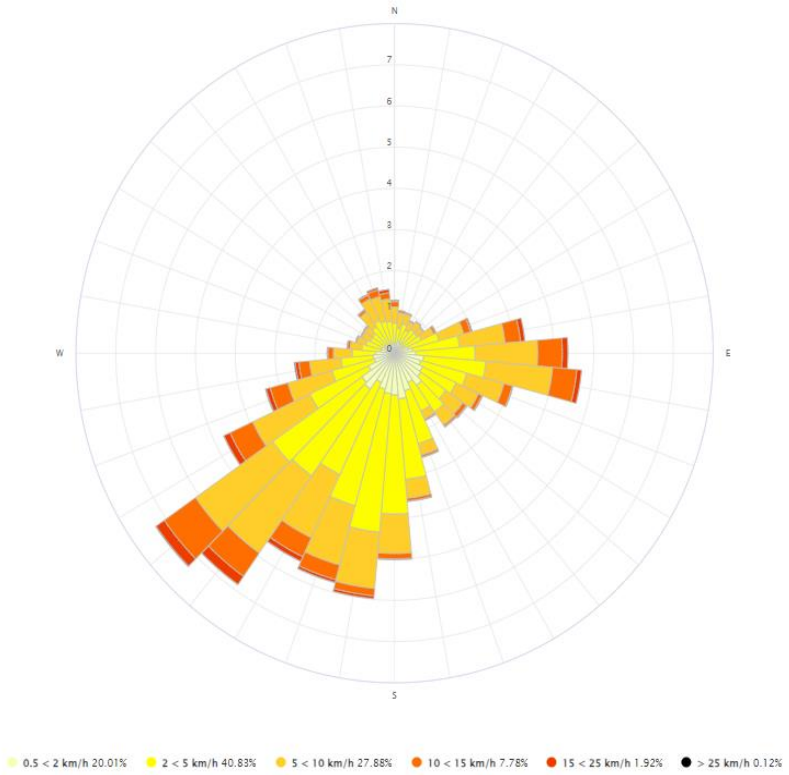

FIGURE 6-2 ANNUAL AVERAGE WIND ROSE 2023-2024

6.3 Air Quality

6.3.1 Environmental Management

Austar implements an Air Quality and Greenhouse Gas Management Plan (AQGHGMP) to meet the requirements of PA 08_0111, DA 29/95 and EPL 416. During the reporting period, the AQGHGMP was revised to reflect closure early works activities and submitted to the DPHI for approval. The AQGHGMP was approved by DPHI on 12 March 2024.

Dust generated from traffic around the CHPP, Pit Top, workshop areas, access roads and reject emplacement areas is generally controlled by water cart where required.

The ROM and clean coal stockpile areas have been cleared and the surface compacted to prevent wind and water erosion. Water carts and water sprays will continue to be utilised during closure activities to minimise dust on roads and stockpile areas where required. It has been observed that the stockpile areas seem to have a crust, and visible dust generation is rare.

The AQGHGMP monitoring program utilises eight depositional dust gauges (DDG), three high volume air samplers (HVAS) and one Tapered Element Oscillating Microbalance (TEOM) continuous dust monitor. The HVAS and TEOM measure for particulate matter less than 10 micrometres (10µm), more commonly referred to as PM_{10}. Total Suspended Particulates (TSP) are not directly measured and are calculated per the methodology outlined in the AQGHGMP.

The location of Austar's air quality monitoring equipment is listed in **Table 6-3** and shown in **Figure 6-3.**

TABLE 6-3 LOCATION OF AIR QUALITY MONITORING POINTS

ID	Location	Monitoring Equipment
D1	Pyne Way, Mount View	DDG, HVAS
D2	Ellalong Road, Pelton Village	DDG, HVAS
D3	Bimbadeen Road, Mount View	DDG
D4	Ellalong Village	DDG
D5	South of No. 3 upcast ventilation shaft	DDG
D6	Bimbadeen Road, Mount View	TEOM
D7	Pelton Fire Trail, Quorrobolong	DDG
D8	Coney Creek Lane, Quorrobolong	DDG, HVAS
D9	Kitchener Public School	DDG
Met Station	CHPP site, Pelton	Meteorological Station

338000 339000 340000 341000 342000 343000 344000 345000 346000 347000 348000 349000

6363000 6362000 6361000 6360000 6359000 6358000 6357000 6356000

KENDALL STREET
BIMBADEEN ROAD
MPL1364
MPL1223
MPL1269
D6
SW4
D3
NM C3
MLA521
BELLBIRD CREEK
SW1
D1
NM C1
SW2
MLA521
SW6
CHPP
SW5
NM C2
GGL728
WOLLOMBI ROAD
D2
MIDDLE ROAD
ELLALONG ROAD
Austar Dam
Pit Top
Kalingo Dam
Cessnock No.1 Colliery
No.1 Shaft
MAIN ROAD
SANCTUARY ROAD
RUBY STREET
HELENA STREET
QUORROBOLONG CREEK
CHURCH STREET
D4
SW Q3
SW Q2
MB04
LWB6
LWB5
LWB4
LWB3
LWB2
MB03A
SW Q1
SANDY CREEK ROAD
ML1550
D5
NER 1010
NM K4
NM K1
D7
AQD1073A
WBH1
WBH3
WBH2
Kalingo Infrastructure Area
EL6598
SW C1
MB01
MB02
ML1388
D8
NM K2
LW A7
LW A8
LW A9
LW A10
LW A11
LW A12
LW A13
LW A14
LW A15
LW A16
LW A17
LW A18
LW A19
GOWAN CREEK
SANDY CREEK
ML1666
CML2
Kitchener Surface Infrastructure Site
WERAKATA STATE CONSERVATION AREA
WERAKATA NATIONAL PARK
BLACK CREEK
CESSNOCK STREET
D9
ABERNETHY STREET
NM K3

LEGEND

- Colliery Holding Boundary
- Mining Lease Application Boundary
- Relevant Mining Titles
- Mine Plan
- Railway
- Creek Lines
- Water Pipeline - Potable
- Bellbird Pipeline 1 and 2
- Water Pipeline
- Austar Coal Mine - Austar Owned Land

Monitoring Locations

- Attended Noise Monitoring
- Dust Gauge
- Dust Gauge and HVAS
- Continuous Dust Monitor (TEOM)
- Creek Monitoring
- Ground Water Monitor
- Surface Water Monitoring
- Meteorological Station

CMA Boundaries

- CMA 1 - Austar Pit Top Facilities
- CMA 2 - Pelton CHPP
- CMA 3 - No.1 Shaft
- CMA 4 - No.2 Shaft
- CMA 5 - Cessnock No.1 Colliery / Kalingo Infrastructure Area
- CMA 6 - Kitchener Surface Infrastructure Site
- CMA 8 - Bellbird Areas 12 and 13
- CMA 9 - Other

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Austar Coal Mine

Environmental Monitoring Network

FIGURE 6-3

6.3.2 Environmental Performance

During the reporting period, all dust samples were collected by trained technicians and analysed by NATA-certified laboratories. Sampling is carried out in accordance with statutory requirements and relevant standards. Monitoring equipment is maintained in accordance with the manufacturer's specifications by qualified specialists. Dust deposition results and PM_{10} monitoring data for the reporting period is provided below.

6.3.2.1 Dust Deposition

Table 6-4 provides a summary of Austar's deposited dust gauge annual average results for insoluble solids during the reporting period, previous reporting periods and against assessment criteria and environmental assessment predictions.

TABLE 6-4 DUST GAUGES ANNUAL AVERAGE COMPARED TO PREDICTIONS AND RESULTS OF PREVIOUS YEARS

ID	Location	EA Prediction Background Levels – Annual Average (g/m^2/ month)	Assessment Criteria	Annual Average Total Insoluble Solids (g/m^2/month)							Change in Deposited Dust 2022-2023 to 2023-2024 Period (g/m^2/ month)
				2017 - 2018	2018 - 2019	2019 - 2020	2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024	
D1	Mount View	0.2 – 2.7*	4 g/m^2 /month (maximum total deposited dust)	0.9	1.2	1.4	0.9	0.6	0.7	0.6	-0.1
D2	Pelton	0.2 – 2.7*		1.1	1.5	1.9	0.9	1.1	2.8	1.7	-1.1
D3	Mount View	0.2 – 2.7*		0.7	0.8	1.3	0.6	0.5	0.7	0.6	-0.1
D4	Ellalong	n/a		1.6	1.4	1.6	1.8	2.0	2.3	1.3	-1.0
D5	Kalingo Infrastructure Area	n/a	2 g/m^2 /month (maximum annual increase in deposited dust)	0.7	1.8	1.3	1.2	1.0	0.9	0.9	0.0
D7	Quorrobolong	1.5 – 1.65^		1.2	1.1	1.3	0.8	0.6	0.4	0.4	0.0
D8	Quorrobolong	1.5 – 1.63^		0.9	0.7	1.4	0.6	0.9	0.6	0.7	+0.1
D9	Kitchener Public School	n/a		1.3	0.9	1.7	0.8	0.9	0.5	0.5	0.0

Note: *Deposited Dust is assessed as insoluble solids as defined by Standards Australia, 2003 AS3580.10.1 -2003: Methods for Sampling and Analysis of Ambient Air – Determination of Particulates – Deposited Matter – Gravimetric Method.*

** Bellbird South EIS (1995)*

^ Proposed Stage 3 Extension Environmental Assessment (Appendix 17) (Umwelt, October 2008)

Depositional dust results during the reporting period were all below the annual average criteria of 4 g/m^2/month for insoluble solids. Site D2 recorded an annual average of 1.7 g/m^2/month for insoluble solids, with seven instances of monthly contaminated samples. D2 is located within 10 metres of residential and business premises on Ellalong Road.

There were thirteen instances (seven at D2, one at D1 and five at D4) where the monthly dust deposition gauges were contaminated with bird droppings, insects or vegetative matter, and these results were excluded from the annual average calculation.

The dust results for the reporting period are consistent with 1995 Environmental Impact Statement (EIS) predictions. Section 4.7.2 of the 1995 EIS states that historical dust depositional data since 1991 ranges between 0.2 to 2.7 g/m^2/month.

6.3.2.2 Total Suspended Particulates

The annual average total suspended particulates (TSP) results for the reporting period are provided in **Table 6-5.**

The calculated TSP for the reporting period at all monitoring locations is below the annual average criterion of 90µg/m^3. The TSP is calculated by multiplying the PM_{10} result by 2.5 in accordance with the method outlined in the AQGHGMP.

6.3.2.3 Particulate Matter - PM_{10} Results

The HVAS units operated on a six-day cycle during the reporting period with the exception of:

- HVAS1 ran short on 15 August 2023 due to no access caused by ongoing electrical work. A make-up run was completed on 16 August 2023.
- HVAS1 ran short on 19 December 2023 due to a power failure. A make-up run was completed on 21 December 2023.

The annual average PM_{10} and TSP results, as well as 24-hour maximum PM_{10}, for the reporting period are shown in **Table 6-5.**

A TEOM monitor which measures PM_{10} on a real-time continuous basis is located at monitoring site D6 to the northeast of the CHPP. 24 hour maximum results since 1 July 2019 and graphical representation of the 24 hour and annual rolling average PM_{10} results are provided in **Table 6-5** and **Figure 6-4**.

The annual average PM_{10} result for the 2023-2024 reporting period as recorded by the TEOM was 13.7 µg/m^3, well below the PM_{10} Annual Average Criterion of 30 µg/m^3 and comparable to data over the last five years (with the evident spike in 2019/2020 due to bushfire pollution, not Austar operations).

TSP and PM_{10} results for the HVAS units were also below the annual average criteria at all monitoring locations.

There were no exceedances of the 24-hour short term impact assessment criteria recorded during the reporting period.

Annual average PM_{10} results are lower than the previous reporting period for all monitoring locations, as shown in **Table 6-5.** This may be attributable to rainfall above the long-term average during the second half of the reporting period. All results remain below the PM_{10} annual average criterion of 30 µg/m^3.

TABLE 6-5 AIR QUALITY CRITERIA AND ANNUAL AVERAGES FOR PARTICULATE MATTER (PM_{10} AND TSP)

Description	Pollutant	Averaging Period	Monitor	Criterion (µg/m³)	Result 2018-2019 (µg/m3)	Result 2019-2020 (µg/m3)	Result 2020-2021 (µg/m3)	Result 2021-2022 (µg/m³)	Result 2022-2023 (µg/m³)	Result 2023–2024 (µg/m³)
Long Term Impact Assessment Criteria for Particulate Matter	Total Suspended Particulate (TSP) matter	Annual Average	TEOM	90	33.4	56	30.8	28.2	27.6	35.62
			HVAS1		42.8	62.8	27.0	22.6	20.5	27.6
			HVAS2		47.7	62.0	25	22.9	21.0	29.9
			HVAS3		39.0	53.8	23	19.3	19.0	26.1
	Particulate Matter <10µm (PM_{10})	Annual Average	TEOM	30	13.4	22.4	12.3	11.3	11.1	13.7
			HVAS1		17.1	25.1	10.8	9.0	8.2	11.0
			HVAS2		19.1	24.8	10.0	9.2	8.4	12.0
			HVAS3		15.6	21.5	9.2	7.7	7.6	10.4
Short Term Impact Assessment Criterion for Particulate Matter	Particulate Matter <10µm (PM_{10})	24-hour Maximum	TEOM	50	131	193.5	39.5	29.9	25.7	40.0
			HVAS1		56	235	32.0	40.5	24.2	34.6
			HVAS2		57	237	28.0	24.7	20.1	46.0
			HVAS3		55	217	30.0	21.3	23.6	35.0

Note: *Methods for sampling and analysis of ambient air as defined by Standards Australia, AS 3580.9.6 -2003: Determination of suspended particulate matter—PM_{10} high volume sampler with size selective inlet—Gravimetric method.*

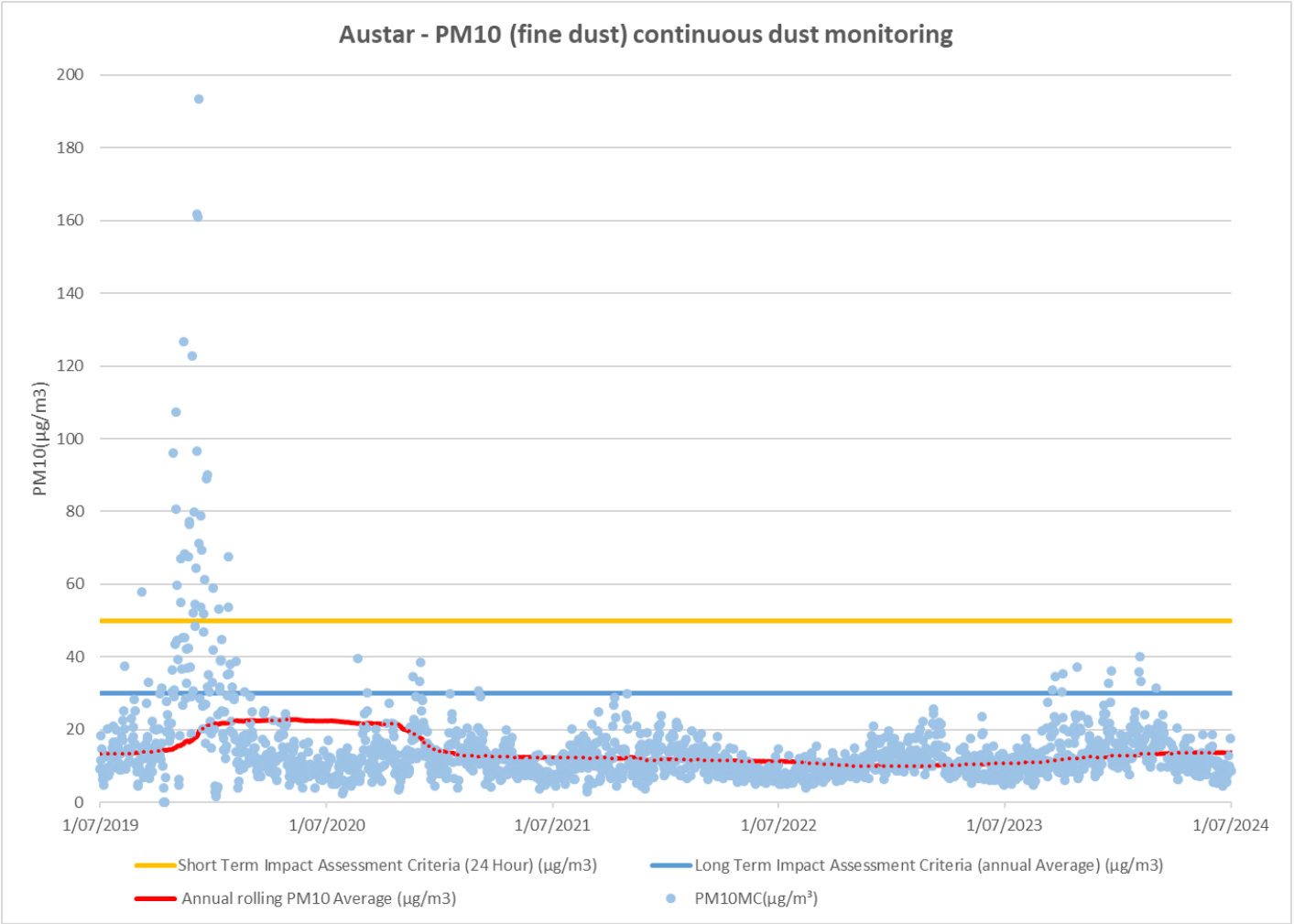


FIGURE 6-4 AUSTAR TEOM PM10 CONTINUOUS DUST MONITORING 2019 - 2024

6.4 Noise

6.4.1 Environmental Management

Austar implements a NVMP prepared in accordance with PA 08_0111, DA 29/95 and EPL 416. The current approved plan is dated 2018. The NVMP was updated and lodged for approval in preparation for demolition activities on 3 July 2024.

Operational noise impacts are potentially greatest at night when background levels are typically low and the allowable levels are correspondingly low, and this is the period when noise propagation enhancement is most likely. Attended noise monitoring is conducted at night, in accordance with the approved NVMP. When modelled noise from early works is expected to be audible in the community, some daytime noise monitoring may be undertaken to confirm modelled predictions.

Austar has not conducted night-time activities (apart from inspections and security patrols) during this reporting period.

Periodic noise monitoring is conducted monthly and reported quarterly in accordance with the NVMP by an independent noise consultant. There are seven key monitoring locations representative of surrounding receivers. Monitoring points have been selected as reference locations and form the basis for assessing and evaluating noise emissions from the operation. The locations are listed in **Table 6-6** and presented in **Figure 6-3.** Noise impact assessment criteria for each location are also presented in **Table 6-6**.

TABLE 6-6 NOISE IMPACT ASSESSMENT CRITERIA

Receiver	Location	Receiver Description	Criteria
Nearest Potentially Affected Receivers to CHPP (EPL 416)			
C1	South of Bimbadeen Road, Mt View	West of CHPP	L_{A90} 40 dB
C2	Pelton Village	Southeast of CHPP	L_{A90} 43 dB
C3	Bimbadeen Road, Mt View	North-west of CHPP	L_{A90} 37 dB
Nearest Potentially Affected Receivers to Kitchener Surface Infrastructure Site (PA 08_0111)			
K1	Pelton Road, Quorrobolong	South of SIS	L_{Aeq} 35 dB / L_{A1} 45 dB
K2	Coney Creek Lane, Quorrobolong	East of SIS	L_{Aeq} 35 dB / L_{A1} 45 dB
K3	Richmond Street, Kitchener	North of SIS	L_{Aeq} 35 dB / L_{A1} 45 dB
Nearest Potentially Affected Receivers to Kalingo Infrastructure Area (DA 29/95)			
K4	Nash Lane, Quorrobolong	East of Kalingo Infrastructure Area	L_{Aeq} 35 dB

6.4.2 Environmental Performance

A summary of results from attended noise monitoring undertaken during the 2023-2024 reporting period is provided in **Table 6-7, Table 6-8** and **Table 6-9**. Results from the last five years are presented in **Appendix A**. All monitoring results were below the approved impact assessment criteria during this reporting period.

Since the transition to care and maintenance and mine closure, the noise monitoring program has continued unchanged and in accordance with the approved NVMP and EPL Noise PRP requirements.

The Austar Noise and Vibration Management Plan requires a combination of continuous and supplementary attended monitoring measures.

Noise sources have reduced since mining ceased with the mine coal conveyor system including coal bins and conveyors decommissioned. The CHPP raw and clean coal systems, trains and loading infrastructure, stockpile dozers and reject trucks are also not operational. No works were undertaken on afternoon or night shift during the reporting period, and the site is not operational during evenings and night times. Results indicate very low levels of noise during the reporting period. Data presented in **Table App A-1** clearly identifies the transition from CHPP operation to care and maintenance in Q1 2020.

The mine ventilation fan at Kitchener SIS ceased operation in March 2022. The ventilation fan at Kalingo Infrastructure Area (KIA), and the Austar pit top Drift ceased operation on 10 October 2022 and sealing commenced on 11 October 2022. Data presented in Table 6-8 and Table 6-9 is consistent with longer term data presented in Appendix A at Kitchener SIS and KIA, with low noise monitoring results during operational and closure periods.

Austar continues to undertake due diligence noise impact assessments to predict potential noise impacts of early work closure activities and to inform appropriate noise monitoring, mitigation and management measures during closure execution. Austar also continues to engage with near neighbours about activities and potential impacts.

TABLE 6-7 NOISE GENERATED BY THE AUSTAR CHPP AGAINST PROJECT CRITERIA

Quarter	Period	Austar CHPP Only $L_{A90\ (15min)}$ (dB)		
		C1	C2	C3
	Noise Criteria	40	43	37
Q3 2023	Night	IA	IA	IA
		IA	IA	IA
		IA	IA	IA
Q4 2023	Night	IA	IA	IA
		IA	IA	IA
		IA	IA	IA
Q1 2024	Night	IA	IA	IA
		IA	IA	IA
		IA	IA	IA
Q2 2024	Night	NM	IA	IA
		IA	IA	IA
		IA	IA	IA

NM – Not measurable
IA – Inaudible
These are results for Austar CHPP in the absence of all other noise sources.

TABLE 6-8 NOISE GENERATED BY KITCHENER SIS AGAINST SPECIFIC PROJECT CRITERIA

Quarter	Period	Kitchener SIS Only $L_{Aeq, 15\ min}$ (dB)			Kitchener SIS Only, $L_{A1\ (1min)}$		
		K1	K2	K3	K1	K2	K3
	Noise Criteria	35	35	35	45	45	45
Q3 2023	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q4 2023	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q1 2024	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q2 2024	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA

NM – Not measurable
IA – Inaudible *These are results for Austar Kitchener SIS in the absence of all other noise sources.*

TABLE 6-9 NOISE GENERATED BY KIA AREA AGAINST SPECIFIC PROJECT CRITERIA, SITE K4

Quarter	Period	Austar KIA Only $L_{Aeq, 15\ min}$ (dB)
		Noise Criteria 35
Q3 2023	Night	IA
		IA
		IA
Q4 2023	Night	IA
		IA
		IA
Q1 2024	Night	IA
		IA
		IA
Q2 2024	Night	NM
		IA
		IA

NM – Not measurable
IA – Inaudible
These are results for Austar Kalingo Infrastructure Area (KIA) in the absence of all other noise sources.

6.5 Weed Management

6.5.1 Environmental Management

Austar's Weed Action Plan identifies environmental weeds known to occur on site, and outlines locations, area covered, a summary of the weed characteristics, recommended actions, and optimum season for treatment. For the current reporting period, Austar has utilised two individual Land Management contracting companies to conduct weed control works in separate locations.

The Weed Action Plan identifies focus locations with exotic weed infestations as the primary target areas for control and management. These locations typically consist of areas previously disturbed by historic clearing, site works, rehabilitation areas, or are adjacent to roadsides or in riparian zones. It was noted during the inspections that large, relatively undisturbed areas outside of remnant bushland areas were generally clear of exotic weed infestations and in healthy condition.

6.5.2 Environmental Performance

During the reporting period, approximately 60 hectares of weeds were treated primarily in locations along Bellbird Creek and Quorrobolong Creek as shown in **Figure 6-5** and **Figure 6-6.** Species and approximate areas treated included:

- Green Cestrum (*Cestrum parquai*) (>10 ha)
- Lantana (*Lantana sp.*) (>30 ha)
- Mother of Millions (*Bryophyllum sp.*) (3 ha)
- Thistle (*Cersium sp.)* (>2 ha)
- Tobacco Bush (*Solanum Mauritianum*) (>10 ha); and
- General seasonal weeds (>5 ha)

Weed treatment was prioritised to address areas where weeds may spread offsite including boundary fences and waterways, and rehabilitation areas where weed presence could compromise rehabilitation outcomes.

The Weed Action Plan is reported against annually to ensure that potential new weed outbreaks are identified, and to review progress of ongoing control works. Weed management works will continue to be implemented across the site, with progress to be reported in future Annual Reviews.

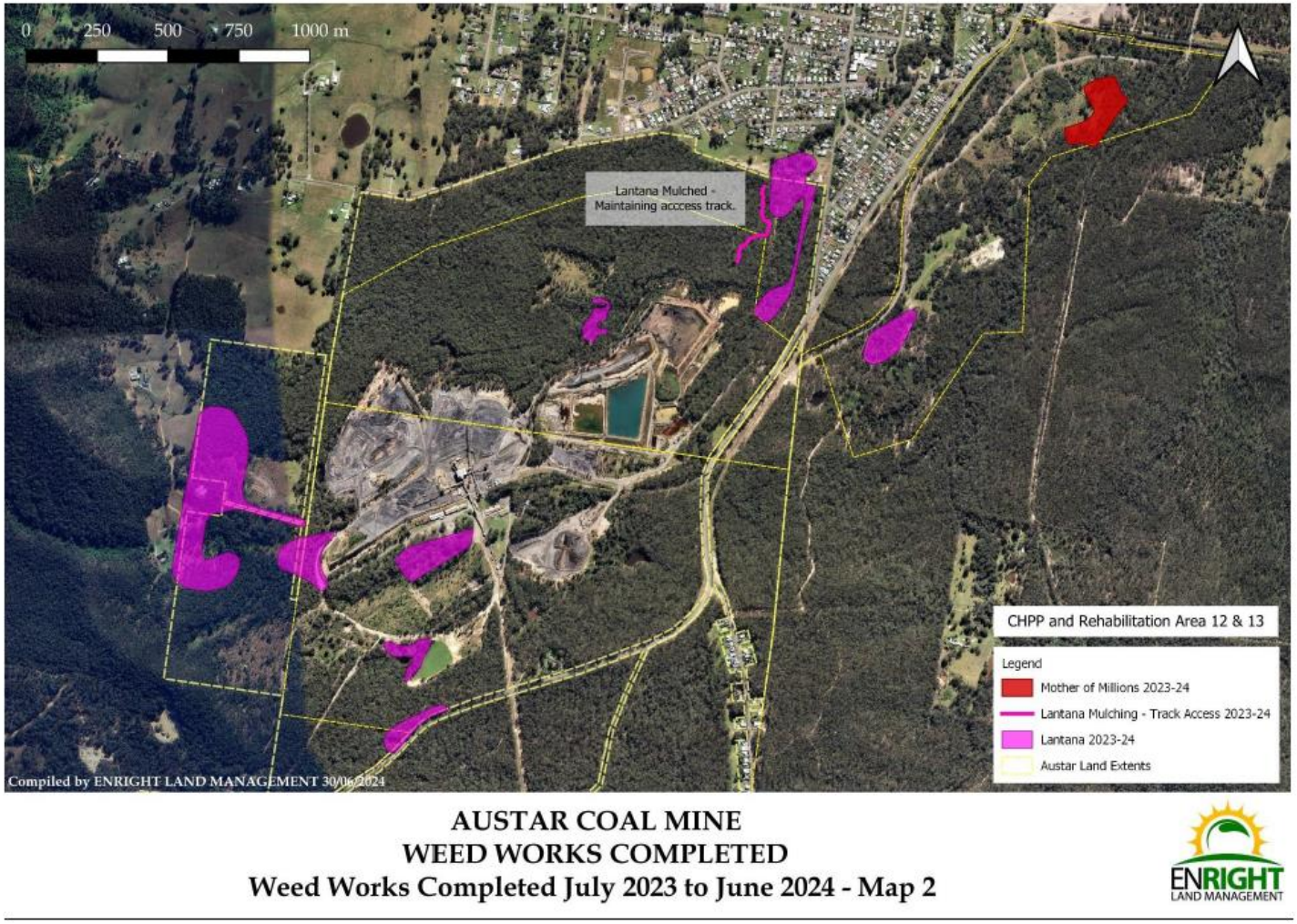


FIGURE 6-5 CHPP AND BELLBIRD AREAS 12 & 13 WEED TREATMENT (SOURCE: AUSTAR WEED WORKS COMPLETED JULY 2023 TO JUNE 2024)

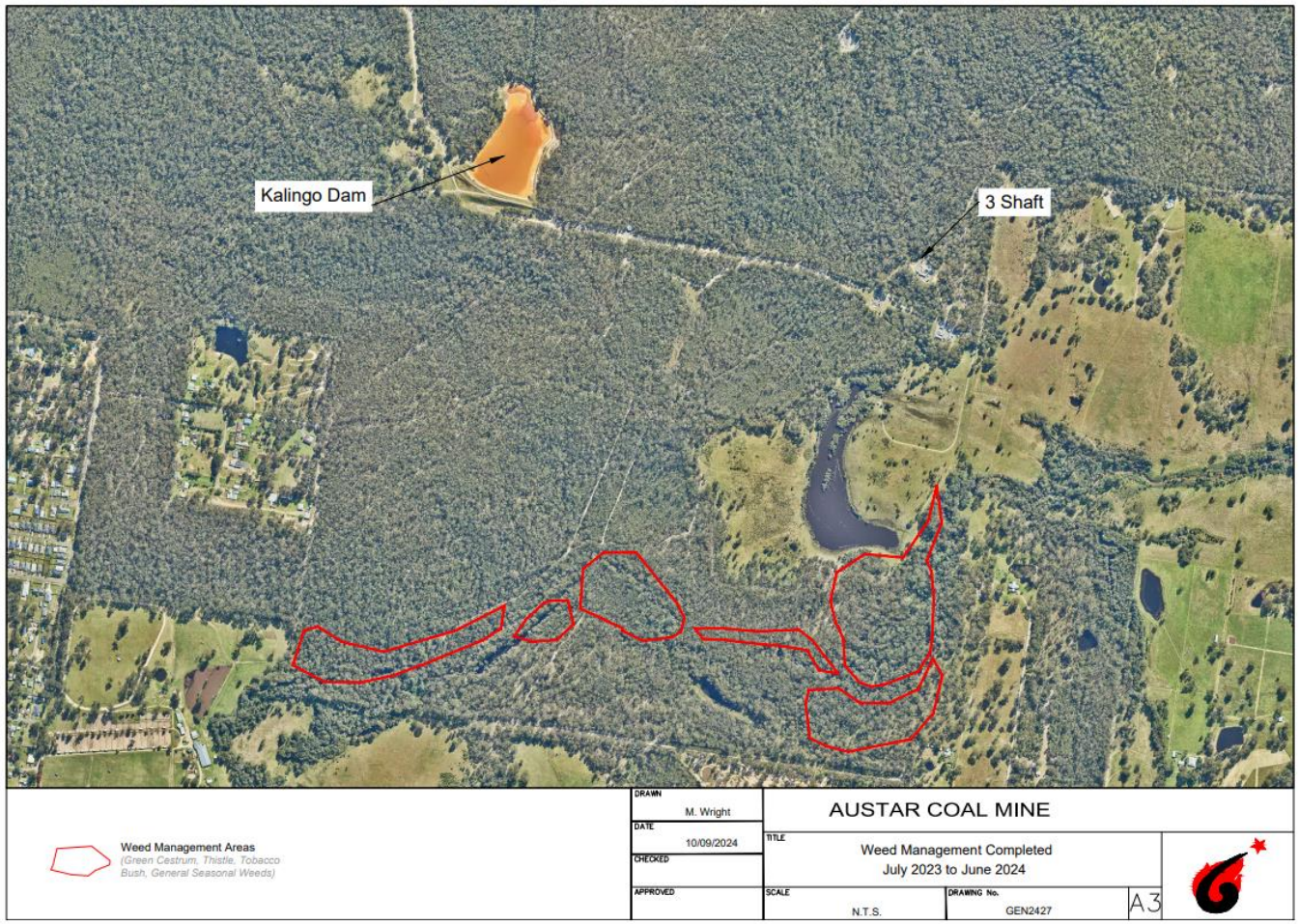


FIGURE 6-6 QUORROBOLONG CREEK WEED TREATMENT COMPLETED JULY 2023 TO JUNE 2024

7 WATER MANAGEMENT

The three main components of the water management system are the:

- Underground mine water management system;
- Pelton CHPP site water management system; and
- Surface water storage and management system.

The Pelton CHPP site water management system historically managed water for use in the CHPP and underground. A Reverse Osmosis (RO) water treatment plant was used to treat water supply for the operations, as well as discharging offsite through a licenced discharge point. The main function of the CHPP site water management system is to manage stormwater runoff and to contain and manage water from prior operational and disturbed areas. The RO Plant has not operated during the reporting period.

As outlined in the SWMP, water is also pumped and stored underground. During the reporting period there was no dewatering of the underground. This allows progressive flooding of the underground during mine closure.

During the reporting period, the SWMP was revised and lodged with the DPHI for approval. The SWMP revision reflects closure progress, including the sealing of the underground, the removal of underground mine water monitory points, and early works plans, including the decommissioning of dams and pumping systems as available. The SWMP was approved by DPHI on 4 June 2024.

7.1 Water Licences

The water licences and works approvals held by Austar are provided in **Table 7-1.**

TABLE 7-1 WATER LICENCES HELD BY AUSTAR

Licence Held	Licence Number	Validity of Licence	Purpose of Licence
Bore Licence Certificate	20BL171361	17 May 2007 - Perpetuity	Monitoring Bore (AQD1077)
Bore Licence Certificate	20BL172524	20 Jul 2010 - Perpetuity	Monitoring Bore (NER1010)
Bore Licence Certificate	20BL172852	7 Jun 2011 - Perpetuity	Monitoring Bore (WBH1, WBH2, WBH3)
Bore Licence Certificate	20BL173843	1 Oct 2014 - Perpetuity	Monitoring Bore (BB1, BB2, BB3)
Bore Licence Certificate	20BL173878	8 Dec 2014 - Perpetuity	Monitoring Bore (MB01)
Bore Licence Certificate	20BL173891	19 Mar 2015 - Perpetuity	Monitoring Bore (MB02)
Water Access Licence	WAL19181	In perpetuity	Unregulated Surface Water Licence
Water Access Licence	WAL41504	In perpetuity	Fractured and Porous Rock Aquifer Licence

7.2 Water Take

Water take for the 2023-2024 reporting period is summarised in **Table 7-2**. Due to no pumping to dewater the underground, the water balance was recorded as zero.

TABLE 7-2 WATER TAKE 2022-2023

Water Licence #	Water sharing plan, source and management zone (as applicable)	Entitlement[1]	Passive take / inflows (ML)	Active pumping (ML)	TOTAL (ML)
WAL19181	Hunter Unregulated and Alluvial Water Sources - Upper Wollombi Water Source - Congewai Creek Management Zone.	10 units	0	0	0
WAL41504	Sydney Basin – North Coast Groundwater Source. North Coast Fractured and Porous Rock Groundwater Sources 2016.	770ML units	0[2]	0	0

1 1 Unit = 1 ML unless restricted through an allocation order.

2 Pumping ceased from water intakes in May 2021, therefore the site water balance is 0.

7.3 Surface Water

7.3.1 Environmental Management

The Austar SWMP has been prepared in accordance with the requirements of DA 29/95, PA 08_0111 and EPL 416, and includes a surface water monitoring program.

EPL 416 authorises two licenced discharge points (LDPs). SW1 is an emergency wet weather discharge point, and SW6 is permitted to discharge 5,000 kilolitres (KL) per day (as an annual average) of treated water from the RO plant (permeate).

Austar has engaged an environmental monitoring specialist to undertake routine surface water sampling and analysis in accordance with the SWMP. Austar's surface water monitoring program includes:

- Five EPL monitoring sites (three creek sites and two discharge points); and
- Four creek monitoring sites (three sites in Quorrobolong Creek and one site in Cony Creek).

The surface water monitoring locations are presented in **Table 7-3** and shown in **Figure 6-3.**

TABLE 7-3 SURFACE WATER MONITORING LOCATIONS AND ANALYTES (SWMP, 2024)

Monitoring Location	Monitoring Frequency and analytes
SW1 (LDP 1 – Emergency Dam Spillway) SW2 (Bellbird Creek Pinch Bridge) SW4 (Bellbird Creek, Downstream Boundary) SW5 (Unnamed Creek, Upstream Boundary) SW6 (LDP6 – 1ML tank discharge to Bellbird Ck)	**Monthly while discharging from SW6** (unless there is no water at the sites): ▪ Quality – SW2, SW4, SW5, SW6 (pH, EC, TSS, Fe) ▪ Volume – SW6 (kL/day) ▪ Qualitative flow estimate – SW2, SW4, SW5 **Twice per year** (unless there is no water at the sites): ▪ Quality – SW2, SW4, SW5, SW6 (EC, pH, TSS, Total Dissolved Solids, redox potential, Major ions and charge balance error, Total Metals)
SW Q1 (Quorrobolong Ck, Sandy Ck Rd) SW Q2 (Quorrobolong Ck Upstream) SW Q3 (Quorrobolong Ck Downstream) SW C1 (Cony Ck)	**Quarterly** (unless there is no water at the sites): ▪ Quality (pH, EC, TSS, Fe) **Twice per year** (unless there is no water at the sites): ▪ Quality (EC, pH, TSS, Total Dissolved Solids, redox potential, Major ions and charge balance error, Total Metals) **Annual** ▪ Visual monitoring of stream health and channel stability (SW Q1, SW Q2 & SW C1 only)

7.3.2 Environmental Performance

Only LDPs SW1 and SW6 have water quality limits. Other locations are monitored for baseline data, or to observe any changes in water quality in the Bellbird South and Stage 3 mining areas.

There were no discharge events from SW1 or SW6 during the reporting period. A maintenance regime has been implemented on the RO plant so water treatment and discharge may recommence if required during closure.

As there was no discharge from SW1 and SW6 during the reporting period no water quality samples were collected from these locations. Water quality samples, although not required under the approved SWMP, were collected up and downstream of the LDP's.

Monitoring results at the up-, mid- and downstream CHPP creek monitoring points (SW5, SW2 and SW4, respectively) are summarised as follows:

- pH measured at individual sites remained relatively constant during the reporting period ranging between pH 5.32 (SW2) to pH 7.38 (SW5) which was similar to the 2022-2023 range of pH 6.91 to pH 7.67, and consistent with the five year data range of 5.21 – 7.67 (**Appendix B**);

- EC ranged between 358 µS/cm (SW2) and 11200 µS/cm (SW5). EC values during the reporting period were generally similar to those of the 2022-2023 reporting periods and indicates some change from the previous three years, which could be attributed to the wetter seasons and the decommissioning of the RO plant, which was the main source of water in Bellbird Creek during the dry years of 2018 – 2020;

- TSS ranged between 2 mg/L (SW2) to 166 mg/L (SW5) for the reporting period. This is a higher variation and maximum than the previous reporting period. This is predominantly due to higher intensity rainfall and greater runoff than experienced in 2012 - 2023; and

- Fe (Iron) ranged between 0.05 mg/L (SW5) and 20.10 mg/L (SW5) which is higher than the 2022-2023 range of 0.13 mg/L (SW2) and 7.62 mg/L (SW4) but comparable with historical data.

Bellbird Creek is ephemeral at sampling location SW5 (upstream boundary to CHPP). Historically, water sampling at SW5 has been somewhat influenced by a potable water leak in the Hunter Water reservoir just upstream of the sample location.

Samples were collected from SW4 during one sampling event out of twelve possible sampling events (July 2023 to June 2024). Sampling did not occur during months when the creek was dry. Twelve monthly sampling events were conducted from SW2 and SW5.

The five-year surface water graphs in **Appendix B** show a difference in water quality data that is predominantly driven by difference in rainfall patterns. 2018 – 2020 were drought years, and water flow in Bellbird Creek was predominantly RO treated water discharged from SW6. The RO plant was turned off in 2021, coinciding with heavier rainfall in 2021 -2022. The water quality of some sites in Bellbird Creek show change in late 2022 and 2023 as the drier weather influences creeks and stagnant water is more common. During the current reporting period, there was a higher than average amount of rainfall, which coincided with the increase in water quality and flow.

Natural fluctuations in water quality in Quorrobolong and Cony Creeks were observed, with sample points generally reporting results within historical ranges. Subsidence in this area was deemed substantially complete in March 2021 and no mining impacts have been recorded or are expected in the future.

For the Quorrobolong and Cony Creek monitoring points (SWQ1, SWQ2, and SWQ3 & SWC1):

- Quorrobolong Creek was generally dry throughout this reporting period. Two samples were collected from SWQ1 and SWQ3. Four samples were collected from SWQ2.

- The sampling location on Cony Creek is in a deep pool, four samples were collected from SWC1 during the reporting period.

- pH ranged between pH 6.38 (SWQ2) and pH 7.72 (SWC1) which is comparable to the 2022-2023 range of pH 6.93 (SWQ2 and SWC1) to pH 7.60 (SWQ1). This generally aligns with results reported in the previous periods;

- EC results ranged between 1120 µS/cm (SWC1) and 3320 µS/cm (SWC1). This is comparable with the 2022-2023 results of 623 µS/cm (SWC1) and 2420 µS/cm (SWQ2) and generally comparable to data from previous reporting periods;

- TSS ranged from <5 mg/L (SWQ1), to 38 mg/L (SWQ2) which is lower than the range reported in 2022-2023 being <5 mg/L to 88 mg/L;

- Iron results ranged from 0.41 mg/L (SWC1) to 5.65 mg/L (SWQ2) during the reporting period. This generally aligns with results reported in the previous reporting period, 2022-2023 ranging from 0.97 mg/L to 5.43 mg/L, and generally consistent with historical results.

All water quality data from 2023-2024 in Quorrobolong and Cony Creeks is within the range of longer-term monitoring shown in the 5-year graphs in **Appendix B**.

7.3.3 CHPP Investigation Drainage Line

During routine inspections of clean water drainage lines in 2017, orange staining/residue was observed in a drainage line at the CHPP (referred to as the Investigation Drainage Line (IDL)). This was reported as an incident to the EPA and has been regularly inspected and monitored since in accordance with EPL conditions U3, E1 and E2.

The IDL is ephemeral and while it had been mainly dry since 2017, during the reporting period there were commonly pools of water throughout.

Condition U3.3 requires the submission of an updated monthly report containing the monitoring results required by Condition U3.2. Condition U3.2 requirements include:

- sampling of surface water in the IDL;
- sampling of Groundwater Bore 1 adjacent to the IDL; and
- photos taken at specific locations along the Investigation Drainage Line.

Reports have been submitted each month to the EPA during the reporting period.

Condition E2 requires that the orange staining / residue within the IDL must be fully contained within the premises at all times. Any discharges to waters of this residue must comply with Condition L1.1 of the EPL which states that the licensee must comply with Section 120 of the *Protection of the Environment Operations Act 1997*. A bunded containment area has been installed upstream of a clean water tributary entering the Investigation Drainage Line to assist in the isolation of orange-stained water. Water captured is pumped from this containment area into the CHPP mine water system. Additionally, water below the IDL can be captured within Doyle Street Dam and pumped back to the mine water system as required.

During the reporting period orange staining was observed in the IDL during all monthly inspections.

Monitoring of the IDL will continue in the next reporting period. Austar is currently undertaking detailed mine closure planning. The ongoing findings of the IDL sampling and inspection program will inform the detailed mine closure technical studies for the CHPP as the source of the orange staining in the IDL is investigated further.

7.3.4 Stream Health and Channel Stability Monitoring

Stream health and Channel Stability monitoring commenced during the current reporting period, August 2023 and June 2024. The monitoring program was commissioned to assess whether any potential changes to flow regimes during mine closure will impact on channel stability and condition. The monitoring program incorporates biannual site inspections of creeks systems immediately downslope of mine closure works, with a report produced following each inspection to characterise the ongoing condition of applicable watercourses. The inspections cover the following watercourses:

- Bellbird Creek;
- Black Creek;
- Congewai Creek; and
- Quorrobolong Creek.

Results for the current reporting period indicate riparian conditions remaining generally steady along each of the creeks during this reporting period. The effects of weed management conducted by Austar during the reporting period around the riparian zone of Bellbird Creek were apparent. Native vegetation regrowth was observed in the areas where weed management had previously been completed. Channel stability remained widely consistent at designated monitoring locations across all creeks where observations were possible.

7.3.5 Kitchener Sediment Dam Discharges Overflow event 6 April 2024

The Kitchener SIS contains infrastructure that is largely in the process of decommissioning, including upcast and downcast ventilation fans (temporarily sealed), services borehole/drop hole (fully sealed), pipelines, powerlines, and electrical substation, as well as vegetated stockpiles that will be used for the rehabilitation of the site. There are three sediment dams on the site designed to catch sediment laden runoff from disturbed areas. Disturbed areas have been partially revegetated to stabilise the site until final rehabilitation is complete.

As outlined in the SWMP, the sediment dams are designed to catch runoff for up to the 90th percentile 5-day rainfall events. Any rainfall event of greater intensity may cause the dams to overflow, with runoff reporting to the headwaters of Black Creek. There was one overflow event over approximately one week during the reporting period, as described below.

Over a five-day period from 2-6 April 2024 the Austar CHPP meteorological station recorded a total of 151.4mm of rainfall; Austar's Kitchener SIS meteorological station recorded a total of 192mm over the same period. This event was greater than the design size for the sediment dams at the Kitchener SIS. Real time monitoring indicates that the Eastern Sediment Dam was at (or over) 100% capacity at approximately 11:13pm on 5 April 2024. Pumping from the Eastern Sediment dam had commenced prior to the dam overtopping and was continuous throughout and after the rain event.

Prior to the commencement of the rainfall event, all sediment dams at the Kitchener SIS were maintained at their lowest levels, with adequate storage for design rainfall events.

Austar enacted the Pollution Incident Response Management Plan (PIRMP) and reported the event to the relevant authorities on 6 April 2024. Water samples were collected for analysis on 6 April 2024 from the East Sediment Dam, Lower Water Storage Dam, Black Creek Upstream SIS, and Black Creek Downstream SIS. Pumping of water from the Eastern Sediment Dam to the Upper Sediment Dam occurred during and after the rainfall event ceased. Pumping of water from the water storage dams to Kalingo Dam occurred during and after the rainfall event. Sampling indicated that given the minor difference in upstream and downstream water quality, there was no environmental consequence or harm to the environment as a result of the overtopping event.

Written incident reports were sent to the EPA and DPHI on 12 April 2024 with no further actions required to date.

7.4 Ground Water

7.4.1 Environmental Management

The SWMP has been prepared in accordance with the requirements of development consent DA29/95 and Project Approval PA08_0111 and includes a groundwater monitoring program.

Quarterly groundwater monitoring and analysis is undertaken in accordance with the SWMP, utilising nine piezometers (MB01, MB02, MB03A, MB04, AQD1073a, NER1010, WBH1, WBH2 and WBH3) to assess groundwater levels in the Bellbird South, Stage 2 and Stage 3 mining areas. The locations of these monitoring sites are presented in **Figure 6-3.**

Groundwater level data from Vibrating Wire Piezometer EX01H is downloaded quarterly. Groundwater resources in the vicinity of Austar are detailed in the SWMP.

7.4.2 Environmental Performance

Appendix C illustrates the groundwater monitoring results at Austar during the reporting period and the last five years for comparison. The graphs contained in **Appendix C** illustrate groundwater elevation, rainfall, pH, and conductivity. Trends from the monitoring program are summarised below:

7.4.2.1 Groundwater Level

- Groundwater elevation in Bellbird South sandstone bore NER1010 remained overall stable between July 2023 and June 2024, coincident with decreased regional rainfall and decreasing cumulative rainfall departure (CRD). Groundwater elevation in NER1010 responds rapidly to significant (i.e., more than 20 mm) rain events. Rapid increases in groundwater elevation were recorded following heavy rainfall throughout the year. Although the total depth of the bore is 102 m, the screened interval spans 82 m in length (20 metres below ground level (mbgl) - 102 mbgl). It is likely that the shallow depth of the upper part of the screen is allowing rainfall recharge to infiltrate and mix with deeper groundwater (see Figure app C-1).
- Groundwater elevations in Stage 2 and Bellbird South alluvial bores increased during the year (Q3 2023 - Q2 2024) (see Figure app C-2). Pressure Transducer (PT) data indicate groundwater elevations increased rapidly following rainfall, decreasing shortly thereafter.
- Groundwater elevation in Stage 3 monitoring bore slightly MB01 increased during the reporting period (see Figure app C-3).

- Groundwater elevation in Stage 3 monitoring bore MB02 increased overall during the recent monitoring period (see Figure app C-4).
- Piezometric pressure (head) at VWP sensor no.1 (which is above predicted height of connected subsidence cracking) slightly decreased during the water year (Q3 2023 – Q2 2024). Pressure head decreased from 61.2 metres Australian height datum (mAHD) to 60.2 mAHD during the reporting period. VWP sensors no.2 (which is within predicted height of connected subsidence cracking) and no.3 (which is below the predicted height of connected subsidence cracking) also decreased throughout the water year (see Figure app C-5).
- Piezometric head at VWP sensor no.4 (located at the coal seam roof, below predicted height of connected subsidence cracking) increased throughout the water year (see Figure app C-5).
- Piezometric head at VWP sensor no.5 (seam centre) gradually decreased throughout the water year.
- Piezometric pressure at VWP sensor no.6 (seam floor) gradually increased throughout the water year (-289 mAHD on 1 July 2023 to -286 on 11 June 2024) (see Figure app C-6).
- Whilst sensors no. 5 and no. 6 show that the coal seam and its surrounding units have been depressurised, these units appear to be slowly recovering. The head in sensor no.6 is higher than the head in sensor no.5 indicating that the unit underlying the coal seam has not been depressurised to the extent of the coal seam, which is to be expected of a unit that has not been extracted.

Water Quality

- Groundwater pH in Stage 2 and Bellbird South alluvial bores (see Figure app C-7) were stable during the 2023-2024 monitoring period. Observed fluctuations in groundwater pH throughout the year were attributed to natural variation.
- Stage 3 monitoring bores MB01 and MB02 recorded generally stable groundwater pH during throughout the year. Groundwater pH at MB01 recorded very little variation in pH compared to MB02 (see Figure app C-8).
- Groundwater EC in Stage 2 and Bellbird south alluvium was variable. MB04, NER1010, and WBH3 have recorded historical lows in EC between Q3 2021 and Q1 2023, associated with significant rainfall recharge. NER1010 groundwater quality is not likely representative of the screened formation (Branxton Formation), but instead is comprised of a mixture of surface and deeper groundwater resulting from the extended screen interval on this bore (see Figure app C-11).
- Groundwater EC in Stage 3 monitoring bore MB01 remained stable in the reporting period. Monitoring bore MB02 EC decreased during the reporting period (see Figure app C-10).

There are no new trends in groundwater quality or water levels that indicate impact conditions that require enactment of the SWMP Response Plan triggers. Monitoring indicates that mining impacts are within EA predictions, and there is no evidence of impacts outside of established predictions.

Trends for five-year monitoring period are summarised below:

- Groundwater elevations have generally reflected the CRD over the last five years.
- Groundwater recharge at MB02 following airlift development can be seen to be very slow. Groundwater elevation took from October 2019 to April 2021 to stabilise. (see Figure app C-14).
- Monitoring results between July 2019 and June 2024 are consistent with predicted impacts.
- Stage 2 and Bellbird South alluvial pH values have generally remained stable during the five-year period to June 2024 (see Figure app C-17).

Maintenance Works

- The headworks at MB03a were reported to be damaged during the previous reporting period, with a new PT and headworks installed during this reporting period.
- Monitoring bores will continue to be inspected throughout the next reporting period. The bore network is currently considered effective with no further maintenance recommended. Recommendations will continue to be addressed as required in future reporting periods.

8 REHABILITATION

Rehabilitation and land management activities were undertaken in accordance with the Austar Rehabilitation Management Plan (September 2023) (RMP) and the Austar Coal Mine Forward Program (1 July 2023 to 30 June 2026) (FP).

Since Austar is a closed mine, there were no mining operations undertaken during the reporting period. Consistent with the Forward Program, rehabilitation activities during the reporting period focused on the maintenance of existing rehabilitation areas and the ongoing preparation of specialist studies to address rehabilitation and closure knowledge gaps and to inform closure execution.

Rehabilitation maintenance activities undertaken included ongoing weed management of the Aberdare Extended Emplacement Area (EEA), Bellbird Areas 12 and 13, the Cessnock No. 1 Colliery/Kalingo Infrastructure Area, and Kitchener SIS. An endemic seed collection program was commenced during the reporting period to establish a seed storage bank for future rehabilitation activities. The focus of the endemic seed collection program has been within PCT 3433 – Hunter Coast Foothills Spotted Gum-Ironbark Grassy Forest and PCT 3444 – Lower Hunter Spotted Gum-Ironbark Forest communities which are the main vegetation communities within Austar. All seed collection, cleaning and storage is carried out in accordance with Flora bank Guidelines and Model Code of Practice.

Activities were also undertaken to restrict unauthorised access into the Aberdare EEA and Bellbird Areas 12 and 13, through the installation of additional concrete barricades and gates to prevent vehicle access. Annual rehabilitation monitoring was undertaken by consulting ecologists (refer **Section 8.3**) and routine inspections by Austar environmental personnel.

Consistent with the rehabilitation schedule in the Forward Program, no new areas of rehabilitation were commenced and there were no areas of rehabilitation relinquished or signed off by the Resources Regulator during the reporting period.

8.1 Rehabilitation Maintenance and Management

During the reporting period rehabilitation maintenance and management activities were undertaken based on the recommendations of the 2023 Rehabilitation Monitoring Program as follows:

- Ongoing weed management of the rehabilitation areas at Kalingo East, Kalingo West, Aberdare Extended EEA, Bellbird Areas 12 and 13; and
- Installation of concrete blocks around multiple areas where unauthorised access has been made by vehicles into the Aberdare EEA and Bellbird rehabilitation areas.

Additionally, grassland areas have been slashed and dumped rubbish removed from the vicinity of Bellbird Areas 12 and 13, and the Aberdare Extended EEA.

Recommendations to remediate rehabilitation damage caused by motorbike tracks was not undertaken during the period, due to the constant difficulty in excluding motorbikes from the area. Options such as additional fencing and providing some designated vehicle tracks through the rehabilitation area are being considered as ways to minimise ongoing damage.

In addition to the annual monitoring program, routine site inspections are conducted monthly by Austar personnel. If issues are identified during inspections, corrective actions are implemented as required.

8.2 Exploration Borehole Rehabilitation

There were no surface exploration works undertaken during this reporting period. All previous exploration boreholes drilled by Austar in EL6598 have been rehabilitated.

Austar continued due diligence works on historic exploration boreholes drilled in Austar mining leases during the reporting period. This was predominantly a desktop exercise supplemented with site inspections to understand the status of exploration boreholes drilled prior to 2006 and to scope the work required to complete rehabilitation.

Austar has identified a total of 373 exploration boreholes of which rehabilitation is required or has in the past been completed and requires landholder sign off. Austar has lodged rehabilitation completion forms for 135 boreholes. 43 boreholes (lodged prior to this reporting period) have been approved, and forms for 104 boreholes were lodged in this reporting period which are pending approval.

During the next reporting period, Austar will commence the rehabilitation of the Exploration Boreholes where required.

8.3 Rehabilitation Monitoring

In accordance with the Austar RMP, rehabilitated areas are to be monitored on an annual basis until they are self-sustaining and no longer require management. Ecological monitoring was undertaken across all Austar rehabilitation areas and associated reference sites during April 2024.

The rehabilitation monitoring program is undertaken annually, with results compared to the completion criteria in the RMP and recommendations provided to progress towards the completion criteria.

The main factors identified during monitoring as key to progression of all monitoring locations towards completion criteria is a reduction in weed cover and a reduction in unauthorised access into the area, with activities such as rubbish dumping and motorbike riding being commonplace. Recommendations have also been made with respect to the probability of needing to undertake supplementary planting, but this will depend on final land use determinations that will be made during detailed mine closure planning.

Results of the monitoring were compared to Performance Criteria for the Ecosystem and Land use Establishment and Sustainability phases (see **Table 8-1**) and the trigger action response plan (TARP) (**Table 8-2**) from the RMP.

Recommendations arising from the 2024 Annual Rehabilitation Monitoring Report are discussed below, along with proposed actions to address the recommendations:

- **Weed management** – weeds require management and control in all rehabilitation areas. Austar has a site wide Annual Weed Action Plan in place incorporating the rehabilitation areas. Weed management works are undertaken by a specialist contractor on a regular basis throughout the year. Weed management in the rehabilitation areas is ongoing, with weed works focusing on recommended actions and areas, including rehabilitation areas and creek lines across site during the reporting period.

- **Supplementary plantings** – should be taken in any areas where weed management is undertaken, and areas are subsequently left unvegetated. Dependent upon decisions on final land use vegetation types, infill planting of target tree and shrub species may be required in some areas. Infill planting is not expected to be required in the short term, as the main weed management works are being undertaken in grassland/pasture areas.
- **Alteration of Seed Mixes** – Umwelt recommends that Rhodes grass *(Chloris gayana)* and kikuyu (*Cenchrus clandestinus*) be removed from any subsequent seeding mixes. Prior to extensive rehabilitation occurring, the current seed mix will be reviewed and updated with the removal of the nominated grass species.
- **Remediation of dirt bike paths** - Dirt-bike paths are quite deep in the Aberdare REA, and remediation of these tracks is recommended so that the subsurface is not exposed. Supplementary planting of these areas may be required following remediation, however given the narrow width, it is likely that ground cover would naturally re-establish along these paths over time. Ongoing measures have been made to restrict access during the reporting period, and these measures will continue to be implemented across the Aberdare REA.
- **Prevention of unauthorised access** – Evidence of unauthorised access (such as 4WD tracks, motorbike riders and push bike riders) were identified in the Bellbird Areas 12 & Area 13 and Aberdare REA. Given proximity of these areas to urban areas, such aspects will be difficult to control. Measures are in place to strengthen site security and exclude trespassers through the installation of concrete barriers, maintenance of fencing and ongoing security patrols.
- **Rubbish removal** – In Kalingo East, various heritage buildings and structures, and loose surface debris are present throughout. Austar regularly removes dumped rubbish from rehabilitation areas when encountered. Further clean-up efforts will be undertaken after heritage assessments have been completed during the closure planning process.

Performance criteria and monitoring requirements and final land use vegetation types for the site are being reviewed and refined as part of the detailed mine closure planning work currently being undertaken.

TABLE 8-1 RMP PERFORMANCE CRITERIA ASSESSMENT

	Area 12	Area 13	Aberdare REA	Aberdare REA North	Kalingo Site 1	Kalingo Site 2
All Phases						
Minor rilling only (less than 30 cm by 30 cm), within areas that landform works have been undertaken	✓	✓	✓	✓	✓	✓
Ecosystem and Land-Use Establishment Phase						
Pasture						
Ground cover comparable to pre-mining environment is re-established following remediation activities.	**Unable to be determined**					
Remediation areas revegetated with species selected based on the existing land use (i.e., pasture) and surrounding vegetation	X	X	X	✓	X	X
Ecosystem function is rehabilitated to that existing pre-mining and consistent with the surrounding landform	✓	✓	✓	✓	✓	✓
Forest						
Development of vegetative ecosystems as per the final land use	X	X			X	X
Areas are seeded with target species (Appendix 2) immediately following growth medium establishment works (if required)	X	X			X	X
For forest areas, targets (within 24 months of sowing during ecosystem establishment): - 10–60% canopy.	X	X			X	X
5–60% understorey.	X	X			X	X
20–80% groundcover	X	X			✓	✓
Weed audits conducted on a regular basis. Weeds identified on-site are actively controlled and/or removed using appropriate weed control techniques.	✓	X			✓	✓
Weeds are absent from canopy and understorey	✓	X			✓	✓
Weeds comprise no more than 20% of groundcover vegetation.	X	X			X	✓

	Area 12	Area 13	Aberdare REA	Aberdare REA North	Kalingo Site 1	Kalingo Site 2
Rehabilitation areas provide a range of structural habitats similar to pre-mining fauna communities.	X	X			X	X
Monitoring data provides evidence of a range of structural habitats and habitats similar to pre-mining fauna communities are evident in rehabilitation areas.	X	X			X	X
Ecosystem and Land-Use Sustainability Phase						
Pasture						
Revegetation is progressing towards a sustainable ecosystem and only requires maintenance that is consistent with the intended final land use	X	X	✓	X	X	X
For pasture areas, groundcover targets: - 0–20% canopy	✓	✓	✓	✓	✓	✓
- 70–100% groundcover	✓	✓	✓	X	X	
Weeds identified on-site are actively controlled and/or removed using appropriate weed control techniques to meet the final land use criteria.	✓	✓	✓	✓	✓	✓
Weeds are absent from canopy and understorey	✓	✓	✓	✓	✓	✓
Weeds comprise no more than 20% of ground cover vegetation	X	X	X	X	✓	✓
Forest						
Native plant species compatible with the surrounding environment are used in revegetation	X	X			X	X
Indicative Vegetation Composition Criteria (i.e. groundcover targets):	X	X			X	X
- 15–50% canopy.	X	X			X	X
- 5–60% understorey.	X	X			X	X
- 20–90% groundcover	✓	X			✓	X
Rehabilitation monitoring indicates sustainability	X	X			X	✓
Rehabilitation monitoring is comparable or trending towards analogue sites (%)	✓	X			✓	✓

	Area 12	Area 13	Aberdare REA	Aberdare REA North	Kalingo Site 1	Kalingo Site 2
Weeds identified on-site are actively controlled and/or removed using appropriate weed control techniques.	✓	✓			✓	✓
No increase in weed population and monitoring indicates the absence of or decline in weed species	X	X			✓	✓
Revegetation is progressing towards a sustainable ecosystem and only requires maintenance that is consistent with the intended final land use.	X	X			X	X
Evidence indicating reproduction (seeding, flowering, or second-generation plants) present.	✓	✓			✓	✓
Signs of recruitment in all strata. Or evidence to demonstrate that the ecosystem will progress towards recruitment.	✓	✓			✓	✓
For forest areas, more than 75% of trees are healthy and growing.	✓	✓			✓	✓
Weeds are absent from canopy and understorey.	✓	X			✓	✓
Weeds comprise no more than 20% of ground cover vegetation.	X	X			✓	✓

TABLE 8-2 COMPARISON OF MONITORING RESULTS TO TRIGGER, ACTION, RESPONSE PLAN

Trigger (RMP Extract)	Comment	Remediation Action
Hazardous Materials (asbestos) inappropriately removed during demolition of heritage structures, leading to soil contamination and/or health impact.	No hazardous materials identified.	Not required
Landform not in accordance with Resources Regulator requirements (i.e., not within criteria identified including capping material depth).	Landform is generally in accordance with final landform.	Not required
Erosion / poor water quality from rehabilitation areas (in excess of target criteria identified).	No erosion identified. However, remediation of degradation caused by dirt bike tracks in Aberdare REA required before depth reaches capping. Soil was also disturbed by borehole machinery within Kalingo Site 1. Water quality not assessed as part of this program of work.	Remediation of dirt bike tracks in Aberdare REA
Lack of vegetation establishment or dieback of rehabilitated areas resulting in inability to meet vegetation criteria targets specified.	No substantial dieback identified.	Not required
Weed infestation threatening rehabilitation success (weeds in excess of identified criteria level).	Weed infestation threatens each of the REAs and Kalingo.	Continue to Implement weed management actions as required. Re-seed following weed management utilising appropriate species as per target final land use where necessary.
Significant damage to rehabilitation areas by feral animals, resulting in inability to meet vegetation criteria targets specified.	No significant damage by feral animals identified.	Not required
Acid leachate identified from rehabilitated reject emplacement areas, potentially resulting in offsite water impact and/or dieback of revegetation, resulting in inability to meet vegetation criteria targets specified.	No evidence of acid leachate identified.	Not required
Spontaneous combustion of rehabilitation area	No evidence of spontaneous combustion observed.	Not required

8.4 Rehabilitation Trials and Research

Austar is currently in the Feasibility Study (FS) stage of mine closure, undertaking numerous technical studies and site investigations to address closure knowledge gaps**.** Due to a projected deficit of topsoil material available for rehabilitation closure activities, three trial plots (plots 1, 2 and 3) were constructed during the reporting period (November 2023) at the Austar CHPP West Pit Stockpile Area to assess the suitability of compost material for use as a primary growth medium in lieu of topsoil. The rehabilitation trial is designed to examine the following factors:

- The compatibility of the compost with key species of the main target vegetation community;
- The potential weed load of the compost material;
- The minimum thickness of the compost material required to obtain native species germination and sustain early growth and development.

A rehabilitation specialist is engaged by Austar to undertake quarterly rehabilitation monitoring and reporting to track the progress of the three trial plots. This monitoring will continue throughout the next reporting period.

Early-stage observations suggest that overall germination and growth of representative flora species of the target vegetation community has been successful. Groundcover, particularly couch, despite the low application rate is extensive in trial plots 2 and 3. The above average rainfall conditions have assisted with the persistence and dominance of the ground cover species.

Native tree and shrub germination is observed to be more successful in trial plot 1. However, the growth rate of the native plants, both Acacia and Eucalypts is less compared with trial plots 2 and 3. This is due to the lack of nutrients present with no compost used in trial plot 1. It is expected to see in the long term, that trial plot 1 will have overall higher success with native species growth due to lack of nutrients resulting in less groundcover competition, particularly from couch.

8.5 Rehabilitation Summary

During the reporting period rehabilitation was managed generally in accordance with the RMP. Mining and rehabilitation status is presented in **Table 8-3** and is consistent with the Forward Plan and Annual Rehabilitation Report**.** In accordance with the Austar RMP and FP there were no areas of land where active disturbance or rehabilitation preparation occurred during the reporting period. Areas documented for the next reporting period are based on the areas detailed in the RMP and Forward Program.

The current rehabilitation and disturbance footprint at Austar is presented in **Plan 1A** as reproduced from the RMP.

TABLE 8-3 REHABILITATION SUMMARY

Mine Area Type	Previous Reporting Period (ha)	This Reporting Period (ha)	Next Reporting Period (ha)
	2022-23	**2023-24**	**2024-25**
Total mine footprint (A)	210.3	211.1	211.1
Total active disturbance (B)	154.3	149.8	146.5

Mine Area Type	Previous Reporting Period (ha)	This Reporting Period (ha)	Next Reporting Period (ha)
Land being prepared for rehabilitation (C)	18.2	23.6	25.1
Land under active rehabilitation (D & E)	37.8	37.8	37.8
Completed rehabilitation (F)	0	0	0

Total mine footprint *includes all areas within a mining lease that either have at some point in time or continue to pose a rehabilitation liability due to surface disturbance activities. The total disturbance footprint is the sum of the total active disturbance, decommissioning, landform establishment, growth medium development, ecosystem and land use establishment, ecosystem and land use development and rehabilitation completion. Underground mining operations should not include the footprint of underground mining areas/subsidence management areas in the total disturbance footprint.*
Total active disturbance *includes on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).*
Land being prepared for rehabilitation *– Includes on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).*
Land under active rehabilitation *- Includes the sum of all disturbed land within a mining lease that have commenced any, or all, of the following phases of rehabilitation – decommissioning, landform establishment and growth medium development.*
Completed rehabilitation *– The final phase of rehabilitation when a rehabilitation area has achieved the approved rehabilitation objectives and rehabilitation completion criteria for the final land use. Rehabilitation areas may be classified as complete when the NSW Resources Regulator has determined in writing that the relevant rehabilitation obligations have been fulfilled following submission of Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate application by the lease holder.* [Exert from RMP]

8.6 Rehabilitation Actions for the Next Reporting Period

Rehabilitation activities in the next reporting period are as detailed in the *Austar Coal Mine Forward Program - Friday 1 July 2024 to Monday 30 June 2027.*

Based on the Forward Program, the following actions are proposed for the 2024-25 reporting period:

- Progress the mine closure planning strategy, and continue Feasibility Study technical studies as documented in the RMP;
- Disconnection, decommissioning and demolition of some items of surface equipment;
- Decommissioning of Kalingo Dam; and
- Maintain existing rehabilitated areas at Aberdare Extended Emplacement Area, Bellbird Areas 12 and 13 and Cessnock No.1/Kalingo Colliery.

9 COMMUNITY RELATIONS

Austar is committed to minimising the impacts of its activities and is an active participant and contributor to community projects that benefit local people.

9.1 Community Support Program

During the reporting period, Austar supported several organisations in the local Cessnock area, including:

- Kiray Putjung NAIDOC week
- Hunter Wildlife Rescue
- Kitchener Public School
- Cessnock District Netball Association

While no longer operating, Austar is still a part of the Cessnock community and will continue to deliver its annual Community Support Program.

9.2 Community Sponsorship

In addition to the Community Support Program, Austar sponsors local community initiatives. In the 2023-2024 reporting year, the long-term sponsorship of the Cessnock Rugby League Football Club and the Cessnock Council Mayoral scholarship program continued.

9.3 Community Liaison

Austar continues to maintain close relationships with neighbouring properties and nearby communities as part of normal business. This is mainly done through individual contacts with neighbours, and the Community Consultative Committee (CCC), as described below.

9.3.1 Community Consultative Committee

The CCC continued to operate during the reporting period. The CCC is conducted generally in accordance with the DPHI's Community Consultative Committee Guideline (January 2019). CCC meetings are currently held every six months. Current members of the CCC are listed in **Table 9-1**. During the reporting period Austar held two CCC meetings, which occurred on the 20 September 2023; and 20 March 2024.

Austar coordinates these meetings and provides information on mine closure planning progress, community programs and environmental performance. The annual review of the CCC and meeting minutes are located on the Austar coal website: http://www.austarcoalmine.com.au.

The major discussion points from the Austar meetings in 2023-2024 were:

- Closure planning, exploration borehole rehabilitation, mine sealing plans, management of sink holes and trespassers during closure.
- Environmental monitoring, results, and incidents;
- Community Support Program.

TABLE 9-1 AUSTAR COMMUNITY CONSULTATIVE COMMITTEE (CCC) DURING THE REPORTING PERIOD

Organisation/Representative	Name
Independent Chairperson	Ms Margaret MacDonald-Hill
Cessnock Council Representative	Councillor John Moores Councillor Jay Suvaal
Community Representatives	Mr Alan Smith Ms Ashlee Baker Mr John Rayner Mr Peter Sturrock Chief Inspector Justin Cornes
Company Representatives	Mr William Farnworth Mr Craig Reiss Ms Carly McCormack Ms Julie McNaughton Ms Maddison Stojcevski

9.3.2 Resident Consultation

During the reporting period, Austar consulted with individual residents who live in areas potentially affected by Austar's operations as required. This consultation was often conducted informally, in a manner that allowed the residents to openly discuss issues of importance to them.

During the next reporting period, there will be further communication with the community regarding closure activities and the potential impacts to persons and/or property as required, including the notification of residents via letter regarding demolition.

9.4 Community Complaints

Austar's Environmental Management Strategy (EMS) includes a procedure for receiving, investigating, responding, and reporting complaints received from the community. Austar maintains a 24-hour-a-day, 7 days a week, free call number 1800 701 986 to receive environmental complaints and other enquiries.

No community complaints were received during the reporting period.

10 INDEPENDENT ENVIRONMENTAL AUDIT

The most recent Independent Environmental Audit was conducted by RPS in October and November 2023.

There were four actions agreed upon by auditors and Austar personnel, all of which have been closed out. These actions are described in **Table 10-1**. The Independent Audit report can be found on the Austar website. The next Independent Environmental Audit is scheduled to be undertaken during Q4 2026.

TABLE 10-1 2023 INDEPENDENT ENVIRONMENTAL AUDIT

Compliance Requirement	Independent Audit Recommendation	Austar Action	
Stream health and channel stability monitoring	Recommend that Creek stability monitoring requirements for Black Creek are included in the next version of the SWMP. Updates to monitoring requirements for alluvial aquifers are included in the GWMP.	Creek stability and stream health for Black Creek will be included in the next revision of the Site Water Management Plan submitted to DPHI.	Completed – SWMP was updated and approved on the 4th of June 2024, with Black Creek added to section 8.1.4.5 of the SWMP.
The site must have a site water balance.	Recommended that the site prepare closure water balance and include in relevant documentation. The applicant advised this is in progress.	The water balance in the SWMP will be updated as final landform designs are developed and findings from closure studies become available. The closure water balance details will be included in the closure site water management plan.	Completed – SWMP was updated and approved on the 4th of June 2024. Details of the current water balance and plans for the closure water balance were included (Section 6.1).
Surface water monitoring program must include surface water assessment criteria.	Recommended that evidence/a statement of why monitoring the impact of subsidence to farms dams is no longer necessary is included in the next revision of the site water management plan.	Austar will update the SWMP to include surface water assessment criteria terminology, and to include the reasons farm dams are not monitored for subsidence impacts during closure.	Completed – SWMP was updated and approved on the 4th of June 2024. See section 8.1.4.6 for information on Farm Dam monitoring.
Requirement for a Groundwater Monitoring Program – including groundwater impact assessment criteria.	Recommend that specific wording relating to 'ground water impact assessment criteria' (i.e. trigger values based on historic data or ANZECC water quality guidelines where historic data isn't available) is included in the next revision of the site water management plan.	The current SWMP uses 'baseline data' as the wording however in the next review of the management plan, 'groundwater assessment criteria' terminology could be adopted.	Completed – SWMP was updated and approved on the 4th of June 2024. Terminology has been changed throughout, particularly in Section 5 of the SWMP.

11 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

During the reporting period, there was one incident reported to the EPA and DPHI. This is described in **Table 11-1**.

TABLE 11-1 INCIDENT REPORTS 2023-2024

Incident No.	Date	Incident summary	Description
1	6 April 2024	Kitchener SIS Unlicenced Discharge	The Eastern Sediment Dam overflowed following very heavy rainfall between 2 and 6 April 2024. The PIRMP process was triggered, and the incident reported to relevant regulators. Water monitoring was undertaken on the 6 April 2024, with results showing very little difference in up and down stream quality indicating no environmental consequences or harm to the environment. No corrective or preventative actions were identified from this incident.

12 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

During the reporting period, the focus at Austar has been completing the PFS and commencing the FS as outlined in the Forward Program three-year forecast.

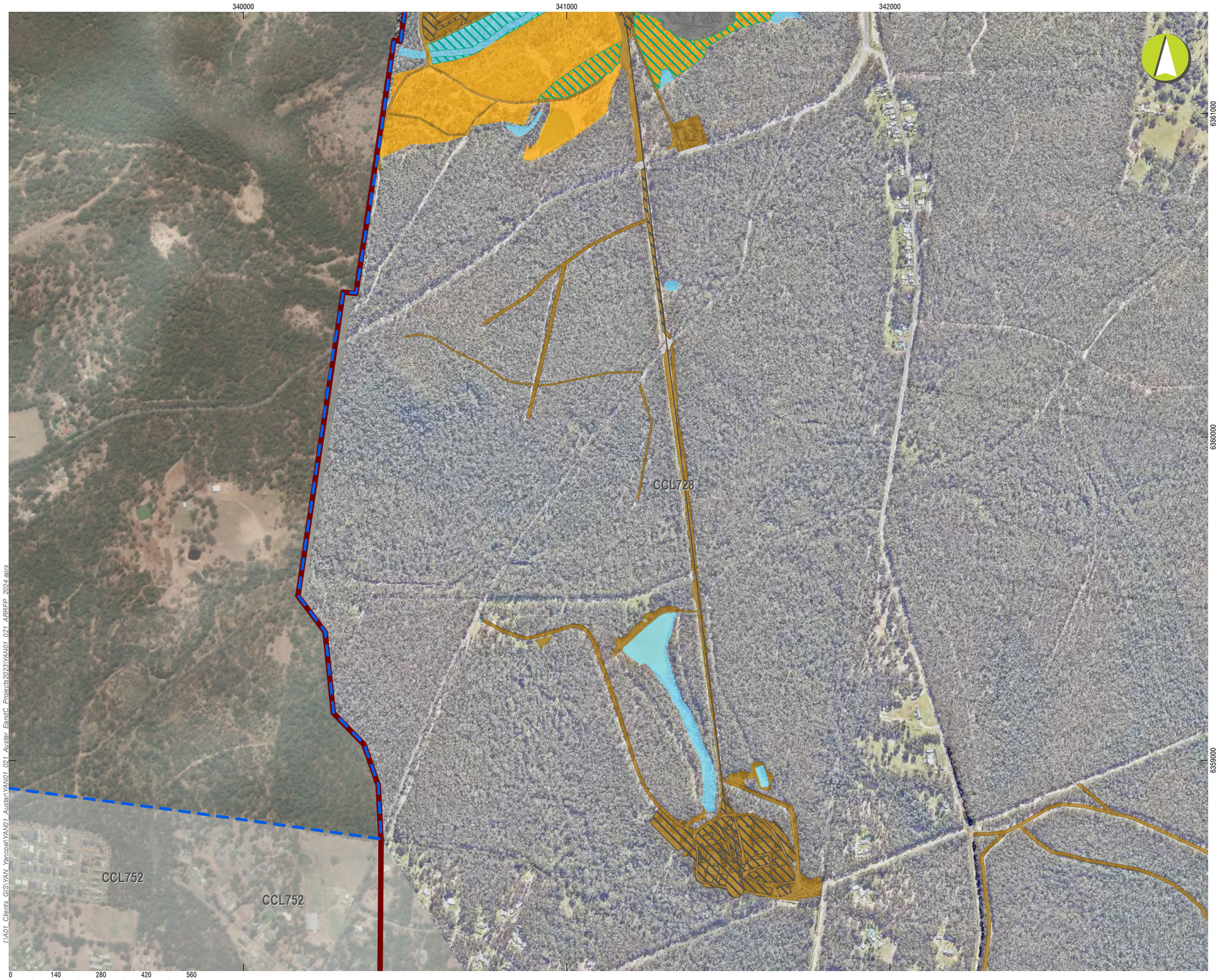
The focus in the next reporting period will be to progress the FS and planned early works including demolition, commencing at closure management area CMA2, then CMA5, CMA1 and CMA2.

Austar plans to carry out the activities in **Table 12-1** during the 2024 - 2025 reporting period.

TABLE 12-1 PROPOSED ACTIVITIES FOR 2024-2025 REPORTING PERIOD

	Activities Proposed in the 2024-25 Reporting Period
1	Progress the mine closure planning strategy as documented **Section 4.1**
3	Continue to maintain existing rehabilitated areas at Aberdare Extended Emplacement Area, Bellbird Areas 12 and 13 and Cessnock No.1/Kalingo Colliery.
4	Demolition of surface equipment at CMA's 4, 5, 1 and 2.

Plans



LEGEND

- Project Approval Boundary
- Colliery Holding Boundary
- Austar Mine Plan

Current Authorisations

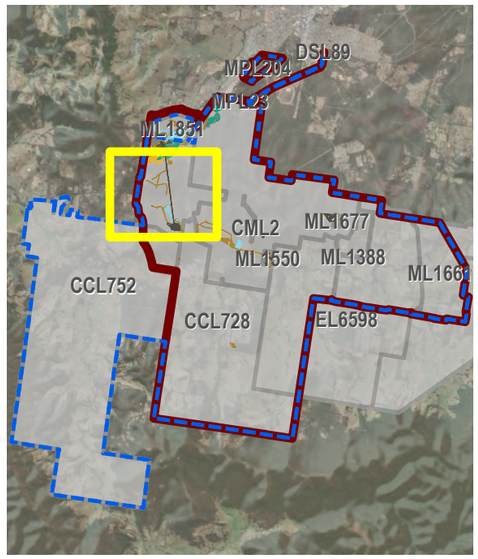
- Coal - Current Titles

Rehabilitation Phase

- Decommissioning
- Ecosystem and Land Use Establishment

Mining Domain Type

- Domain 1: Infrastructure Area
- Domain 2: Tailings Storage Facility
- Domain 3: Water Management Area
- Domain 4: Overburden Emplacement Area



Austar Coal ARRFP 2024

CMA 1 - Austar Pit Top Facilities

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	Austar Coal Mine ARRFP
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx | xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	11/09/2024

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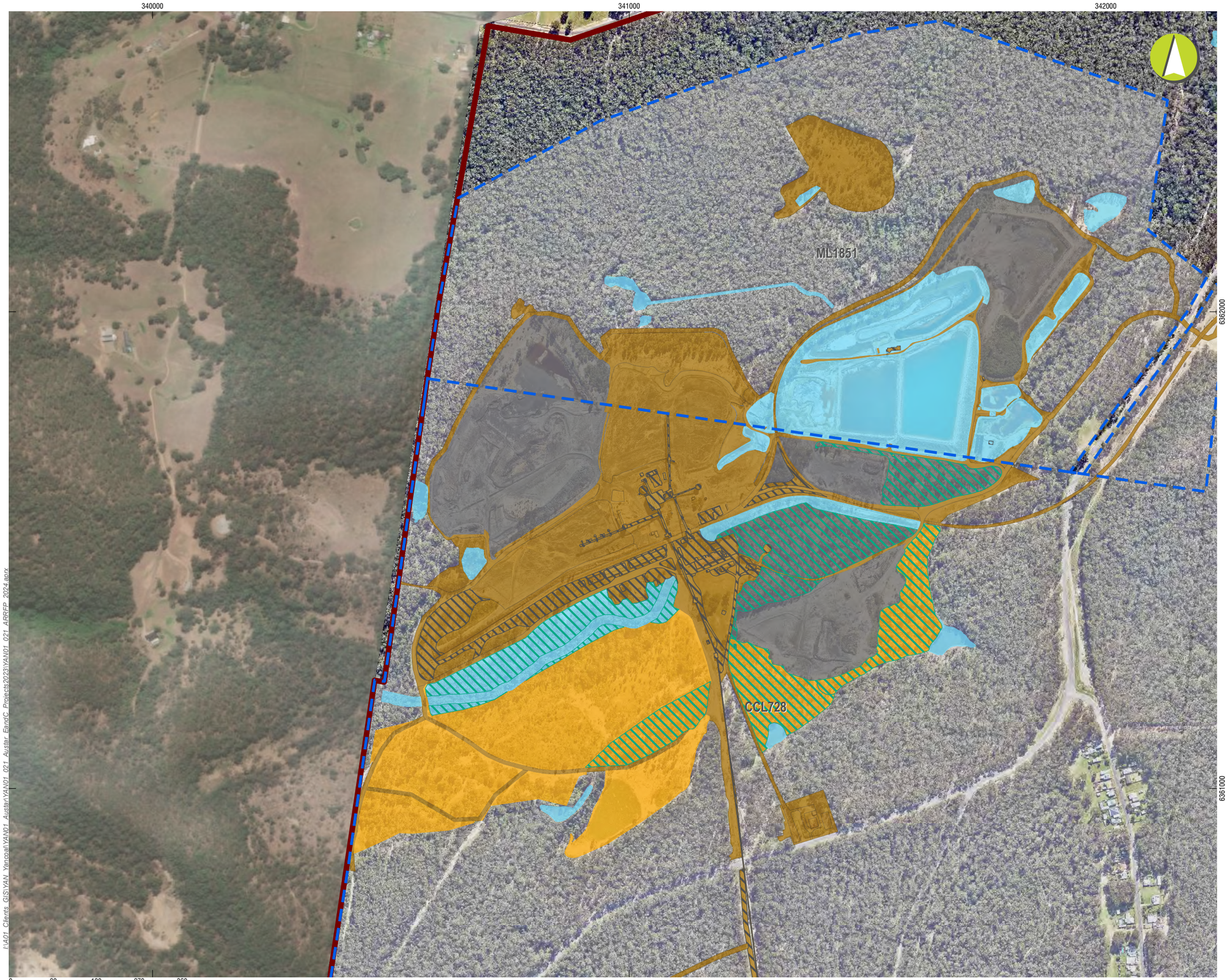


LEGEND

- Project Approval Boundary
- Colliery Holding Boundary

Current Authorisations

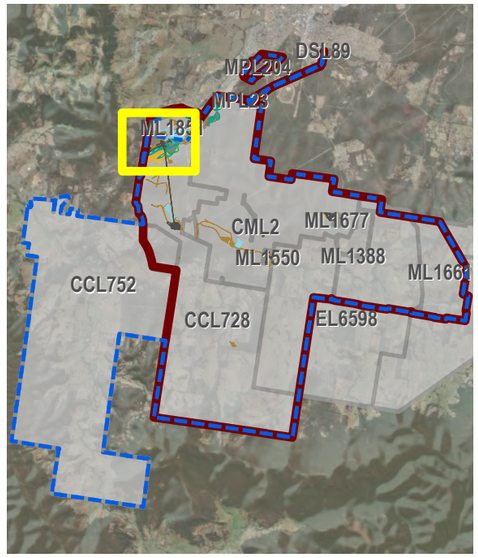
- Coal - Current Titles

Rehabilitation Phase

- Decommissioning
- Ecosystem and Land Use Establishment

Mining Domain Type

- Domain 1: Infrastructure Area
- Domain 2: Tailings Storage Facility
- Domain 3: Water Management Area
- Domain 4: Overburden Emplacement Area



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Austar Coal ARRFP 2024

CMA 2 - Pelton CHPP - Inset 1

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	Austar Coal Mine ARRFP
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx | xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	11/09/2024

LEGEND

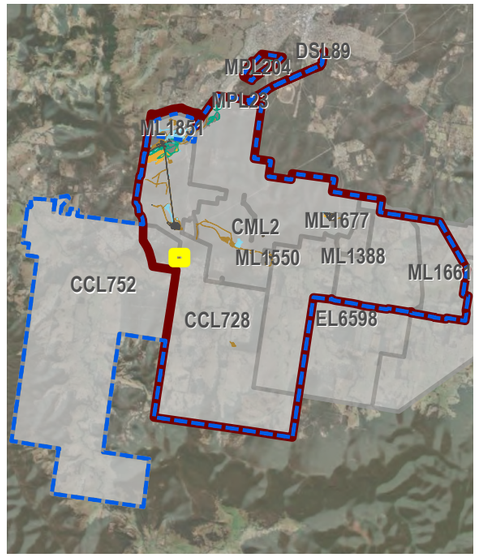
- Project Approval Boundary
- Colliery Holding Boundary
- Austar Mine Plan

Current Authorisations

- Coal - Current Titles

Mining Domain Type

- Domain 1: Infrastructure Area



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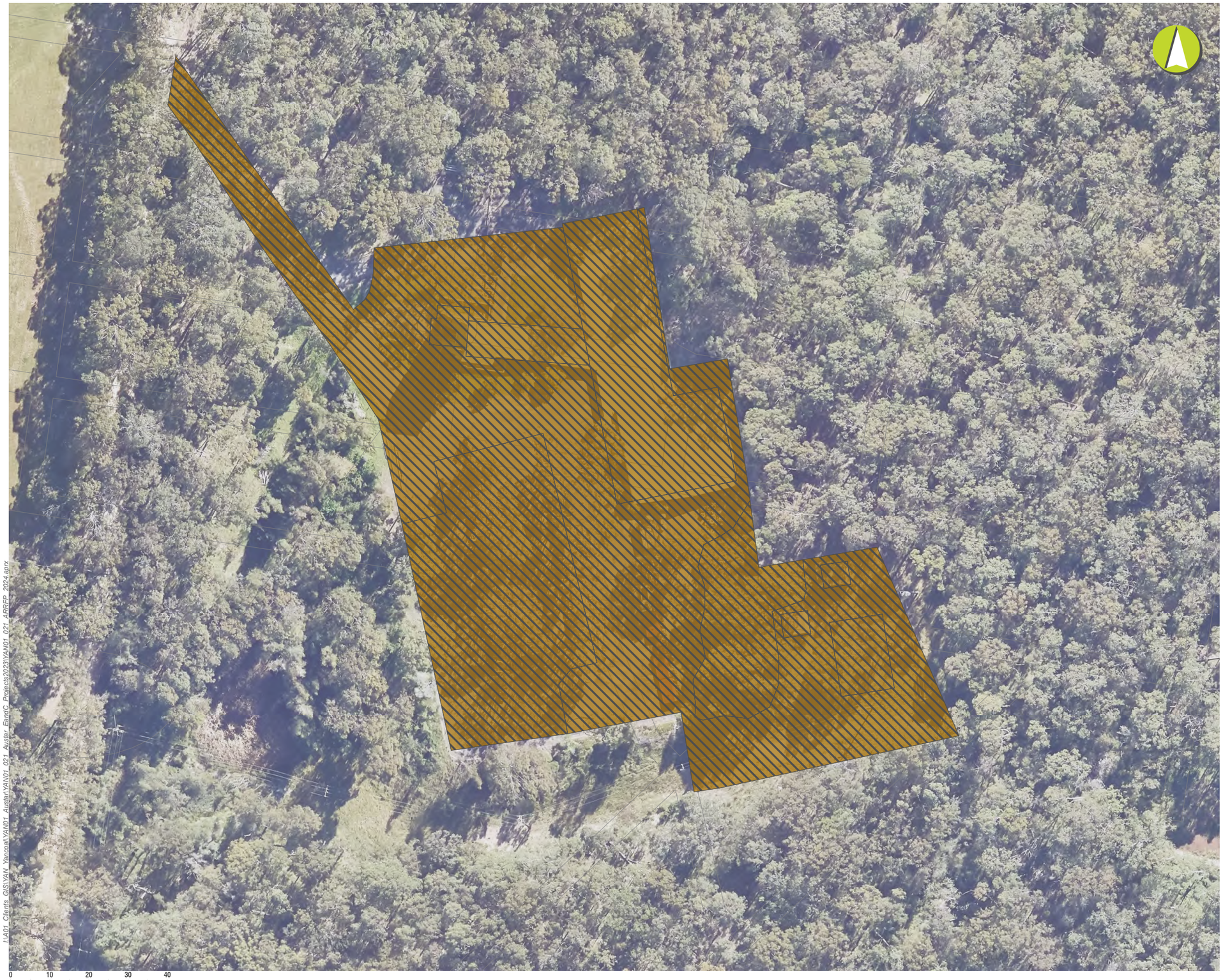
Austar Coal ARRFP 2024

CMA 3 - No.1 Shaft - Inset

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	Austar Coal Mine ARRFP
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx | xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	11/09/2024



LEGEND

- Project Approval Boundary
- Colliery Holding Boundary
- Austar Mine Plan

Current Authorisations

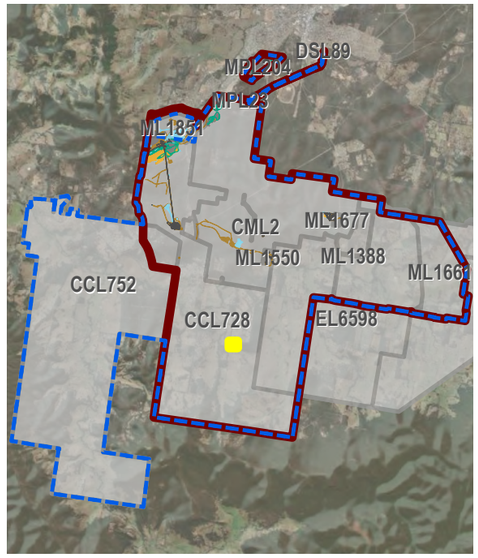
- Coal - Current Titles

Rehabilitation Phase

- Decommissioning

Mining Domain Type

- Domain 1: Infrastructure Area



Austar Coal ARRFP 2024

CMA 4 - No.2 Shaft - Inset

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	Austar Coal Mine ARRFP
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx | xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	11/09/2024

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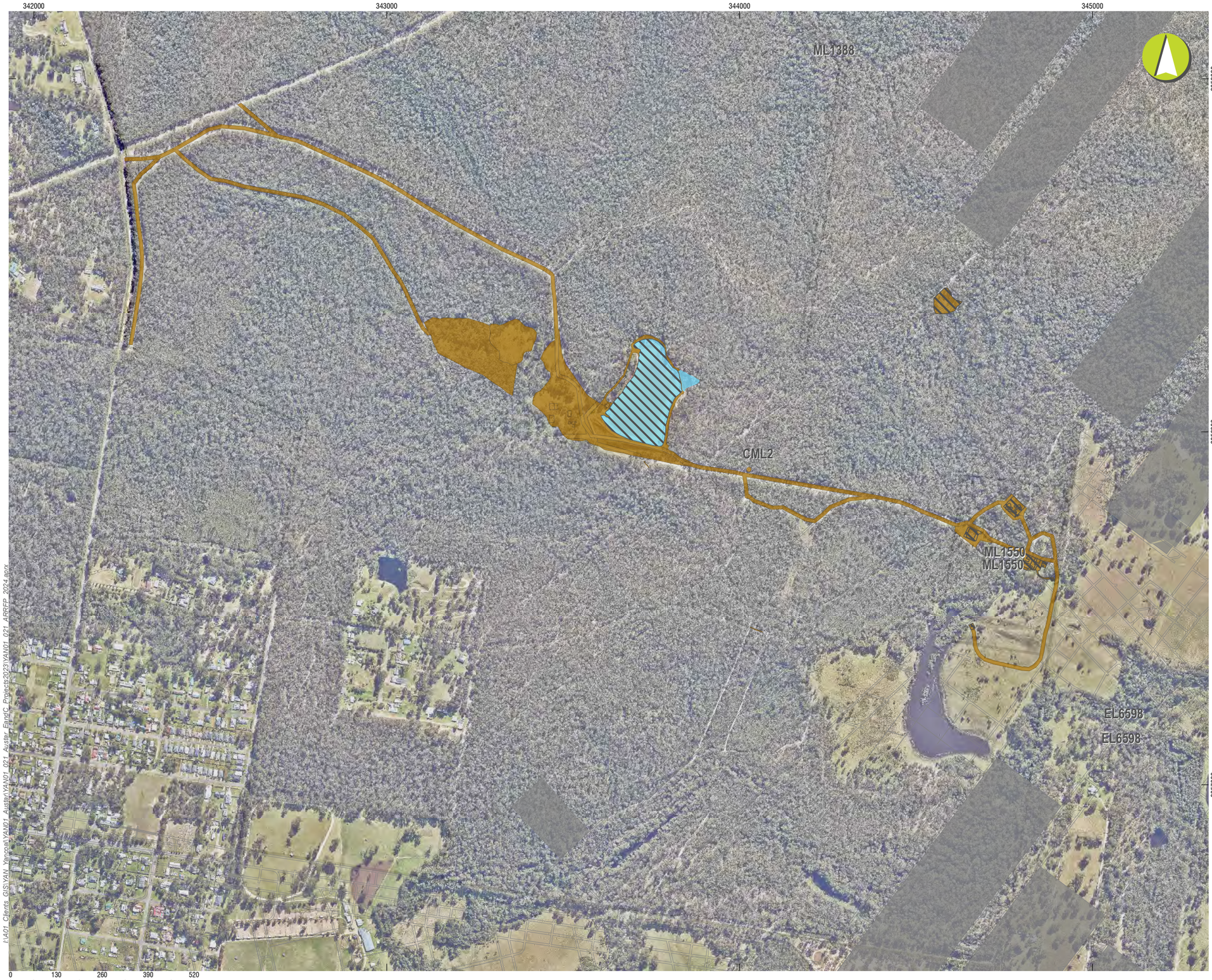


LEGEND

- Project Approval Boundary
- Colliery Holding Boundary
- Austar Mine Plan
- Completed workings

Current Authorisations

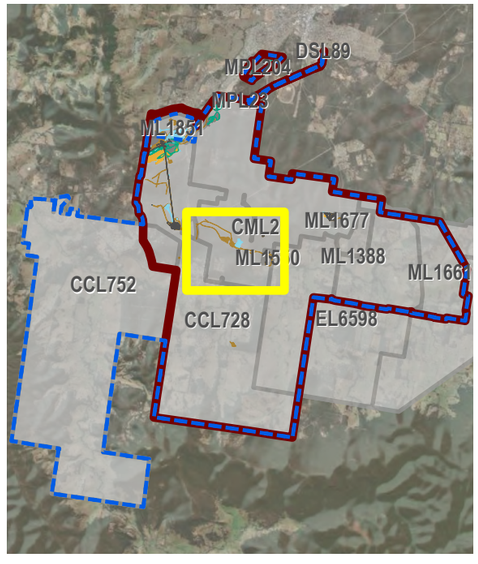
- Coal - Current Titles

Rehabilitation Phase

- Decommissioning

Mining Domain Type

- Domain 1: Infrastructure Area
- Domain 3: Water Management Area



Austar Coal ARRFP 2024

CMA 5 - Cessnock No.1 Colliery / Kalingo Infrastructure Area

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	Austar Coal Mine ARRFP
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx | xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	11/09/2024

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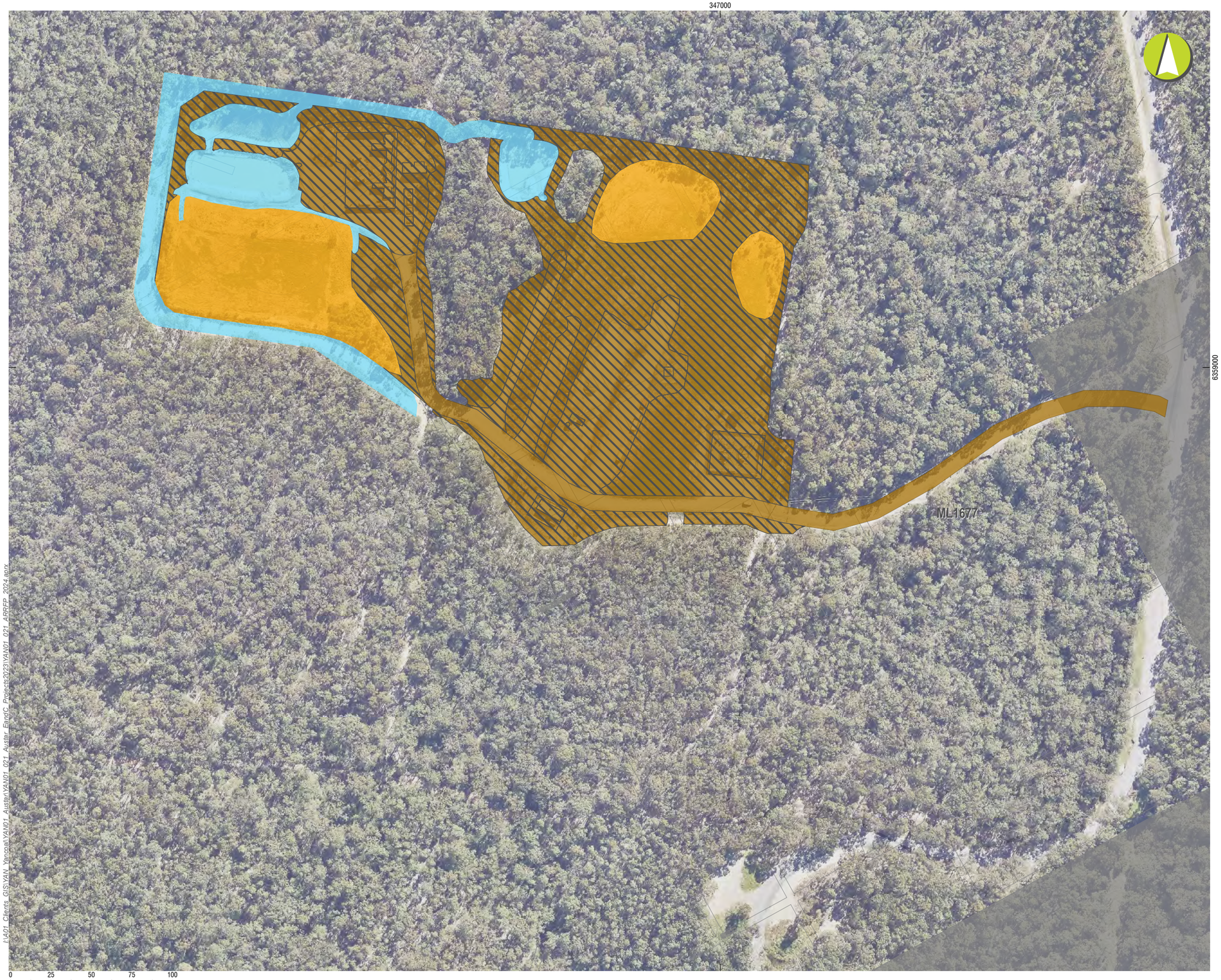


LEGEND

- Project Approval Boundary
- Colliery Holding Boundary
- Austar Mine Plan
- Completed workings

Current Authorisations

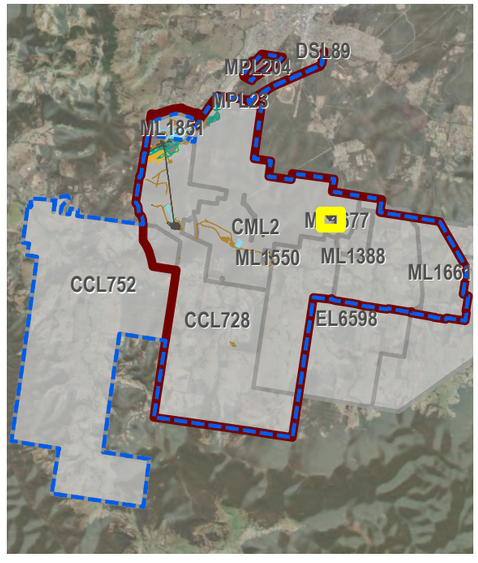
- Coal - Current Titles

Rehabilitation Phase

- Decommissioning

Mining Domain Type

- Domain 1: Infrastructure Area
- Domain 3: Water Management Area
- Domain 4: Overburden Emplacement Area



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Austar Coal ARRFP 2024

CMA 6 - Kitchener Surface Infrastructure Site

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	Austar Coal Mine ARRFP
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx | xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	11/09/2024

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MPL233

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LEGEND

- Project Approval Boundary
- Colliery Holding Boundary

Current Authorisations

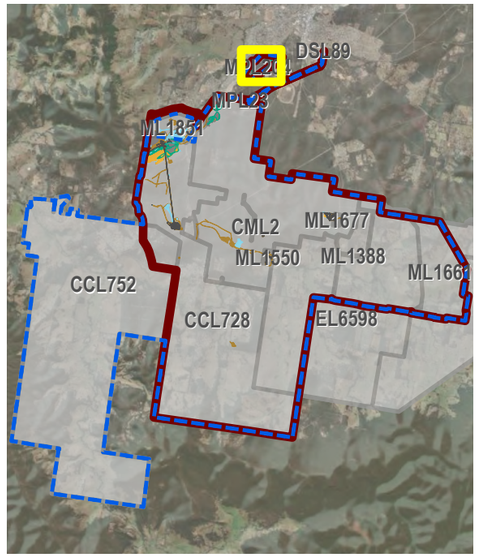
- Coal - Current Titles

Rehabilitation Phase

- Ecosystem and Land Use Establishment

Mining Domain Type

- Domain 2: Tailings Storage Facility



Austar Coal ARRFP 2024

CMA 7 - Aberdare Extended Emplacement Area

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	Austar Coal Mine ARRFP
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx | xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	11/09/2024

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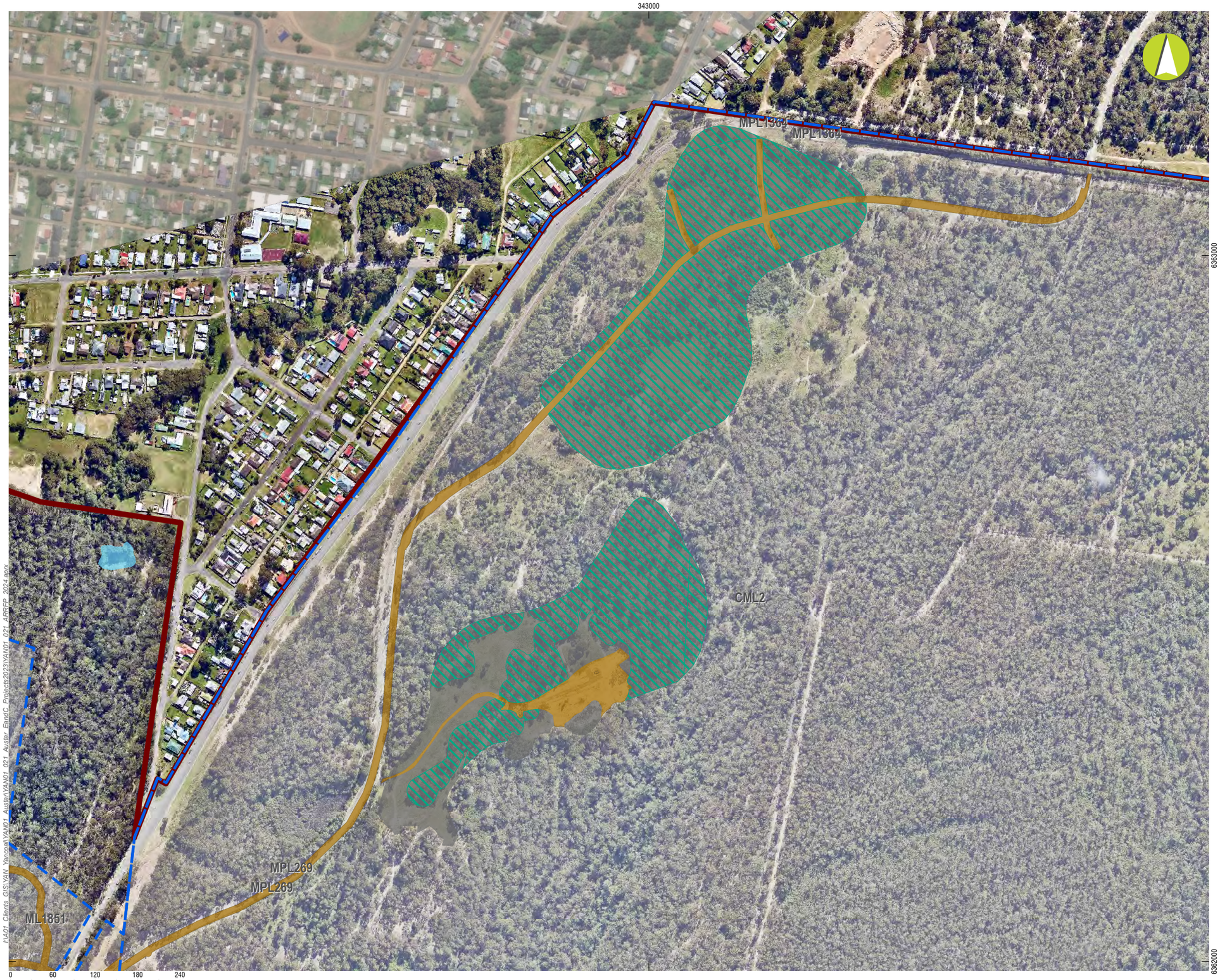


LEGEND

- Project Approval Boundary
- Colliery Holding Boundary

Current Authorisations

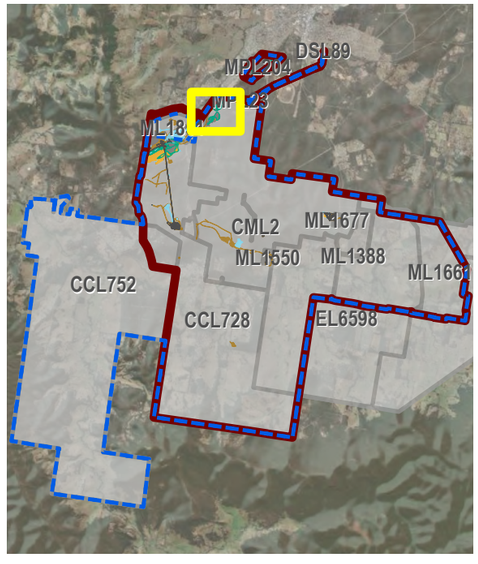
- Coal - Current Titles

Rehabilitation Phase

- Ecosystem and Land Use Establishment

Mining Domain Type

- Domain 1: Infrastructure Area
- Domain 2: Tailings Storage Facility
- Domain 3: Water Management Area



Austar Coal ARRFP 2024

CMA 8 - Bellbird Areas 12 and 13 - Inset

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	Austar Coal Mine ARRFP
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	xxxx | xxxx
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	11/09/2024

INTEGRATED ENVIRONMENTAL MANAGEMENT AUSTRALIA
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Appendices

Appendix A. Long Term Noise Monitoring Data

TABLE APP A-1 CHPP NOISE DATA, 2018 - 2024

Quarter	Period	Austar CHPP Only L_{A90} (15min) (dB)		
		C1	C2	C3
	Noise Criteria	40	43	37
Q2 2024	Night	IA	IA	IA
		IA	IA	IA
		NM	IA	IA
Q1 2024	Night	IA	IA	IA
		IA	IA	IA
		IA	IA	IA
Q4 2023	Night	IA	IA	IA
		IA	IA	IA
		IA	IA	IA
Q3 2023	Night	IA	IA	IA
		IA	IA	IA
		IA	IA	IA
Q2 2023	Night	IA	IA	IA
		IA	IA	IA
		IA	IA	IA
Q1 2023	Night	IA	IA	IA
		IA	IA	IA
		IA	IA	IA
Q4 2022	Night	IA	<25	IA
		IA	IA	IA
		IA	IA	IA
Q3 2022	Night	IA	IA	IA
		IA	IA	IA
		IA	<25	IA
Q2 2022	Night	IA	<20	IA
		IA	<25	IA
		IA	<25	IA
Q1 2022	Night	IA	IA	IA
		IA	IA	IA
		IA	IA	IA
Q4 2021	Night	<20	<20	IA
		NM	NM	NM
		IA	IA	IA
Q3 2021	Night	IA	26	IA
		IA	IA	IA
		IA	<25	IA
Q2 2021	Night	<25	<25	NM
		NM	29	IA
		IA	IA	IA
Q1 2021	Night	<25	<25	IA
		<25	NM	IA
		IA	IA	IA
Q4 2020	Night	<25	21	IA
		IA	26	NM
		IA	IA	IA
Q3 2020	Night	IA	<25	IA
		NM	29	<25
		<25	NM	NM
Q2 2020	Night	IA	IA	IA
		IA	IA	IA
		IA	IA	NM
Q1 2020	Night	37	38	29
		25	<25	<20
		<20	<28	<20
Q4 2019	Night	38	36	30
		26	26	NM
		37	37	31
Q3 2019	Night	38	43	31
		NM	<35	IA
		33	IA	<30
Q2 2019	Night	30	32	27
		36	38	37
		39/44	<30	**40/45**
Q1 2019	Night	35	36	<30
		37	31	33
		<25	41	<25
Q4 2018	Night	<25	IA	<25
		IA	IA	<20
		<20	IA	<20
Q3 2018	Night	<20	<20	NM
		<30	32	IA
		<25	IA	IA

NM – Not measurable
IA – Inaudible
These are results for Austar CHPP in the absence of all other noise sources.

TABLE APP A-2 NOISE GENERATED AT KITCHENER SIS 2018 - 2024

Quarter	Period	Kitchener SIS Only $L_{Aeq, 15\ min}$ (dB)			Kitchener SIS Only, $L_{A1\ (1min)}$		
		K1	K2	K3	K1	K2	K3
	Noise Criteria	35	35	35	45	45	45
Q2 2024	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q1 2024	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q4 2023	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q3 2023	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q2 2023	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q1 2023	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q4 2022	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q3 2022	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		<20	<20	IA	23	<20	IA
Q2 2022	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q1 2022	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q4 2021	Night	IA	<20	IA	IA	<20	IA
		IA	IA	IA	IA	<20	IA
		IA	IA	IA	IA	IA	IA
Q3 2021	Night	<25	IA	IA	<25	IA	IA
		<25	IA	IA	<25	IA	IA
		IA	<20	IA	IA	<20	IA
Q2 2021	Night	IA	IA	IA	IA	IA	IA

Quarter	Period	Kitchener SIS Only $L_{Aeq,\ 15\ min}$ (dB)			Kitchener SIS Only, $L_{A1\ (1min)}$		
		K1	K2	K3	K1	K2	K3
	Noise Criteria	35	35	35	45	45	45
		<25	<25	IA	<25	<25	IA
		27	<25	IA	33	<25	IA
Q1 2021	Night	IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
		IA	IA	IA	IA	IA	IA
Q4 2020	Night	<20	IA	IA	<20	IA	IA
		IA	<20	<25	IA	<20	<25
		IA	IA	IA	IA	IA	IA
Q3 2020	Night	IA	<20	<25	IA	<20	<25
		27	<25	<20	32	<25	<20
		27	<25	<25	31	<25	<25
Q2 2020	Night	<30	<25	NM	<30	<25	NM
		IA	IA	<05	IA	IA	<20
		30	IA	<25	32	IA	<25
Q1 2020	Night	IA	IA	IA	IA	IA	IA
		<20	IA	IA	<20	IA	IA
		<20	IA	IA	<20	IA	IA
Q4 2019	Night	IA	IA	IA	IA	IA	IA
		<25	IA	IA	30	IA	IA
		IA	IA	IA	IA	IA	IA
Q3 2019	Night	33	<30	IA	42	<30	IA
		IA	NM	NM	IA	NM	NM
		<25	IA	IA	<25	IA	IA
Q2 2019	Night	<20	IA	IA	<20	IA	IA
		<30	<25	<25	<30	<25	<25
		<20	IA	IA	<20	IA	IA
Q1 2019	Night	<20	IA	IA	<20	IA	IA
		<25	IA	IA	<25	IA	IA
		<20	IA	IA	<20	IA	IA
Q4 2018	Night	<25	IA	<20	<25	IA	<20
		IA	IA	IA	IA	IA	IA
		<25	<20	<20	<25	<20	<20
Q3 2018	Night	<30	<25	IA	<30	<25	IA
		29	<25	<25	32	<30	<25
		IA	IA	NM	IA	IA	NM

NM – Not measurable
IA – Inaudible
These are results for Austar Kitchener SIS in the absence of all other noise sources.

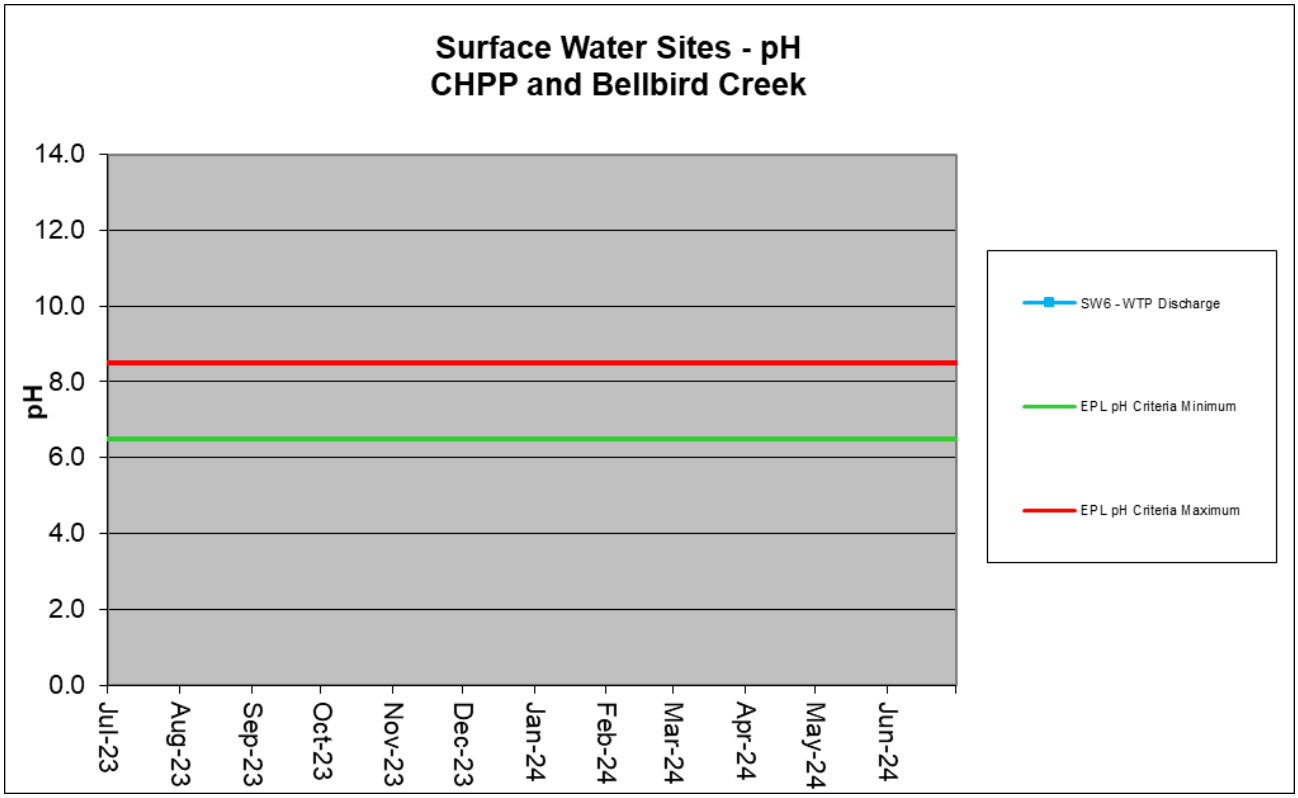
TABLE APP A-3 NOISE GENERATED BY KIA 2018 - 2024

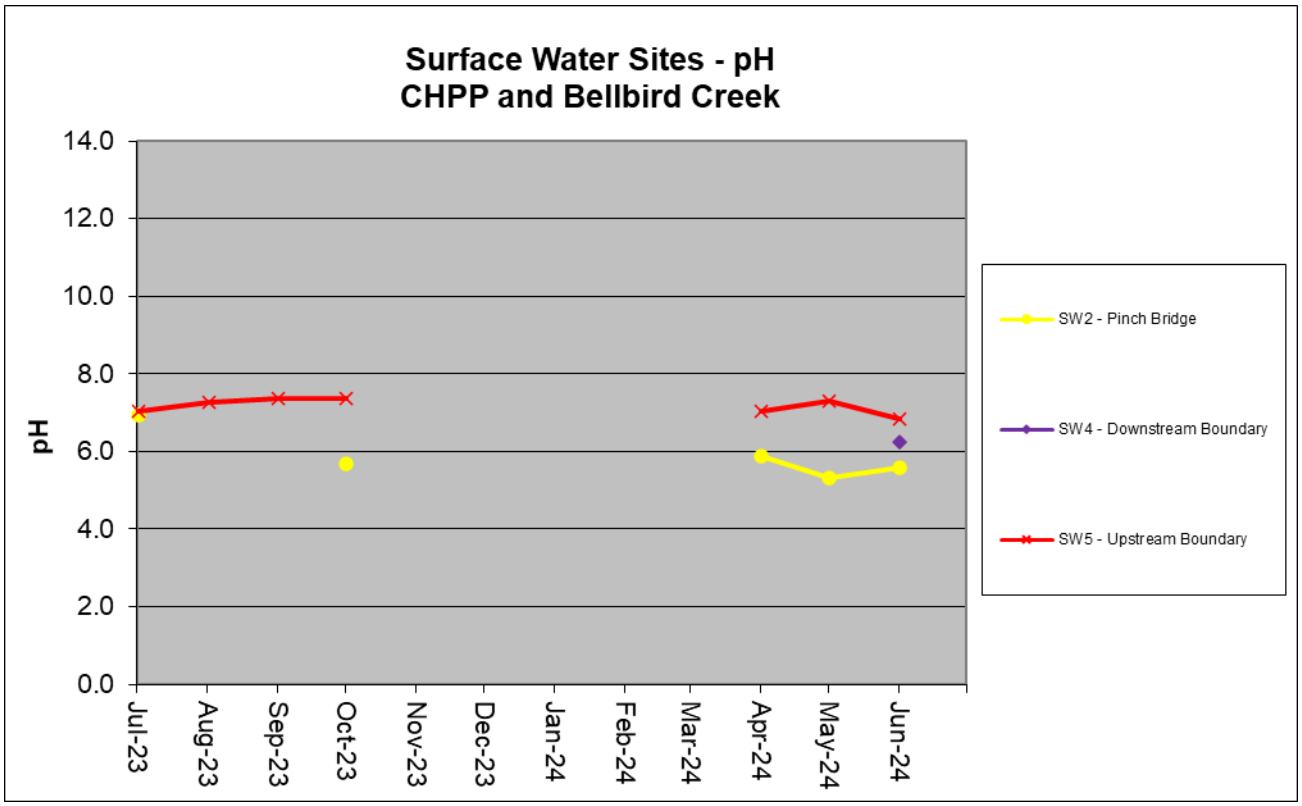
Quarter	Period	Austar KIA Only $L_{Aeq, 15\ min}$ (dB)
		Noise Criteria 35
Q2 2024	Night	IA
		IA
		IA
Q1 2024	Night	IA
		IA
		IA
Q4 2023	Night	IA
		IA
		IA
Q3 2023	Night	IA
		IA
		NM
Q2 2023	Night	IA
		IA
		IA
Q1 2023	Night	IA
		IA
		IA
Q4 2022	Night	<25
		IA
		IA
Q3 2022	Night	IA
		IA
		<20
Q2 2022	Night	<20
		<25
		26
Q1 2022	Night	IA
		<25
		<25
Q4 2021	Night	<20
		<25
		<20
Q3 2021	Night	IA
		31
		IA
Q2 2021	Night	IA
		<25
		29
Q1 2021	Night	<25
		IA
		<20
Q4 2020	Night	22
		25
		<20
Q3 2020	Night	<25
		28
		28
Q2 2020	Night	<30
		<25
		<25
Q1 2020	Night	NM
		<20
		29
Q4 2019	Night	NM
		<20
		NM
Q3 2019	Night	34
		NM
		25
Q2 2019	Night	27
		<30
		33
Q1 2019	Night	<25
		25
		IA
Q4 2018	Night	<25
		IA
		<20
Q3 2018	Night	<30
		<25
		IA

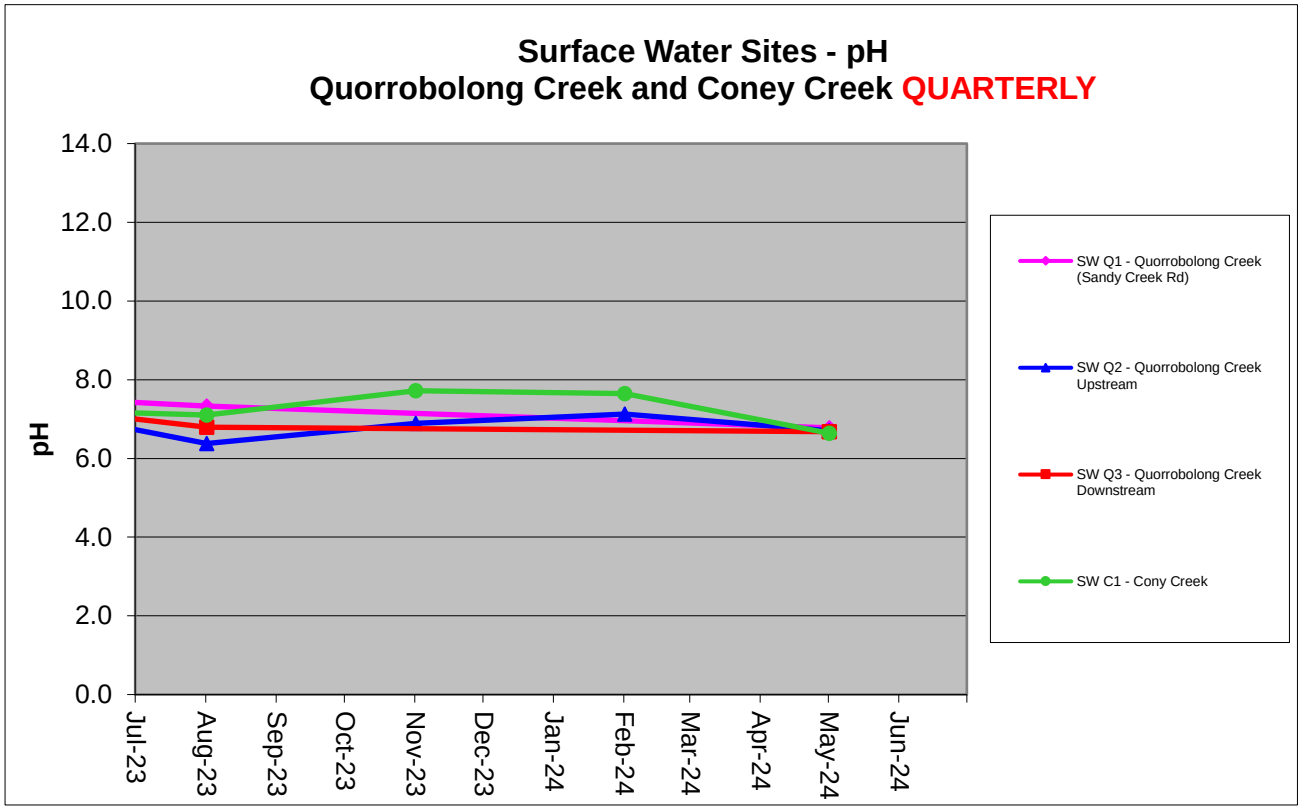
NM – Not measurable
IA – Inaudible
These are results for Austar Kalingo Infrastructure Area in the absence of all other noise sources.

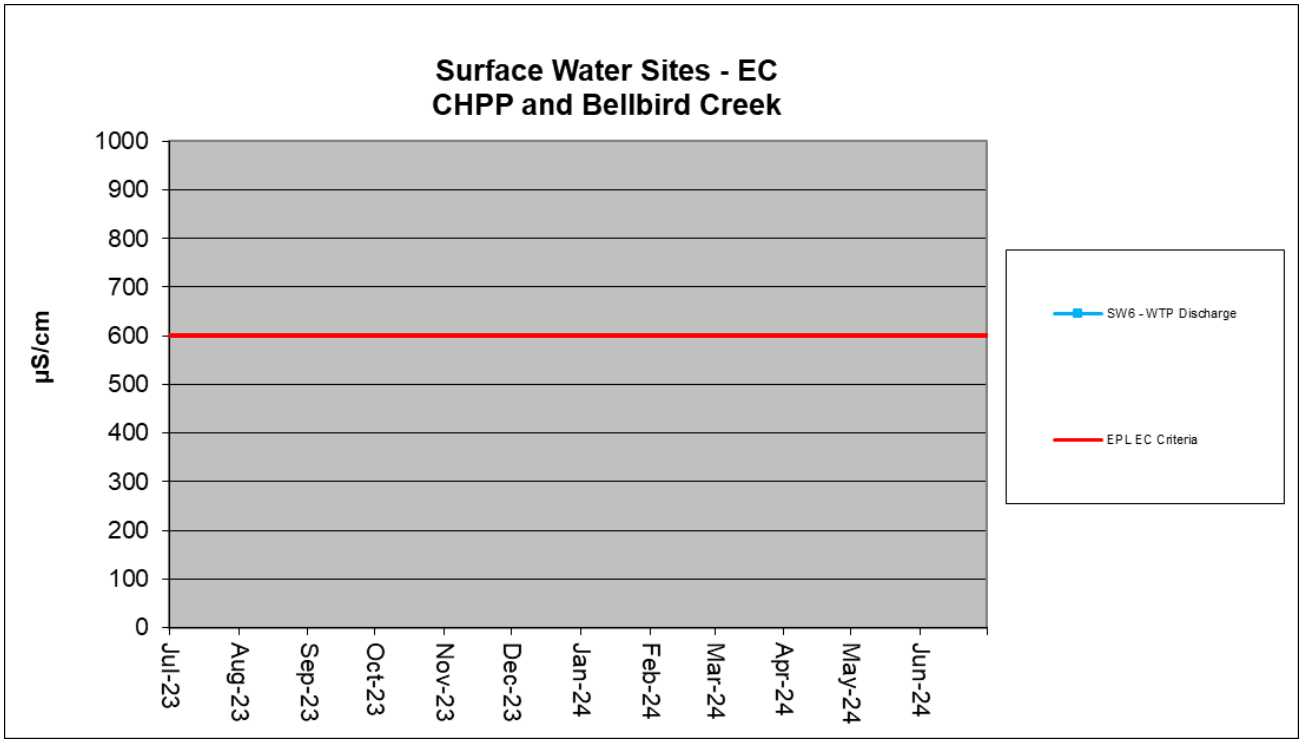
Appendix B. Surface Water Quality Graphs

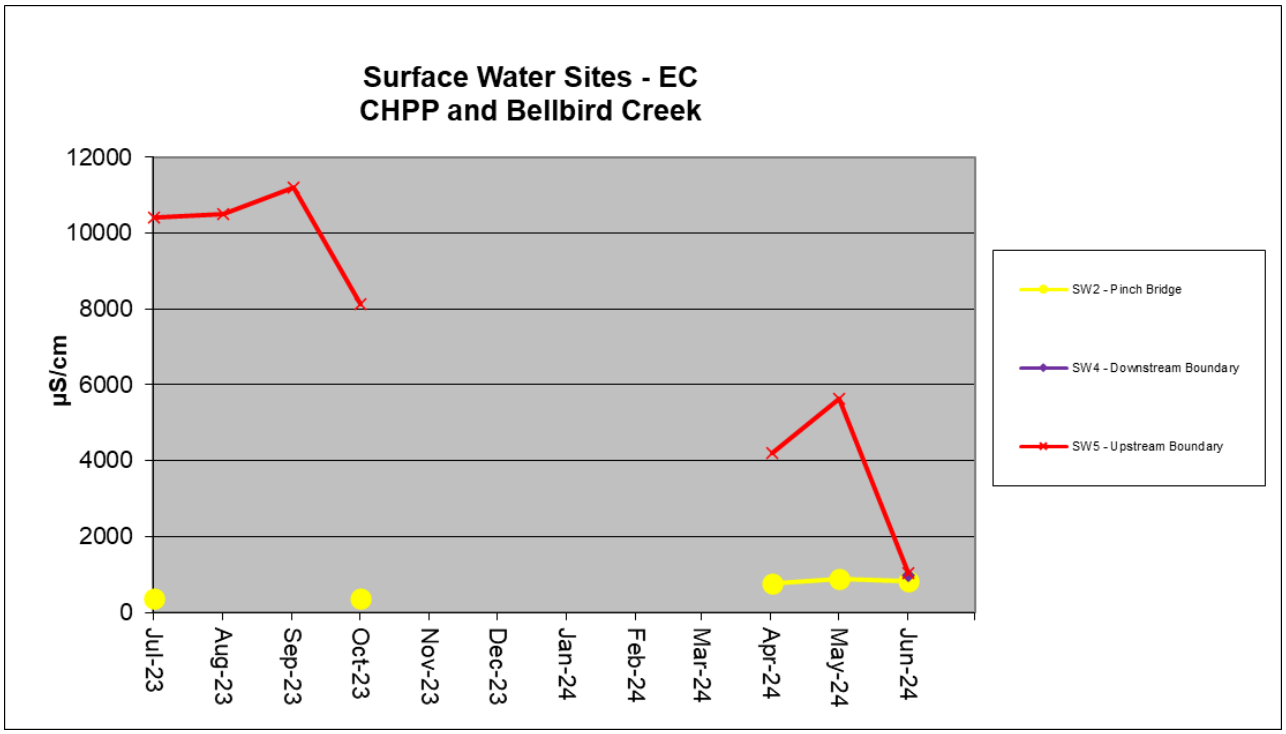
Surface Water Graphs, 2023 – 2024

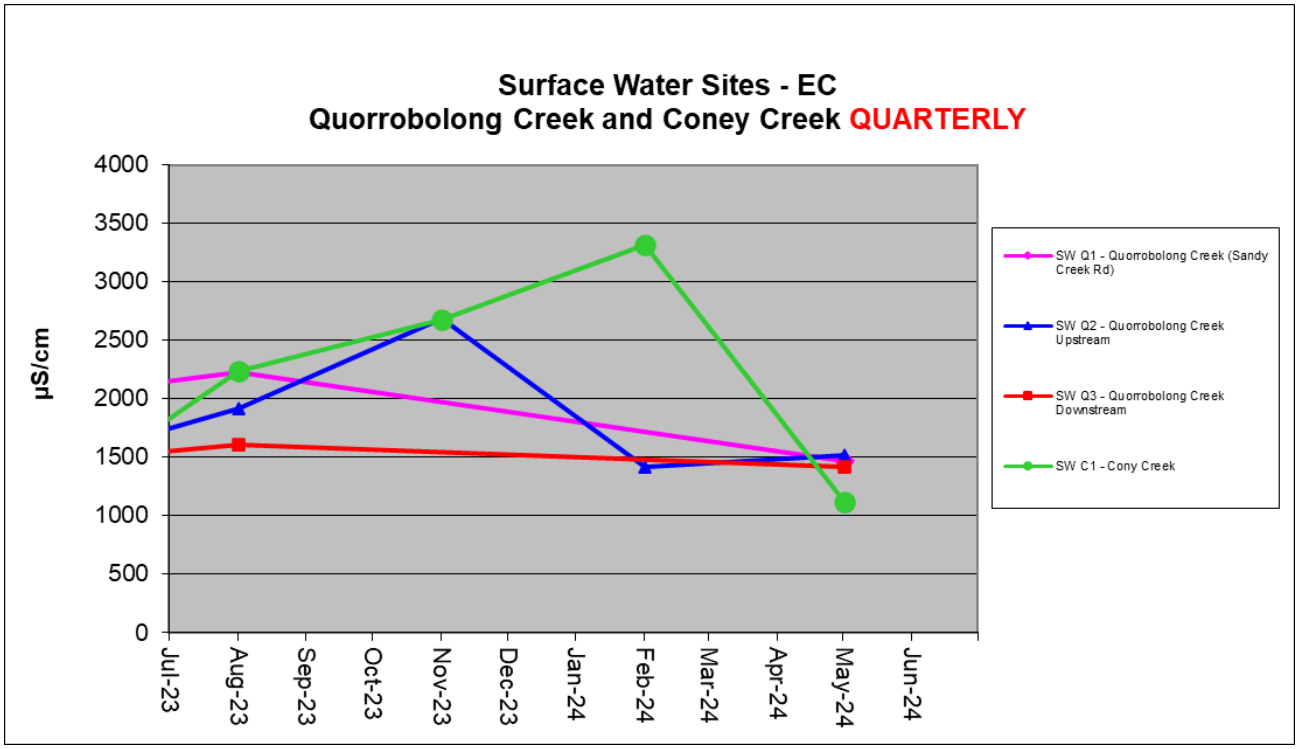


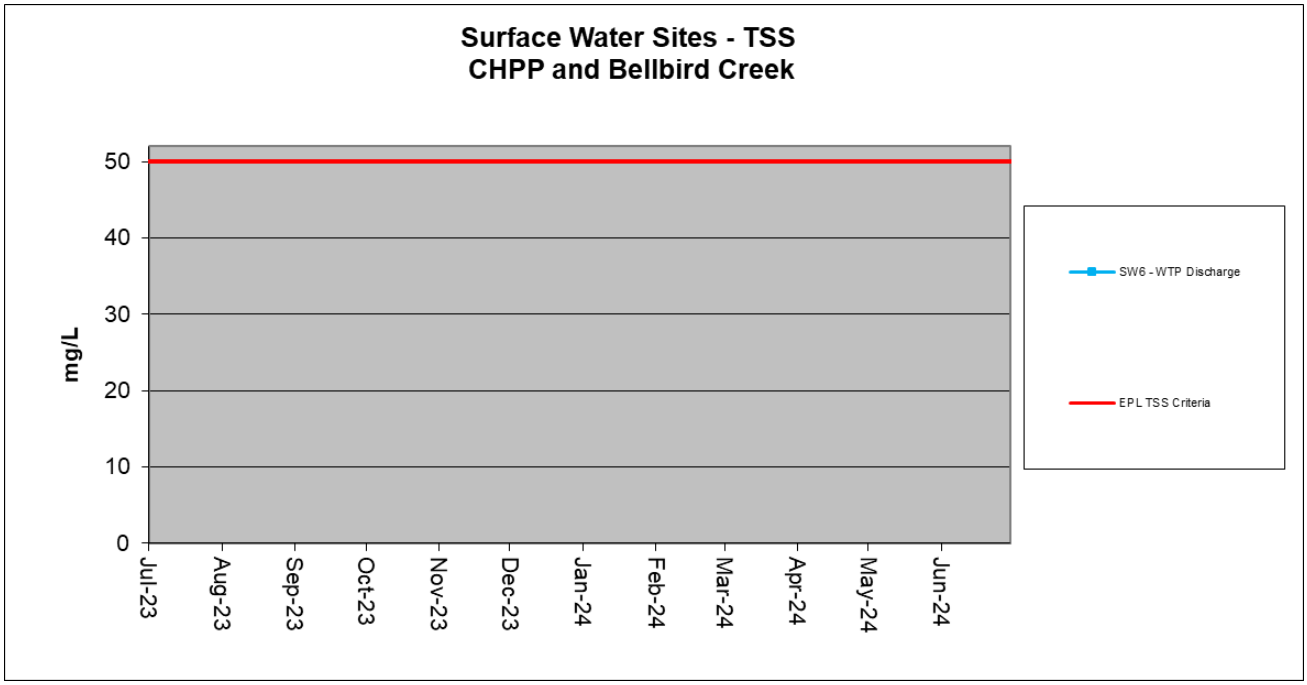


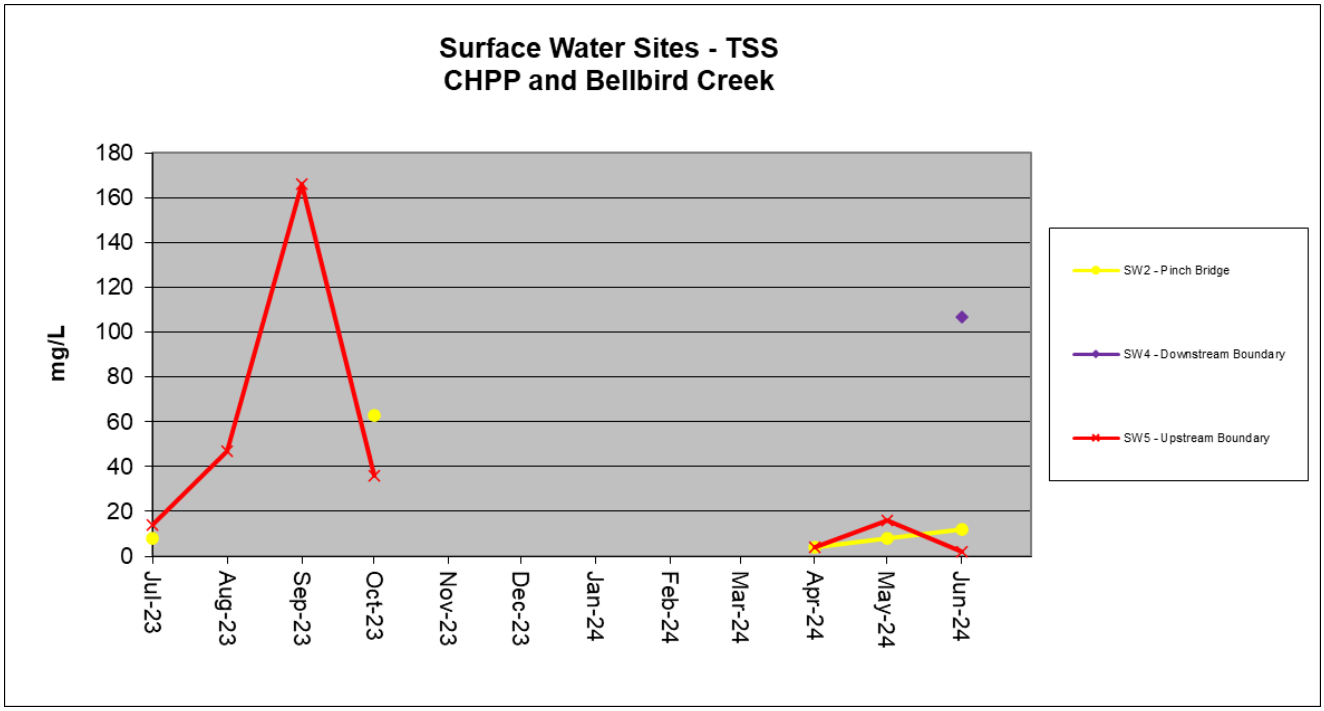

Surface Water Sites - pH
Quorrobolong Creek and Coney Creek QUARTERLY
pH
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
Jun-24
SW Q1 - Quorrobolong Creek (Sandy Creek Rd)
SW Q2 - Quorrobolong Creek Upstream
SW Q3 - Quorrobolong Creek Downstream
SW C1 - Cony Creek

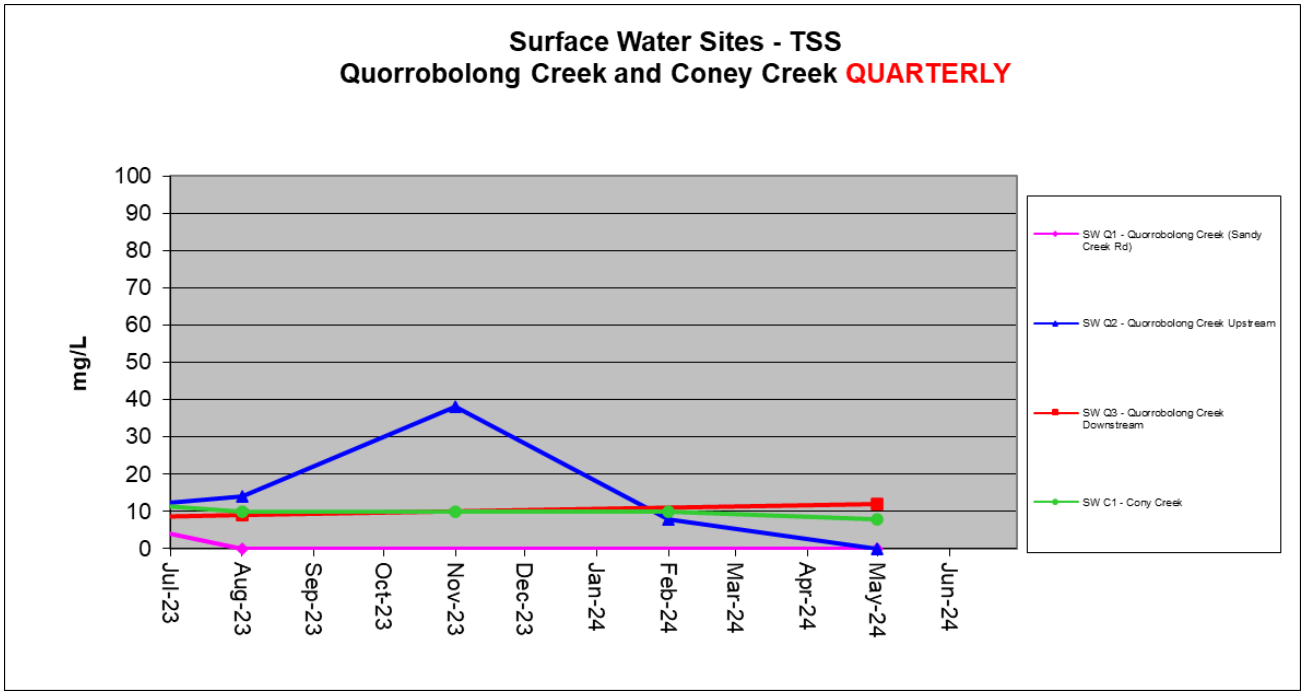

Surface Water Sites - EC
CHPP and Bellbird Creek
µS/cm
1000
900
800
700
600
500
400
300
200
100
0
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
Jun-24
SW6 - WTP Discharge
EPL EC Criteria

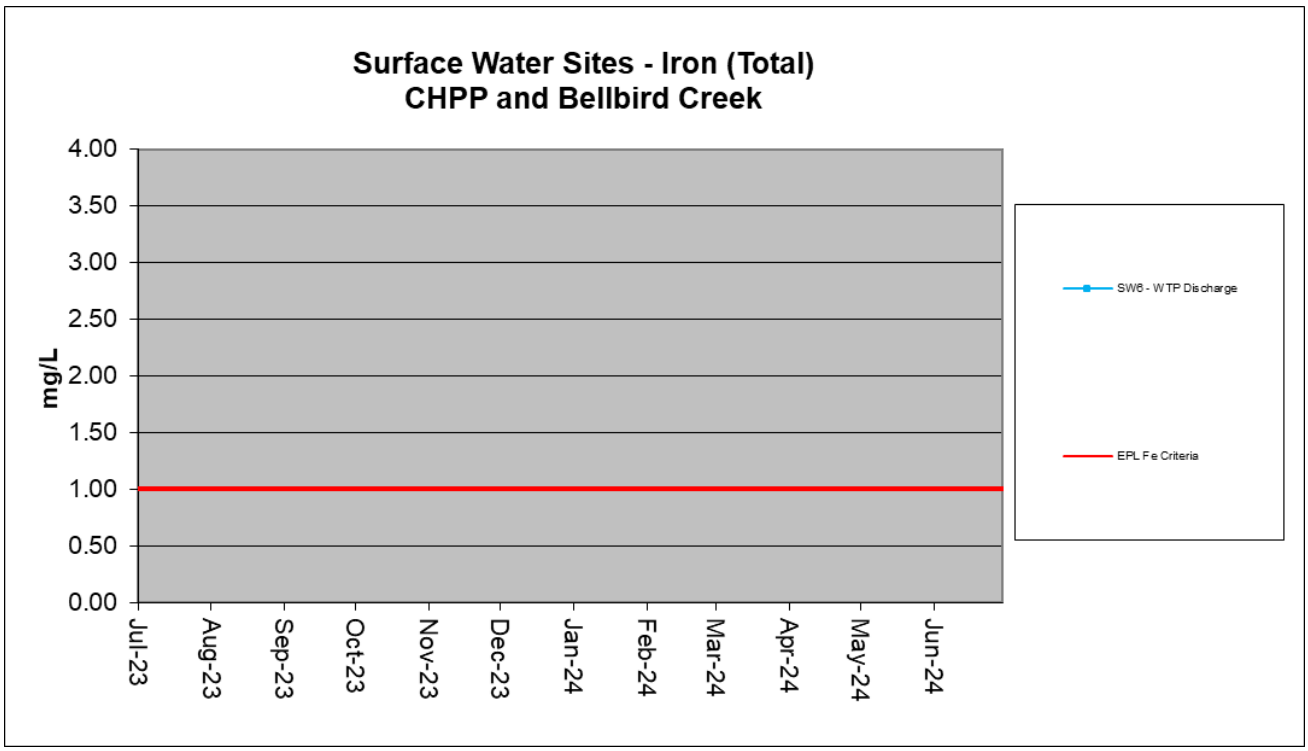

Surface Water Sites - EC
CHPP and Bellbird Creek
µS/cm
12000
10000
8000
6000
4000
2000
0
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
Jun-24
SW2 - Pinch Bridge
SW4 - Downstream Boundary
SW5 - Upstream Boundary

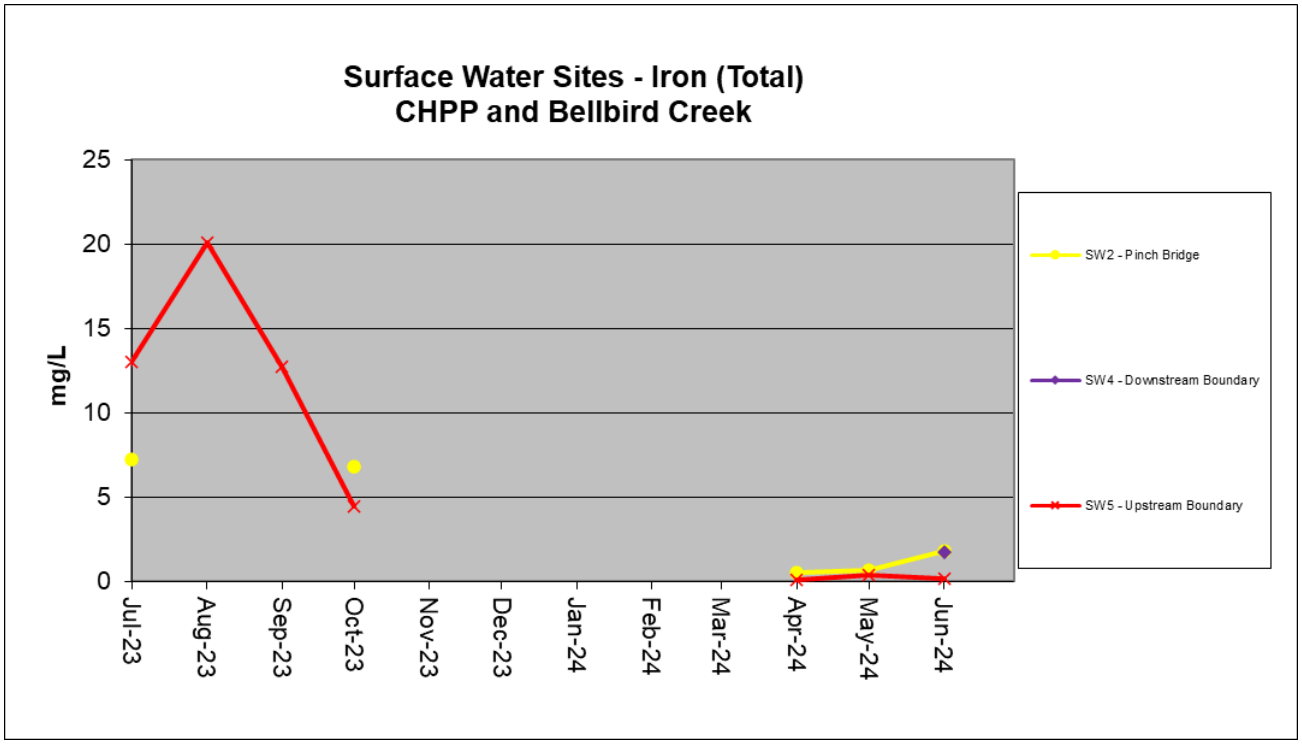

Surface Water Sites - EC
Quorrobolong Creek and Coney Creek QUARTERLY
µS/cm
4000
3500
3000
2500
2000
1500
1000
500
0
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
Jun-24
SW Q1 - Quorrobolong Creek (Sandy Creek Rd)
SW Q2 - Quorrobolong Creek Upstream
SW Q3 - Quorrobolong Creek Downstream
SW C1 - Cony Creek

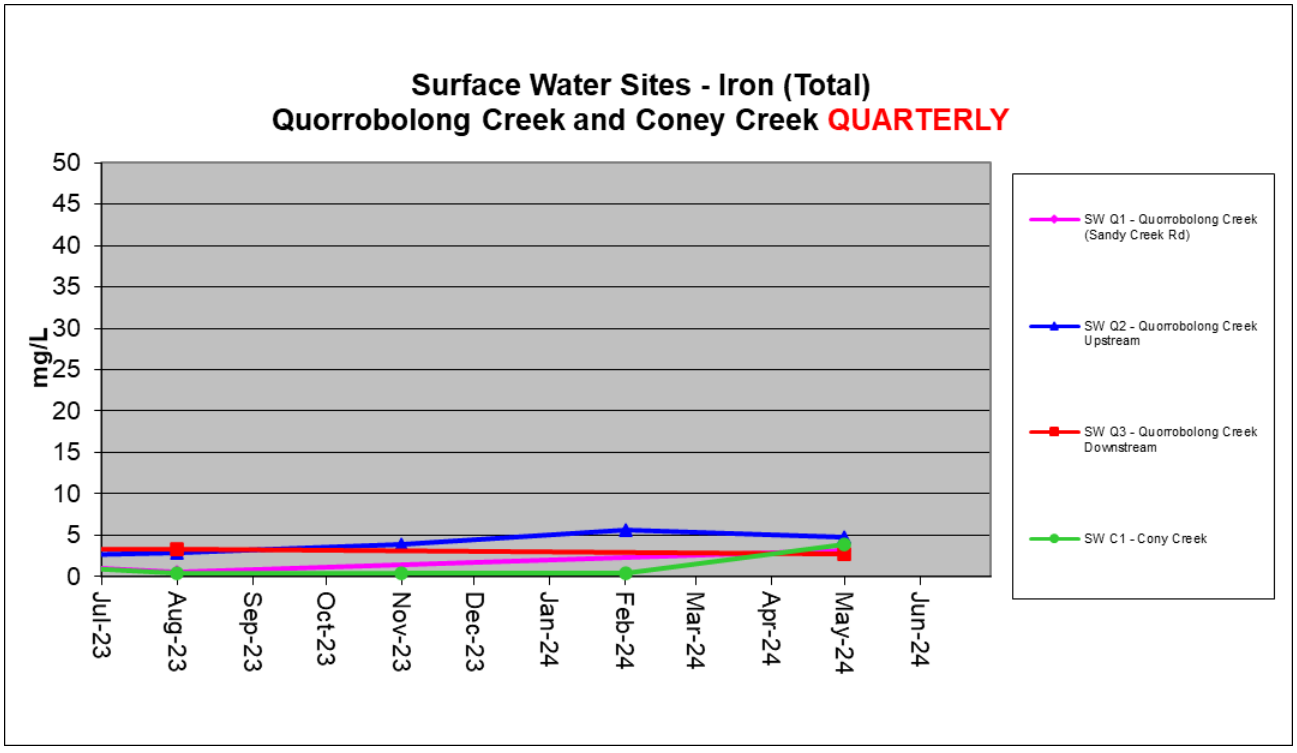

Surface Water Sites - TSS
CHPP and Bellbird Creek
mg/L
50
40
30
20
10
0
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
Jun-24
SW6 - WTP Discharge
EPL TSS Criteria


Surface Water Sites - TSS
CHPP and Bellbird Creek
mg/L
180
160
140
120
100
80
60
40
20
0
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
Jun-24
SW2 - Pinch Bridge
SW4 - Downstream Boundary
SW5 - Upstream Boundary

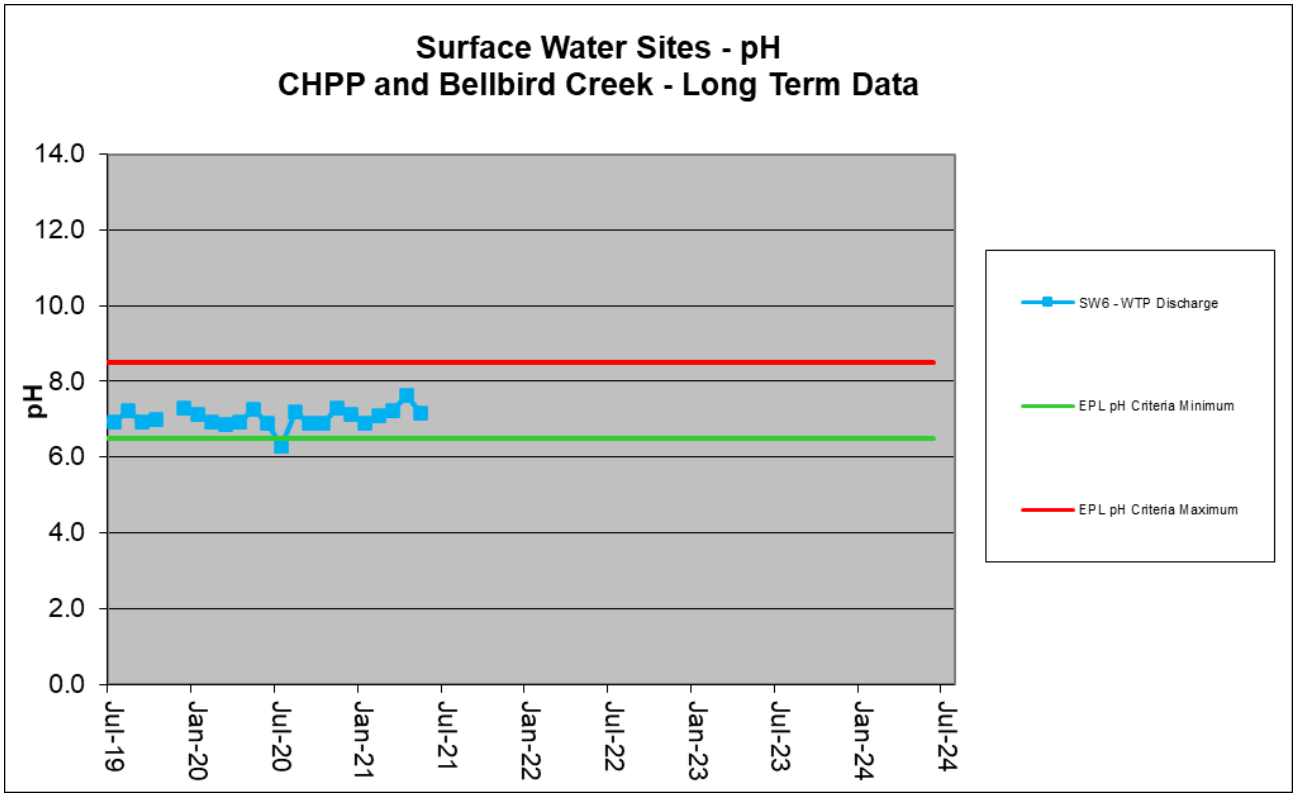

Surface Water Sites - TSS
Quorrobolong Creek and Coney Creek QUARTERLY
mg/L
100
90
80
70
60
50
40
30
20
10
0
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
Jun-24
SW Q1 - Quorrobolong Creek (Sandy Creek Rd)
SW Q2 - Quorrobolong Creek Upstream
SW Q3 - Quorrobolong Creek Downstream
SW C1 - Cony Creek

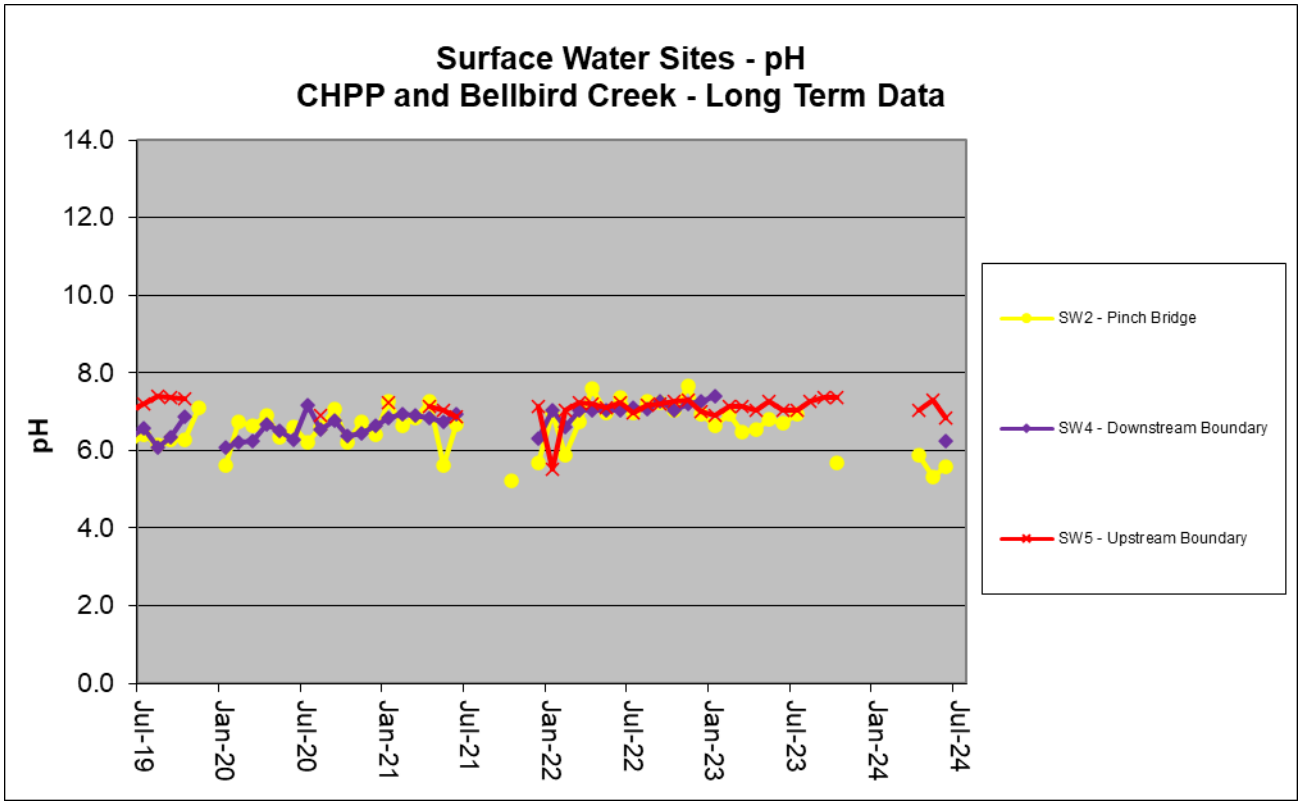

Surface Water Sites - Iron (Total)
CHPP and Bellbird Creek
mg/L
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
Jun-24
SW6 - WTP Discharge
EPL Fe Criteria

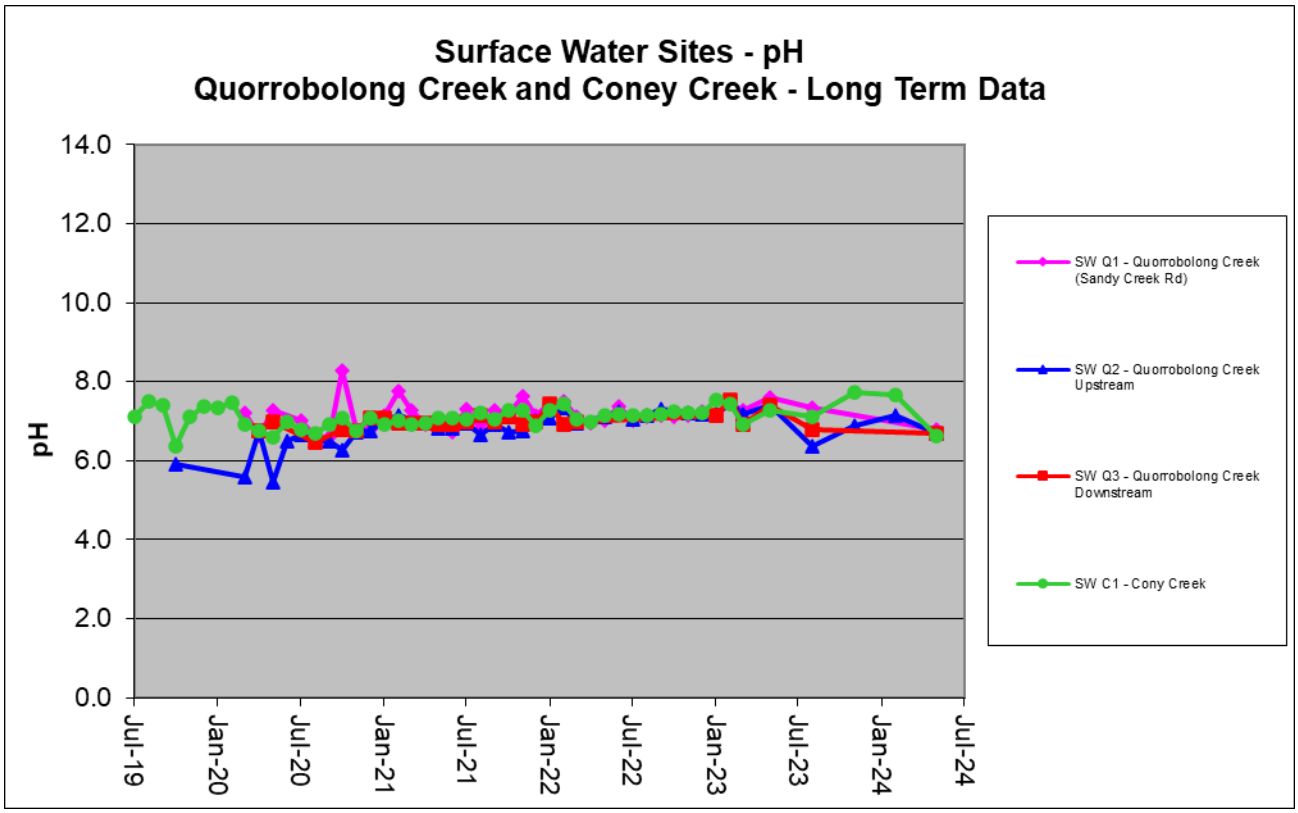


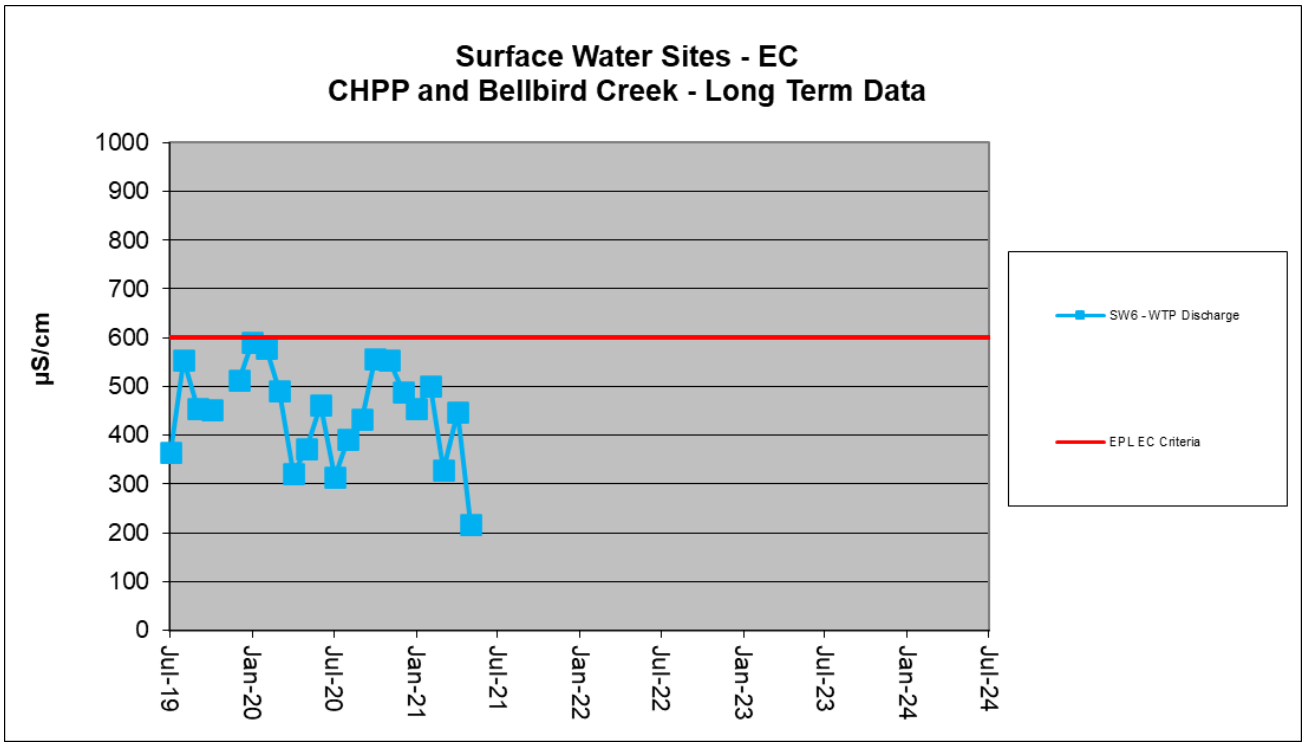


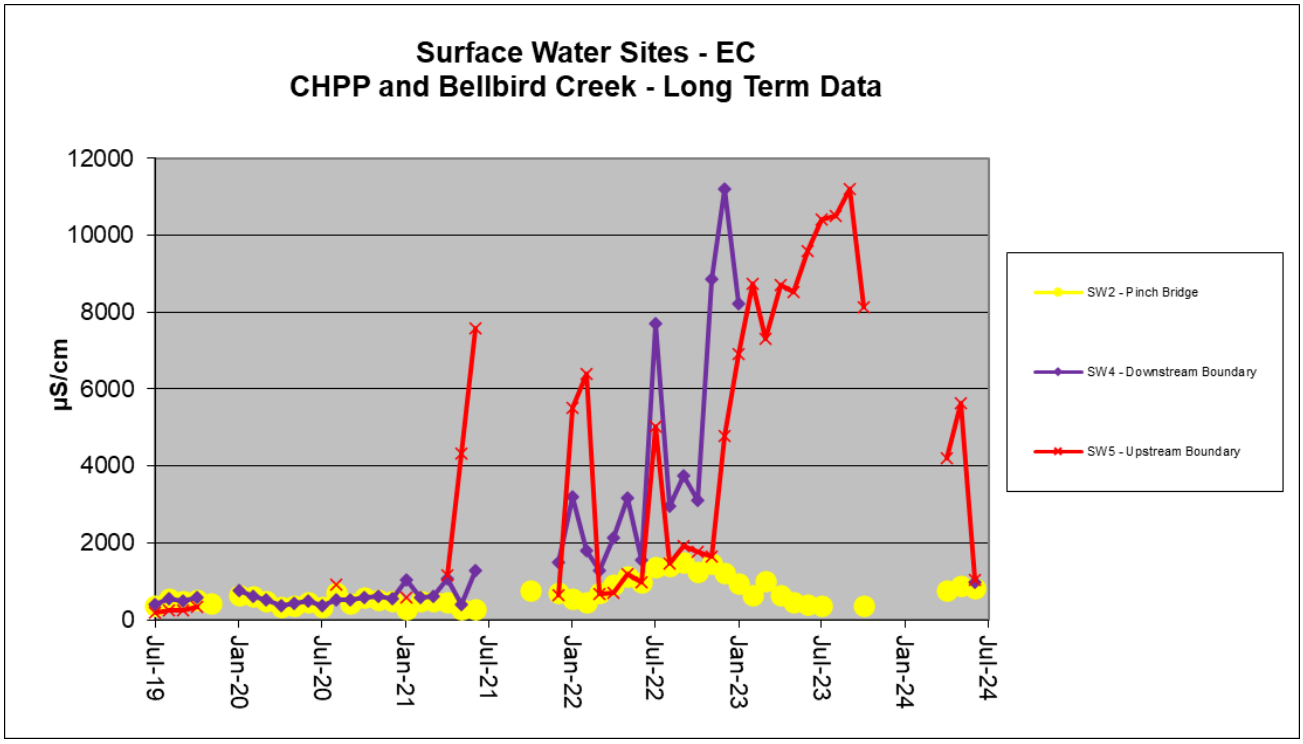
Long Term Surface Water Graphs 2019-2024

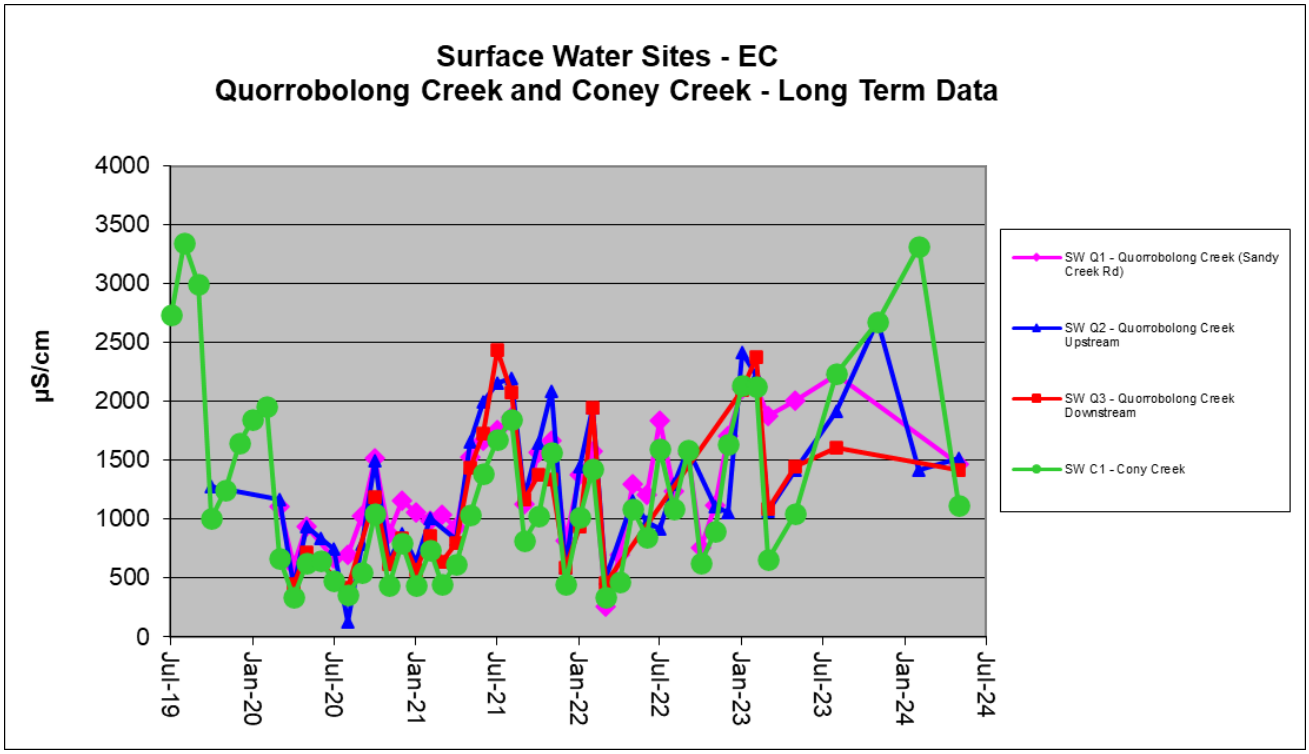

Surface Water Sites - pH
CHPP and Bellbird Creek - Long Term Data
pH
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW6 - WTP Discharge
EPL pH Criteria Minimum
EPL pH Criteria Maximum

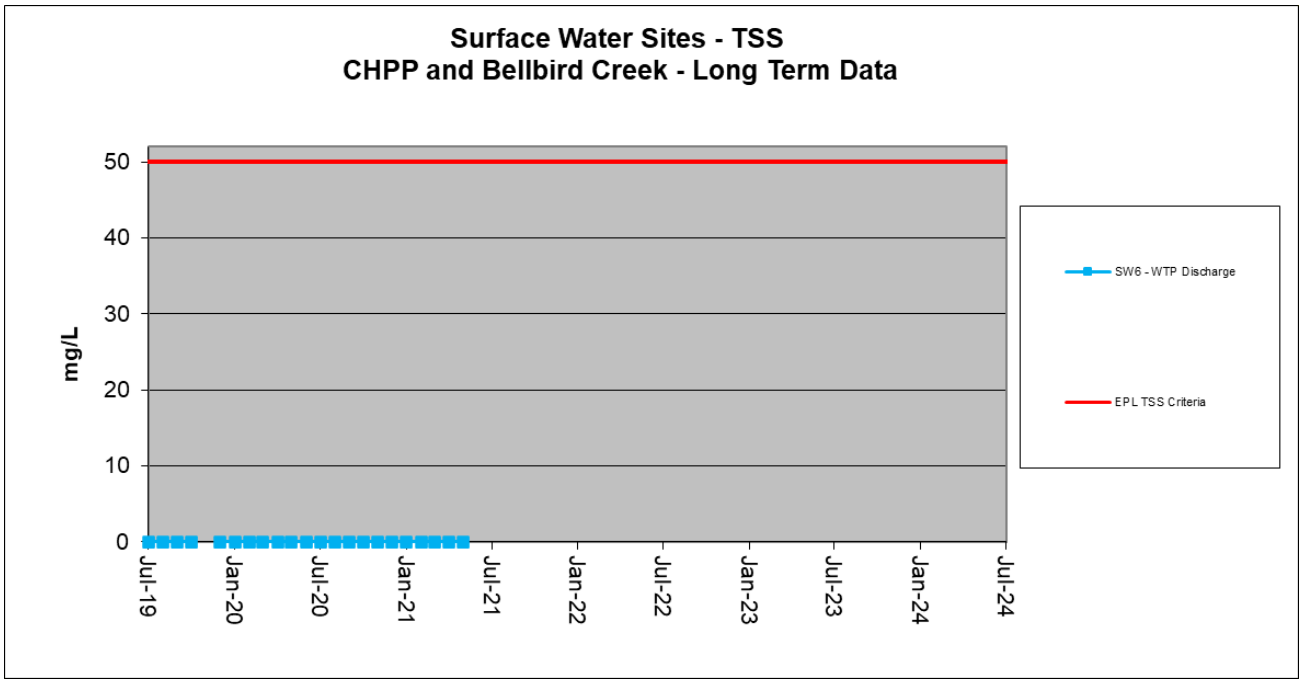

Surface Water Sites - pH
CHPP and Bellbird Creek - Long Term Data
pH
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW2 - Pinch Bridge
SW4 - Downstream Boundary
SW5 - Upstream Boundary

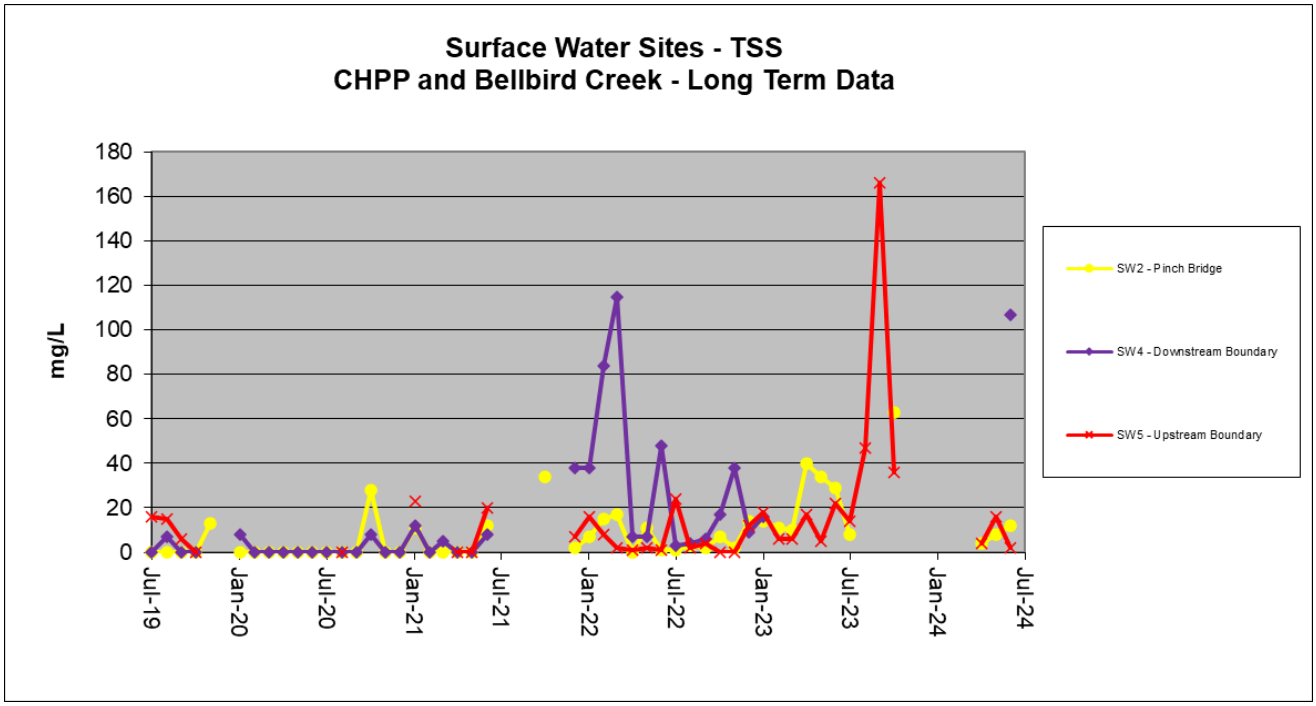

Surface Water Sites - pH
Quorrobolong Creek and Coney Creek - Long Term Data
pH
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW Q1 - Quorrobolong Creek (Sandy Creek Rd)
SW Q2 - Quorrobolong Creek Upstream
SW Q3 - Quorrobolong Creek Downstream
SW C1 - Cony Creek

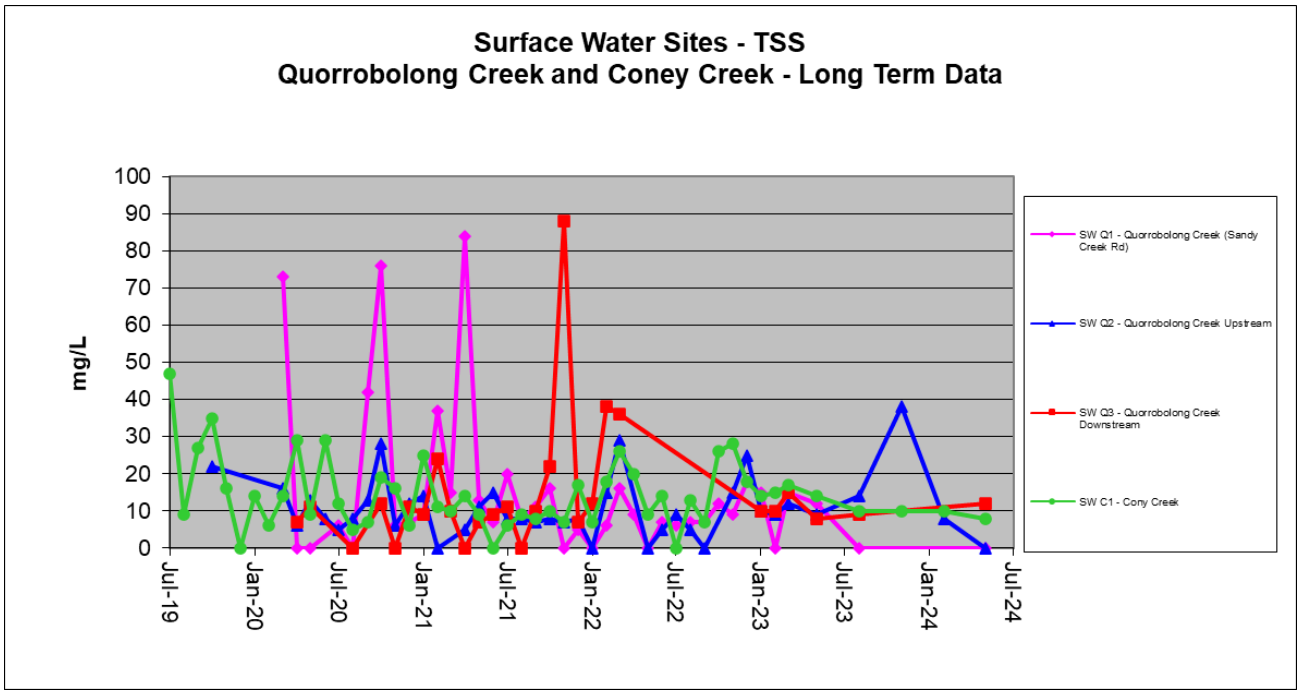

Surface Water Sites - EC
CHPP and Bellbird Creek - Long Term Data
µS/cm
1000
900
800
700
600
500
400
300
200
100
0
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW6 - WTP Discharge
EPL EC Criteria

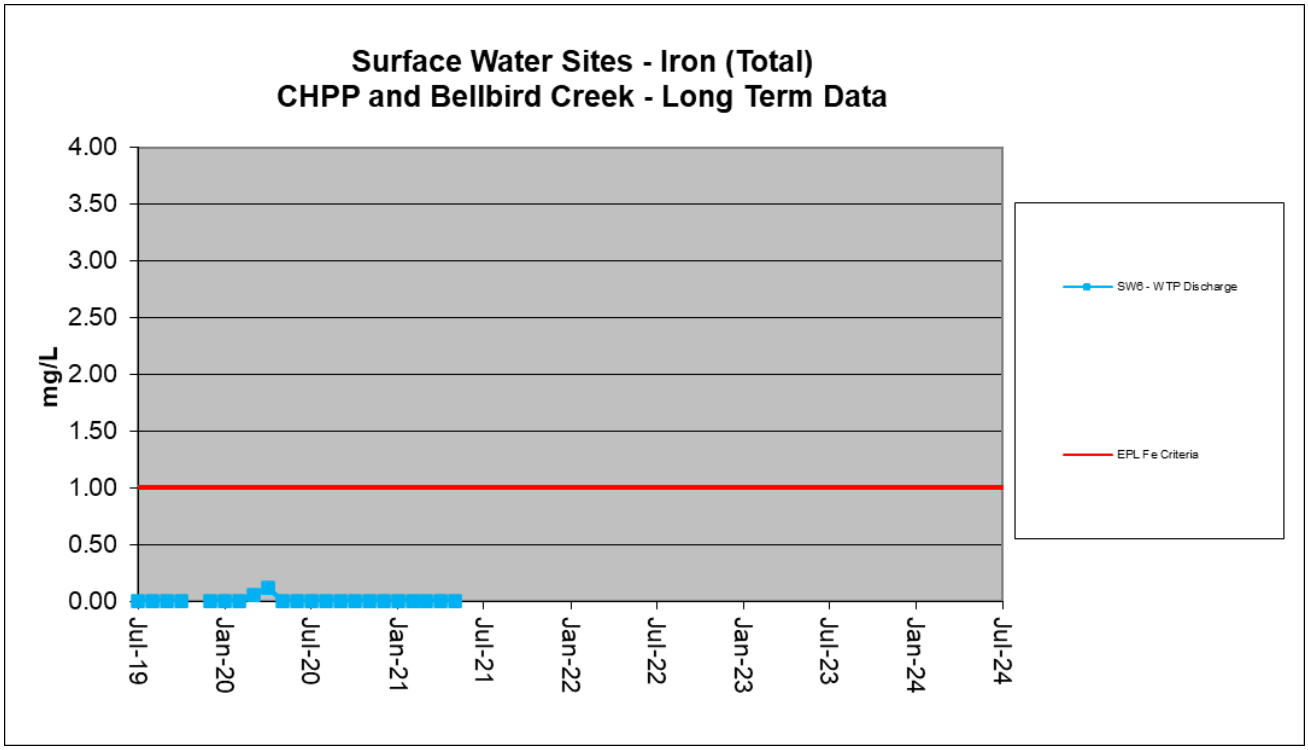

Surface Water Sites - EC
CHPP and Bellbird Creek - Long Term Data
µS/cm
12000
10000
8000
6000
4000
2000
0
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW2 - Pinch Bridge
SW4 - Downstream Boundary
SW5 - Upstream Boundary

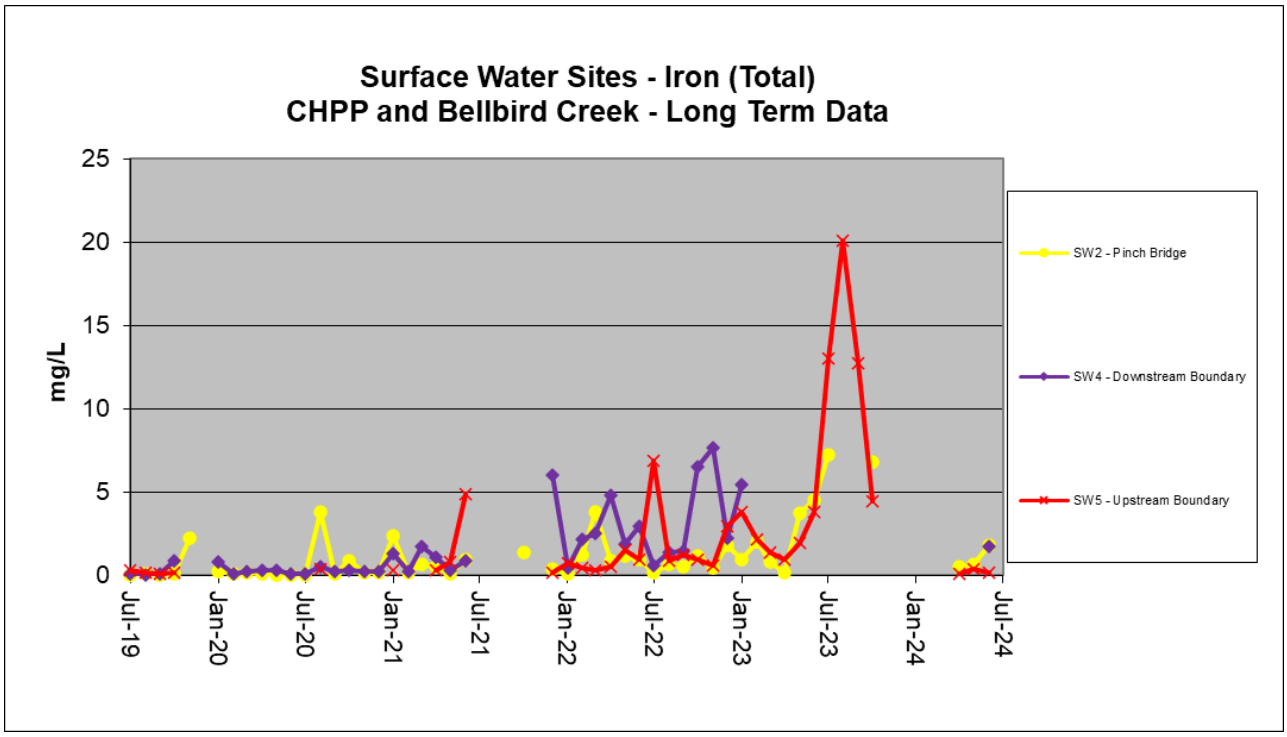

Surface Water Sites - EC
Quorrobolong Creek and Coney Creek - Long Term Data
µS/cm
4000
3500
3000
2500
2000
1500
1000
500
0
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW Q1 - Quorrobolong Creek (Sandy Creek Rd)
SW Q2 - Quorrobolong Creek Upstream
SW Q3 - Quorrobolong Creek Downstream
SW C1 - Cony Creek

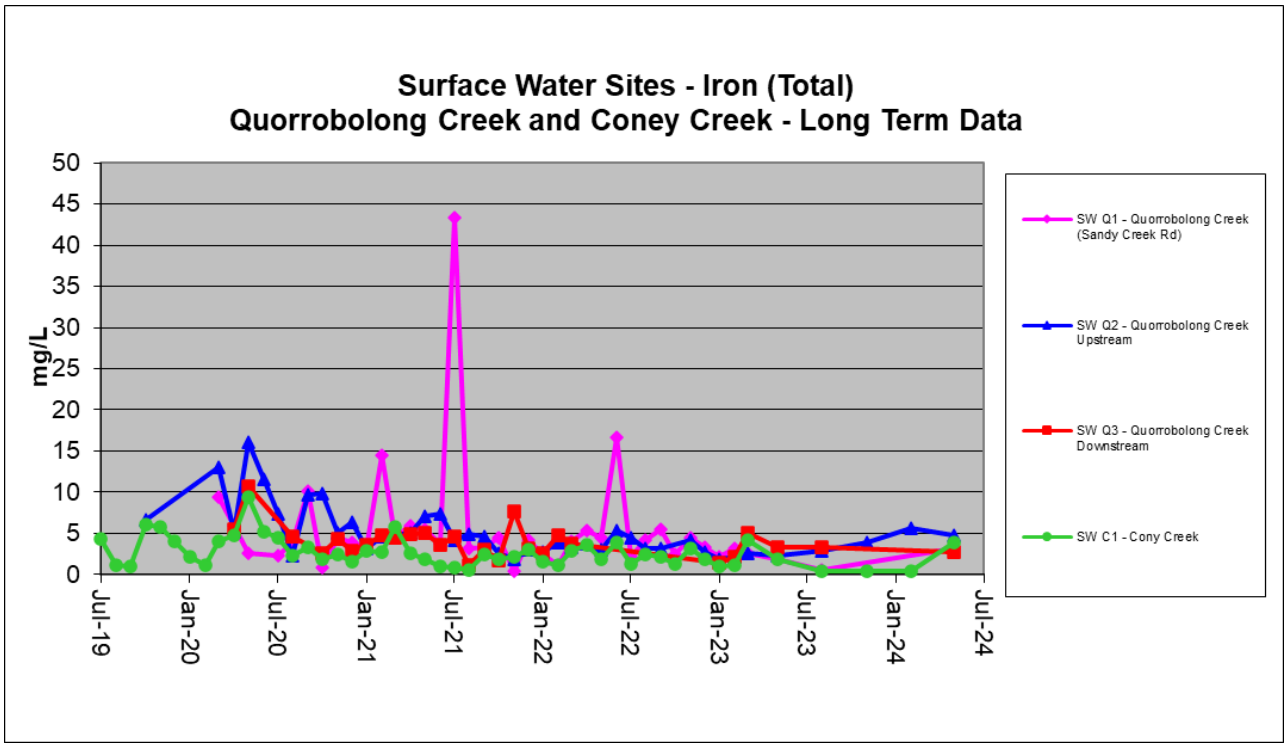

Surface Water Sites - TSS
CHPP and Bellbird Creek - Long Term Data
mg/L
50
40
30
20
10
0
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW6 - WTP Discharge
EPL TSS Criteria


Surface Water Sites - TSS
CHPP and Bellbird Creek - Long Term Data
mg/L
180
160
140
120
100
80
60
40
20
0
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW2 - Pinch Bridge
SW4 - Downstream Boundary
SW5 - Upstream Boundary


Surface Water Sites - TSS
Quorrobolong Creek and Coney Creek - Long Term Data
mg/L
100
90
80
70
60
50
40
30
20
10
0
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW Q1 - Quorrobolong Creek (Sandy Creek Rd)
SW Q2 - Quorrobolong Creek Upstream
SW Q3 - Quorrobolong Creek Downstream
SW C1 - Cony Creek


Surface Water Sites - Iron (Total)
CHPP and Bellbird Creek - Long Term Data
mg/L
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW6 - WTP Discharge
EPL Fe Criteria


Surface Water Sites - Iron (Total)
CHPP and Bellbird Creek - Long Term Data
mg/L
25
20
15
10
5
0
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW2 - Pinch Bridge
SW4 - Downstream Boundary
SW5 - Upstream Boundary


Surface Water Sites - Iron (Total)
Quorrobolong Creek and Coney Creek - Long Term Data
mg/L
50
45
40
35
30
25
20
15
10
5
0
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
Jul-23
Jan-24
Jul-24
SW Q1 - Quorrobolong Creek (Sandy Creek Rd)
SW Q2 - Quorrobolong Creek Upstream
SW Q3 - Quorrobolong Creek Downstream
SW C1 - Cony Creek

Appendix C. Groundwater Level and Quality Graphs

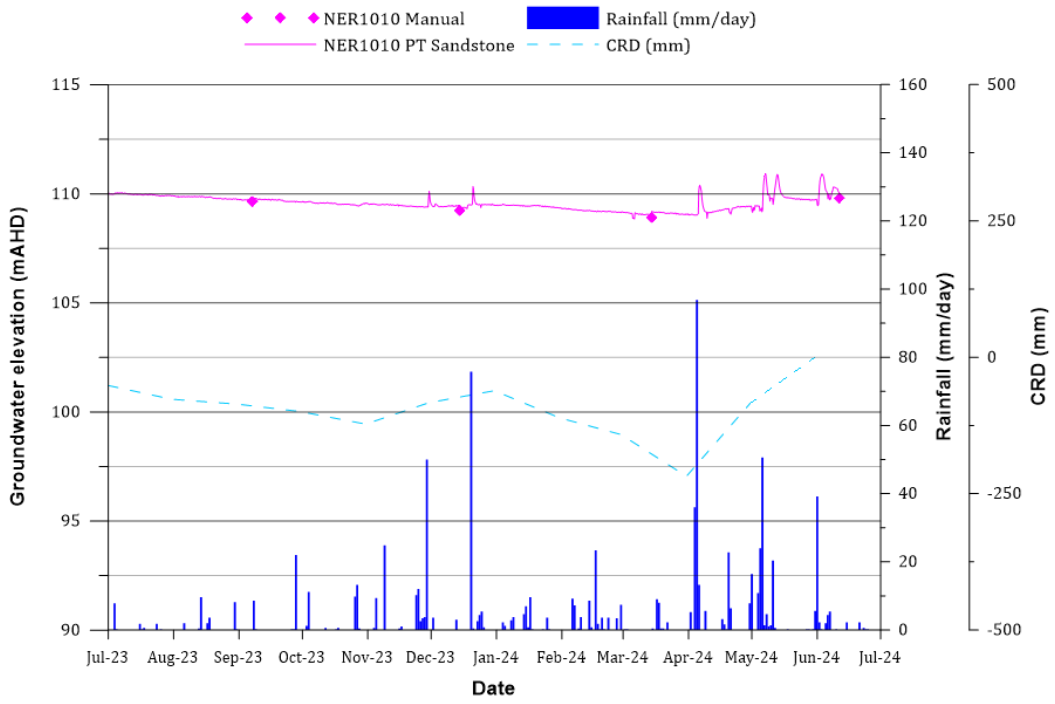


FIGURE APP C-1 NER1010 GROUNDWATER LEVEL HYDROGRAPHS

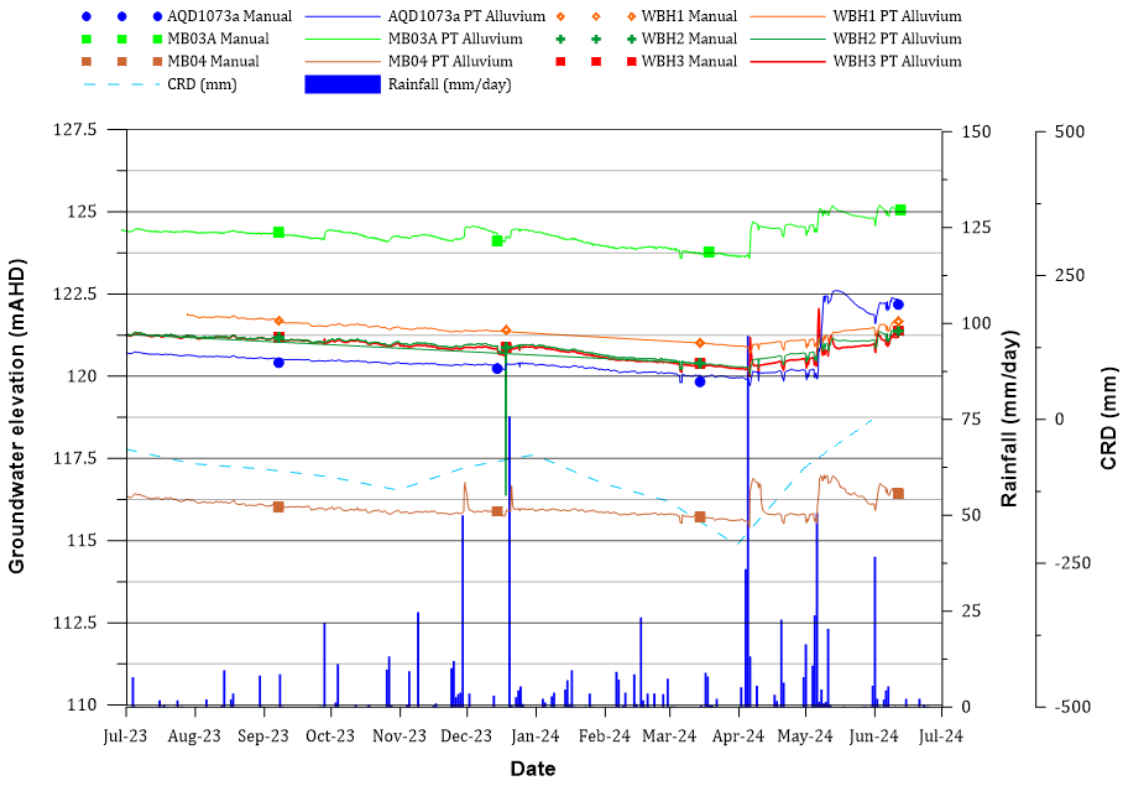


FIGURE APP C-2 STAGE 2 AND BELLBIRD SOUTH ALLUVIUM AND WATERNSW GROUNDWATER LEVEL HYDROGRAPHS

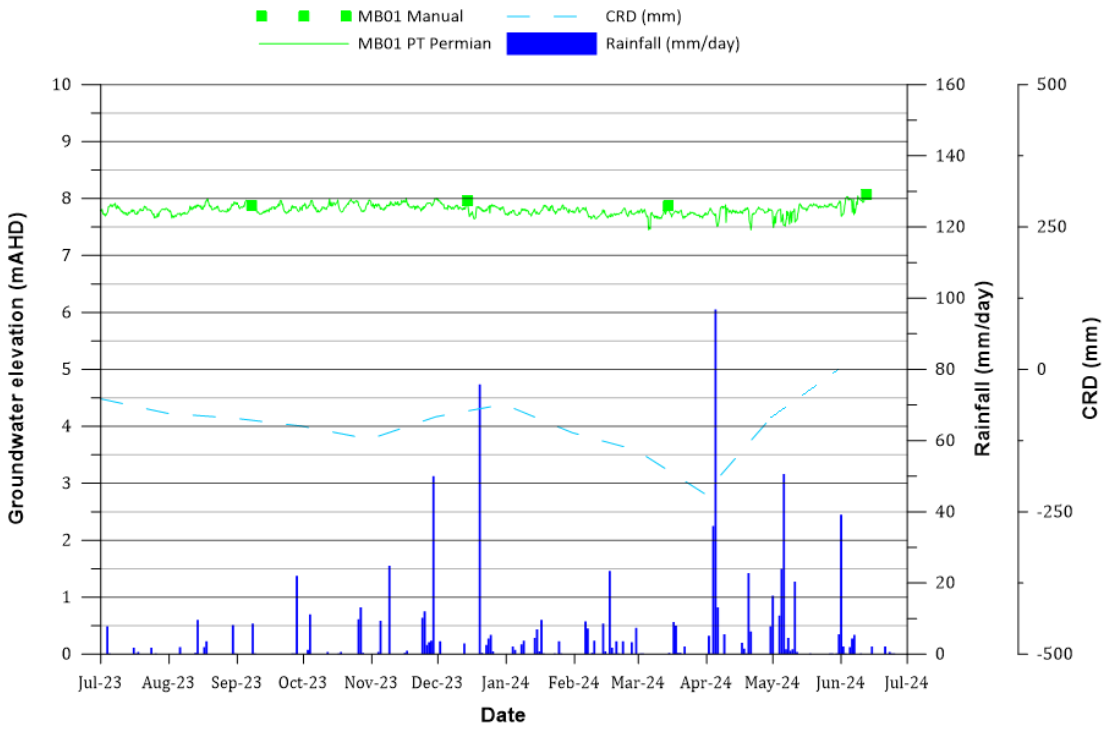


FIGURE APP C-3 STAGE 3 MB01 SANDSTONE AQUIFER GROUNDWATER LEVEL HYDROGRAPH

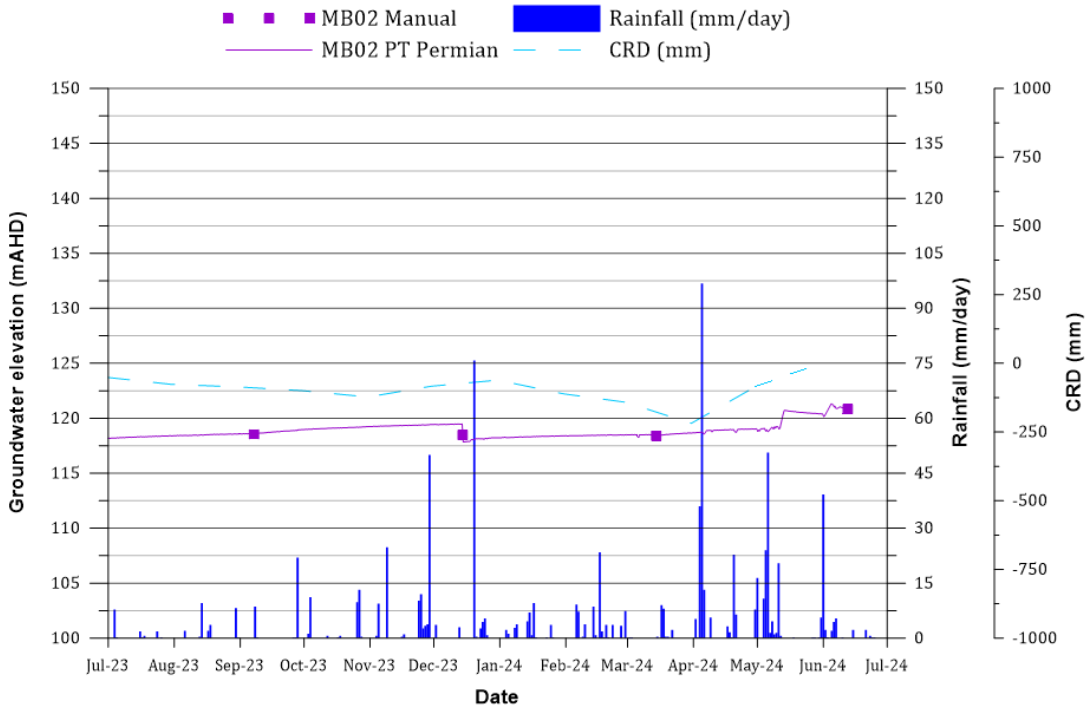


FIGURE APP C-4 STAGE 3 MB02 SANDSTONE AQUIFER GROUNDWATER LEVEL HYDROGRAPH

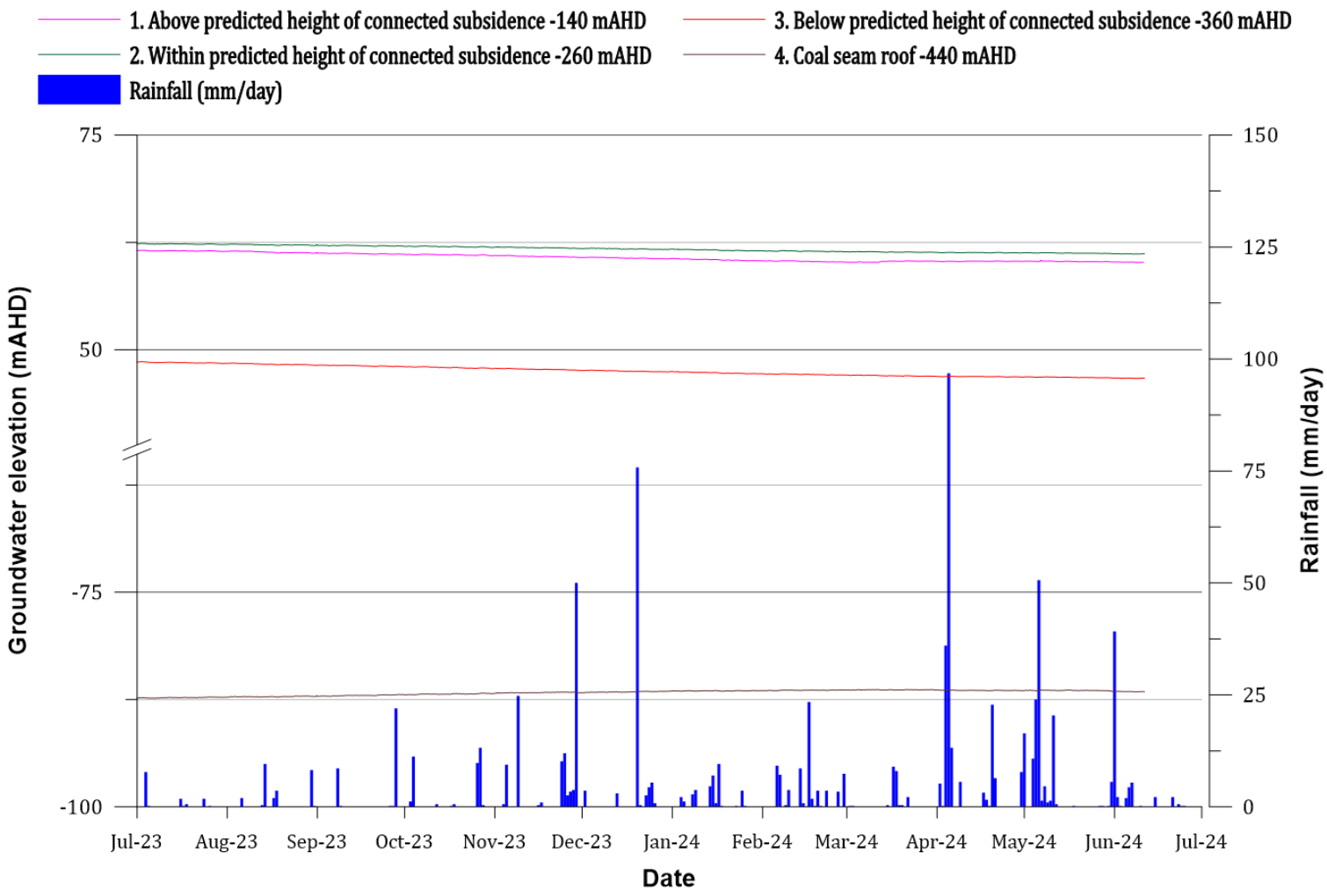

1. Above predicted height of connected subsidence -140 mAHD
2. Within predicted height of connected subsidence -260 mAHD
Rainfall (mm/day)
3. Below predicted height of connected subsidence -360 mAHD
4. Coal seam roof -440 mAHD
Groundwater elevation (mAHD)
75
50
-75
-100
150
125
100
75
50
25
0
Rainfall (mm/day)
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24
Jun-24
Jul-24
Date

FIGURE APP C-5 EX01H PIEZOMETRIC HEAD MEASUREMENTS: SENSORS NO.1 TO NO.4

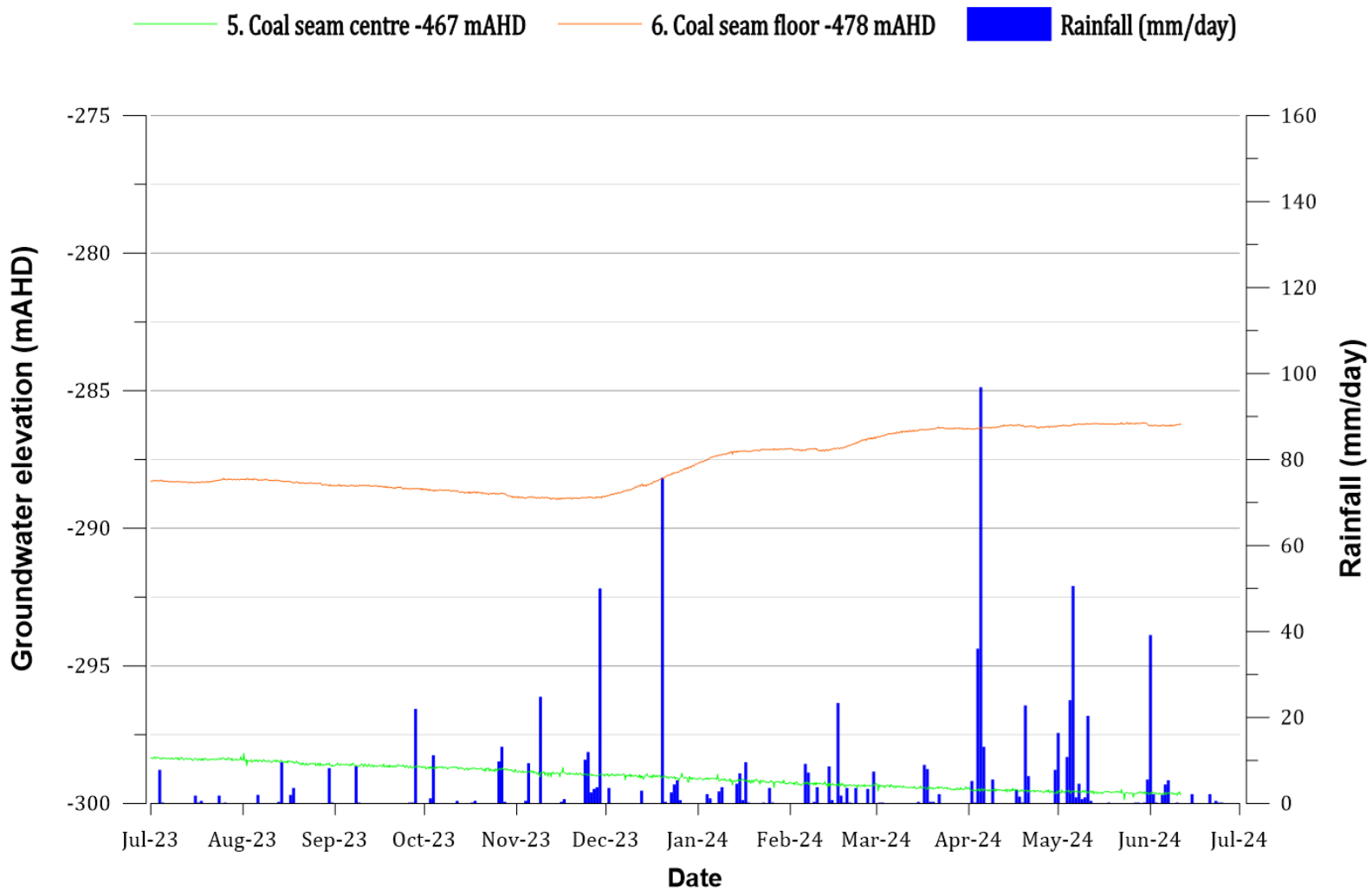


FIGURE APP C-6 EX01H PIEZOMETRIC HEAD MEASUREMENTS: SENSORS NO.5 AND NO.6

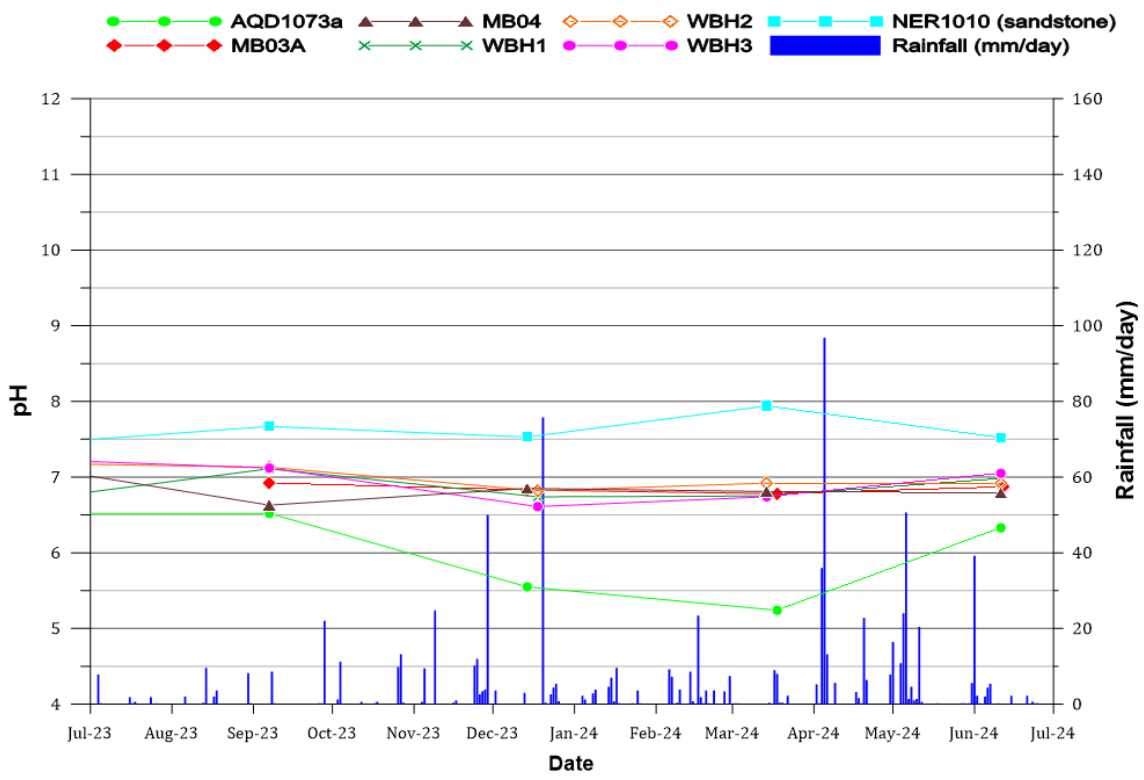


FIGURE APP C-7 STAGE 2 AND BELLBIRD SOUTH ALLUVIUM AND SANDSTONE AQUIFER PH TRENDS

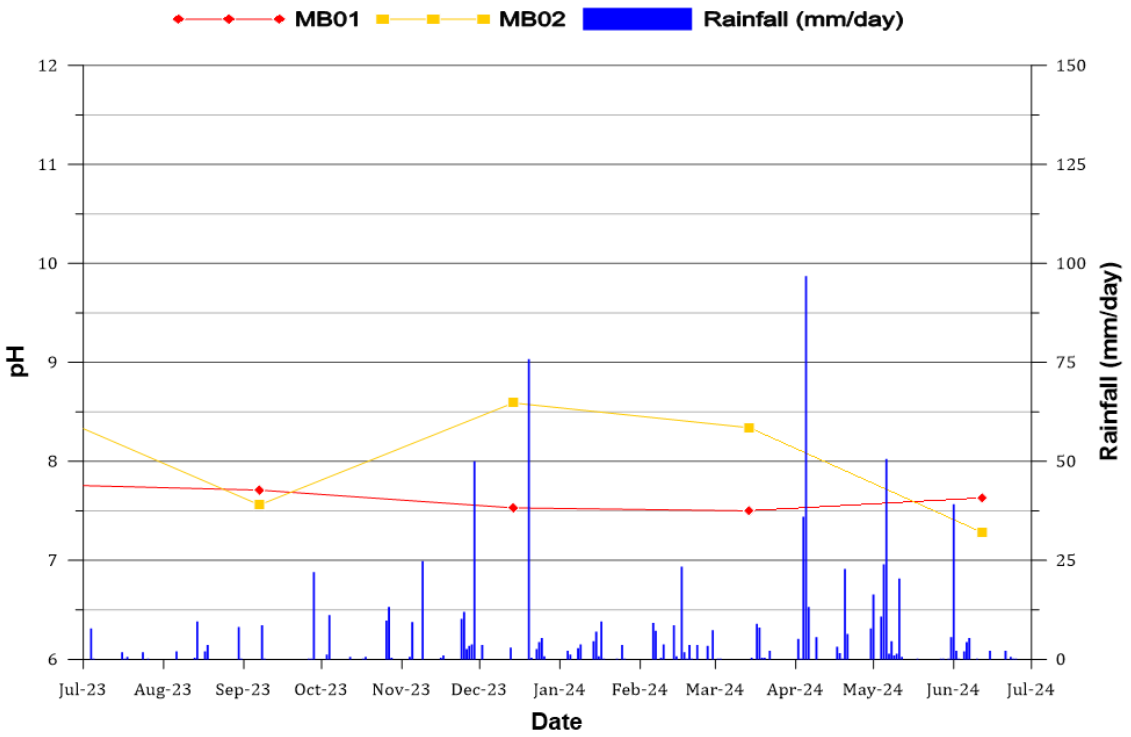


FIGURE APP C-8 STAGE 3 SANDSTONE AQUIFER PH TRENDS

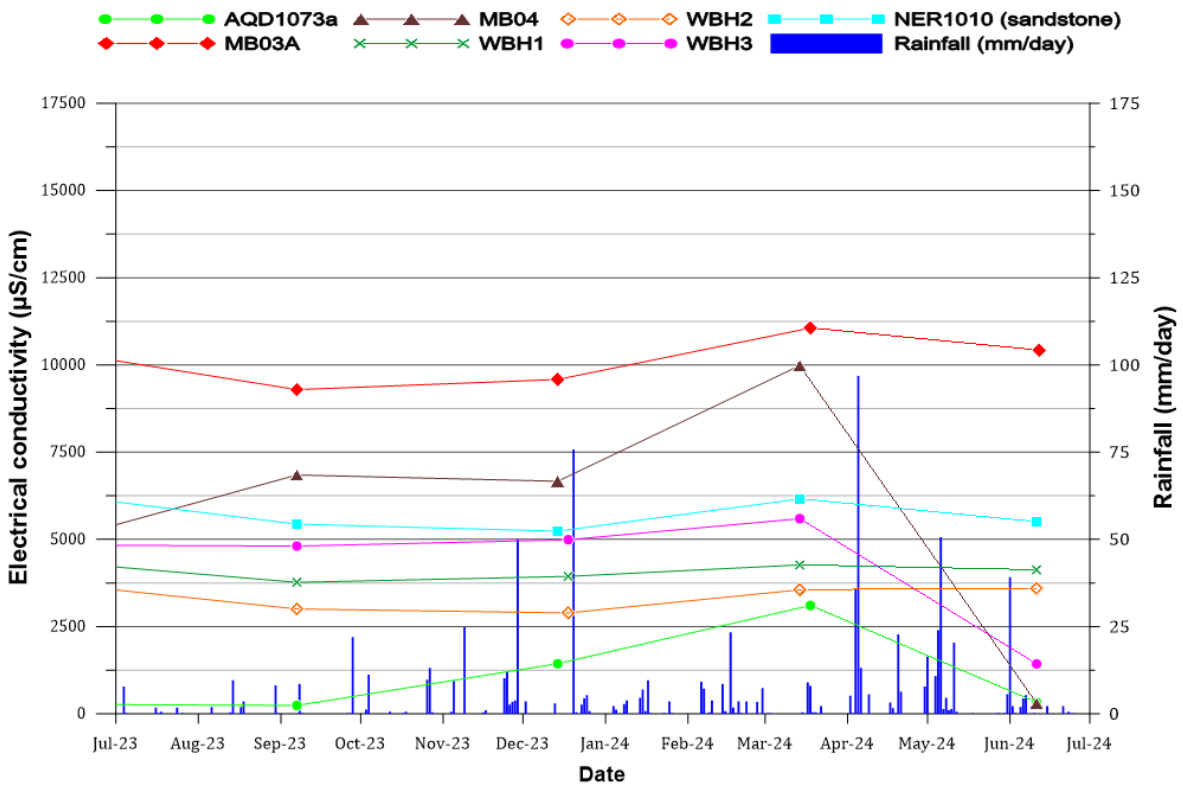


FIGURE APP C-9 STAGE 2 AND BELLBIRD SOUTH ALLUVIUM AND SANDSTONE AQUIFER EC TRENDS

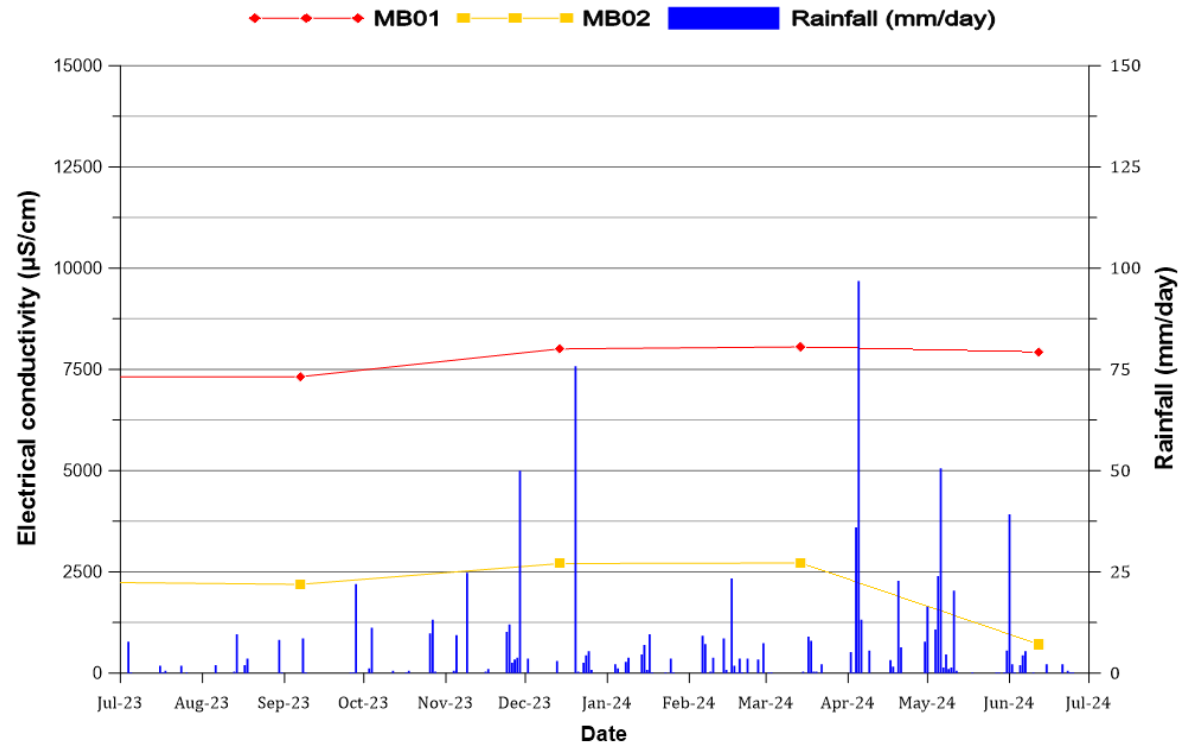


FIGURE APP C-10 STAGE 3 SANDSTONE AQUIFER EC TRENDS

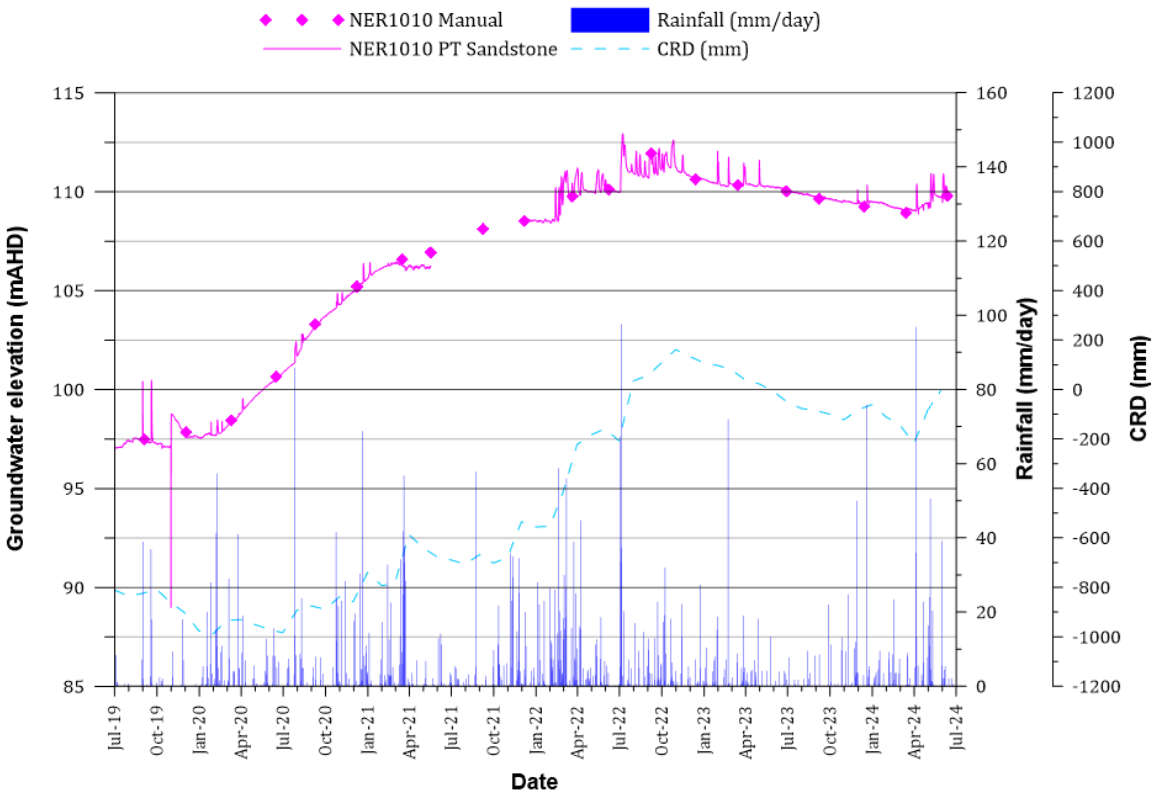


FIGURE APP C-11 5-YEAR NER1010 GROUNDWATER LEVEL HYDROGRAPH

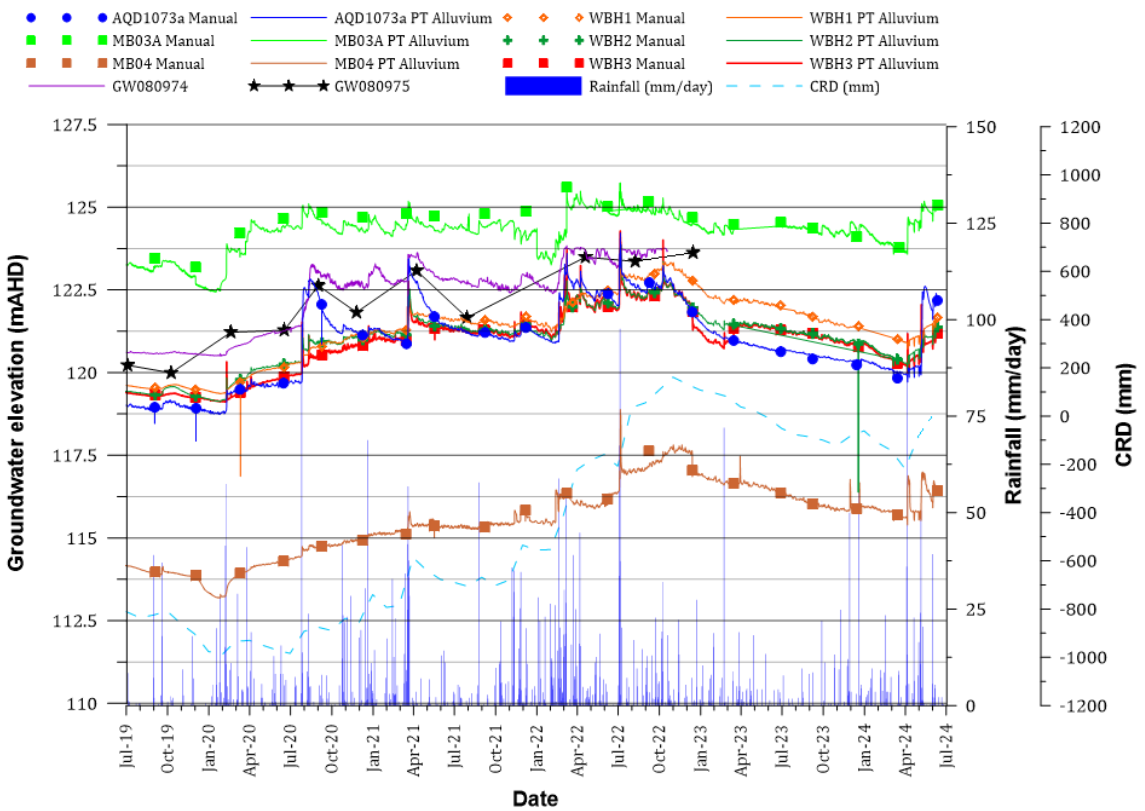


FIGURE APP C-12 5-YEAR STAGE 2 AND BELLBIRD SOUTH ALLUVIUM AND WATERNSW GROUNDWATER LEVEL HYDROGRAPHS

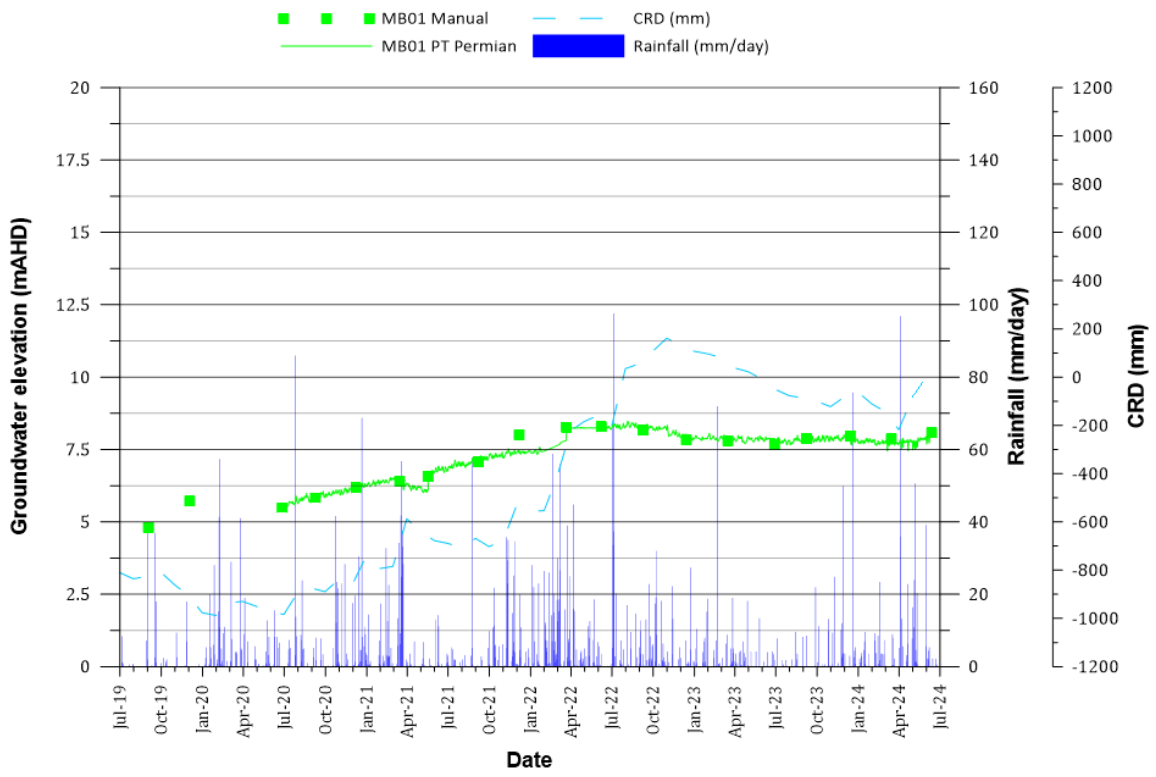


FIGURE APP C-13 **5-YEAR STAGE 3 MB01 SANDSTONE AQUIFER GROUNDWATER LEVEL HYDROGRAPH**

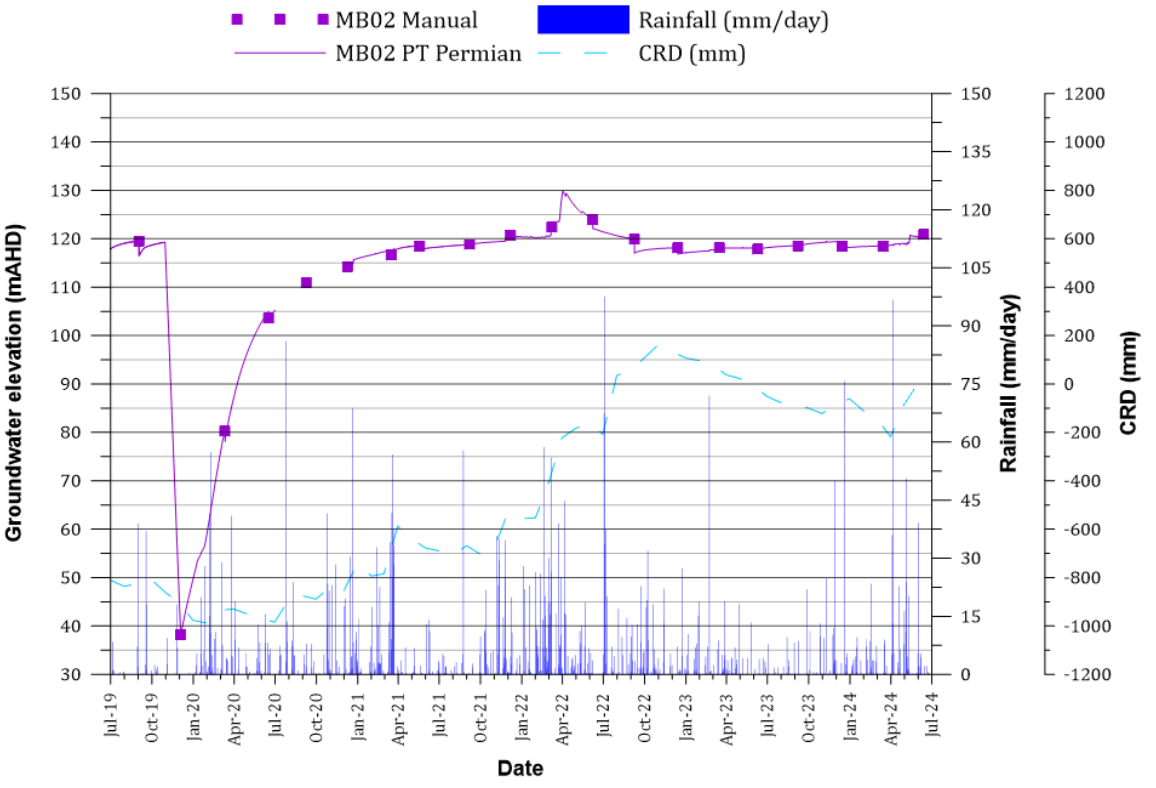


FIGURE APP C-14 **5-YEAR STAGE 3 MB02 SANDSTONE AQUIFER GROUNDWATER LEVEL HYDROGRAPH**

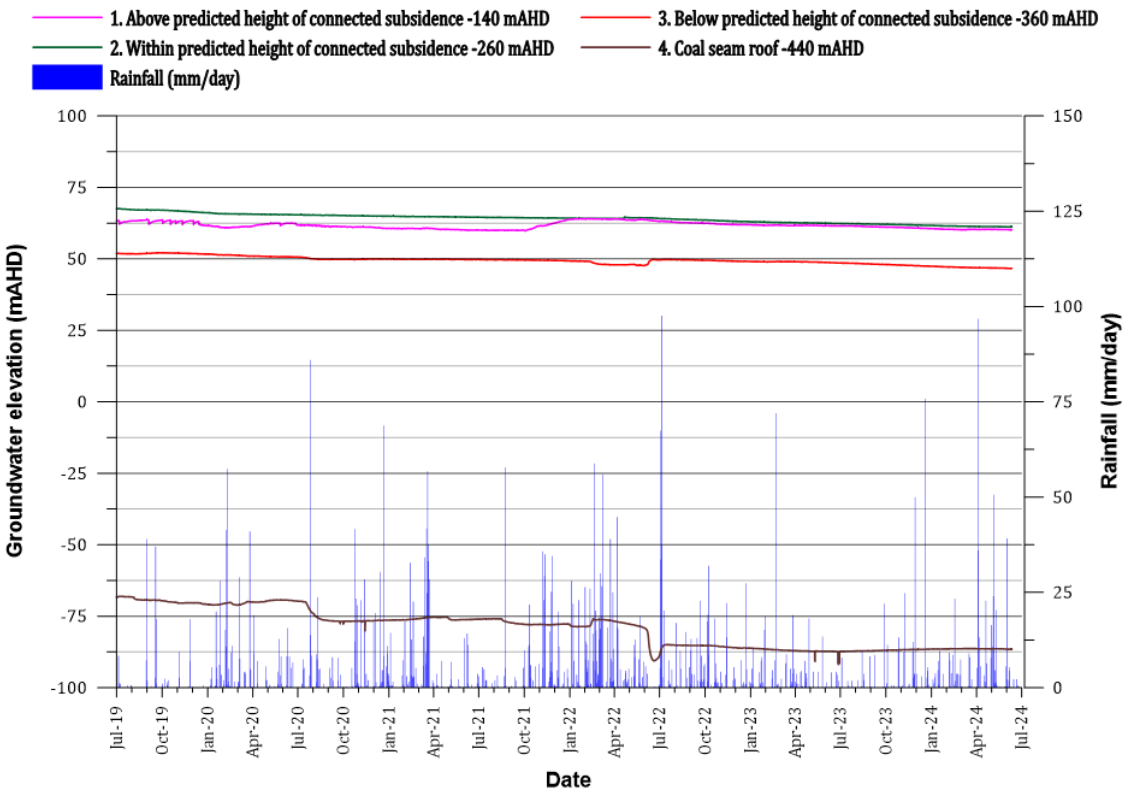


FIGURE APP C-15 5-YEAR EX01H PIEZOMETRIC HEAD MEASUREMENTS: SENSORS NO.1 TO NO.4

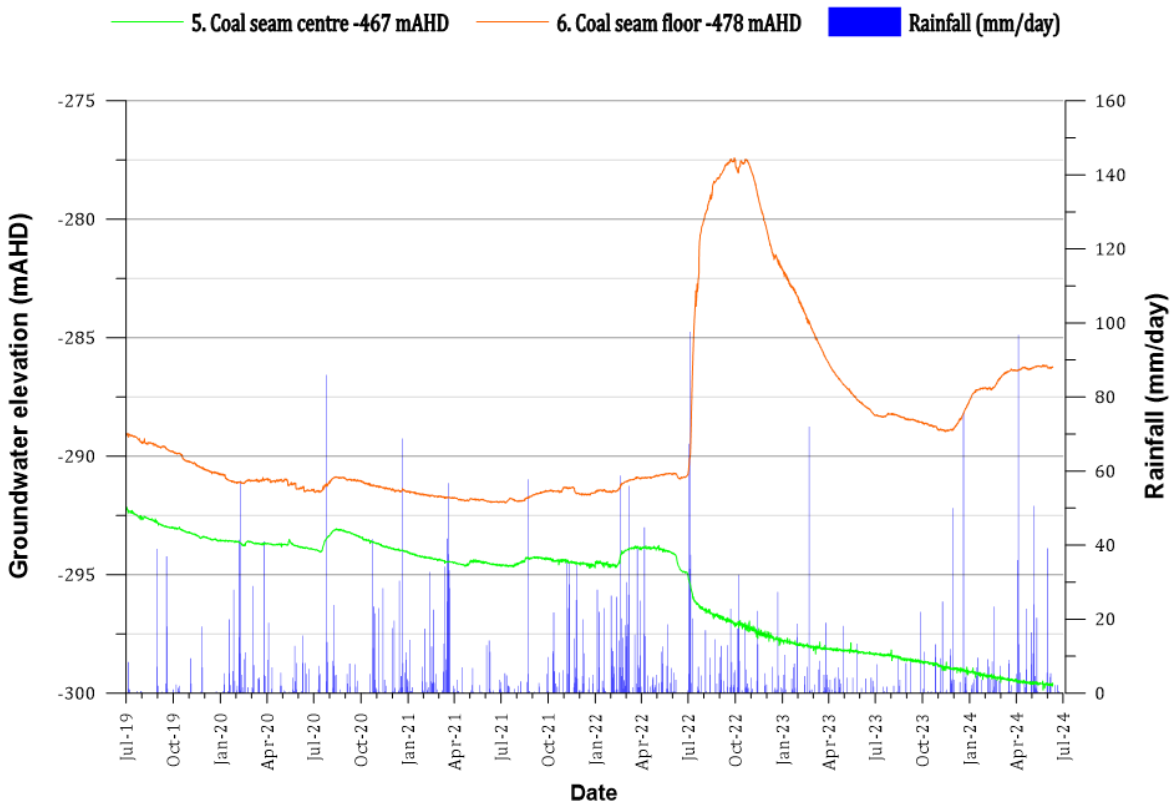


FIGURE APP C-16 5-YEAR EX01H PIEZOMETRIC HEAD MEASUREMENTS: SENSORS NO.5 AND NO.6

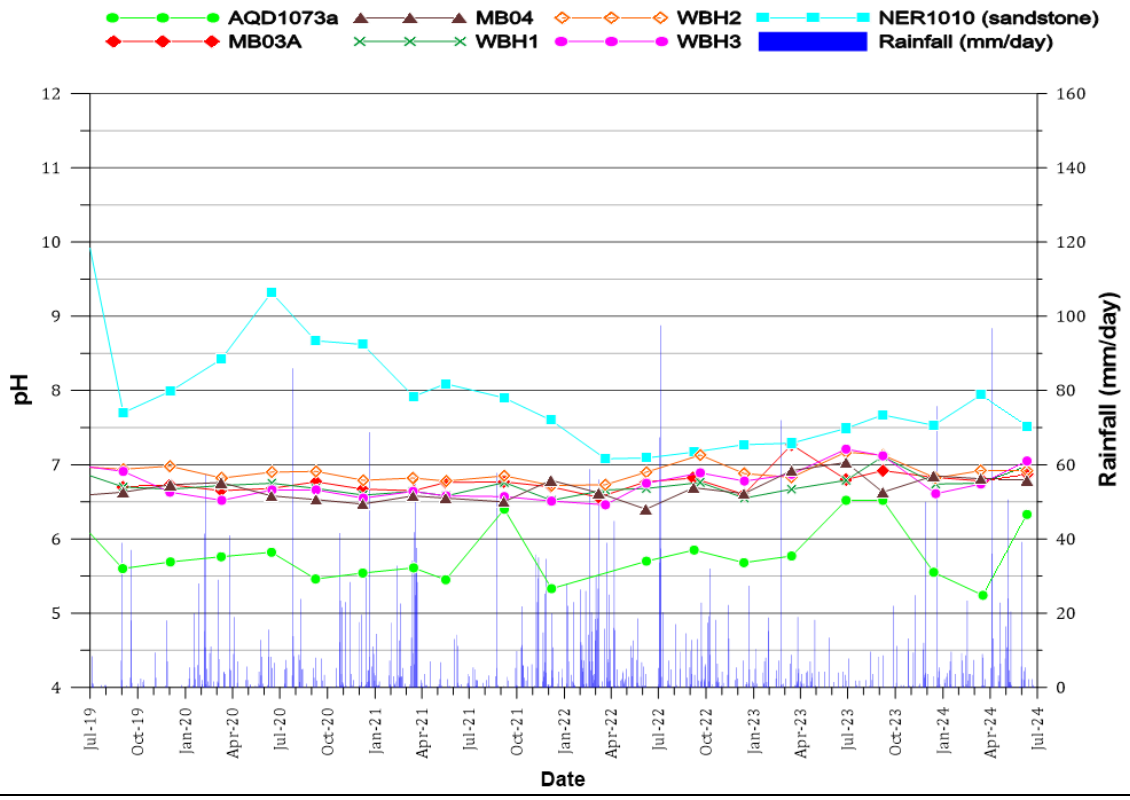


FIGURE APP C-17 **5-YEAR STAGE 2 AND BELLBIRD SOUTH ALLUVIUM AND SANDSTONE AQUIFER PH TRENDS**

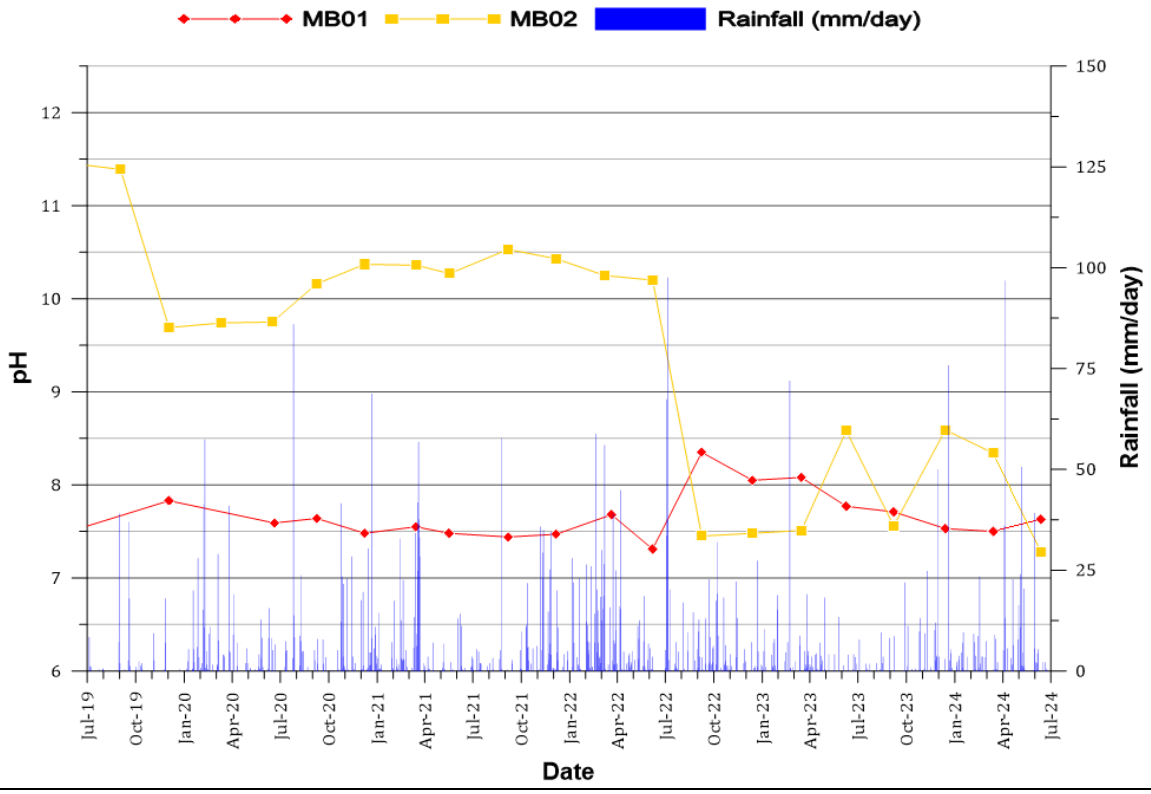


FIGURE APP C-18 **5-YEAR STAGE 3 SANDSTONE AQUIFER PH TRENDS**

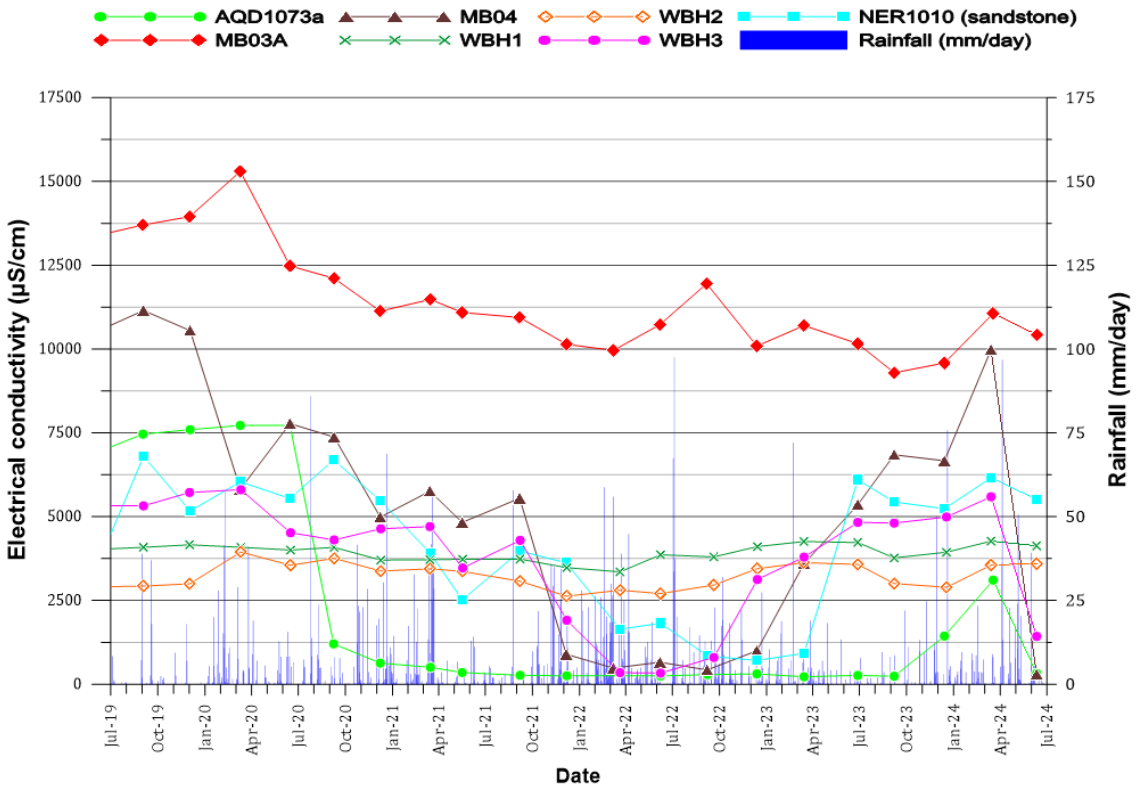


FIGURE APP C-19 **5-YEAR STAGE 2 AND BELLBIRD SOUTH ALLUVIUM AND SANDSTONE AQUIFER EC TRENDS**

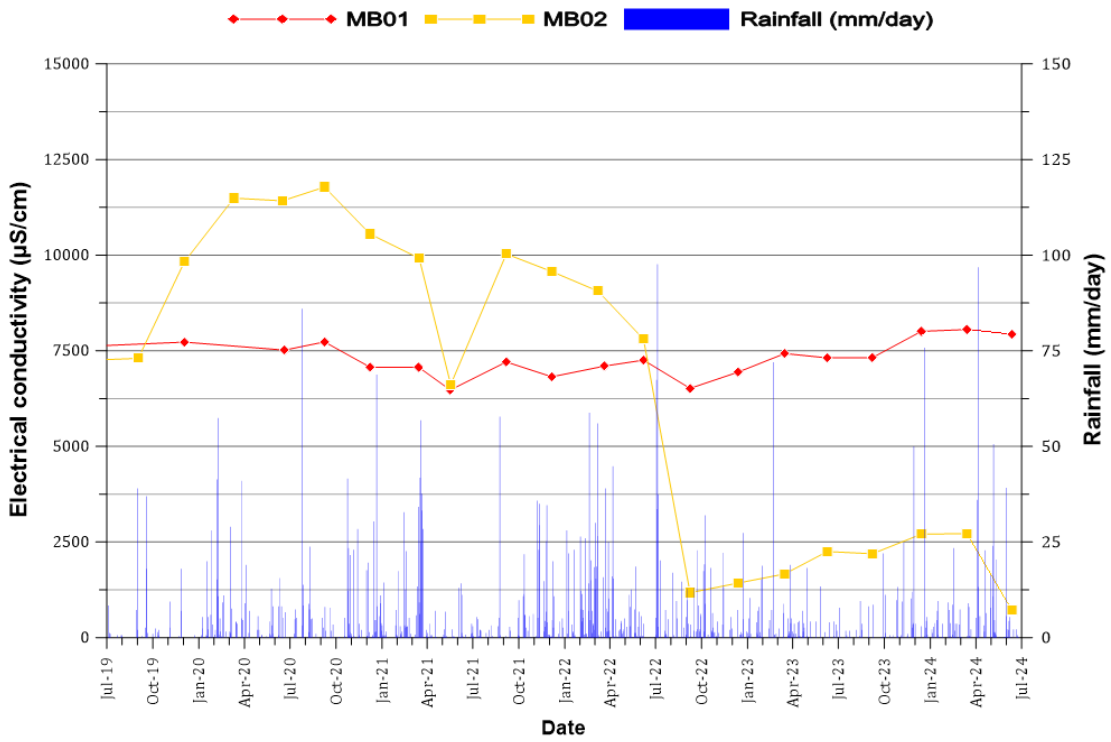


FIGURE APP C-20 **5-YEAR STAGE 3 SANDSTONE AQUIFER EC TRENDS**

Department of Planning, Housing and Infrastructure

NSW Planning ref: MP08_0111-PA-73

Julie McNaughton
Environment & Community Senior advisor
Austar Coal Mine Pty Limited
Eora Country
Darling Park - Tower 2 Level 18, 201 Sussex Street
Sydney New South Wales 2000
23/01/2025

Sent via the Major Projects Portal only

Subject: Austar Coal - Annual Review 2024

Dear Ms McNaughton

I refer to your Annual Review for the period 1 July 2023 to 30 June 2024, submitted as required by Schedule 7, Condition 3 of MP08_0111 as modified (the approval) to the NSW Department of Planning, Housing and Infrastructure (NSW Planning) on 30 September 2024.

NSW Planning has reviewed the Annual Review and considers it to generally satisfy the reporting requirements of the approval and the NSW Planning *Annual Review Guideline* (October 2015). Please make publicly available a copy of the Annual Review 2024 on the company's website within 30 days.

However, for future Annual Reviews, under the provisions of Schedule 2, Condition 4(a) of the approval, please include the following information:

1. Air Quality and Greenhouse Gas Management – Data for air quality monitoring at the frequency detailed in the approval, including justification for excluding any data in calculations of averages used to demonstrate compliance with the approval criteria.

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

Should you wish to discuss the matter further, please contact Joel Fleming, (Senior Compliance Officer) on 02 6575 3416 or email compliance@planning.nsw.gov.au

Yours sincerely

Joel Curran
Acting Team Leader
Compliance

As nominee of the Planning Secretary