



AGENDA

Ordinary Meeting of Council

To be held on
Thursday 12 December 2024
At 4:30 PM



MISSION STATEMENT

To provide regional economic opportunity and lifestyle choices through provision of a quality water supply by innovative leadership showing environmental responsibility in cooperation with the community, constituent councils and governments.

VISION

To be innovative leaders in the supply and distribution of water through regional efficiency, technical excellence and customer service.

STATEMENT OF ETHICAL OBLIGATIONS

Councillors are reminded of their Oath or Affirmation of Office made under Section 233A of the Local Government Act 1993 and their obligation under Council's Code of Conduct to disclose and appropriately manage Conflicts of Interest.

QUORUM

To be innovative leaders in the supply and distribution of water through regional efficiency, technical excellence and customer service.

COUNCILLORS



Councillor Alan White
Chairperson
Coolamon Shire Council



Councillor Graham Sinclair
Deputy Chairperson
Temora Shire Council



Councillor Matt Austin
Junee Shire Council



Councillor Rodney Crowe
Bland Shire Council



Councillor Les Cooper
Cootamundra-Gundagai
Regional Council



Councillor Joanne Mackay
Hilltops Council



Councillor Neil Langford
Hilltops Council



Councillor Cameron Rouse
Narrandera Shire Council

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1 OPENING AND WELCOME**2 ACKNOWLEDGEMENT OF COUNTRY**

I would like to acknowledge the Wiradjuri people who are the Traditional Custodians of the Land. I would also like to pay respect to their people both past present and emerging, and extend that respect to other Aboriginal Australians who are present.

3 LEAVE OF ABSENCE/APOLOGIES

At the time of preparation of the business paper no apologies have been received.

Leave of Absence

Nil

Apologies

Nil

Application for Leave of Absence

Nil

4 ATTENDANCE OF COUNCILLORS BY AUDIO VISUAL LINK

Councils Code of Meeting Practice permits Councillors to attend and participate in meetings of the council with the approval of the council or relevant committee.

Clauses 5.19 - 5.30 of the Code of Meeting Practice provides the parameters for eligibility and requirements for remote attendance.

5 WEBCASTING OF COUNCIL MEETINGS

Attendees of this meeting are reminded that:

- a) The meeting is being recorded and made publicly available on Council's website, and
- b) Persons attending the meeting should refrain from making any defamatory statements.

6 PRESENTATIONS

No presentations are scheduled for this meeting.

7 CONFIRMATION OF MINUTES**8 DISCLOSURES AND DECLARATIONS OF INTEREST**

Councillors and Senior Staff are reminded of their obligation to declare their interest in any matter listed before them.

Councillors may declare an interest at the commencement of the meeting, or alternatively at any time during the meeting should any issue progress or arise that would warrant a declaration.

Councillors must state their reason in declaring any type of interest.

9 BUSINESS WITHOUT NOTICE – URGENT

In accordance with clause 9.3 of Councils Code of Meeting Practice, business may be transacted at a meeting without due notice only if:

- a) A motion is passed to have the business transacted at the meeting, and
- b) The business to be considered is ruled by the chairperson to be of great urgency on the grounds that it requires a decision by the council before the next scheduled ordinary meeting of the council.

10 CHAIRPERSON MINUTES

Nil

11 REPORTS FROM COMMITTEES

Nil

12 CORRESPONDENCE

Nil

13 CORPORATE SERVICES MANAGER**13.1 COUNCIL INVESTMENTS REPORT - OCTOBER 2024****Author:** Accountant**Authoriser:** Corporate Services Manager**Attachments:** Nil**RECOMMENDATION**

That Council receive and note the report detailing Council cash and investments at 31 October 2024.

ALIGNMENT WITH BUSINESS ACTIVITY STRATEGIC PLAN

Priority 1 High Quality, Secure and Efficient Water Supplies

BACKGROUND

A report on Council's investments is required to be presented for Council's consideration in accordance with Clause 212 of the Local Government (General) Regulation 2005.

REPORT

Council's cash and investment portfolio decreased by \$4,207,317.17 from \$32,355,483.03 at September 2024 to \$28,148,165.86 at October 2024.

Cash and Investment Portfolio

| Type | LT Rating | ST Rating | Issuer | Frequency | Purchase | Maturity | Days | Rate | Percentage of Portfolio | Principal |
|---------------|-----------|-----------|-----------------------|-----------------|------------|------------|------|-------|-------------------------|---------------------|
| TD | BBB- | A-3 | Judo Bank | At maturity | 9/05/2024 | 7/11/2024 | 182 | 5.20% | 4% | \$1,000,000 |
| TD | AA- | A-1+ | NAB | Annually | 16/08/2024 | 15/11/2024 | 91 | 4.90% | 7% | \$2,000,000 |
| TD | BBB | A-2 | Defence Bank | Annually | 1/12/2023 | 29/11/2024 | 364 | 5.50% | 14% | \$4,000,000 |
| TD | NR | NR | NT Treasury Corp | Annually | 28/09/2020 | 15/12/2024 | 1539 | 1.10% | 4% | \$1,000,000 |
| TD | AA- | A-1+ | NAB | At maturity | 24/09/2024 | 2/01/2025 | 100 | 4.90% | 11% | \$3,000,000 |
| TD | BBB | A-2 | AMP Bank | Annually | 12/01/2023 | 13/01/2025 | 732 | 4.55% | 7% | \$2,000,000 |
| TD | AA- | A-1+ | NAB | At maturity | 25/07/2024 | 23/01/2025 | 182 | 5.28% | 4% | \$1,000,000 |
| TD | AA- | A-1+ | NAB | Annually | 24/02/2023 | 24/02/2025 | 731 | 4.93% | 4% | \$1,000,000 |
| TD | BBB | A-2 | AMP Bank | Annually | 1/09/2023 | 4/03/2025 | 550 | 5.05% | 7% | \$2,000,000 |
| TD | BBB | A-2 | Police Financial Svcs | Annually | 1/03/2023 | 13/03/2025 | 743 | 5.15% | 4% | \$1,000,000 |
| TD | BBB | A-2 | Defence Bank | Annually | 8/03/2023 | 27/03/2025 | 750 | 4.90% | 4% | \$1,000,000 |
| TD | AA- | A-1+ | NAB | At maturity | 2/10/2024 | 2/04/2025 | 182 | 5.00% | 9% | \$2,500,000 |
| TD | NR | NR | Summerland CU | Annually | 22/03/2023 | 8/05/2025 | 778 | 4.80% | 4% | \$1,000,000 |
| TD | A+ | A-1 | Rabobank Australia | Annually | 25/09/2024 | 26/09/2029 | 1827 | 4.70% | 14% | \$4,000,000 |
| CASH | AA- | A-1+ | Commonwealth Bank | At Call Account | | 1/11/2024 | 1 | 4.20% | 4% | \$1,016,308.00 |
| CASH | AA- | A-1+ | Commonwealth Bank | Cash Account | | 1/11/2024 | 1 | 0.01% | 2% | \$631,857.86 |
| TOTAL: | | | | | | | | | | \$28,148,166 |

Portfolio Performance

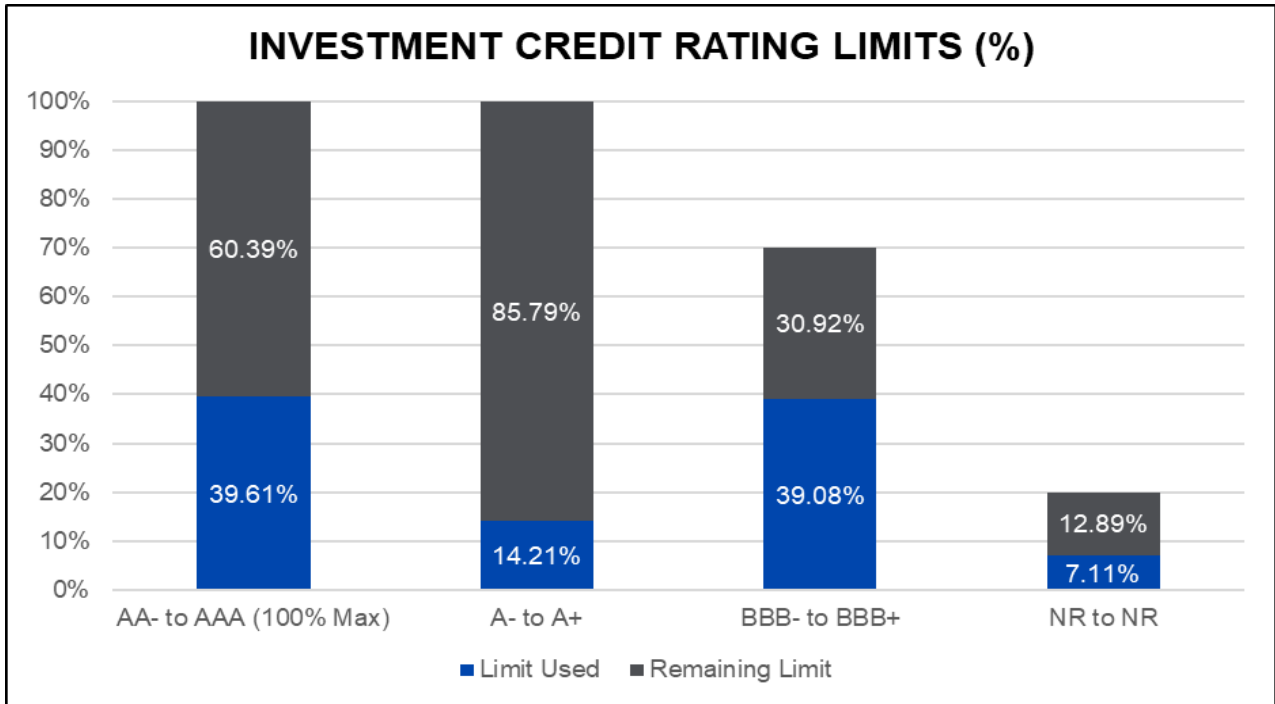
Goldenfields Water County Council's investment portfolio weighted average interest for October 2024 was 4.55%. Performance indicators for comparison are:

- BBSW 4.42% RBA Cash Rate 4.35% AusBond Bank Bill 4.36%

Interest received to October 2024 totalled \$413,011.78.

Credit Quality Compliance

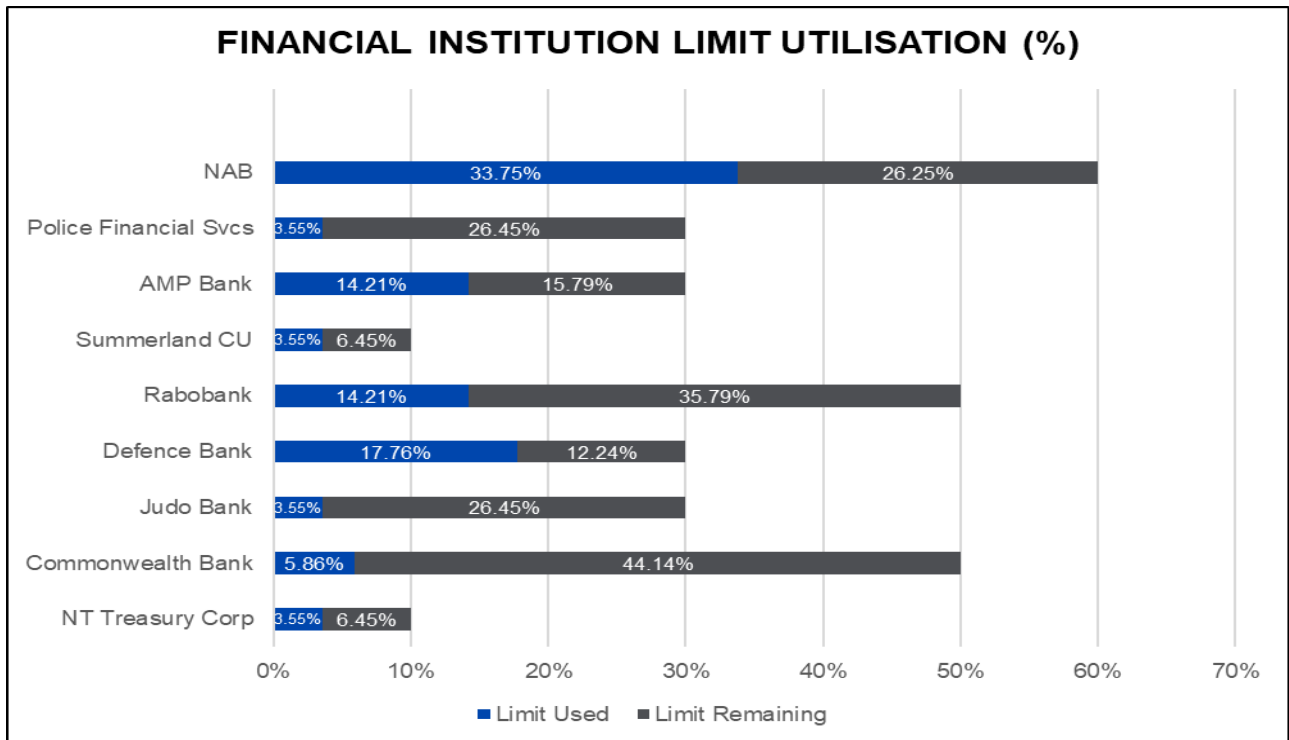
Council’s investment portfolio was compliant with policy in terms of S&P long term rating credit quality limits, as displayed below.



Financial Institution Compliance

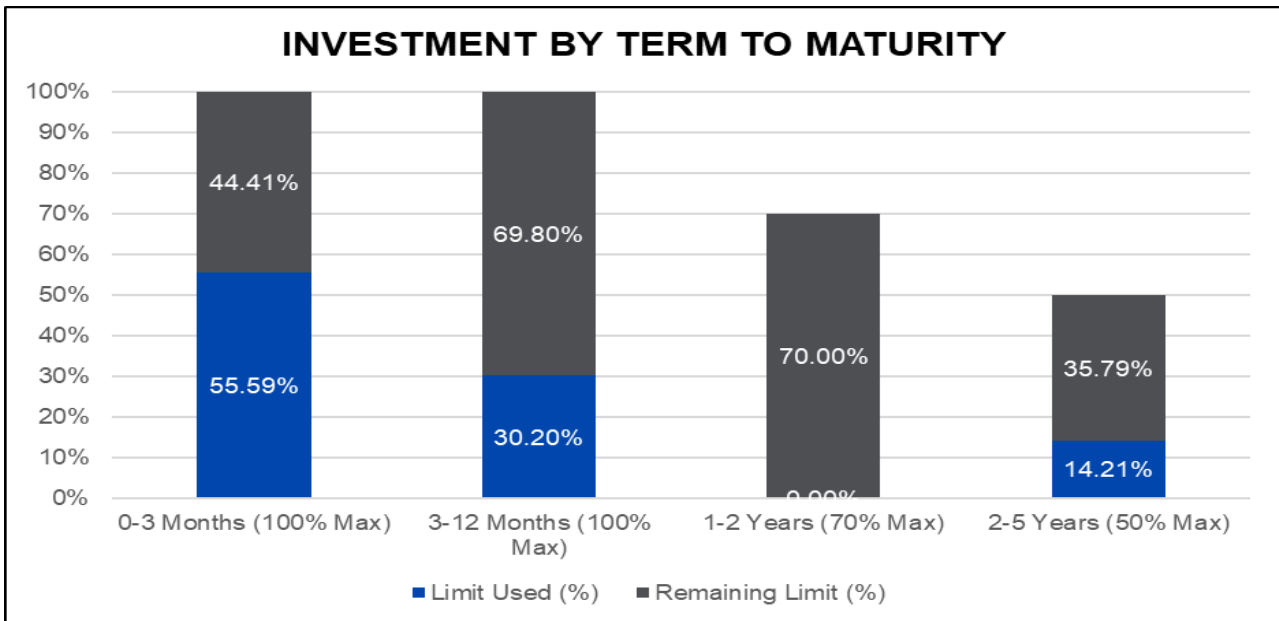
As at the end of October, Council was compliant with policy in terms of individual financial institution capacity limits. It is worth noting that capacity limits are affected by changes in the on-call account balance compared to the total portfolio balance.

Overall, the portfolio is diversified across a variety of credit ratings, including some exposure to unrated authorised deposit-taking institutions (ADIs).



Term to Maturity

Council’s investment portfolio maturities shown graphically below were also compliant with policy requirements.



Application of Investment Funds

The table below details the allocation of cash balances in terms of restricted funds, noting restrictions are all internal rather than external.

| Restricted Funds: | |
|---|---------------------|
| Employee Leave Entitlements | \$2,551,897 |
| Plant & Vehicle Replacement | \$1,462,793 |
| Infrastructure Replacement | \$1,349,640 |
| Section 64 Developer Contribution Reserve | \$5,000,000 |
| | |
| Unrestricted Funds | \$17,783,836 |
| TOTAL | \$28,148,166 |

Declaration

I hereby certify that investments listed in the report have been made in accordance with Section 625 of the *Local Government Act 1993*, Clause 212 of the *Local Government (General) Regulation 2005* and Council’s Investment Policy PP004.

Signed

Melody Carr

Corporate Services Manager

FINANCIAL IMPACT STATEMENT

Council’s cash and investment portfolio decreased by \$4,207,317.17 from \$32,355,483.03 at September 2024 to \$28,148,165.86 at October 2024.

13.2 COUNCIL INVESTMENTS REPORT - NOVEMBER 2024

Author: Accountant
Authoriser: Corporate Services Manager
Attachments: Nil

RECOMMENDATION

That Council receive and note the report detailing Council cash and investments at 30 November 2024.

ALIGNMENT WITH BUSINESS ACTIVITY STRATEGIC PLAN

Priority 1 High Quality, Secure and Efficient Water Supplies

BACKGROUND

A report on Council's investments is required to be presented for Council's consideration in accordance with Clause 212 of the Local Government (General) Regulation 2005.

REPORT

Council's cash and investment portfolio increased by \$1,441,782.15 from \$28,148,165.86 at October 2024 to \$29,589,948.01 at November 2024.

Cash and Investment Portfolio

| Type | LT Rating | ST Rating | Issuer | Frequency | Purchase | Maturity | Days | Rate | Percentage of Portfolio | Principal |
|---------------|-----------|-----------|-----------------------|-----------------|------------|------------|------|-------|-------------------------|---------------------|
| TD | BBB | A-2 | Defence Bank | Annually | 1/12/2023 | 29/11/2024 | 364 | 5.50% | 14% | \$4,000,000 |
| TD | NR | NR | NT Treasury Corp | Annually | 28/09/2020 | 15/12/2024 | 1539 | 1.10% | 3% | \$1,000,000 |
| TD | AA- | A-1+ | NAB | At maturity | 24/09/2024 | 2/01/2025 | 100 | 4.90% | 10% | \$3,000,000 |
| TD | BBB | A-2 | AMP Bank | Annually | 12/01/2023 | 13/01/2025 | 732 | 4.55% | 7% | \$2,000,000 |
| TD | AA- | A-1+ | NAB | At maturity | 25/07/2024 | 23/01/2025 | 182 | 5.28% | 3% | \$1,000,000 |
| TD | AA- | A-1+ | NAB | Annually | 24/02/2023 | 24/02/2025 | 731 | 4.93% | 3% | \$1,000,000 |
| TD | BBB | A-2 | AMP Bank | Annually | 1/09/2023 | 4/03/2025 | 550 | 5.05% | 7% | \$2,000,000 |
| TD | BBB | A-2 | Police Financial Svcs | Annually | 1/03/2023 | 13/03/2025 | 743 | 5.15% | 3% | \$1,000,000 |
| TD | BBB | A-2 | Defence Bank | Annually | 8/03/2023 | 27/03/2025 | 750 | 4.90% | 3% | \$1,000,000 |
| TD | AA- | A-1+ | NAB | At maturity | 2/10/2024 | 2/04/2025 | 182 | 5.00% | 8% | \$2,500,000 |
| TD | NR | NR | Summerland CU | Annually | 22/03/2023 | 8/05/2025 | 778 | 4.80% | 3% | \$1,000,000 |
| TD | A+ | A-1 | Rabobank Australia | Annually | 25/09/2024 | 26/09/2029 | 1827 | 4.70% | 14% | \$4,000,000 |
| CASH | AA- | A-1+ | Commonwealth Bank | At Call Account | | 1/12/2024 | 1 | 4.20% | 15% | \$4,523,609.99 |
| CASH | AA- | A-1+ | Commonwealth Bank | Cash Account | | 1/12/2024 | 1 | 0.01% | 5% | \$1,566,338.02 |
| TOTAL: | | | | | | | | | | \$29,589,948 |

Portfolio Performance

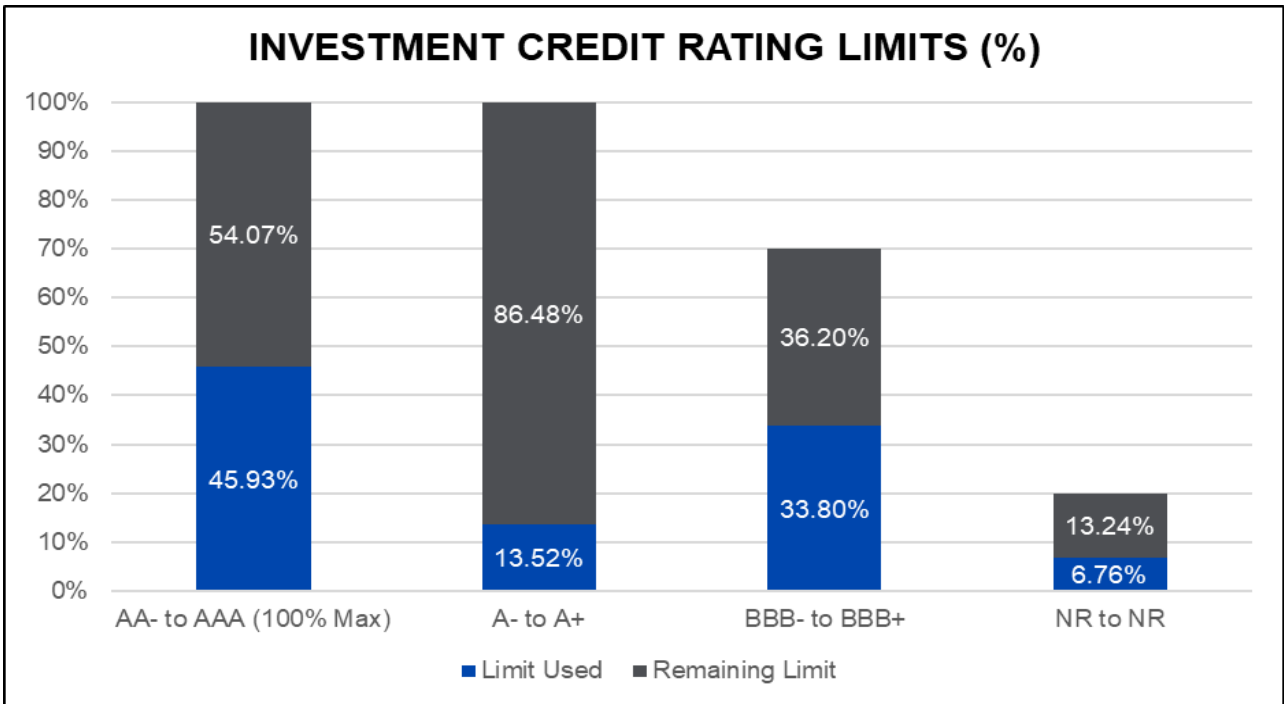
Goldenfields Water County Council's investment portfolio weighted average interest for November 2024 was 4.35%. Performance indicators for comparison are:

- BBSW 4.43% RBA Cash Rate 4.35% AusBond Bank Bill 4.36%

Interest received to November 2024 totalled \$682,770.69.

Credit Quality Compliance

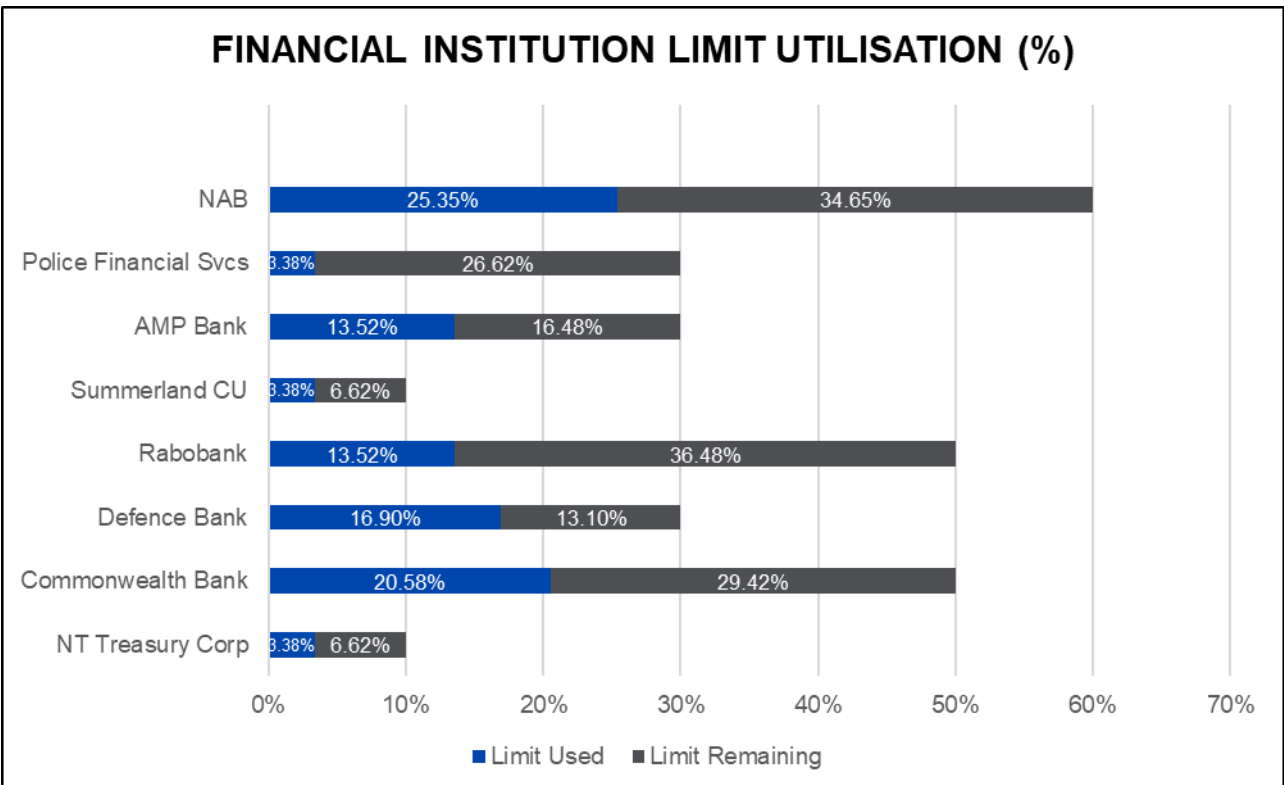
Council’s investment portfolio was compliant with policy in terms of S&P long term rating credit quality limits, as displayed below.



Financial Institution Compliance

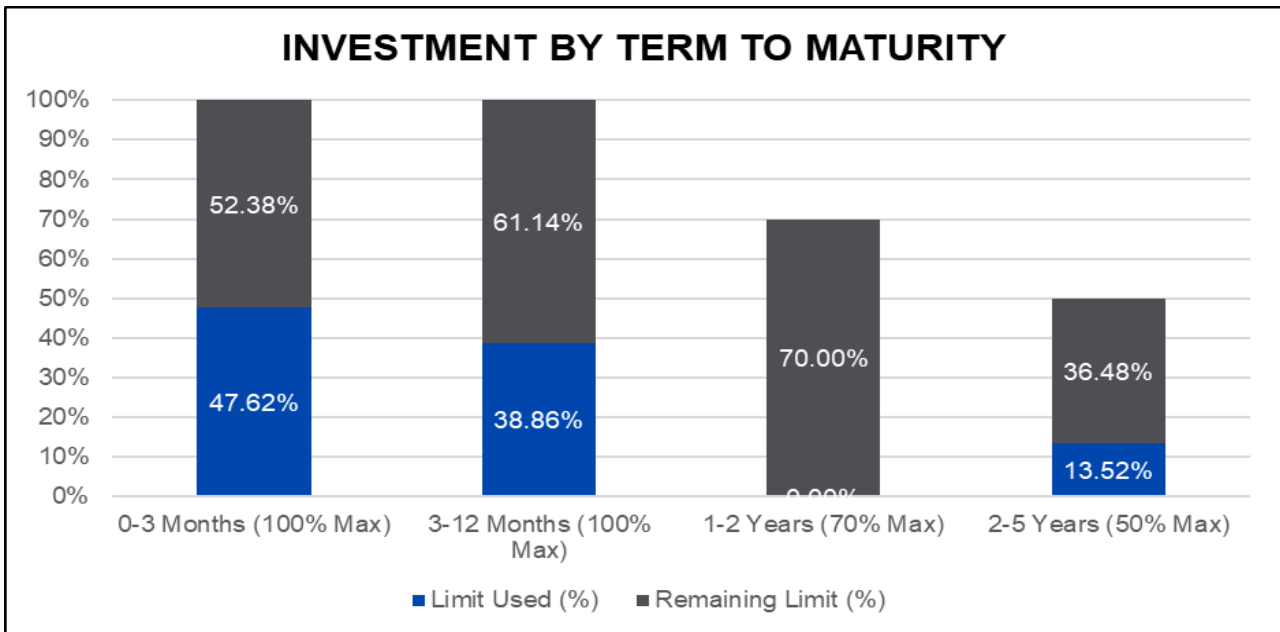
As at the end of November, Council was compliant with policy in terms of individual financial institution capacity limits. It is worth noting that capacity limits are affected by changes in the on-call account balance compared to the total portfolio balance.

Overall, the portfolio is diversified across a variety of credit ratings, including some exposure to unrated authorised deposit-taking institutions (ADIs).



Term to Maturity

Council’s investment portfolio maturities shown graphically below were also compliant with policy requirements.



Application of Investment Funds

The table below details the allocation of cash balances in terms of restricted funds, noting restrictions are all internal rather than external.

| | |
|---|---------------------|
| Restricted Funds: | |
| Employee Leave Entitlements | \$2,551,897 |
| Plant & Vehicle Replacement | \$1,462,793 |
| Infrastructure Replacement | \$1,349,640 |
| Section 64 Developer Contribution Reserve | \$5,000,000 |
| | |
| Unrestricted Funds | \$19,225,618 |
| TOTAL | \$29,589,948 |

Declaration

I hereby certify that investments listed in the report have been made in accordance with Section 625 of the *Local Government Act 1993*, Clause 212 of the *Local Government (General) Regulation 2005* and Council’s Investment Policy PP004.

Signed

Melody Carr

Corporate Services Manager

FINANCIAL IMPACT STATEMENT

Council’s cash and investment portfolio increased by \$1,441,782.15 from \$28,148,165.86 at October 2024 to \$29,589,948.01 at November 2024.

14 OPERATIONS MANAGER

Nil

15 PRODUCTION AND SERVICES MANAGER**15.1 DRINKING WATER MANAGEMENT SYSTEM ANNUAL REPORT 2023/24****Author:** Production & Services Manager**Authoriser:** Production & Services Manager**Attachments:** 1. Drinking Water Management System 23_24 [↓](#)**RECOMMENDATION**

That the Board review and accept the Drinking Water Management System Annual Review

ALIGNMENT WITH BUSINESS ACTIVITY STRATEGIC PLAN

Priority 1 High Quality, Secure and Efficient Water Supplies

BACKGROUND

Goldenfields Water developed and adopted a Drinking Water Management System (DWMS) and associated Policy in February 2018. The purpose of the DWMS Annual Report is to inform and update New South Wales Department of Health (NSW Health) and NSW Department of Climate Change, Energy, the Environment and Water (DCCEW) of Goldenfields Water County Councils (GWCC) implementation and ongoing assessment of its Drinking Water Management System. It also demonstrates that GWCC is compliant with requirement s25 Public Health Act 2010 to develop a Quality Assurance Program (QAP) in line with the framework for Drinking Water Quality Management in the Australian Drinking Water Guidelines.

REPORT

The 2023/2024 DWMS Annual Report is the sixth annual review completed under the current adopted DWMS that has been undertaken by Goldenfields Water staff. This Annual Report has utilised the entire 2023/24 data for the Jugiong, Oura, Mt Arthur and Mt Daylight potable water supply systems. A majority of this data was made available from the implementation of WaterOutlook and ClearSCADA. Data is also utilised from NSW Health's Drinking Water Database and ASAM reservoir asset condition database where required.

Throughout the reporting period GWCC have undertaken numerous water samples for both operational and verification monitoring. These samples are tested at the GWCC laboratory and/or an external NATA accredited laboratory for operational monitoring or NSW Health's FASS lab for verification or compliance purposes. GWCC also conducted a number of onsite tests for operational purposes which are presented below.

Throughout the reporting period GWCC have conducted a total of 902 microbial water samples to be either tested by NSW Health or tested 'in-house' by GWCC Water Quality staff.

The drinking water is tested throughout the period by an independent party for chemical elements which may be present in the water. A total of 151 chemical water samples were carried out during the reporting period, and all were tested by NSW Health's FASS laboratory. From the 151 total samples collected and tested, 53 were treated water samples taken in the distribution system and 98 were raw or bore water samples.

GWCC also undertake pesticide sampling of the drinking water across the entire scheme. These samples are tested by a NATA accredited laboratory for the 2023/24 FY a total of 16 samples were tested for the presence of pesticides. All sample results were compliant with parameters set in the Australian Drinking Water Guidelines (ADWG), all results indicating an 'Nil detections.

It is also a requirement for GWCC to test for Radiological characteristics in the ground water supplies every 2 years. For the 2023/24 FY, 4 Radiological samples were taken and tested by Australian Nuclear Science and Technology Organisation (ANSTO). Results and locations can be seen in table 22.

Another initiative undertaken by GWCC is the monitoring of chlorine within the distribution system networks across the entire drinking water scheme. These tests are conducted routinely by the distribution and water quality staff and a total of 2450 chlorine tests were conducted onsite throughout the year. These tests include both Total and Free chlorine.

A running spreadsheet of results was previously updated by office staff once data was received from field sampling and is now located in GWCC’s records management system ‘Content Manager (doc 18/1344)’. WaterOutlook (WO) has also been rolled out to all fields staff allowing them to upload the results of the chlorine tests. Since the implementation of WO, there has been 13,444 chlorine test results uploaded into the database. With the implementation of WaterOutlook, the outdoor staff now directly upload the results of the chlorine tests via mobile platforms in order to eliminate double handling of data and direct registration within our water quality database.

The main obligations of Goldenfields Water managing their DWMS is to ensure that no breaches of Critical Control Points (CCP’s) occur or if they do occur, that they are reported, reviewed, and corrected as part of a continual improvement process.

All results for 2023/24 year were within ADWG limits however, GWCC did record one incident of E. coli detected at the Wyalong school as detailed in the attached report in Table 26. This result was communicated at the time to NSW Public Health and retesting was completed. Internal testing, chlorine results and retesting validation results determined that the detection was due to human error in sampling techniques and not an actual occurrence of E-coli within the system.

GWCC maintains a register of customer complaints throughout the year. The below table provides an overview of these complaints and their volume. Please note that if the calls have been registered as a compliant but a notification, they will not appear within this table. However, all discoloured water calls received are registered as complaints.

| Month | Total Complaints | Discoloured Water | Burst Main | Taste/Odour Related | No Supply/Low Pressure | Leaking Meter | Messy or unsafe jobsite | Unable to Isolate meter | Other |
|--------|------------------|-------------------|------------|---------------------|------------------------|---------------|-------------------------|-------------------------|-------|
| Jul-23 | 7 | 5 | | | | 1 | 1 | | |
| Aug-23 | 22 | 21 | | | 1 | | | | |
| Sep-23 | 28 | 22 | 1 | 1 | 3 | | 1 | | |
| Oct-23 | 19 | 14 | | | 5 | | | | |
| Nov-23 | 26 | 21 | | | 5 | | | | |
| Dec-23 | 38 | 31 | | | 3 | | | | 4 |
| Jan-24 | 17 | 16 | | | | | | | 1 |
| Feb-24 | 33 | 25 | | | 4 | | 1 | | 3 |
| Mar-24 | 23 | 20 | | | 2 | | | | 1 |
| Apr-24 | 18 | 15 | | 1 | 1 | 1 | | | |
| May-24 | 29 | 21 | | | 3 | 2 | | | 3 |
| Jun-24 | 15 | 11 | 1 | | | | | | 3 |

There was a total of 275 complaints throughout the year with 222 (80%) of these relating to aesthetic discoloured water events.

FINANCIAL IMPACT STATEMENT

The recommendation does not impact on Council’s financial position.



Drinking Water Management System
Annual Report 2023/24

Drinking Water Management System

Annual Report 2023/24



Goldenfields Water County Council

Date: December 2024

Version: 3.5



Drinking Water Management System
Annual Report 2023/24

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Document Control

| Date | Version | Change made | Person | Date submitted to NSW Health |
|----------------|---------|---|---|------------------------------|
| August 2017 | 2.0 | Drinking Water Management System annual report created | Chris Breen/Geoff Veneris | March 2017 |
| October 2019 | 3.0 | Updated annual report with relevant data | Chris Breen/Geoff Veneris | October 2019 |
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| July 2024 | 3.5 | Updated annual report with relevant data for 2023/24 reporting period | Mitchell Farlow/Chris Breen/Geoff Veneris | December 2024 |

Guidance

This report is designed to address the reporting (Element 10), evaluation (Element 11) and review and continual improvement (Element 12) requirements of Goldenfields Water County Council's Drinking Water Management System (DWMS).

The NSW Guidelines for Drinking Water Management Systems (2013) recommends review of the following areas:

- Performance of critical control points
- Water quality review (raw, treated and distribution water quality including verification monitoring in the NSW Health Drinking Water Database)
- Levels of Service (including consumer complaints)
- Incident and emergencies (including follow up)
- Drinking Water Management System implementation
- Continuous improvement plan implementation

Review of system performance should be against ADWG, levels of service, NSW Water Supply and Sewerage Performance Monitoring Reports and other regulatory requirements (Element 1).

Shortcomings should be captured in the Improvement Plan (Element 12).



Executive Summary

Critical Control Points

The following tables provide the total number of CCP exceedances registered throughout the 2023/24 financial year with the corresponding CCP number for each scheme.

Table 1. Number of CCP exceedances in the Jugiong supply scheme.

| Jugiong | CCP1 | CCP2 | CCP3 | CCP4 | CCP5 | OCP6 |
|---------------------------|------|------|------|------|------|------|
| Number of CCP exceedances | 0 | 0 | 1 | 5 | 0 | 2 |

Table 2. Number of CCP exceedances in the Oura supply scheme.

| Oura | CCP1 | CCP2 | CCP3 | CCP4 |
|---------------------------|------|------|------|------|
| Number of CCP exceedances | 0 | 2 | 0 | 0 |

Table 3. Number of CCP exceedances in the Mt Daylight supply scheme.

| Mt Daylight | CCP1 | CCP2 |
|---------------------------|------|------|
| Number of CCP exceedances | 0 | 0 |

Table 4. Summary of CCPs across all schemes.

| CCP Number | Monitoring Parameter | Target Criterion | Adjustment Limit | Critical Limit |
|-------------|--|--|--|--|
| 1 - Jugiong | Turbidity (Continuous online) Raw Water | Dependant on raw Water Quality | | 20% above set point for > 20minutes |
| 2 - Jugiong | Turbidity (Continuous online) Filter Outlet | ≤ 0.2 NTU | ≥ 0.5 NTU | ≥ 1.0 NTU |
| 3 - Jugiong | Free Chlorine residual (Continuous online & alarmed) Finished Water | 1.8mg/L | ≤ 1.2mg/L or ≥ 2.0mg/L | Summer: ≤ 0.8mg/L for > 30min or ≥ 5.0mg/L Winter: ≤ 0.5mg/L for > 30min or ≥ 5.0mg/L |
| 4 - Jugiong | Fluoride (Daily) Finished Water | 1.0mg/L | < 0.95mg/L or > 1.05mg/L | < 0.9mg/L for > 72hrs or > 1.5mg/L |
| 5 - Jugiong | System (monthly) inspection Integrity Reservoir | Secure, evidence of break in or vermin | no of identification of breach or vermin access to reservoir | Visual identification of vermin or containment in reservoir |
| 6 - Jugiong | Free chlorine residual (continuous online & alarmed) Prunevale and Cootamundra | 0.8mg/L | ≤ 0.5mg/L or ≥ 2.0mg/L | ≤ 0.2mg/L or ≥ 5.0mg/L |



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| CCP Number | Monitoring Parameter | Target Criterion | Adjustment Limit | Critical Limit | |
|------------------------|---|---------------------|--|--|---|
| 1 - Oura | Free Chlorine residual (Daily) Treated Water | 0.5mg/L | ≤ 0.3mg/L or ≥ 1.0mg/L | or ≤ 0.2mg/L or ≥ 5.0mg/L | |
| 2 - Oura | Fluoride (Daily) Treated Water | 1.0mg/L | < 0.9mg/L or > 1.2mg/L | or < 0.9mg/L for > 72hrs or ≥ 1.5mg/L | |
| 3 - Oura | System (monthly) inspection | Integrity Reservoir | Secure, evidence of break in or vermin | no of breach or vermin access to reservoir | Visual identification of vermin or containment in reservoir |
| 4 - Oura | Chlorine Residual (weekly) Wyalong and Thanowring Rd | 0.5mg/L | ≤ 0.35mg/L | ≤ 0.25mg/L | |
| 1 - Mt Arthur | Free Chlorine residual (3 x weekly) Tank 4 Outlet | 0.8mg/L | ≤ 0.5mg/L or ≥ 2.0mg/L | or ≤ 0.3mg/L or ≥ 5.0mg/L | |
| 2 - Mt Arthur | System (monthly) inspection | Integrity Reservoir | Secure, evidence of break in or vermin | no of breach or vermin access to reservoir | Visual identification of vermin or containment in reservoir |
| 1 - Mt Daylight | Free Chlorine Residual (continuous Online) Naradhan Reservoir | 0.8mg/L | ≤ 0.5mg/L or ≥ 2.0mg/L | or ≤ 0.3mg/L or ≥ 5.0mg/L | |
| 2 - Mt Daylight | System (monthly) Inspection | Integrity Reservoir | Secure, evidence of break in or vermin | no of breach or vermin access to reservoir | Visual identification of vermin or containment in reservoir |

Water Quality

Verification monitoring has been undertaken over the entire GWCC scheme during the reporting period. Majority of data is compliant with the Australian Drinking Water Guidelines and limits set by public Health (NSW Health) with exceedances summarised in Table 1, 2 and 3.

GWCC did record one incident of E. coli detected at the Wyalong school in Wyalong reservoirs as detailed in Table 26, which were communicated at the time to NSW Health and retesting completed. Internal testing, chlorine results and retesting results determined that the detection was due to human error in sampling techniques.

Operational monitoring has also been conducted over the entire scheme with some non-compliances reported at the extremities of our systems. These non-compliances have been summarised in Table 24. The non-compliances have been mainly for low residual chlorines and elevated temperatures in the furthest extremities in each of the water source systems. GWCC standard protocol for low chlorine residuals is to manual dose hypo when low results are evident.

With the emergence of PFAS, 'Forever Chemicals' GWCC had already implemented a monitoring program to test for these chemicals within its raw water catchments for Jugiong and Oura, noting the historical issues with Riverina Water. Goldenfields has also been a member of the Technical Working Group that consists of DCCEW, Members of Defence,



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Jacobs and Public Works Advisory, in developing response protocols and guidance to the Governance Group.

PFAS testing has occurred during the 2023/24 reporting period. With all Bores at Oura and the source water and finished water at the Jugiong Water Treatment Plant being tested. Results of these samples are in Appendix F: PFAS Sampling Results. Mt Arthur and Mt Daylight bores have also been tested but in the 2024/25 reporting period so results will be reported in next years DWMS report. (Results available if required).

Continuous Improvement Plan

GWCC review and update their Action and Implementation Plan as per Appendix B - Continuous Improvement Plan of this report. A summary of items that have been addressed or ongoing are detailed in the below Table 5.

The main outstanding item for GWCC to complete is the automation and upgrade of the Mt Arthur system. This system is earmarked for an entire new automated SCADA system that should be completed by June 2025. Once completed, this will allow us to receive online monitoring results and establish automated CCP requirements similar to our other systems. As can be seen within our historical DWMS reviews, data is limited for this scheme and manually registered within our Wateroutlook system.

Table 5. Summary of Council's Action and Implementation Plan.

| | Completed or closed | In progress | Not Started | Implemented/Ongoing | Items added |
|-------------------|---------------------|-------------|-------------|---------------------|-------------|
| Number of actions | 80 | 0 | 0 | 2 | 0 |

*Note that the 3 items that haven't been counted above have been rolled into other action items. Full Continuous Improvement Plan can be seen in Appendix B.

DWMS Reviews

The 2017/18 DWMS was the first to be undertaken by GWCC. The 2017/18 report was conducted using only the data available at the time. The dataset used was limited to only a few months' worth of information.

This DWMS report is our latest annual review and has utilised the entire 2023/24 data for the Jugiong, Oura and Mt Daylight water supply systems. The Mt Arthur supply system will be included in the 2024/25 DWMS report as it is currently being updated into the GWCC SCADA system. This data was made available from the implementation of WaterOutlook and ClearSCADA. Data is also utilised from NSW Health's Drinking Water Database.

In addition to the general progression of the DWMS, GWCC engaged its internal Auditor (National Audits Group) in 2019 to review the DWMS and provide recommendations for improvement.

A key finding was that more transparency of data reported and adopted by the Board should occur. A full list of audit findings can be found in Appendix D - External Auditor Report Summary. These actions have since been carried out.

| Review | Scope | Findings | Actions taken |
|------------|----------------|----------------------|---|
| 26/09/2019 | Internal Audit | Listed in Appendix D | Responses noted in Appendix D and added to continuous improvement plan for GWCC to action |



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In addition to this GWCC will be undertaking a review of its DWMS risk profile and an audit readiness program within the 2024/25 period. This is intended to establish a new risk assessment and Actions & Implementation program.

Reservoir Inspections

A total of 126 reservoirs, 8 surge tanks and 2 Break Pressure tanks are visually inspected weekly via a weekly 'drive-by'. A more comprehensive inspection conducted on the above is conducted on a quarterly basis. The findings of the inspections are summarised in the section headed Reservoir Inspections (page 68). A more comprehensive reservoir inspection report has been downloaded from the ASAM website and/or utilised from other third party specialists, this is the database that Aqualift provide when undertaking GWCC reservoir cleaning and maintenance, the report for reservoirs inspected during the 2023/24 FY is available in Appendix C of this report. Additional internal inspection and structural reports are completed and submitted to the Engineering division for corrective action on prioritisation of issued works.

Report Purpose

The purpose of the report is to inform and keep up to date New South Wales Department of Health (NSW Health) of Goldenfields Water County Councils (GWCC) implementation and ongoing assessment of its Drinking Water Management System. It also demonstrates that GWCC is compliant with requirement s25 Public Health Act 2010 to develop a Quality Assurance Program (QAP) in line with the framework for Drinking Water Quality Management in the Australian Drinking Water Guidelines.

Scheme Summary

GWCC provides the essential water requirements of approximately 40,000 people spread over an area in excess of 22,000 sq. km, between the Lachlan & Murrumbidgee Rivers in the Southwest of NSW.

GWCC's water supply system consists of five separate water schemes, Jugiong, Oura, Mt Arthur, Mt Daylight and Hylands Bridge. GWCC carries out water supply functions within the Local Government areas of Bland, Coolamon, Cootamundra-Gundagai Regional Council, Junee, Temora, Hilltops Council previously (Harden, Young), parts of Narrandera and Wagga Wagga.

Harden and Young Councils, now Hilltops Council are retailers who purchase bulk water from GWCC and supply the water to retail customers in their respective local government areas. Cootamundra-Gundagai Regional Council receives bulk supply from GWCC and retails water to customers in the township of Cootamundra, with GWCC supplying water to retail customers in the Cootamundra Shire outside the urban centre. GWCC also supplies small quantities of bulk water to Riverina Water County Council to service their northern supply areas.

At the end of the 2023/24 reporting period, there were 12043 water connections across the entire drinking water scheme, broken down in Table 6. This is an increase of 267 new connections across the Goldenfields County Council Drinking Water scheme. It should be noted that the bulk connections are identified as single connections only.

Table 6. Total GWCC connections, broken down by scheme.

| Oura | Jugiong | Mt Arthur | Daylight | Hylands Bridge (non-potable) | Total |
|------|---------|-----------|----------|------------------------------|-------|
| 8896 | 713 | 1590 | 271 | 90 | 12043 |



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A number of projects were also undertaken that encompassed the entirety of all Drinking Water schemes; these projects and current costings are summarised below:

| | | |
|--|----|---------|
| Buildings Goldenfields Wide | \$ | 222881 |
| Pump Stations Goldenfields Wide | \$ | 93083 |
| Reservoir Sites Goldenfields Wide | \$ | 100413 |
| Mains - Rural (Outside Town) Goldenfields Wide | \$ | 811 |
| Mains - Reticulation (In Town) Goldenfields Wide | \$ | 5425 |
| Treatment Plant Goldenfields Wide | \$ | 218 |
| Mains - Trunk (Town to Town) Goldenfields Wide | \$ | 1258 |
| Information Technology Goldenfields Wide | \$ | 22005 |
| Microwave Goldenfields Wide | \$ | 257483 |
| Plant and Equipment Goldenfields Wide | \$ | 1695995 |
| Pump Stations Goldenfields Wide | \$ | 91273 |

Jugiong Scheme

The Jugiong drinking water supply system is one of the largest water supply systems managed by Goldenfields Water. Most of the water produced in the Jugiong system supplies the bulk water Councils of Cootamundra Gundagai and Hilltops. Water is also delivered to a small number of retail customers in rural properties and the villages of Stockinbingal, Wallendbeen and Springdale. Approximately 18,000 people are supplied water from the Jugiong system.

Source Water

Goldenfields Water is licenced to extract water from the Murrumbidgee River via two submersible pumps operated in a duty / stand-by configuration. The submersible pumps are fixed speed; pump 1 operates at 185 L/s and pump 2 operates at 300 L/s.

The Jugiong source has been categorised as having a "Low" risk regarding Cryptosporidium. NSW Public Health's preliminary outcome assessment for Cryptosporidium for the Jugiong scheme was reported to GWCC on 27th November 2019. A listed action for the Jugiong Scheme was:

'Maintaining the operation and monitoring (ideally continuously) of individual filters to consistently reduce turbidity to <0.2 NTU'

Goldenfields can confirm that individual turbidity meters have since been installed during the 2021/22 financial year. Commissioning was completed in the 2022/23 financial year.

In addition to the NSW Public Health's preliminary advice in 2019, GWCC undertook a review of catchment assessments for all of its water supply sources as part its current development of an Integrated Water Cycle Management Strategy (IWCM). This has concluded that Jugiong is a high-risk category 4 catchment under the utilisation of the Public Works Advisory assessment tool.

Water Treatment Process

The Jugiong Water Treatment Plant (WTP) is located on Waterworks Road in the township of Jugiong. The plant is a conventional WTP with a nominal capacity of 40 ML/day. It should be noted that the current pump arrangements at the plant can only produce around 23.8ML a day. Recent stress testing of the plant indicated that the plant is only capable of achieving an estimated 29ML of process whilst trying to achieve Health Based Targets (HBT's) and all CCP's for a 22-hour run time. This is due to a limitation within clarification of the process



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The treatment process at Jugiong WTP comprises of the following process steps:

- Water from the Murrumbidgee River is pumped via 120 m rising main to Jugiong WTP (capacity 23.8 ML/day) by two pumps in a duty/standby configuration
- Water passes through a flow meter, where a flow of greater than 101 L/s starts the chlorine and soda ash pre-dosing systems for oxidisation of metals and pH adjustment, respectively. The chlorine pre-dose is optional, and is switched on or off by the operator, depending on water quality conditions
- The pre-dosed water enters the rapid mix tank which consists of baffles and two mixers in series. Polymer and aluminium sulphate are dosed into the rapid mix tank to aid flocculation
- Water then flows into the two flocculation tanks which has three mixers in series operating at declining speeds to allow for floc formation
- Flocculated water then enters the two clarifiers and sludge is removed by a travelling sludge rake. Sludge is sent to the duty sludge lagoon
- Clarified water enters the filter block, where it is dosed with chlorine and subsequently distributed across six gravity sand filters
- Filtered water enters a common channel. When flow in the filtered water channel is above 101 L/s, post-dosing of soda ash and chlorine are activated for pH adjustment and increased disinfection capacity, respectively. Water is also dosed with fluoride in the filtered water channel
- Flow from the filtered water channel enters the 3 ML clear water tank through a mid-level inlet and bottom outlet configuration
- Water from the clear water tank proceeds to clear water pumping station 1 (CWPS1), which has two 680 kW pumps and a smaller 400 kW pump that operate in a duty/standby/standby mode. CWPS1 distributes water to Jugiong drinking water supply system
- Treated water is distributed through 14 reservoirs and by 8 pumping stations. There are 138 km of trunk mains and 182 km of reticulation mains in the Jugiong system

Connections

The Jugiong drinking Water scheme has 688 retail connections. The system also supplies GWCCs bulk customers, Hilltops and Cootamundra-Gundagai. Jugiong GWCC retail Connections are broken down as follows:

- 20mm = 536
- 25mm = 165
- 32mm = 3
- 40mm = 4
- 50mm = 3

Included in this data are 3 stand pipe connections: 1 x 32mm, 1 x 40mm and 1 x 50mm.

For the Hilltops and Cootamundra-Gundagai Regional Council (CGRC) connections that are supplied via bulk service, Table 7 shows the breakdown of connections as sourced from Hilltops and Coota-Gundagai Regional Councils. (Spreadsheet located in CM9 Doc. 21/13324). When we get new connections Special Schedule 7 can give us a further breakdown:



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Table 7. Breakdown of bulk service connections based off size.

| Bulk Customer | 20mm | 25mm | 32mm | 40mm | 50mm | 63mm | 65mm | 80mm | 100mm | 150mm | Sub Total |
|------------------|------|------|------|------|------|------|------|------|-------|-------|-----------|
| Hilltops Council | 6058 | 360 | 32 | 38 | 48 | 0 | 3 | 5 | 10 | 0 | 6554 |
| Bulk Customer | 20mm | 25mm | 32mm | 40mm | 50mm | 63mm | 75mm | 80mm | 100mm | 150mm | Sub Total |
| CGRC | 3994 | 124 | 33 | 45 | 58 | 1 | 3 | 2 | 8 | 0 | 4269 |

Upgrade to the System/System Improvements

GWCC staff have undertaken works to upgrade several assets within the Jugiong Drinking water scheme a summary of those works are provided below:

| | |
|---|-------------|
| Temora - Little Crowley Street Pipeline Replacement | \$24704 |
| Jugiong Raw Water Pumps replacements - Replace 2 x Raw water pumps at Jugiong | \$198107 |
| Demondrille Pump 3 Overhaul | \$18926 |
| Rosehill to Harden Bypass | \$223 |
| Site Fencing - New or replacement of fencing around reservoirs and pump stations to improve security | \$4,348 |
| Cooney's Creek Replacement - Replace approx 60m of exposed pipeline through Cooney's creek and rock armour section of erosion | \$1,126 |
| Jugiong CWPS1 P1 and P2 Inlet Manifold 2022 | \$2,539 |
| Wombat BT to Young TS Pipeline Upgrade | \$220,405 |
| Jugiong CWPS1 Pump 1 - 2022 | \$234 |
| Jugiong Raw Water Well Renewal | \$19,761 |
| Wombat BT Renewal | \$3,154 |
| Jugiong WTP - Valve & Pneumatic Upgrade | \$26,392 |
| Jugiong High Voltage | \$3,783,763 |
| Pump Station Valve Renewals - Jugiong | \$4,682 |
| Mains Valve Renewals - Jugiong | \$137 |
| Jugiong Compressor | \$32,716 |
| PRV Replacement - Jugiong | \$7,549 |
| Rosehill Pipeline Replacement | \$70,359 |
| Water Service Renewals - Jugiong | \$1,495 |

A total of \$4,279,908 has been spent on the Jugiong scheme for the 2023/24 Financial year.



Oura Scheme

The Oura drinking water supply system is one of the largest water supply systems managed by Goldenfields Water. The majority of water is delivered to retail customers; however, a small amount is supplied to Riverina Water in bulk to customers along the Goldenfields Water pipeline. Approximately 15,000 people are supplied water from the Oura system. The Oura drinking water supply system can be connected to Goldenfields Water's Mt Arthur drinking water supply scheme at Coolamon and Ganmain, as well as the Hyland's Bridge non-drinking water supply at Barellan.

Source Water

Water is sourced from the Oura Borefield, which is located at Gumly Gumly Island to the north of Murrumbidgee River. Goldenfields Water is licensed to draw from four groundwater bores: Bore 2, Bore 3, Bore 4 and Bore 6. Bores are located in bore huts.

Water in the Murrumbidgee Inland Alluvial Aquifer is recharged by the Murrumbidgee River and is managed by the Natural Resource Access Regulator in NSW. There are two alluvial formations in this region: the Lachlan formation is a confined aquifer system that is overlain by the semi-confined to unconfined Cowra formation (NSW Dept. of Water and Energy, 2007).

According to the DPI Water (NSW Office of Water, 2011), groundwater in the Oura system is fresh, with total dissolved solids (TDS) ranging from zero to 500 mg/L and is suitable for domestic stock, some irrigation purposes and municipal use. NSW Public Health has issued preliminary advice regarding the risk of the Gumly Gumly source which has been deemed "protected". The Oura source has been categorised as having a "Low" risk regarding Cryptosporidium. NSW Public Health's preliminary outcome assessment for Cryptosporidium for the Oura scheme was reported to GWCC on 27th November 2019. In addition to this GWCC has undertaken additional assessment of the catchment as part of its IWCM Strategy development, utilising Public Works Advisory assessment tool and confirmed that a category 1 classification is deemed appropriate for this system.

Water Treatment Process

Water for the Oura drinking water supply system undergoes aeration, disinfection and fluoridation prior to distribution.

The treatment process for Oura drinking water supply system comprises of the following process steps:

- Groundwater is pumped from the Oura Borefield by line shaft bore pumps in each bore. The bores are operated in sequential mode where increased water demand will increase the number of bores online. The order of bore start up is operator adjustable, with the current order of preference set as: Bore No. 4, 6 and 3. Bore 2 was placed into service in November 2020, however, less than desirable water quality was achieved and it was decided to remove the bore from production until such time as it can be cleaned and flushed properly. The bore was removed from service and cleaned by an external contractor in early 2021 with a substantial amount of sand removed. It has since been placed back into service and is currently only used as a secondary pump. It is unable to be utilised as the lead pump due to high iron, manganese which reduces the ability to hold residual.
- The groundwater is dosed with chlorine prior to entering a cascade tray aerator. The aerator serves to oxidate dissolved iron and manganese from the raw water.



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- After aeration, water is transferred to the Oura Contact Tank (2.2 ML), where chlorine contact time is achieved before being pumped by Oura pumping station to Marrar Pinnacle (Marrar Pinnacle 1.6 ML, 1 reservoir) or the Junee BT Reservoir (Junee 17 ML, 3 reservoirs).
- The Oura pumping station consists of two 605 kW pumps and a smaller 400 kW pump that operate on a duty/duty/standby configuration.
- Fluoride is dosed on the outlet of the Oura pumping station.

The Oura drinking water supply system is one of the largest distribution systems managed by Goldenfields Water.

Treated water is distributed through 35 reservoirs and by 19 pumping stations. There are 201km of trunk mains and 1,055km of reticulation mains in the Oura system. There are two chlorine booster pumping stations located at Thanowring Road and Reefon pumping stations to ensure adequate free chlorine residual is maintained throughout the system.

Connections

The Oura drinking water scheme has 9159 connections. This scheme also supplies bulk water to Riverina Water County Council. The Oura connections are broken down as follows:

- 20mm = 7849 connections
- 25mm = 817 connections
- 32mm = 92 connections
- 40mm = 65 connections
- 50mm = 56 connections
- 80mm = 8 connections
- 100mm = 6 connections
- 200mm = 1 Connection

Included in this data are 19 standpipe connections: 8 x 32mm, 5 x 40mm, 2 x 50mm and 4 x 80mm.

Upgrade to the System/System Improvements

GWCC staff have undertaken works to upgrade several assets within the Oura Drinking water scheme a summary of those works are provided below:

| | |
|---|-----------|
| Milvale Road Pipe Extension Dead End Removal | \$4,071 |
| Oura Bore 4 | \$56,894 |
| Duke St Junee - Developer Mains Extension - Allen | \$2,518 |
| Hoskins Street Pipeline Replacement - Polaris to Kitchener | \$115,239 |
| 94 Blythe St Wyalong reconnect to new service line | \$971 |
| Barellan Mains Replacements | \$35,6731 |
| Bland Historical Society Mains Extension | \$2,976 |
| Oura Bore 3 - Cleaning and relining Oura Bore 3 | \$249,855 |
| Marinna Pump Station - Investigation, design and installation of new pumps at Marinna, pipework and operation | \$67,077 |
| Marinna Pump 1 2023 | \$7,934 |
| Temora Transfer Pump 2 2023 | \$1,143 |
| Stinson Street Coolamon Replacement | \$20,564 |
| Oura to Junee Connection Upgrades | \$25,836 |



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| | |
|--|--------------|
| June Silos Pump 2023 | \$213 |
| Marrar Urban Renewal - Replacement of old sections of pipeline within Marrar township and trunk main downstream of PRV | \$90,747 |
| Oura Bore 3 - 2022 | \$1,694 |
| Wyalong Reliability Project Pipeline Construction | \$1,460,141 |
| Bygoo Road Replacement - Ardlethan | \$22,432 |
| West Wyalong Standpipe Reservoir | \$623,583 |
| West Wyalong Transfer Pump Station | \$401,074 |
| Oura Pump Station Renewal | \$2,208,444 |
| Rural Meter and Taggle Replacement Program | \$56,027 |
| Urban Meter & Taggle Replacement Program | \$34,017 |
| Oura New Connections from Riv Water (50% Contribution) | \$3,338 |
| Oura Reservoir & Aerator | \$12,114,555 |
| Pump Station Valve Renewals - Oura | \$388 |
| Mains Valve Renewals - Oura | \$1,346 |
| Wyalong Reliability Project Pre Work | \$42,860 |
| Oura HV Elec Upgrade | \$100,824 |
| PRV Replacement - Oura | \$36,357 |
| Thanowring Road Temora Pipeline Upgrade | \$2,134,458 |
| Water Service Renewals - Oura | \$995 |
| New Water Service Connections - Oura | \$7,776 |

A total of \$20,253,094 has been spent on the Oura scheme for the 2023/24 financial year.

Oura Water Scheme – Periodic inspection

The Oura Drinking Water Scheme was inspected by the Department of Planning, Industry and Environment (DPIE) Senior Inspector Mark Bradshaw. This inspection was in accordance with statutory requirements of the Local government Act 1993. At the time of inspection (9th May, 2024) the system was reported as “performing satisfactorily” and “CCPs were adequately understood and monitored”. A further comment was made stating “it is pleasing to see Councils water infrastructure being upgraded”. The onsite water quality results taken at time of inspection are as per Table 8 Table 9below.



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Table 8. Water quality results from Oura inspection by DPIE.

| Analytical Results | | | | Sample ID | |
|--|-------------|------|---------|---|---------------|
| Sub-Matrix: WATER (Matrix: WATER) | | | | Goldenfields Water Oura WTP Raw Water - GFW1 | |
| | | | | Goldenfields Water Oura WTP Treated Water - GFW2 | |
| Sampling date / time | | | | 07-May-2024 00:00 | |
| Compound | CAS Number | LOR | Unit | CA2402988-001 | CA2402988-002 |
| | | | | Result | Result |
| EA005CA: pH | | | | | |
| pH | ---- | 0.01 | pH Unit | 7.30 | 7.87 |
| EA010CA: Conductivity | | | | | |
| Electrical Conductivity @ 25°C | ---- | 2 | µS/cm | 341 | 253 |
| EA041CA: Colour - True | | | | | |
| Colour (True) | ---- | 1 | PCU | <1 | <1 |
| EA045CA: Turbidity | | | | | |
| Turbidity | ---- | 0.1 | NTU | 1.0 | 0.6 |
| EA043CA: UV Absorbance - Filtered | | | | | |
| UV Absorbance @ 254nm | ---- | 0.01 | AU | <0.01 | <0.01 |
| ED037CA: Alkalinity | | | | | |
| Hydroxide Alkalinity as CaCO ₃ | DMO-210-001 | 0.1 | mg/L | <0.1 | <0.1 |
| Carbonate Alkalinity as CaCO ₃ | 3812-32-6 | 0.1 | mg/L | <0.1 | <0.1 |
| Bicarbonate Alkalinity as CaCO ₃ | 71-52-3 | 0.1 | mg/L | 93.9 | 104 |
| Total Alkalinity as CaCO ₃ | ---- | 1 | mg/L | 94 | 104 |
| EP002CA: Dissolved Organic Carbon | | | | | |
| Dissolved Organic Carbon (as NPOC) | ---- | 1 | mg/L | <1 | <1 |
| ED009CA: Anions | | | | | |
| Chloride | 16887-00-6 | 0.1 | mg/L | 36.0 | 19.9 |
| EG005CA: Total Metals by ICP-OES | | | | | |
| Aluminium | 7429-90-5 | 0.02 | mg/L | <0.02 | <0.02 |
| Iron | 7439-89-6 | 0.02 | mg/L | <0.02 | <0.02 |
| EG020CA: Total Metals by ICP-MS | | | | | |
| Manganese | 7439-96-5 | 0.5 | µg/L | 60.7 | 57.1 |
| EA066CA: Calcium Hardness as CaCO₃ | | | | | |
| Calcium Hardness as CaCO ₃ | ---- | 1 | mg/L | 46 | 36 |
| EA065CA: Total Hardness | | | | | |
| Total Hardness as CaCO ₃ | ---- | 1 | mg/L | 100 | 76 |

These results indicate that the treatment process was being managed well and the quality of the water complies with ADWG (for parameters tested).

Mt Arthur Scheme

The Mt Arthur drinking water supply system supplies approximately 2,300 people. The Mt Arthur System can be supplemented by the Oura drinking Water supply system through Coolamon and Ganmain, however this is not common practice.

Water for the Mt Arthur drinking water supply system is drawn from the Lachlan Fold Belt fractured rock aquifer system, near the Murrumbidgee River at Matong. According to the DPI Water (NSW Office of Water, 2011), groundwater in this region is of moderate quality with TDS between 500 to 1500mg/L and is suitable for domestic stock and some irrigation purposes.



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Source Water

Water is sourced from Mt Arthur Borefield, which is located near the Murrumbidgee River at Matong. GWCC is licenced to draw 762ML per annum from two groundwater bores. These bores are located in Bore Huts on the corner of Old Narrandera Rd and Matong Rd.

The Mt Arthur source has been categorised as having a “Low” risk regarding Cryptosporidium. NSW Public Health’s preliminary outcome assessment for Cryptosporidium for the Mt Arthur scheme was reported to GWCC on 27th November 2019. In addition to this GWCC has undertaken additional assessment of the catchment as part of its IWCM Strategy development, utilising Public Works Advisory assessment tool and confirmed that a category 1 classification is deemed appropriate for this system

Water Treatment Process

The Water treatment of the Mt Arthur drinking water supply system comprises of the following steps:

- Groundwater is pumped to the surface by two 94kW bore pumps in a duty/standby configuration
- Water is injected with chlorine prior to entering the four Ganmain Low Level Reservoirs where iron and manganese are settled out.
- The water is then distributed to retail customers in Coolamon, Ganmain, Matong and Grong Grong

The Mt Arthur Drinking Water Supply system distributes water to the areas of Ganmain, Coolamon, Grong Grong and Matong. Treated Water is distributed through 9 reservoirs and by 6 pumping stations. There are 76km of trunk mains and 67km of reticulation mains in the Mt Arthur system.

Connections

The Mount Arthur drinking water scheme has 1577 connections; the Mount Arthur connections are broken down as follows:

- 20mm = 1484 connections
- 25mm = 57 connections
- 32mm = 35 connections
- 40mm = 7 connections
- 50mm = 7 connections

Included in this data are 2 standpipe connections: 1 x 32mm and 1 x 40mm

Upgrades to the System/System Improvements

GWCC staff have undertaken works to upgrade several assets within the Mt Arthur drinking water scheme a summary of those works are provided below:

| | |
|---|-----------|
| Mt Arthur Aeration Tower - Investigation, design and construction of an aeration tower at Ganman for the Mt Arthur Scheme | \$573 |
| Coolamon Town Retic - Replacement of old pipeline assets within Coolamon township | \$371,100 |
| Supply and install new Switchboard to improve site to minimum standards | \$58,129 |
| Matong Pump Station - 2022 | \$4,630 |
| Lonsdale Control Panel | \$144 |
| Ganmain Pump Station Switchboard Renewal | \$5,607 |



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| | |
|---|----------|
| Matong Bore 2 Switchboard Renewal | \$76,581 |
| Pump Station Valve Renewals - Mt. Arthur | \$1,974 |
| Mains Valve Renewals - Mt Arthur | \$46 |
| PRV Replacement - Mt Arthur | \$12,707 |
| New Water Service Connections - Mr Arthur | \$5,891 |

A total of \$528,127 has been spent on the Mt Arthur scheme for the 2023/24 financial year.

Mt Arthur Water Scheme – Periodic inspection

The Mt Arthur Drinking Water Scheme was inspected by the Department of Planning, Industry and Environment (DPIE) Senior Inspector Mark Bradshaw. This inspection was in accordance with statutory requirements of the Local government Act 1993. At the time of inspection (9th May, 2024) the system was reported as “performing satisfactorily” and was being “well managed”. The onsite water quality results taken at time of inspection are as per Table 9 below.

Table 9. Water quality results from Mt Arthur inspection by DPIE.

| Analytical Results | | | | Goldenfields Water | Goldenfields Water | Goldenfields Water |
|---|-------------|----------------------|---------|-----------------------------------|-----------------------------|-----------------------|
| Sub-Matrix: WATER (Matrix: WATER) | | | | GFW1 MT Aurthur Bore Pump 2 | GFW2 Gong Gong Reservoir | GFW3 Ganmain Depot |
| Compound | CAS Number | Sampling date / time | | 09-May-2024 00:00 | 09-May-2024 00:00 | 09-May-2024 00:00 |
| | | LOR | Unit | CA2403035-001 | CA2403035-002 | CA2403035-003 |
| | | | | Result | Result | Result |
| EA005CA: pH | | | | | | |
| pH | --- | 0.01 | pH Unit | 7.63 | 7.66 | 7.54 |
| EA010CA: Conductivity | | | | | | |
| Electrical Conductivity @ 25°C | --- | 2 | µS/cm | 348 | 307 | 276 |
| EA041CA: Colour - True | | | | | | |
| Colour (True) | --- | 1 | PCU | 5 | <1 | <1 |
| EA045CA: Turbidity | | | | | | |
| Turbidity | --- | 0.1 | NTU | 2.6 | 1.0 | 1.0 |
| EA043CA: UV Absorbance - Filtered | | | | | | |
| UV Absorbance @ 254nm | --- | 0.01 | AU | 0.01 | <0.01 | <0.01 |
| ED037CA: Alkalinity | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMO-210-001 | 0.1 | mg/L | <0.1 | <0.1 | <0.1 |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 0.1 | mg/L | <0.1 | <0.1 | <0.1 |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 0.1 | mg/L | 95.8 | 86.3 | 90.7 |
| Total Alkalinity as CaCO3 | --- | 1 | mg/L | 96 | 86 | 91 |
| EP002CA: Dissolved Organic Carbon | | | | | | |
| Dissolved Organic Carbon (as NPOC) | --- | 1 | mg/L | <1 | <1 | <1 |
| ED009CA: Anions | | | | | | |
| Chloride | 16887-00-6 | 0.1 | mg/L | 38.7 | 35.0 | 28.6 |
| EG005CA: Total Metals by ICP-OES | | | | | | |
| Aluminium | 7429-90-5 | 0.02 | mg/L | <0.02 | <0.02 | <0.02 |
| Iron | 7439-89-6 | 0.02 | mg/L | 0.50 | 0.10 | 0.13 |
| EG020CA: Total Metals by ICP-MS | | | | | | |
| Manganese | 7439-96-5 | 0.5 | µg/L | 70.8 | 16.1 | 29.6 |
| EA066CA: Calcium Hardness as CaCO3 | | | | | | |
| Calcium Hardness as CaCO3 | --- | 1 | mg/L | 21 | 25 | 20 |
| EA065CA: Total Hardness | | | | | | |

These results indicate that the treatment process was being managed well and the quality of the water complies with ADWG (for parameters tested).

Mt Daylight System

The Mt Daylight drinking water is a water supply system that supplies approximately 125 people in the villages and surrounds of Naradhan, Weethalle and Tallimba.



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The Mt Daylight drinking water supply system draws its ground water from the lower Lachlan alluvium, located in the Lachlan River Catchment. The aquifers surrounding Lake Ballyrogan (Lake Brewster) from which the Mt Daylight system draws its water. This is hydraulically connected to surface waters. Meaning, that ground water quality in the daylight system is connected to surface water quality, although it is expected that the ground water turbidity would be much better due to filtration through subsurface flows. Both DPI Water (NSW Office of Water 2011) and Natural Resources Commission (2006) report that the groundwater in the Mt daylight scheme is relatively fresh with low salinity, making it suitable for municipal use.

Source Water

Water is sourced from the Daylight Borefield which consists of two bores located in the Carathool Shire local government area, between Lake Brewster and the Lachlan River. The bores are jointly owned and operated by Carathool Shire Council and GWCC. GWCC owns 71% of the assets in value and Carathool owns 29%. Carathool is responsible for the maintenance, repair, and replacement of all bores. Additionally, Carathool is the water entitlement licence holder without having GWCC listed as an entitled party. GWCC is the only provider of municipal potable water supply from this scheme.

The Mt Daylight source has been categorised as having a “Low” risk regarding Cryptosporidium. NSW Public Health’s preliminary outcome assessment for Cryptosporidium for the Mt Daylight scheme was reported to GWCC on 27th November 2019. In addition to this GWCC has undertaken additional assessment of the catchment as part of its IWCM Strategy development, utilising Public Works Advisory assessment tool and confirmed that a category 1 classification is deemed appropriate for this system.

Water Treatment Process

The treatment of the water in the Mt Daylight System comprises of the following:

- Groundwater is pumped to the surface by two 30kW pumps in a duty/standby configuration to the daylight reservoirs
- Water is injected with Chlorine at the inlet to the Mt daylight reservoirs
- Water is distributed to retail customers in Naradhan, Weethalle and Tallimba.

Treated Water is distributed through 7 reservoirs and by 5 pumping stations. There are 308km of trunk mains and 8 km of reticulation mains in the Mt Daylight system.

Connections

The Mount Daylight Drinking water supply has 266 connections, these connections are broken down as follows:

- 20mm = 144 connections
- 25mm = 122 connections
- 32mm = 2 connection
- 40mm = 1 connection
- 50mm = 1 Connection
- 150mm = 1 Connection

Included in this data are 1 standpipe connections: 1 x 32mm.

Upgrades to the System/System Improvements

Carrathool/Ballyrogan Bore - 2022

\$68,198



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Mt Daylight Water Scheme – Periodic inspection

The Mt Daylight Drinking Water Scheme was inspected by the Department of Planning, Industry and Environment (DPIE) Senior Inspector Mark Bradshaw. This inspection was in accordance with statutory requirements of the Local government Act 1993. At the time of inspection (8th May, 2024) the system was reported as “performing satisfactorily” and was being “well managed”. The onsite water quality results taken at time of inspection are as per Table 10 below.

Table 10. Mt Daylight Periodic Inspection

Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | Sample ID | | Goldfields Water Mt. Daylight Bore Pump 1 - GFW1 | Goldfields Water Mt. Daylight P/S + Res - GFW2 | Goldfields Water Weethalk Pioneer Park - GFW3 | Goldfields Water Tallimba Park - GFW4 |
|---|-------------|----------------------|---------|--|--|---|--|
| Compound | CAS Number | Sampling date / time | | 08-May-2024 09:10 | 08-May-2024 10:15 | 08-May-2024 12:20 | 08-May-2024 13:40 |
| | | LOR | Unit | CA2403017-001 | CA2403017-002 | CA2403017-003 | CA2403017-004 |
| | | | | Result | Result | Result | Result |
| EA005CA: pH | | | | | | | |
| pH | --- | 0.01 | pH Unit | 7.35 | 7.59 | 7.70 | 7.77 |
| EA010CA: Conductivity | | | | | | | |
| Electrical Conductivity @ 25°C | --- | 2 | µS/cm | 681 | 701 | 692 | 682 |
| EA041CA: Colour – True | | | | | | | |
| Colour (True) | --- | 1 | PCU | 1 | 1 | 2 | 1 |
| EA045CA: Turbidity | | | | | | | |
| Turbidity | --- | 0.1 | NTU | 2.2 | 1.8 | 0.5 | 0.3 |
| EA043CA: UV Absorbance - Filtered | | | | | | | |
| UV Absorbance @ 254nm | --- | 0.01 | AU | <0.01 | 0.02 | <0.01 | 0.01 |
| ED037CA: Alkalinity | | | | | | | |
| Hydroxide Alkalinity as CaCO3 | DMD-210-001 | 0.1 | mg/L | <0.1 | <0.1 | <0.1 | <0.1 |
| Carbonate Alkalinity as CaCO3 | 3812-32-6 | 0.1 | mg/L | <0.1 | <0.1 | <0.1 | <0.1 |
| Bicarbonate Alkalinity as CaCO3 | 71-52-3 | 0.1 | mg/L | 149 | 145 | 160 | 142 |
| Total Alkalinity as CaCO3 | --- | 1 | mg/L | 149 | 145 | 160 | 142 |
| EP002CA: Dissolved Organic Carbon | | | | | | | |
| Dissolved Organic Carbon (as NPOC) | --- | 1 | mg/L | <1 | 2 | <1 | 2 |
| ED009CA: Anions | | | | | | | |
| Chloride | 16887-00-6 | 0.1 | mg/L | 84.6 | 84.1 | 83.7 | 83.9 |
| EG005CA: Total Metals by ICP-OES | | | | | | | |
| Aluminium | 7429-90-5 | 0.02 | mg/L | <0.02 | <0.02 | <0.02 | <0.02 |
| Iron | 7439-89-6 | 0.02 | mg/L | 0.25 | 0.03 | <0.02 | <0.02 |
| EG020CA: Total Metals by ICP-MS | | | | | | | |
| Manganese | 7439-96-5 | 0.5 | µg/L | 118 | 109 | 6.0 | <0.5 |
| EA086CA: Calcium Hardness as CaCO3 | | | | | | | |
| Calcium Hardness as CaCO3 | --- | 1 | mg/L | 58 | 61 | 67 | 62 |
| EA085CA: Total Hardness | | | | | | | |
| Total Hardness as CaCO3 | --- | 1 | mg/L | 139 | 149 | 152 | 150 |

Rural Backflow Prevention Program

GWCC rural Backflow prevention Program sees a Reduced Pressure Zone Device (RPZD) installed on rural water connections to prevent the cross contamination of water supply.

An RPZD is a device that stops the reverse flow of contaminated water in rural areas from entering our rural water supply system.

All rural connections have been classified as high risk of cross contamination due to the use of hazardous chemicals and livestock on rural properties. Cross contamination caused by these factors can travel back into rural customers’ water mains which can potentially harm health or cause death. Due to the risk, the installation of a testable RPZD is required to ensure compliance in accordance with the Australian Standard (AS3500 Part 1: Plumbing and Drainage Section 4).

GWCC adopted the Backflow Prevention policy (PP06) in August 2016 and works began in May 2017 to install backflow devices on all rural properties. As per Table 11, GWCC installed 50 new RPZDs in the 23/24 financial year bringing the total number of installations to 1644.



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There remains approximately 68 RPZDs outstanding, or no certificate has been found and/or completed for their install, with no outstanding installations in the Hilltops Council. Additional RPZD installs may be required if new service connections in rural areas come online.

In October 2024, the GWCC Board resolved to update the backflow prevention policy which included having the testing regime of RPZDs be completed biennially, as it is not possible for us to achieve the testing regime without significant staffing level increase. As such, Council have commenced an audit and testing program to re-certify existing backflow devices and have previously been replacing any non-conforming devices.

Table 11. Breakdown of total RPZDs within GWCC scheme.

| | |
|---|-------------|
| # of RPZD Installed at Beginning of 23/24 FY | 1594 |
| <i># of RPZD Existing – GWCC Owned</i> | <i>1461</i> |
| <i># of RPZD Existing – Hilltops Council Owned</i> | <i>133</i> |
| # of RPZD Installed during 23/24 FY | 50 |
| <i># of RPZD Installed – GWCC Owned</i> | <i>50</i> |
| <i># of RPZD Installed – Hilltops Council Owned</i> | <i>0</i> |
| Total RPZD Count | 1644 |
| <i># of GWCC Owned RPZDs</i> | <i>1511</i> |
| <i># of Hilltops Council Owned RPZDs</i> | <i>133</i> |
| <i># of RPZD Installs Outstanding</i> | <i>68</i> |
| # of RPZD Tested during 23/24 FY | 33 |



Critical Control Points

No changes have been made to the CCP's during the 2023/24 reporting period.

Table 12. Summary of critical control points.

| CCP Number | Monitoring Parameter | Target Criterion | Adjustment Limit | Critical Limit | |
|-----------------|--|--------------------------------|--|--|---|
| 1 - Jugiong | Turbidity (Continuous online) Raw Water | Dependant on raw Water Quality | | 20% above set point for > 20minutes | |
| 2 - Jugiong | Turbidity (Continuous online) Filter Outlet | ≤ 0.2 NTU | ≥ 0.5 NTU | ≥ 1.0 NTU | |
| 3 - Jugiong | Free Chlorine residual (Continuous online & alarmed) Finished Water | 1.8mg/L | ≤ 1.2mg/L or ≥ 2.0mg/L | Summer: ≤ 0.8mg/L for > 30min or ≥ 5.0mg/L Winter: ≤ 0.5mg/L for > 30min or ≥ 5.0mg/L | |
| 4 - Jugiong | Fluoride (Daily) Finished Water | 1.0mg/L | < 0.95mg/L or > 1.05mg/L | < 0.9mg/L for > 72hrs or > 1.5mg/L | |
| 5 - Jugiong | System (monthly) inspection | Integrity Reservoir | Secure, evidence of break in or vermin | no of breach or vermin access to reservoir | Visual identification of vermin or containment in reservoir |
| 6 - Jugiong | Free chlorine residual (continuous online & alarmed) Prunevale and Cootamundra | 0.8mg/L | ≤ 0.5mg/L or ≥ 2.0mg/L | ≤ 0.2mg/L or ≥ 5.0mg/L | |
| 1 - Oura | Free Chlorine residual (Daily) Treated Water | 0.5mg/L | ≤ 0.3mg/L or ≥ 1.0mg/L | ≤ 0.2mg/L or ≥ 5.0mg/L | |
| 2 - Oura | Fluoride (Daily) Treated Water | 1.0mg/L | < 0.9mg/L or > 1.2mg/L | < 0.9mg/L for > 72hrs or ≥ 1.5mg/L | |
| 3 - Oura | System (monthly) inspection | Integrity Reservoir | Secure, evidence of break in or vermin | no of breach or vermin access to reservoir | Visual identification of vermin or containment in reservoir |
| 4 - Oura | Chlorine Residual (weekly) Wyalong and Thanowring Rd | 0.5mg/L | ≤ 0.35mg/L | ≤ 0.25mg/L | |
| 1 - Mt Arthur | Free Chlorine residual (3 x weekly) Tank 4 Outlet | 0.8mg/L | ≤ 0.5mg/L or ≥ 2.0mg/L | ≤ 0.3mg/L or ≥ 5.0mg/L | |
| 2 - Mt Arthur | System (monthly) inspection | Integrity Reservoir | Secure, evidence of break in or vermin | no of breach or vermin access to reservoir | Visual identification of vermin or containment in reservoir |
| 1 - Mt Daylight | Free Chlorine Residual (continuous Online) Naradhan Reservoir | 0.8mg/L | ≤ 0.5mg/L or ≥ 2.0mg/L | ≤ 0.3mg/L or ≥ 5.0mg/L | |



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| CCP Number | Monitoring Parameter | Target Criterion | Adjustment Limit | Critical Limit |
|-----------------|---|---|---|---|
| 2 - Mt Daylight | System Integrity Reservoir (monthly) Inspection | Secure, no evidence of break in or vermin | Visual identification of breach or vermin access to reservoir | Visual identification of vermin or containment in reservoir |

Critical Limit Exceedances

A breakdown of what each CCP represents can be seen in Table 12 above. Note that OCP1 relates to pH which is an operational control point with associated critical limits (<7 and >8) and is not a critical control point. However, exceedances related to this operational control point have been included in Table 13. Critical limit exceedances - Jugiong.

Table 13. Critical limit exceedances - Jugiong

| Date | CCP 1 | CCP 2 | CCP 3 | CCP 4 | CCP 5 | CCP 6 | OCP 1 | Reason | Immediate Correction | Preventive Action |
|-----------|-------|-------|-----------|-----------|-------|-------|-------|---|---|---|
| 1/8/2023 | | | | | | | 8.04 | Previous day maintenance on filters, filter washes, minimal pumping, unusually high raw water pH. Plant didn't run long from previous night shutting down on high pH. | Increase alum dose and reduce soda ash dose. | Monitor plant shut down when not manned. |
| 22/8/2023 | | | | 0.8m g/L | | | | Weight Scales needed calibrating, output reading that hopper has fluoride when in fact the hopper was empty | Fill hopper with fluoride | Regular calibration of scales and manually check hopper |
| 23/8/2023 | | | | 0.85 mg/L | | | | Low fluoride reading due to minimal water pumped for the day | Monitor results | Small pump repaired and on duty again soon |
| 27/8/2023 | | | 0.66 mg/L | | | | | Not an exceedance. Alarm was triggered as plant had not ran and chlorine decay brought level down to 0.66mg/l over extended detention time. | Inhibit alarm to run plant for chlorine dosing to commence to elevate levels again. | Nil required. |
| 9/9/2024 | | | | 0.1m g/L | | | | Fluoride Plant Fault | No Incident Report received, assumed another blockage | Ensure incident reports are completed |



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| Date | CCP 1 | CCP 2 | CCP 3 | CCP 4 | CCP 5 | CCP 6 | OCP 1 | Reason | Immediate Correction | Preventive Action |
|------------|-------|-------|-------|-----------|-------|-------|-------|---|--|--|
| 19/9/2024 | | | | | | | 8.12 | High pH due to excessive filter dumps and backwashing during commissioning works with only 1 clarifier in operation, caused by higher flow through clarifier and polymer dosing failure | Monitor filters and operation was resolved with polymer system fixed and having 2 clarifiers operating | Clean clarifier and put back in service |
| 12/11/2023 | | | | 0.8mg/L | | | | Electrical Outage due to storm approx 7:30pm on 11/11/23 | No Incident Report received | Ensure incident reports are completed in wateroutlook |
| 16/5/2024 | | | | 0.87 mg/L | | | | Low fluoride result 0.87mg/L due to fluctuating raw water flows. Fluctuations occurring due to manually operated raw water valve awaiting automation install. | Advise workshop of flow issue | Valve becoming redundant due to install of raw water pump VSD's. |

Table 14. Critical limit exceedances - Ora

| Date | CCP1 | CCP2 | CCP3 | CCP4 | Reason | Immediate Correction | Preventative Action |
|-----------|------|----------|------|------|--|---|--|
| 26/4/2024 | | 0.28mg/L | | | Low fluoride level, "hopper level 98kg | No incident report received assumed usual blockage and failure. | New system being purchased for plant upgrade |
| 7/6/2024 | | 0.87mg/L | | | No incident report or reason given in report | No incident report or reason given in report. | Ensure incident reports completed |

Table 15. Critical limit exceedances - Mt Daylight

| Date | CCP1 | CCP2 | Reason | Immediate Correction | Preventative Action |
|---|------|------|--------|----------------------|---------------------|
| There have been no Critical Control Point Exceedances for the Mt Daylight Borefield for 2023/24 | | | | | |



Fluoride Critical Limit exceedance

See Table 13. Critical limit exceedances - Jugiong and Table 14. Critical limit exceedances - Oura.

Table 16. Fluoride critical limit exceedances – summary all results in (mg/L)

| Date | Scheme | Recorded Concentration (mg/L) | Amount Exceeded By (mg/L) |
|------------|---------|-------------------------------|---------------------------|
| 22/8/2023 | Jugiong | 0.80 | -0.10 |
| 23/8/2023 | Jugiong | 0.85 | -0.05 |
| 9/9/2023 | Jugiong | 0.1 | -0.85 |
| 12/11/2023 | Jugiong | 0.8 | -0.1 |
| 16/5/2024 | Jugiong | 0.87 | -0.03 |
| 26/4/2024 | Oura | 0.28 | -0.62 |
| 7/6/2024 | Oura | 0.87 | -0.03 |

Other Reportable CCP Events

Oura Scheme

Two CCP breaches were reported for the 2023/24 reporting period, these are outlined in table 14.

Mt Daylight Scheme

No CCP events have been recorded for the 2023/24 period.

Jugiong Scheme

Six CCP breaches were reported for the 2023/24 reporting period, these are outlined in table 13.



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Critical Control Point Graphs

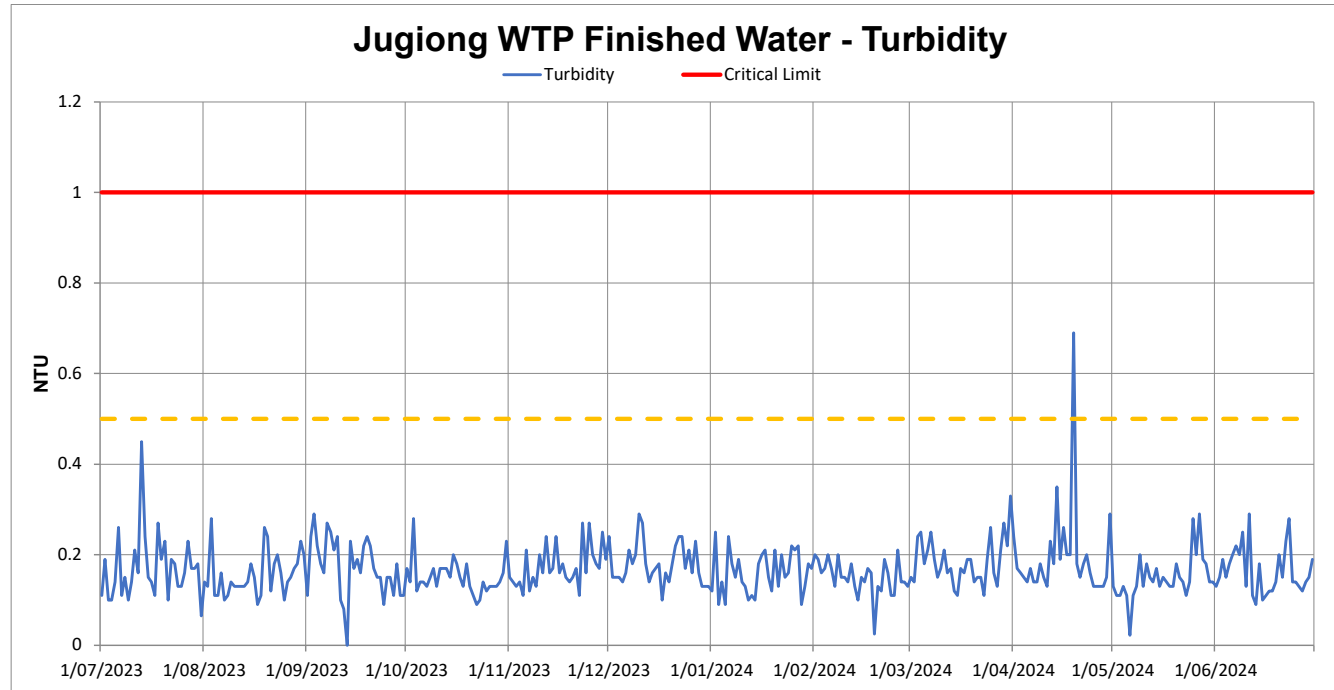


Figure 1. Jugiong water treatment plant CCP1 - filter outlet turbidity.

Figure 1 above is a representation of turbidity in the water leaving the Jugiong Water Treatment Plant. The red lines are our Critical Control Points (CCP) for the turbidity in the water and the orange lines are our Operational Control Points. As is indicated above, GWCC is consistently within the current CCP throughout the year with no exceedances.



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Figure 2. Jugiong water treatment plant CCP3 - free chlorine.

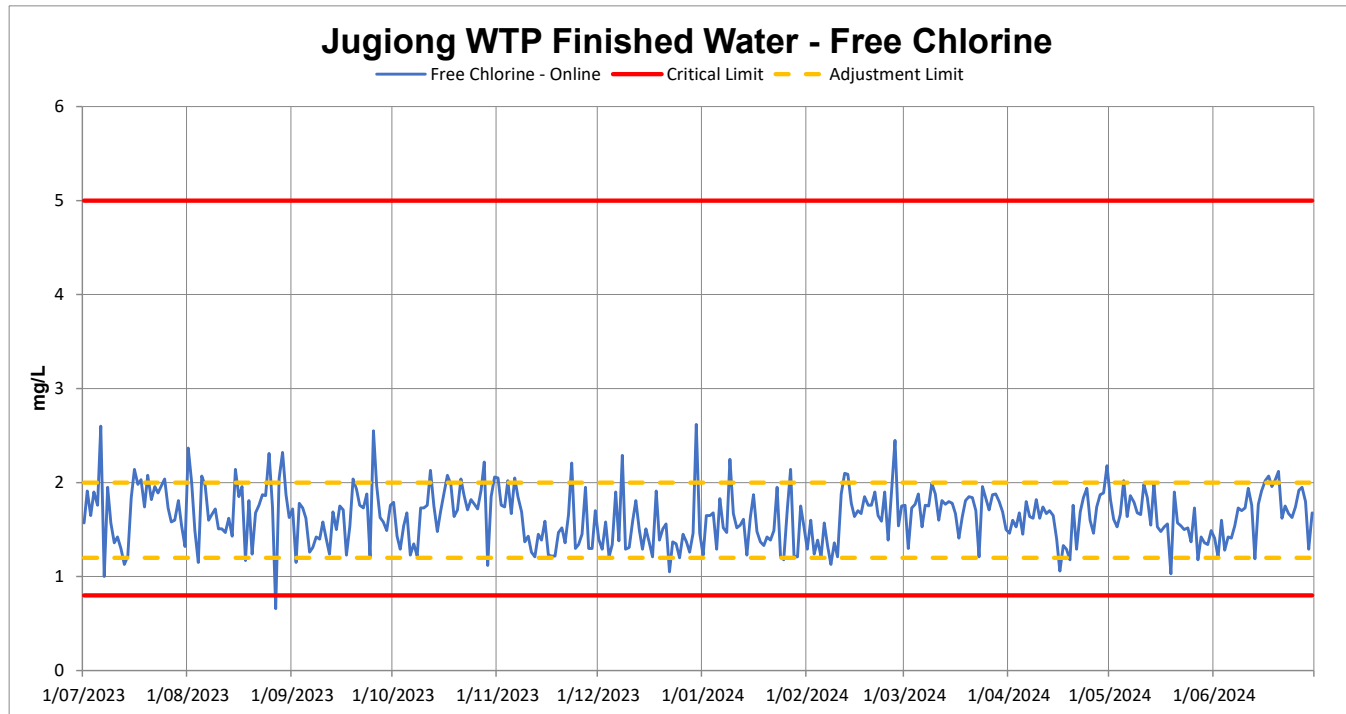


Figure 2 above is a representation of free chlorine in the water leaving the Jugiong Water Treatment Plant. The red lines are our Critical Control Points (CCP) for the concentration of chlorine in the water and the orange lines are our Operational Control Points. As is indicated above, GWCC is consistently within the CCP throughout the year except for 1 exceedance. This exceedance is explained in Table 13 above.



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Figure 3. Jugiong water treatment plant CCP4 - finished fluoride.

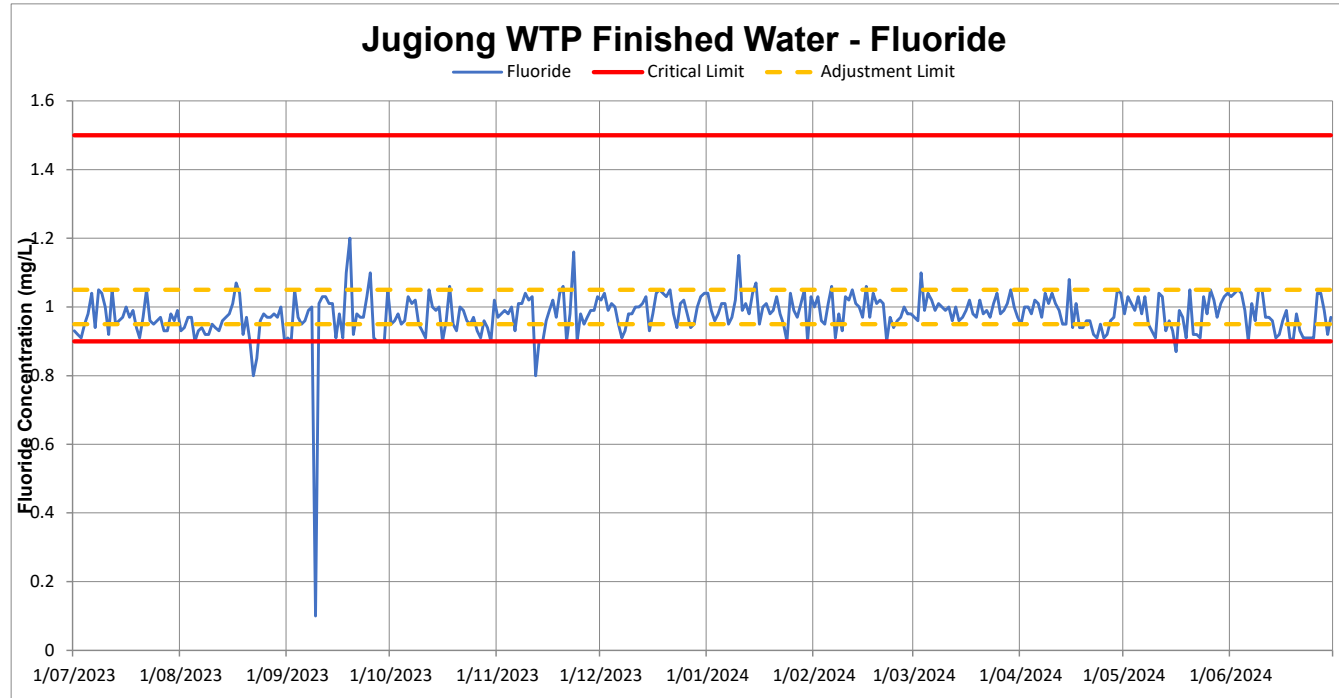


Figure 3 is a representation of the Finished Water Fluoride in the water leaving the Jugiong Water Treatment Plant. The red lines are our Critical Control Points (CCP) limits for the concentration of fluoride in the water and the orange lines are our Operational Control Points. As is indicated above, GWCC is generally within the CCP throughout the year with the exception of 4 exceedances as indicated above. These exceedances are explained in Table 13 above.



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Figure 4. Oura water treatment plant CCP1 - finished water free chlorine.

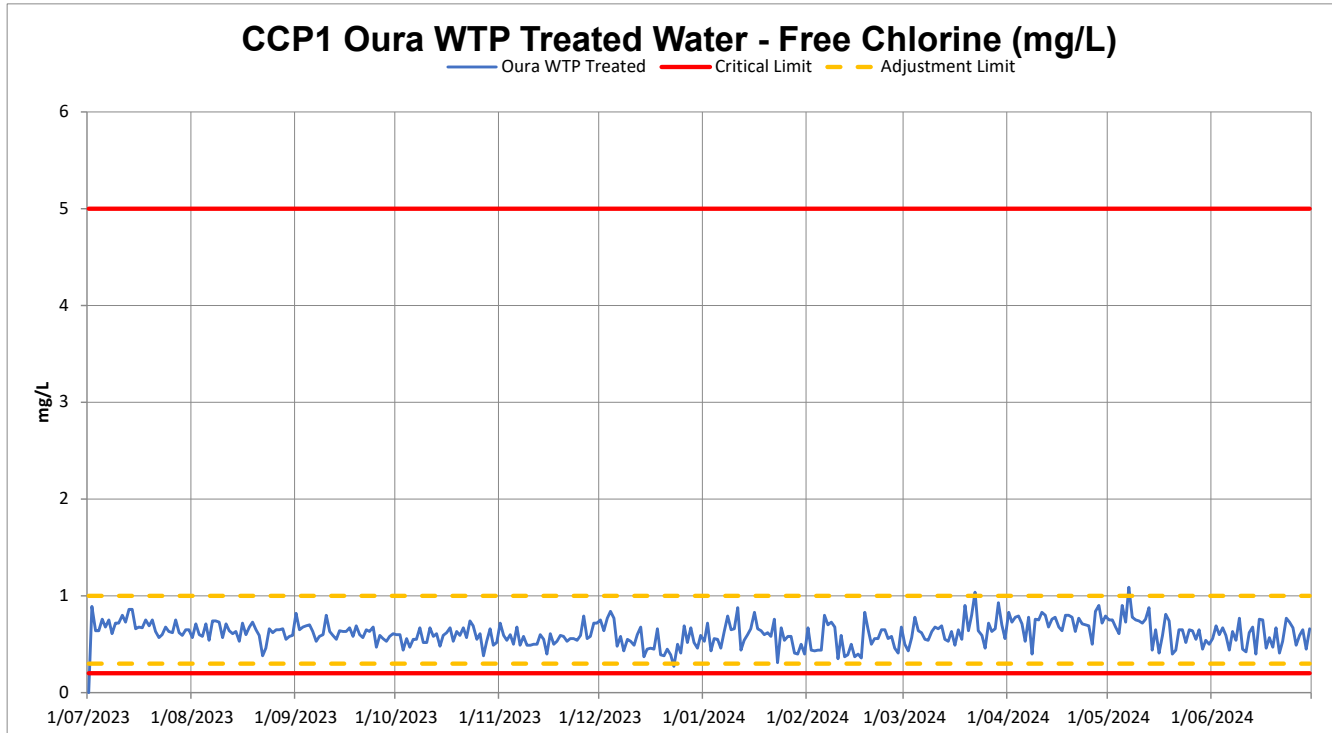


Figure 4 above is a representation of free chlorine in the water leaving the Oura Water Treatment Plant. The red lines are our Critical Control Points (CCP) for the concentration of chlorine in the water and the orange lines are our Operational Control Points. As is indicated above, GWCC is consistently within the CCP throughout the year with 0 exceedances.



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Figure 5. Oura water treatment plant CCP2 - treated water fluoride.

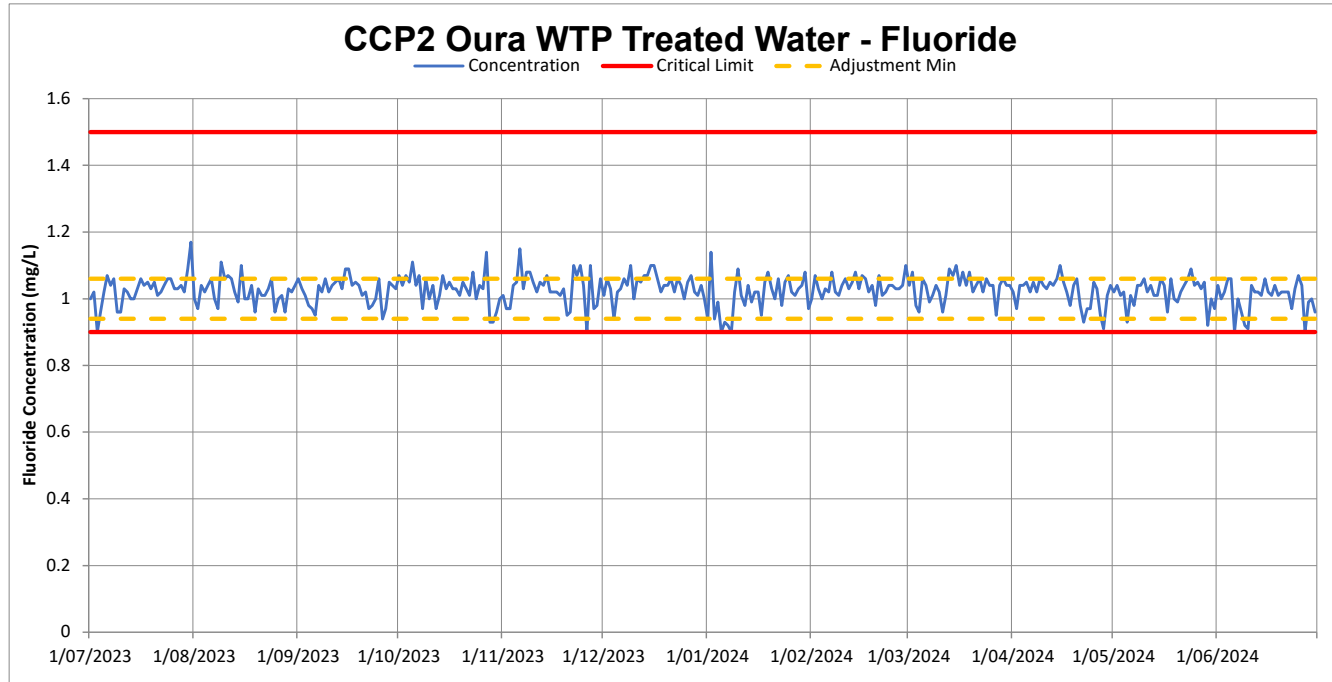


Figure 5 above is a representation of the Finished Water Fluoride in the water leaving the Oura Water Treatment Plant. The red lines are our Critical Control Points (CCP) limits for the concentration of Fluoride in the water and the orange lines are our Operational control points. As is indicated above, there have been 0 critical exceedances throughout the reporting period. These exceedances if any, have been explained in Table 14 above.



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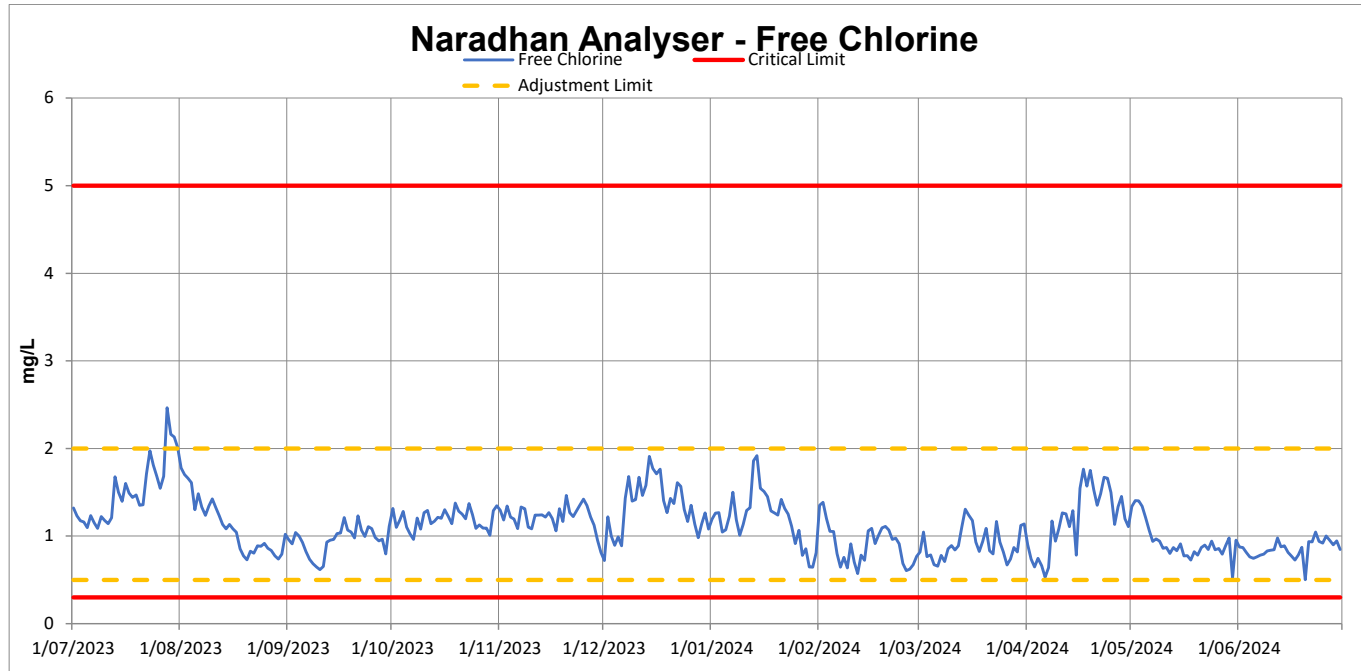


Figure 6. Mt Daylight CCP1 – finished water free chlorine.

Figure 6 above is representative of the finished water free chlorine for the Mt Daylight system. The red lines are our CCPs and the orange lines are the operational limits. As is indicated above, GWCC is consistently within the CCPs with no exceedances reported.



Water Quality Discussion

Throughout the reporting period GWCC have undertaken numerous water samples for both operational and verification monitoring. These samples are tested at the GWCC laboratory or an external NATA accredited laboratory for operational monitoring or NSW Health's FASS lab for verification or compliance purposes. GWCC also conducted a number of onsite tests for operational purposes which are presented below.

Water samples are tested for Physical, Chemical and Microbial properties in the water.

Throughout the reporting period GWCC have conducted a total of 902 microbial water samples to be either tested by NSW Health or tested 'in-house' by GWCC Water Quality staff.

The drinking water is tested throughout the period by an independent party for chemical elements which may be present in the water. A total of 151 water samples were carried out during the reporting period, and all were tested by NSW Health's FASS laboratory. From the 151 total samples collected and tested, 53 were treated water samples taken in the distribution system and 98 were raw or bore water samples.

GWCC also undertake pesticide sampling of the drinking water across the entire scheme. These samples are tested by a NATA accredited laboratory for the 2023/24 FY a total of 16 samples were tested for the presence of pesticides. All sample results were compliant with parameters set in the ADWGs, all results indicating an 'ND' nothing detected.

It is also a requirement for GWCC to test for Radiological characteristics in the ground water supplies every 2 years. For the 2023/24 FY, 4 Radiological samples were taken and tested by Australian Nuclear science and Technology Organisation (ANSTO). Results and locations can be seen in table 22.

Another initiative undertaken by GWCC is the monitoring of chlorine within the distribution system networks across the entire drinking water scheme. These tests are conducted routinely by the distribution staff and a total of 2450 chlorine test were conducted onsite throughout the year. These tests include both Total and Free chlorine. A running spreadsheet of results was previously updated by office staff once data was received by the distribution staff and is now located in GWCC new database Content Manager (doc 18/1344). Water Outlook (WO) has since been rolled out to the distribution staff to upload the results of the chlorine tests. Since this implementation of Water Outlook to staff, there has been 13,444 operational chlorine test results uploaded into the database. See table 21 below.

It is noted that whilst the Jugiong WTP has individual filter turbidity analysers, the current DWMS CCP is still only 1 NTU at the outlet of the filters. A review of the current DWMS is being undertaken with an audit readiness program. It is assumed this will result in individual CCP's for each filter as well as the outlet in the future.

Additional works with Atom Consulting regarding the facilitation of service level agreements with our Bulk Councils has been undertaken and we have Draft water quality parameters identified for final agreement. A Draft SLA has been developed by a legal advisor with reviews being complete by each Council. It is intended that the Draft document will be presented to both CGRC and Hilltops Councils for resolution over the coming 12 months for finalisation.

GWCC has undertaken historical testing of Per- and poly-fluoroalkyl substances (PFAS) of its raw water sources. Nil detection for all historical results has been recorded.



Data Collection

GWCC have conducted numerous monitoring samples throughout the distribution system as well as a number of verification samples that are tested by independent Forensic Analytical Science Services (FASS) laboratories. Below is a summary of Micro samples taken and tested throughout GWCC distribution system as well as tests conducted onsite and at GWCC Water Treatment plants.

Table 17. Micro sampling summary

| Tests conducted | Tested by Pathology | Microorganisms Summary | | | (Total) |
|-----------------|---------------------|------------------------|-----------------|-----------------------|---------|
| | | Non-compliant samples | Tested In House | Non-compliant samples | |
| Jugiong | 80 | 0 | 192 | 0 | 270 |
| Oura | 264 | 0 | 215 | 0 | 479 |
| Mt Arthur | 64 | 0 | 64 | 0 | 138 |
| Mt Daylight | 23 | 0 | 0 | 0 | 23 |
| Total | 431 | 0 | 471 | 0 | 902 |

New South Wales Health – Micro Monitoring

New South Wales Health Drinking Water Monitoring Program outlines the number and allocation of samples within a Drinking Water System. These numbers are based on population served and the complexity of the system. Currently GWCC have 431 water samples tested by FASS for E.coli and Faecal Coliforms across the entire drinking water scheme. These numbers can be further broken down into water supply systems:

- Jugiong Drinking Water Scheme 80 samples annually for E.coli and Faecal Coliforms
- Oura Drinking Water Scheme 270 samples annually for E.coli and Faecal Coliforms, this is 6 more than is required by NSW Health and can be attributed to doing 6 ‘Additional Samples’, additional samples are sometimes required when the original sample indicates an anomaly.
- Mount Arthur Drinking Water Scheme 64 samples annually for E.coli and Faecal Coliforms
- Mount Daylight Drinking Water Scheme 26 samples annually for E.coli and Faecal Coliforms, this is 3 more than is required by NSW Health and can be attributed to doing 3 ‘Additional Samples’, additional samples are sometimes required when the original sample indicates an anomaly



Comprehensive Chemical Sample Summary

Table 18. Comprehensive chemical sample results - summary

| | Tested by FASS (Verification and Operational) | Non-compliant samples | Samples with an indicator not compliant with ADWG e.g. Iron or Manganese or pH | Reason/Notes: |
|---|---|-----------------------|--|--|
| Comprehensive chemical Samples Treated Water | 53 | See Table 19 | 1 | See list below Some samples are Non-Compliant for more than 1 parameter |
| Comprehensive Chemical for Raw and/or Bore Data | 98 | | | |

GWCC conduct both Verification and Operational monitoring of potential chemicals in the drinking water over all of the drinking water scheme. Raw water or untreated water samples are taken from all duty bores from Mt Arthur, Mt Daylight and Oura on a monthly basis. Treated water samples are also taken in the distribution system of all of these schemes. As can be seen from table 18 & 19 above, GWCC has conducted 53 comprehensive chemical samples for our treated water and 98 samples for our raw and/or bore water. A breakdown of how many samples were taken and tested by the FASS lab for each drinking water scheme is presented below:

- **Oura** – 30 raw water samples were taken from the duty bores and 36 Treated water samples taken from the distribution system.
- **Jugiong** – 33 raw water samples taken from the Murrumbidgee River and 12 Treated water samples were taken from the distribution system.
- **Mt Daylight** – 18 Raw water samples were taken from the bores and 2 Treated water samples taken from the distribution system.
- **Mt Arthur** - Raw water samples were taken from the duty bore each month, a total of 17 samples for the reporting period and 5 Treated water samples taken from the distribution system.



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Table 19. Breakdown of number of samples with parameters exceeding ADWG values – Treated Water only.

| Site | Indicator Non-Compliant | | | | | | | |
|------------------------------------|-------------------------|------------------|-----------|--------|-----------|----|----------|------|
| | Copper | Iron | Manganese | Colour | Turbidity | pH | Fluoride | Lead |
| Distribution – Oura Scheme | | | | | | 1 | | |
| Distribution – Jugiong Scheme | | | | | | | | |
| Distribution – Mt Arthur Scheme* | | 1 Only aesthetic | | | | | NA | |
| Distribution – Mt Daylight Scheme* | | | | | | | NA | |

Note: Only shows treated water samples taken from the distribution systems. *Non Fluoridated system

Source water (Ground Water) monitoring has also been increased during the reporting period. All bores are sampled every month and samples sent to FASS for testing. A total of 65 samples were taken during the reporting period from a combination of Oura Bores, Mt Arthur Bores and Mt Daylight bores.

Chlorine Distribution Summary

Table 20. GWCC entire distribution system chlorine management

| Chlorine Distribution System Monitoring | in Situ tests for chlorine from spreadsheet and Water Outlook for (2023/24) | in Situ test results for chlorine - since implementation of Water Outlook (not including current FY) |
|---|---|--|
| Entire Scheme | 2450 | 13444 |

Every week GWCC distribution staff conduct Chlorine Analysis of the water distribution system at GWCC. Above is a summary of how many samples are tested for free and total Chlorine as well as Temperature, Turbidity and pH throughout the entire distribution system.

Radiological Sampling

NSW Health Drinking Water Monitoring Program indicates that ground water supplies are to be tested every 2 years for radiological characteristics. Table 21 below shows the results of these tests. All samples are within ADWG guidelines.

Table 21. Results of radiological sampling

| Sample description | Sample Date | ANSTO ID | Gross Alpha (Bq/L) | Gross Beta (Bq/L) | Calculated ⁴⁰ K |
|--------------------|-------------|----------|--------------------|-------------------|----------------------------|
| Oura Bore 2 | 30/5/2024 | C1003 | <0.03 | 0.03 ± 0.01 | 0.029 |
| Oura Bore 6 | 30/5/2024 | C1004 | 0.04 ± 0.01 | <0.03 | 0.038 |
| Mt Arthur Bore 1 | 28/5/2024 | C1002 | <0.03 | <0.03 | 0.033 |
| Mt Daylight Bore 1 | 27/5/2024 | C1001 | 0.08 ± 0.02 | 0.03 ± 0.01 | 0.099 |



Algal monitoring

GWCC undertakes regular monitoring of its surface water catchments for algal counts. This is only undertaken to develop a baseline representation of any potential future issues that may be incurred in future years.

Water Treatment Plants

GWCC have two main Water Treatment Plants (WTPs) located at Jugiong and Oura. A number of operational water sample results are taken and used on daily basis to help with the operation of the plants and to determine correct amounts of chlorine and fluoride that need to be injected into the water to make it suitable for consumption. Below is a list of the tests conducted and where within the treatment process they are taken.

Along with the operational monitoring conducted at the WTPs, verification monitoring is also undertaken, specifically for fluoride. A fluoride sample is taken from both WTPs every month and sent to FASS for testing. Results can be seen in the Fluoride Compliance Summary report in appendix C.

Table 22. Jugiong water treatment plant in-house testing.

| Raw Water | Dosed Water | Settled Water | Finished Water |
|---------------------|-------------|---------------|---------------------|
| Fluoride | pH | Turbidity | Turbidity - online |
| Turbidity - online | | Colour | Turbidity - Offline |
| Turbidity - Offline | | pH | Colour |
| Colour | | | pH |
| pH | | | Alkalinity |
| Alkalinity | | | Hardness |
| Hardness | | | Temperature |
| Temperature | | | Free Chlorine |
| | | | Total Chlorine |
| | | | Fluoride |

Table 23. Oura water treatment plant in-house testing.

| Raw Water | Treated Water | Oura Collection tank |
|-------------|----------------|----------------------|
| Temperature | Free Chlorine | Turbidity |
| Fluoride | Total Chlorine | |
| pH | Temperature | |
| | Fluoride | |
| | pH | |



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Non-Compliant Data

Operational monitoring indicates there have been some incidences of high pH and low residual chlorine in the extremities of the Jugiong, Oura, Mt Daylight and Mt Arthur drinking water schemes. Results are indicated in Table 24 below.

Table 24. Summary of non-compliant water quality data from operational monitoring.

| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|-------------------|---------------------------|-----------|------------|---------------------------|--|-------|
| 17/7/2023 | Young Terminal Storage | FCI | 0.02 | Reservoir Dosing | New chlorine analyser at Prunevale | |
| 16/1/2024 | Young Terminal Storage | FCI | 0.02 | Reservoir Dosing | New chlorine analyser at Prunevale | |
| 18/1/2023 | Young Terminal Storage | FCI | 0.1 | Reservoir Dosing | New chlorine analyser at Prunevale | |
| 12/3/2023 | Young Terminal Storage | FCI | 0.02 | Reservoir Dosing | New chlorine analyser at Prunevale | |
| 10/5/2024 | Young Terminal Storage | FCI | 0.03 | Reservoir Dosing | New chlorine analyser at Prunevale | |
| 10/10/2023 | Harden Town offtake Meter | FCI | 0.14 | Reservoir Dosing | | |
| 6/12/2023 | Cowangs Reservoir | FCI | 0.09 | Reservoir Dosing | | |
| 19/7/2023 | New Horizon, Gundagai Rd | FCI | 0.04 | Upstream Reservoir dosing | Check chlorine tablets in Brawlin res more often | |
| 16/8/2023 | New Horizon, Gundagai Rd | FCI | 0.02 | Upstream Reservoir dosing | Check chlorine tablets in Brawlin res more often | |
| 10/10/2024 | New Horizon, Gundagai Rd | FCI | 0.12 | Upstream Reservoir dosing | Check chlorine tablets in Brawlin res more often | |
| 9/11/2023 | New Horizon, Gundagai Rd | FCI | 0.12 | Upstream Reservoir dosing | Check chlorine tablets in Brawlin res more often | |
| 6/12/2023 | New Horizon, Gundagai Rd | FCI | 0.02 | Upstream Reservoir dosing | Check chlorine tablets in Brawlin res more often | |



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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|-----------|---------------------------------------|-------------|------------|---------------------------|--|-------|
| 19/1/2024 | New Horizon, Gundagai Rd | FCI | 0.05 | Upstream Reservoir dosing | Check chlorine tablets in Brawlin res more often | |
| 6/2/2024 | New Horizon, Gundagai Rd | FCI | 0.06 | Upstream Reservoir dosing | Check chlorine tablets in Brawlin res more often | |
| 26/3/2024 | New Horizon, Gundagai Rd | FCI | 0.07 | Upstream Reservoir dosing | Check chlorine tablets in Brawlin res more often | |
| 29/4/2024 | New Horizon, Gundagai Rd | FCI | 0.11 | Upstream Reservoir dosing | Check chlorine tablets in Brawlin res more often | |
| 19/4/2024 | New Horizon, Gundagai Rd | FCI | 0.07 | Upstream Reservoir dosing | Check chlorine tablets in Brawlin res more often | |
| 15/2/2024 | Cootamundra Depot | Temperature | 25.8 | Upstream Reservoir dosing | | |
| 23/2/2024 | Cootamundra Depot | Temperature | 27.3 | Upstream Reservoir dosing | | |
| 19/7/2023 | Stockinbingal Bowling Club | FCI | 0.06 | Upstream Reservoir dosing | | |
| 16/8/2023 | Stockinbingal Bowling Club | FCI | 0.02 | Upstream Reservoir dosing | | |
| 21/5/2024 | Stockinbingal Bowling Club | FCI | 0.02 | Upstream Reservoir dosing | | |
| 19/6/2024 | Stockinbingal Bowling Club | FCI | 0.02 | Upstream Reservoir dosing | | |
| 6/12/2023 | PRV Pit, Cnr Dimaseer and Olympic Hwy | FCI | 0.1 | Upstream Reservoir dosing | | |



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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|-----------|---|-----------------|------------|---------------------------|--|-------|
| 28/2/2024 | PRV Pit, Cnr Dirnaseer and Olympic Hwy | Temperature | 25.4 | | | |
| 28/2/2024 | Dirnaseer Reservoir | Temperature/FCI | 25.4/0.1 | Reservoir Dosing | | |
| 29/4/2024 | Dirnaseer Reservoir | FCI | 0.16 | Reservoir Dosing | | |
| 19/6/2024 | Dirnaseer Reservoir | FCI | 0.07 | Reservoir Dosing | | |
| 6/2/2024 | Wallendbeen Roundabout | pH | 8.52 | | | |
| 16/8/2023 | Town Offtake, Springvale | FCI | 0.02 | Upstream Reservoir Dosing | | |
| 28/2/2024 | Town Offtake, Springvale | FCI/pH | 0.02/8.54 | Upstream Reservoir Dosing | | |
| 29/4/2024 | Town Offtake, Springvale | FCI | 0.04 | Upstream Reservoir Dosing | | |
| 21/5/2024 | Town Offtake, Springvale | FCI | 0.02 | Upstream Reservoir Dosing | | |
| 19/6/2024 | Town Offtake, Springvale | FCI | 0.05 | Upstream Reservoir Dosing | | |
| 17/1/2024 | Wallendbeen School | FCI | 0.02 | Upstream Reservoir Dosing | | |
| 28/2/2024 | Wallendbeen School | pH | 8.7 | | | |
| 16/1/2024 | Wallendbeen Reservoir | FCI | 0.1 | Upstream Reservoir Dosing | | |
| 10/7/2023 | Brawlin Reservoir | FCI | 0.09 | Reservoir Dosing | Check chlorine tablets in Brawlin res more often | |



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|-----------|-------------------------|-----------|------------|------------------|--|-------|
| 17/7/2023 | Brawlin Reservoir | FCI | 0.06 | Reservoir Dosing | Check chlorine tablets in Brawlin res more often | |
| 16/1/2024 | Brawlin Reservoir | FCI | 0.03 | Reservoir Dosing | Check chlorine tablets in Brawlin res more often | |
| 19/1/2024 | Brawlin Reservoir | FCI | 0.05 | Reservoir Dosing | Check chlorine tablets in Brawlin res more often | |
| 28/2/2024 | Brawlin Reservoir | FCI/pH | 0.05/27.3 | Reservoir Dosing | Check chlorine tablets in Brawlin res more often | |
| 25/3/2024 | Brawlin Reservoir | FCI | 0.05 | Reservoir Dosing | Check chlorine tablets in Brawlin res more often | |
| 3/6/2024 | Brawlin Reservoir | FCI | 0.09 | Reservoir Dosing | Check chlorine tablets in Brawlin res more often | |
| 25/6/2024 | Brawlin Reservoir | FCI | 0.02 | Reservoir Dosing | Check chlorine tablets in Brawlin res more often | |
| 17/1/2024 | Coota No. 2 Offtake | FCI | 0.02 | Reservoir Dosing | | |
| 14/8/2024 | Stockinbingal Reservoir | FCI | 0.08 | Reservoir Dosing | | |

| Oura Scheme Date | Location | Parameter | Exceedance | Correction | Preventative Action | Notes |
|------------------|---------------------------|------------------|------------|---------------------------|---------------------|-------|
| 30/11/2023 | Tara Station | Pump FCI | 0.04 | Upstream Reservoir Dosing | | |
| 21/12/2023 | Tara Station | Pump Temperature | 26 | | | |
| 10/1/2024 | Tara Station | Pump FCI | 0.17 | Upstream Reservoir Dosing | | |
| 22/2/2024 | Tara Station | Pump Temperature | 27.3 | | | |
| 21/12/2023 | Ariah Park Town Reservoir | Temperature | 26 | | | |
| 2/2/2024 | Ariah Park Town Reservoir | Temperature | 26 | | | |
| 30/1/2024 | Ariah Park Town Reservoir | Temperature | 26 | | | |



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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|----------------------------|-----------------|------------|------------|--------------------------|-------|
| 20/2/2024 | Ariah Park Town Reservoir | Temperature | 28 | | | |
| 4/3/2024 | Ariah Park Town Reservoir | Temperature | 26 | | | |
| 18/3/2024 | Ariah Park Town Reservoir | Temperature | 26 | | | |
| 30/1/2024 | 17 Wellmans St, Ariah Park | Temperature | 29 | | | |
| 30/1/2024 | Beckom Hotel | Temperature | 25.2 | | | |
| 20/2/2024 | Beckom Hotel | Temperature | 26.1 | | | |
| 19/1/2024 | Ardlethan Town Reservoir | Temperature | 26 | | | |
| 16/2/2024 | Ardlethan Town Reservoir | Temperature | 26 | | | |
| 4/3/2024 | Ardlethan Town Reservoir | Temperature | 26 | | | |
| 18/3/2024 | Ardlethan Town Reservoir | Temperature | 26 | | | |
| 20/3/2024 | Ardlethan Town Reservoir | Temperature/pH | 25.7/8.55 | | | |
| 30/1/2024 | 34 Parkes St, Ardlethan | Temperature | 29.8 | | | |
| 17/11/2023 | Barellan Town Reservoir | FCI | 0.15 | | Upstream Chlorine Dosing | |
| 30/11/2023 | Barellan Town Reservoir | FCI | 0.12 | | Upstream Chlorine Dosing | |
| 10/1/2024 | Barellan Town Reservoir | FCI/Temperature | 0.02/27.3 | | Upstream Chlorine Dosing | |
| 19/1/2024 | Barellan Town Reservoir | FCI/Temperature | 0.15/26 | | Upstream Chlorine Dosing | |
| 4/3/2024 | Barellan Town Reservoir | Temperature | 26 | | | |



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|------------|---------------------|------------------|------------|------------|--------------------------|-------|
| 14/3/2024 | Barellan Reservoir | Town Temperature | 29.5 | | | |
| 18/3/2024 | Barellan Reservoir | Town Temperature | 26 | | | |
| 20/3/2024 | Barellan Reservoir | Town Temperature | 25.2 | | | |
| 16/4/2024 | Barellan Reservoir | Town FCI | 0.18 | | Upstream Chlorine Dosing | |
| 8/1/2024 | Temora Balance Tank | Temperature | 26 | | | |
| 22/1/2024 | Temora Balance Tank | Temperature | 26 | | | |
| 26/2/2024 | Temora Balance Tank | Temperature | 26 | | | |
| 8/1/2024 | Temora Reservoir | Town Temperature | 26.3 | | | |
| 22/1/2024 | Temora Reservoir | Town Temperature | 26 | | | |
| 5/2/2024 | Temora Reservoir | Town Temperature | 26 | | | |
| 26/2/2024 | Temora Reservoir | Town Temperature | 26 | | | |
| 14/1/2024 | Temora School | High Temperature | 26.4 | | | |
| 20/2/2024 | Temora School | High FCI | 0.19 | | Upstream Chlorine Dosing | |
| 25/7/2023 | 22 Beattie Temora | St, FCI | 0.08 | | Upstream Chlorine Dosing | |
| 20/9/2023 | 22 Beattie Temora | St, FCI | 0.02 | | Upstream Chlorine Dosing | |
| 14/12/2023 | 22 Beattie Temora | St, Temperature | 28.6 | | | |



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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|-----------------------------------|-----------------|------------|------------|--------------------------|-------|
| 24/1/2024 | 22 Beattie St, Temora | Temperature | 28.7 | | | |
| 2/4/2024 | 22 Beattie St, Temora | FCI/Temperature | 0.12/26.5 | | | |
| 1/5/2023 | 22 Beattie St, Temora | FCI | 0.03 | | Upstream Chlorine Dosing | |
| 20/9/2023 | Temora School West | FCI | 0.1 | | Upstream Chlorine Dosing | |
| 14/12/2023 | Temora School West | Temperature | 28.2 | | | |
| 24/1/2024 | Temora School West | Temperature/pH | 28.2/8.52 | | | |
| 5/3/2024 | Temora School West | Temperature | 27 | | | |
| 2/4/2024 | Temora School West | Temperature/pH | 25.8/8.57 | | | |
| 1/5/2024 | Temora School West | Chlorine | 0.11 | | | |
| 15/11/2023 | Temora Caravan Park | Temperature | 26 | | | |
| 14/12/2023 | Temora Caravan Park | Temperature | 28 | | | |
| 24/1/2024 | Temora Caravan Park | Temperature | 31 | | | |
| 5/3/2024 | Temora Caravan Park | Temperature | 27.6 | | | |
| 2/4/2024 | Temora Caravan Park | Temperature | 28.2 | | | |
| 25/6/2024 | Temora Caravan Park | pH | 8.54 | | | |
| 11/12/2023 | Cartwrights Hill Reservoir Outlet | Temperature | 26 | | | |
| 8/1/2024 | Cartwrights Hill Reservoir Outlet | Temperature | 26 | | | |



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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|-----------------------------------|----------------------|------------|-----------------|-------------------|-------|
| 22/1/2024 | Cartwrights Hill Reservoir Outlet | Temperature | 26 | | | |
| 13/12/2023 | Marrar Park | Temperature | 29.1 | | | |
| 22/1/2024 | Marrar Park | Temperature | 26.1 | | | |
| 13/2/2024 | Marrar Park | Temperature | 27.8 | | | |
| 4/3/2024 | Marrar Park | Temperature | 25.1 | | | |
| 13/2/2024 | Marrar Pinnacles | Temperature | 27.5 | | | |
| 21/9/2023 | Junee School | Public Chlorine | 0.15 | Upstream Dosing | | |
| 22/1/2024 | Junee School | Public Temperature | 26 | | | |
| 22/1/2024 | Junee School | High Temperature | 25.5 | | | |
| 13/2/2024 | Junee School | High Temperature | 25.6 | | | |
| 21/9/2023 | 18 Prince St Junee | St Chlorine | 0.13 | | | |
| 13/12/2023 | Mariina Station | Pump Temperature | 25.4 | | | |
| 14/11/2023 | Illabo Hotel | Chlorine | 0.1 | | | |
| 13/12/2023 | Illabo Hotel | Temperature | 27 | | | |
| 22/1/2024 | Illabo Hotel | Temperature | 26.1 | | | |
| 13/2/2024 | Illabo Hotel | Chlorine/Temperature | 28.4 | | | |
| 24/6/2024 | Illabo Hotel | Chlorine | 0.17 | | | |
| 21/9/2023 | Wantabadgery Hall | Chlorine | 0.15 | | | |
| 2/11/2023 | Wantabadgery Hall | Chlorine | 0.15 | | | |
| 13/2/2024 | Wantabadgery Hall | Chlorine | 0.18 | | | |
| 4/3/2024 | Wantabadgery Hall | Chlorine | 0.19 | | | |
| 30/11/2023 | Palace Hotel, Ardlethan | Temperature | 26 | | | |



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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|-----------------------------|----------------------|------------|------------|-------------------|-------|
| 10/1/2024 | Palace Hotel, Ardlethan | Chlorine/Temperature | 0.04/27.2 | | | |
| 20/2/2024 | Palace Hotel, Ardlethan | Temperature | 26.8 | | | |
| 20/3/2024 | Golf Club, Aria Park | Temperature | 25.5 | | | |
| 21/9/2023 | Memorial Park, Bethungra | Chlorine | 0.02 | | | |
| 22/1/2024 | Memorial Park, Bethungra | Chlorine | 0.06 | | | |
| 13/2/2024 | Memorial Park, Bethungra | Chlorine/Temperature | 0.14/25.6 | | | |
| 14/3/2024 | Memorial Park, Bethungra | Temperature | 26.6 | | | |
| 8/1/2024 | Barmedman Park | Temperature | 27 | | | |
| 15/1/2024 | Barmedman Park | Temperature | 26.1 | | | |
| 23/1/2024 | Barmedman Park | Temperature | 25.4 | | | |
| 19/2/2024 | Barmedman Park | Temperature | 27.8 | | | |
| 15/3/2024 | Barmedman Park | Temperature | 26.9 | | | |
| 19/2/2024 | Wyalong Meter Pit | Chlorine/Temperature | 0.18/26.4 | | | |
| 12/3/2024 | Wyalong Meter Pit | Temperature | 25.5 | | | |
| 3/6/2023 | Wyalong Meter Pit | pH | 8.53 | | | |
| 28/11/2023 | Wyalong School | Chlorine | 0.18 | | | |
| 14/2/2024 | Wyalong School | Temperature | 25.1 | | | |
| 12/3/2024 | Wyalong School | Temperature | 27.3 | | | |
| 19/10/2023 | 35 Perseverance St, Wyalong | Chlorine | 0.19 | | | |



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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|--------------------------------|----------------------|------------|-----------------|-------------------|-------|
| 14/2/2024 | 35 Perseverance St, Wyalong | Temperature | 28 | | | |
| 12/3/2024 | 35 Perseverance St, Wyalong | Temperature | 31.1 | | | |
| 8/5/2024 | 35 Perseverance St, Wyalong | pH | 8.72 | | | |
| 3/6/2024 | 35 Perseverance St, Wyalong | pH | 8.7 | | | |
| 19/10/2023 | West Wyalong Public School | Chlorine | 0.06 | Upstream Dosing | | |
| 19/2/2024 | West Wyalong Public School | Chlorine/Temperature | 0.06/26.7 | | | |
| 14/2/2024 | West Wyalong Public School | Chlorine/Temperature | 0.18/26.7 | | | |
| 12/3/2024 | West Wyalong Public School | Chlorine/Temperature | 0.07/27.1 | | | |
| 8/1/2024 | Wyalong Terminal res | Temperature | 25.2 | | | |
| 16/2/2024 | Wyalong Terminal Res | Temperature | 26.5 | | | |
| 12/3/2024 | Wyalong Terminal Res | Temperature | 27.2 | | | |
| 15/3/2024 | Wyalong Terminal Res | Temperature | 28.6 | | | |
| 3/6/2024 | Wyalong Terminal Res | Chlorine/pH | 016/8.62 | | | |
| 3/6/2024 | Wyalong Terminal Res | pH | 8.58 | | | |
| 19/10/2023 | Calleen Reservoir Outlet | pH | 8.82 | | | |
| 19/10/2023 | Calleen Reservoir Outlet | pH | 8.52 | | | |



Drinking Water Management System
Annual Report 2023/24

| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|--------------------------|---------------------------|------------|------------|-------------------|-------|
| 15/1/2024 | Calleen Reservoir Outlet | Temperature | 25.7 | | | |
| 16/2/2024 | Calleen Reservoir Outlet | Temperature | 25.9 | | | |
| 19/2/2024 | Calleen Reservoir Outlet | Temperature | 25.5 | | | |
| 26/2/2024 | Calleen Reservoir Outlet | Temperature | 26.2 | | | |
| 1/3/2024 | Calleen Reservoir Outlet | Temperature | 25.7 | | | |
| 11/3/2024 | Calleen Reservoir Outlet | Temperature | 26.5 | | | |
| 12/3/2024 | Calleen Reservoir Outlet | Temperature/pH | 26.4/8.7 | | | |
| 22/3/2024 | Calleen Reservoir Outlet | Temperature | 25.4 | | | |
| 8/5/2024 | Calleen Reservoir Outlet | pH | 8.68 | | | |
| 3/6/2024 | Calleen Reservoir Outlet | pH | 8.84 | | | |
| 19/10/2023 | Ungarie reservoir | Town pH | 8.82 | | | |
| 15/1/2024 | Ungarie reservoir | Town Temperature | 25.7 | | | |
| 16/2/2024 | Ungarie reservoir | Town Temperature | 26.9 | | | |
| 19/2/2024 | Ungarie reservoir | Town Temperature | 26.7 | | | |
| 19/2/2024 | Ungarie reservoir | Town Chlorine/Temperature | 0.13/26.7 | | | |
| 14/2/2024 | Ungarie reservoir | Town Chlorine/Temperature | 0.11/26.6 | | | |
| 26/2/2024 | Ungarie reservoir | Town Temperature | 25.6 | | | |
| 1/3/2024 | Ungarie reservoir | Town Temperature | 27.6 | | | |



Drinking Water Management System
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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|--------------------|---------------------------------|---------------|------------|-------------------|-------|
| 11/3/2024 | Ungarie reservoir | Town Temperature | 26.6 | | | |
| 12/3/2024 | Ungarie reservoir | Town Temperature/pH | 28.7/8.95 | | | |
| 15/3/2024 | Ungarie reservoir | Town Temperature | 26.5 | | | |
| 22/3/2024 | Ungarie reservoir | Town Temperature | 25.6 | | | |
| 8/5/2024 | Ungarie reservoir | Town pH | 8.65 | | | |
| 3/6/2024 | Ungarie reservoir | Town pH | 9.28 | | | |
| 28/11/2023 | Bing Park, Ungarie | Wallder Chlorine/temperature/pH | 0.12/27.1/8.7 | | | |
| 4/12/2023 | Bing Park, Ungarie | Wallder Temperature | 26.9 | | | |
| 19/12/2023 | Bing Park, Ungarie | Wallder Temperature | 27.1 | | | |
| 29/12/2023 | Bing Park, Ungarie | Wallder Temperature | 26.9 | | | |
| 12/1/2024 | Bing Park, Ungarie | Wallder Temperature | 25.5 | | | |
| 15/1/2024 | Bing Park, Ungarie | Wallder Temperature | 34 | | | |
| 2/2/2024 | Bing Park, Ungarie | Wallder Temperature | 32 | | | |
| 9/2/2024 | Bing Park, Ungarie | Wallder Temperature | 28.8 | | | |
| 16/2/2024 | Bing Park, Ungarie | Wallder Temperature | 32.8 | | | |
| 19/2/2024 | Bing Park, Ungarie | Wallder Temperature | 31 | | | |
| 26/2/2024 | Bing Park, Ungarie | Wallder Temperature | 31.1 | | | |
| 1/3/2024 | Bing Park, Ungarie | Wallder Temperature | 34 | | | |



Drinking Water Management System
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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|----------------------------|----------------------|------------|------------|-------------------|-------|
| 11/3/2024 | Bing Wallder Park, Ungarie | Temperature | 28.1 | | | |
| 12/3/2024 | Bing Wallder Park, Ungarie | Temperature/pH | 31.8/8.95 | | | |
| 15/3/2024 | Bing Wallder Park, Ungarie | Temperature | 32 | | | |
| 22/3/2024 | Bing Wallder Park, Ungarie | Temperature | 27.5 | | | |
| 8/4/2024 | Bing Wallder Park, Ungarie | Temperature | 25.9 | | | |
| 3/6/2024 | Bing Wallder Park, Ungarie | pH | 9.18 | | | |
| 19/10/2023 | Central School, Ungarie | pH | 8.87 | | | |
| 14/2/2024 | Central School, Ungarie | Chlorine/pH | 0.12/8.82 | | | |
| 8/5/2024 | Central School, Ungarie | pH | 9.03 | | | |
| 10/7/2023 | Temora East | Chlorine | 0.16 | | | |
| 14/7/2023 | Temora East | Chlorine | 0.19 | | | |
| 20/9/2023 | Temora East | Chlorine | 0.09 | | | |
| 22/9/2023 | Temora East | Chlorine | 0.13 | | | |
| 20/10/2023 | Temora East | Chlorine | 0.15 | | | |
| 30/10/2023 | Temora East | Chlorine | 0.07 | | | |
| 20/11/2023 | Temora East | Chlorine | 0.16 | | | |
| 15/11/2023 | Temora East | Chlorine | 0.12 | | | |
| 11/12/2023 | Temora East | Chlorine/Temperature | 0.16/25.3 | | | |
| 2/1/2024 | Temora East | Chlorine | 0.11 | | | |
| 22/1/2024 | Temora East | Chlorine/Temperature | 0.09/28 | | | |
| 24/1/2024 | Temora East | Chlorine | 0.16 | | | |
| 12/2/2024 | Temora East | Chlorine | 0.14 | | | |
| 26/2/2024 | Temora East | Temperature | 26 | | | |
| 4/3/2024 | Temora East | Chlorine | 0.15 | | | |



Drinking Water Management System
Annual Report 2023/24

| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|---------------------------|-------------|------------|------------|-------------------|-------|
| 5/3/2024 | Temora East | Chlorine | 0.04 | | | |
| 12/3/2024 | Temora East | Temperature | 27 | | | |
| 2/4/2024 | Temora East | Chlorine | 0.13 | | | |
| 1/5/2024 | Temora East | Chlorine | 0.02 | | | |
| 28/5/2024 | Temora East | Chlorine | 0.11 | | | |
| 14/6/2024 | Temora East | Chlorine | 0.1 | | | |
| 25/6/2024 | Temora East | Chlorine | 0.11 | | | |
| 21/12/2023 | Ariah Park No. 1 | Temperature | 26 | | | |
| 2/2/2024 | Ariah Park No. 1 | Temperature | 26 | | | |
| 16/2/2024 | Ariah Park No. 1 | Temperature | 26 | | | |
| 4/3/2024 | Ariah Park No. 1 | Temperature | 26 | | | |
| 18/3/2024 | Ariah Park No. 1 | Temperature | 26 | | | |
| 15/1/2024 | Ariah Park No. 2 | Temperature | 26 | | | |
| 4/3/2024 | Ariah Park No. 2 | Temperature | 26 | | | |
| 15/1/2024 | Ardlethan Booster Pump | Temperature | 26 | | | |
| 19/1/2024 | Ardlethan Booster Pump | Temperature | 26 | | | |
| 16/2/2024 | Ardlethan Booster Pump | Temperature | 26 | | | |
| 4/3/2024 | Ardlethan Booster Pump | Temperature | 26.7 | | | |
| 18/3/2024 | Ardlethan Booster Pump | Temperature | 26.8 | | | |
| 15/1/2024 | Barellan LL | Temperature | 26 | | | |
| 19/1/2024 | Barellan LL | Temperature | 26 | | | |
| 4/3/2024 | Barellan LL | Temperature | 26 | | | |
| 18/3/2024 | Barellan LL | Temperature | 26 | | | |
| 19/1/2024 | Barellan Club | Temperature | 26 | | | |
| 18/3/2024 | Barellan Club | Temperature | 26 | | | |
| 8/1/2024 | Ampol Wyalong | Temperature | 27.3 | | | |
| 8/1/2024 | Wyalong Park | Temperature | 29 | | | |
| 16/2/2024 | Wyalong Park | Temperature | 32 | | | |



Drinking Water Management System

Annual Report 2023/24

| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|--------------------|-----------------|-------------|------------|------------|---------------------|-------|
| 11/3/2024 | Wyalong Park | Temperature | 31.7 | | | |
| 11/12/2023 | Eurollie Res | Temperature | 26 | | | |
| 21/12/2023 | Eurollie Rd Res | Temperature | 26 | | | |
| 22/1/2024 | Eurollie Rd Res | Temperature | 26 | | | |
| 26/2/2024 | Eurollie Rd Res | Temperature | 26 | | | |
| 8/1/2024 | Wyalong Depot | Temperature | 27.3 | | | |
| 15/1/2024 | Wyalong Depot | Temperature | 25.9 | | | |
| 8/1/2024 | Bectric Res | Temperature | 26 | | | |
| 22/1/2024 | Bectric Res | Temperature | 26 | | | |
| 2/4/2024 | Bectric Res | Temperature | 26 | | | |
| 1/12/2023 | Mirrool Res | Chlorine | 0.14 | | | |
| 21/12/2023 | Mirrool Res | Temperature | 26 | | | |
| 8/1/2024 | Mirrool Res | Chlorine | 0.13 | | | |
| 2/2/2024 | Mirrool Res | Temperature | 26 | | | |
| 4/3/2024 | Mirrool Res | Temperature | 26 | | | |
| 18/3/2024 | Mirrool Res | Temperature | 26.3 | | | |
| 31/7/2023 | Ungarie Rural | Chlorine | 5.7 | | | |
| 21/8/2023 | Ungarie Rural | Chlorine | 5.1 | | | |
| 15/1/2024 | Ungarie Rural | Temperature | 27 | | | |
| 2/2/2024 | Ungarie Rural | Temperature | 26 | | | |
| 16/2/2024 | Ungarie Rural | Temperature | 26.5 | | | |
| 19/2/2024 | Ungarie Rural | Temperature | 25.9 | | | |
| 23/2/2024 | Ungarie Rural | Temperature | 26 | | | |
| 26/2/2024 | Ungarie Rural | Temperature | 25.8 | | | |
| 1/3/2024 | Ungarie Rural | Temperature | 29.5 | | | |
| 11/3/2024 | Ungarie Rural | Temperature | 26.7 | | | |
| 15/3/2024 | Ungarie Rural | Temperature | 26.8 | | | |
| Mt Daylight | | | | | | |
| Date | Location | Parameter | Exceedance | Correction | Preventative Action | Notes |
| 15/1/2024 | Hannan Res | Temperature | 29.7 | | | |
| 2/2/2024 | Hannan Res | Temperature | 27.2 | | | |



Drinking Water Management System
Annual Report 2023/24

| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|-----------|-----------------------|----------------------|------------|------------|-------------------|-------|
| 9/2/2024 | Hannan Res | Temperature | 25.8 | | | |
| 16/2/2024 | Hannan Res | Temperature | 29.7 | | | |
| 19/2/2024 | Hannan Res | Temperature | 29.4 | | | |
| 14/2/2024 | Hannan Res | Chlorine/Temperature | 0.15/27.8 | | | |
| 23/2/2024 | Hannan Res | Temperature | 27.6 | | | |
| 26/2/2024 | Hannan Res | Temperature | 29 | | | |
| 4/3/2024 | Hannan Res | Temperature | 31.3 | | | |
| 11/3/2024 | Hannan Res | Temperature | 28.1 | | | |
| 13/3/2024 | Hannan Res | Temperature | 29.3 | | | |
| 15/3/2024 | Hannan Res | Temperature | 30 | | | |
| 22/3/2024 | Hannan Res | Temperature | 25.5 | | | |
| 15/1/2024 | Naradhan Concrete Res | Temperature | 27.5 | | | |
| 2/2/2024 | Naradhan Concrete Res | Temperature | 26.5 | | | |
| 9/2/2024 | Naradhan Concrete Res | Temperature | 25.4 | | | |
| 16/2/2024 | Naradhan Concrete Res | Temperature | 29.3 | | | |
| 19/2/2024 | Naradhan Concrete Res | Temperature | 27.8 | | | |
| 14/2/2024 | Naradhan Concrete Res | Chlorine/Temperature | 0.19/28.7 | | | |
| 23/2/2024 | Naradhan Concrete Res | Temperature | 29 | | | |
| 26/2/2024 | Naradhan Concrete Res | Temperature | 28.6 | | | |
| 11/3/2024 | Naradhan Concrete Res | Temperature | 28.2 | | | |
| 13/3/2024 | Naradhan Concrete Res | Temperature | 29.3 | | | |
| 15/3/2024 | Naradhan Concrete Res | Temperature | 29.1 | | | |



Drinking Water Management System
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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|---------------------------|----------------------|------------|------------|-------------------|-------|
| 22/3/2024 | Naradhan Concrete Res | Temperature | 26 | | | |
| 19/10/2023 | North Weethalle Res | Chlorine | 0.02 | | | |
| 15/1/2024 | North Weethalle Res | Temperature | 28 | | | |
| 2/2/2024 | North Weethalle Res | Temperature | 26.5 | | | |
| 16/2/2024 | North Weethalle Res | Temperature | 28.3 | | | |
| 19/2/2024 | North Weethalle Res | Temperature | 27.6 | | | |
| 19/2/2024 | North Weethalle Res | Chlorine/Temperature | 0.02/28.6 | | | |
| 14/2/2024 | North Weethalle Res | Chlorine/Temperature | 0.02/28.3 | | | |
| 23/2/2024 | North Weethalle Res | Temperature | 27.1 | | | |
| 26/2/2024 | North Weethalle Res | Temperature | 28 | | | |
| 1/3/2024 | North Weethalle Res | Temperature | 30.1 | | | |
| 11/3/2024 | North Weethalle Res | Temperature | 28.7 | | | |
| 13/3/2024 | North Weethalle Res | Chlorine/Temperature | 0.11/29.5 | | | |
| 15/3/2024 | North Weethalle Res | Chlorine/Temperature | 0.18/29 | | | |
| 2/4/2024 | North Weethalle Res | Temperature | 25.1 | | | |
| 5/4/2024 | North Weethalle Res | Temperature | 25.1 | | | |
| 8/4/2024 | North Weethalle Res | Chlorine | 0.19 | | | |
| 2/8/2023 | Russell Trading Weethalle | Chlorine | 0.17 | | | |



Drinking Water Management System
Annual Report 2023/24

| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|---------------------------|----------------------|------------|------------|-------------------|-------|
| 26/9/2023 | Russell Trading Weethalle | Chlorine | 0.12 | | | |
| 26/10/2023 | Russell Trading Weethalle | Chlorine | 0.14 | | | |
| 19/10/2023 | Russell Trading Weethalle | Chlorine | 0.09 | | | |
| 4/12/2023 | Russell Trading Weethalle | Temperature | 25.2 | | | |
| 19/12/2023 | Russell Trading Weethalle | Chlorine/Temperature | 0.09/25.8 | | | |
| 29/12/2023 | Russell Trading Weethalle | Chlorine | 0.18 | | | |
| 12/1/2024 | Russell Trading Weethalle | Chlorine/Temperature | 0.14/25.4 | | | |
| 15/1/2024 | Russell Trading Weethalle | Temperature | 30.5 | | | |
| 2/2/2024 | Russell Trading Weethalle | Temperature | 28.5 | | | |
| 9/2/2024 | Russell Trading Weethalle | Temperature | 26.8 | | | |
| 16/2/2024 | Russell Trading Weethalle | Temperature | 31.1 | | | |
| 19/2/2024 | Russell Trading Weethalle | Temperature | 29.8 | | | |
| 14/2/2024 | Russell Trading Weethalle | Chlorine/Temperature | 0.02/30.5 | | | |
| 26/2/2024 | Russell Trading Weethalle | Chlorine/Temperature | 0.16/30.9 | | | |
| 1/3/2024 | Russell Trading Weethalle | Chlorine/Temperature | 0.14/32 | | | |
| 11/3/2024 | Russell Trading Weethalle | Temperature | 31 | | | |
| 13/3/2024 | Russell Trading Weethalle | Chlorine/Temperature | 0.02/32.4 | | | |
| 15/3/2024 | Russell Trading Weethalle | Chlorine/Temperature | 0.1/32.7 | | | |



Drinking Water Management System
Annual Report 2023/24

| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|---------------------------|----------------------|------------|------------|-------------------|-------|
| 22/3/2024 | Russell Trading Weethalle | Chlorine/Temperature | 0.13/28.4 | | | |
| 2/4/2024 | Russell Trading Weethalle | Chlorine/Temperature | 0.15/25.7 | | | |
| 9/4/2024 | Russell Trading Weethalle | Chlorine | 0.12 | | | |
| 11/4/2024 | Russell Trading Weethalle | Chlorine | 0.13 | | | |
| 26/4/2024 | Russell Trading Weethalle | Chlorine | 0.12/0.09 | | | |
| 8/5/2024 | Russell Trading Weethalle | Chlorine | 0.08 | | | |
| 5/6/2024 | Russell Trading Weethalle | Chlorine | 0.08 | | | |
| 16/2/2024 | Narriah Res | Temperature | 26 | | | |
| 14/2/2024 | Narriah Res | Temperature | 25.6 | | | |
| 23/2/2024 | Narriah Res | Temperature | 26.5 | | | |
| 26/2/2024 | Narriah Res | Temperature | 26.7 | | | |
| 1/3/2024 | Narriah Res | Temperature | 27.5 | | | |
| 13/3/2024 | Narriah Res | Temperature | 27.3 | | | |
| 15/3/2024 | Narriah Res | Temperature | 26.5 | | | |
| 19/9/2023 | Tallimba Park | Chlorine | 0.18 | | | |
| 26/10/2023 | Tallimba Park | Chlorine | 0.11 | | | |
| 6/11/2023 | Tallimba Park | Chlorine | 0.11 | | | |
| 19/12/2023 | Tallimba Park | Temperature | 26.7 | | | |
| 12/1/2024 | Tallimba Park | Temperature | 25.5 | | | |
| 15/1/2024 | Tallimba Park | Temperature | 26.3 | | | |
| 2/2/2024 | Tallimba Park | Temperature | 27.8 | | | |
| 9/2/2024 | Tallimba Park | Temperature | 27.8 | | | |
| 16/2/2024 | Tallimba Park | Temperature | 27.3 | | | |
| 19/2/2024 | Tallimba Park | Temperature | 31.5 | | | |
| 26/2/2024 | Tallimba Park | Temperature | 28.9 | | | |
| 1/3/2024 | Tallimba Park | Chlorine/Temperature | 0.12/30.6 | | | |



Drinking Water Management System
Annual Report 2023/24

| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|-----------------|----------------------|------------|------------|-------------------|--|
| 11/3/2024 | Tallimba Park | Temperature | 28.3 | | | |
| 15/3/2024 | Tallimba Park | Temperature | 30.3 | | | |
| 22/3/2024 | Tallimba Park | Temperature | 25.5 | | | |
| 11/4/2024 | Tallimba Park | Chlorine | 0.12 | | | |
| 18/12/2023 | Tallimba School | Chlorine | 0.02 | | | |
| 14/2/2024 | Tallimba Inn | Temperature | 27.3 | | | |
| 13/3/2024 | Tallimba Inn | Chlorine/Temperature | 0.11/28.7 | | | |
| 26/9/2023 | Tallimba Inn | Turbidity | 7.31 | | | May have been entered incorrectly as pH is also 7.31 |
| 29/12/2023 | Nobbies Res | Chlorine | 0.1 | | | |
| 15/1/2024 | Nobbies Res | Temperature | 28.5 | | | |
| 2/2/2024 | Nobbies Res | Temperature | 26.5 | | | |
| 16/2/2024 | Nobbies Res | Temperature | 28.5 | | | |
| 19/2/2024 | Nobbies Res | Temperature | 27.9 | | | |
| 23/2/2024 | Nobbies Res | Chlorine/Temperature | 0.1/28.6 | | | |
| 26/2/2024 | Nobbies Res | Temperature | 27.6 | | | |
| 1/3/2024 | Nobbies Res | Temperature | 30.7 | | | |
| 4/3/2024 | Nobbies Res | Temperature | 28 | | | |
| 11/3/2024 | Nobbies Res | Temperature | 27.8 | | | |
| 15/3/2024 | Nobbies Res | Temperature | 29 | | | |
| 22/3/2024 | Nobbies Res | Chlorine | 0.1 | | | |
| 2/4/2024 | Nobbies Res | Temperature | 25.4 | | | |
| 15/1/2024 | Weethalle Res | Temperature | 27.8 | | | |
| 2/2/2024 | Weethalle Res | Temperature | 25.4 | | | |
| 9/2/2024 | Weethalle Res | Temperature | 25.2 | | | |
| 16/2/2024 | Weethalle Res | Temperature | 27.5 | | | |
| 19/2/2024 | Weethalle Res | Temperature | 27.5 | | | |
| 23/2/2024 | Weethalle Res | Temperature | 27.4 | | | |
| 26/2/2024 | Weethalle Res | Temperature | 27.7 | | | |
| 4/3/2024 | Weethalle Res | Temperature | 30.3 | | | |



Drinking Water Management System

Annual Report 2023/24

| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|--------------------|----------------------|------------|------------|-------------------|-------|
| 11/3/2024 | Weethalle Res | Temperature | 28.5 | | | |
| 15/3/2024 | Weethalle Res | Chlorine/Temperature | 0.12/29 | | | |
| 22/3/2024 | Weethalle Res | Temperature | 26.2 | | | |
| 2/4/2024 | Weethalle Res | Temperature | 25.2 | | | |
| 15/1/2024 | Naradhan Steel res | Temperature | 27.5 | | | |
| 2/2/2024 | Naradhan Steel res | Temperature | 25.9 | | | |
| 16/2/2024 | Naradhan Steel res | Temperature | 28.9 | | | |
| 19/2/2024 | Naradhan Steel res | Temperature | 27.9 | | | |
| 23/2/2024 | Naradhan Steel res | Temperature | 29 | | | |
| 26/2/2024 | Naradhan Steel res | Temperature | 29 | | | |
| 1/3/2024 | Naradhan Steel res | Temperature | 30.2 | | | |
| 11/3/2024 | Naradhan Steel res | Temperature | 28.2 | | | |
| 15/3/2024 | Naradhan Steel res | Temperature | 29 | | | |
| 22/3/2024 | Naradhan Steel res | Temperature | 25.6 | | | |
| 6/11/2023 | Naradhan Park | Temperature | 25.5 | | | |
| 4/12/2023 | Naradhan Park | Temperature | 26 | | | |
| 29/12/2023 | Naradhan Park | Temperature | 25.4 | | | |
| 12/1/2024 | Naradhan Park | Temperature | 25.2 | | | |
| 15/1/2024 | Naradhan Park | Temperature | 32 | | | |
| 2/2/2024 | Naradhan Park | Temperature | 28.5 | | | |
| 9/2/2024 | Naradhan Park | Temperature | 25.6 | | | |
| 16/2/2024 | Naradhan Park | Temperature | 31.7 | | | |
| 19/2/2024 | Naradhan Park | Temperature | 28.9 | | | |
| 23/2/2024 | Naradhan Park | Temperature | 28.9 | | | |



Drinking Water Management System

Annual Report 2023/24

| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|-----------|----------------|-------------|------------|------------|-------------------|-------|
| 26/2/2024 | Naradhan Park | Temperature | 31.2 | | | |
| 1/3/2024 | Naradhan Park | Temperature | 32.4 | | | |
| 11/3/2024 | Naradhan Park | Temperature | 29.5 | | | |
| 15/3/2024 | Naradhan Park | Temperature | 32.1 | | | |
| 22/3/2024 | Naradhan Park | Temperature | 28.8 | | | |
| 2/4/2024 | Naradhan Park | Temperature | 26 | | | |
| 8/4/2024 | Naradhan Park | Temperature | 25.5 | | | |
| 15/1/2024 | Mt Daylight PS | Temperature | 27 | | | |
| 2/2/2024 | Mt Daylight PS | Temperature | 25.6 | | | |
| 16/2/2024 | Mt Daylight PS | Temperature | 26.1 | | | |
| 19/2/2024 | Mt Daylight PS | Temperature | 25.9 | | | |
| 23/2/2024 | Mt Daylight PS | Temperature | 25.8 | | | |
| 26/2/2024 | Mt Daylight PS | Temperature | 26 | | | |
| 1/3/2024 | Mt Daylight PS | Temperature | 25.3 | | | |
| 15/1/2024 | Naradhan PS | Temperature | 27.5 | | | |
| 2/2/2024 | Naradhan PS | Temperature | 25.9 | | | |
| 9/2/2024 | Naradhan PS | Temperature | 25.1 | | | |
| 16/2/2024 | Naradhan PS | Temperature | 28.5 | | | |
| 19/2/2024 | Naradhan PS | Temperature | 28.2 | | | |
| 23/2/2024 | Naradhan PS | Temperature | 26.8 | | | |
| 26/2/2024 | Naradhan PS | Temperature | 27.9 | | | |
| 1/3/2024 | Naradhan PS | Temperature | 27.4 | | | |
| 11/3/2024 | Naradhan PS | Temperature | 27.6 | | | |
| 15/3/2024 | Naradhan PS | Temperature | 28.5 | | | |
| 22/3/2024 | Naradhan PS | Temperature | 25.5 | | | |

Mt Arthur

| Date | Location | Parameter | Exceedance | Correction | Preventative Action | Notes |
|----------|----------------------|----------------------|------------|-----------------|---------------------|-------|
| 8/8/2023 | Public School Matong | Chlorine | 0.18 | Upstream Dosing | | |
| 9/1/2024 | Public School Matong | Chlorine/Temperature | 0.11/25.7 | | | |



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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|-----------|--------------------------|-------------------------------|------------|------------|-------------------|-------|
| 19/3/2024 | Public School Matong | Temperature | 25.7 | | | |
| 28/8/2023 | High Ganmain | Level Chlorine | 0.19 | | | |
| 19/2/2024 | High Ganmain | Level Temperature | 26 | | | |
| 14/3/2024 | Hay Centre | Industry Chlorine/Temperature | 0.14/29.1 | | | |
| 19/2/2024 | Allowah Lodge, Coolamon | Temperature | 27.1 | | | |
| 14/3/2024 | Allowah Lodge, Coolamon | Chlorine/Temperature | 0.08/27.9 | | | |
| 19/3/2024 | Allowah Lodge, Coolamon | Temperature | 25.5 | | | |
| 19/2/2024 | Central School, Coolamon | Temperature | 30.3 | | | |
| 19/3/2024 | Central School, Coolamon | Temperature | 28.3 | | | |
| 15/5/2024 | High North, Coolamon | Level Chlorine | 0.17 | | | |
| 19/2/2024 | Public School, Ganmain | Temperature | 29.7 | | | |
| 19/3/2024 | Public School, Ganmain | Temperature | 26 | | | |
| 6/12/2023 | Grong Park | Grong Chlorine/Temperature | 0.06/25.2 | | | |
| 9/1/2024 | Grong Park | Grong Chlorine/Temperature | 0.02/26.5 | | | |
| 19/2/2024 | Grong Park | Grong Chlorine/Temperature | 0.02/30.9 | | | |
| 19/2/2024 | Grong Park | Grong Chlorine/Temperature | 0.09/29.4 | | | |
| 14/3/2024 | Grong Park | Grong Chlorine/Temperature | 0.02/29.1 | | | |
| 19/3/2024 | Grong Park | Grong Chlorine/Temperature | 0.02/26.8 | | | |



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| Date | Location | Parameter | Exceedance | Correction | Preventive action | Notes |
|------------|----------------|------------------|------------|------------|-------------------|-------|
| 15/4/2024 | Grong Park | Grong Chlorine | 0.1 | | | |
| 15/5/2024 | Grong Park | Grong Chlorine | 0.06 | | | |
| 12/6/2024 | Grong Park | Grong Chlorine | 0.13 | | | |
| 14/12/2023 | Ganmain T3 | Temperature | 25.1 | | | |
| 19/3/2024 | Ganmain T3 | Temperature | 26.1 | | | |
| 14/8/2023 | Matong Low Res | Chlorine | 0.18 | | | |
| 17/10/2023 | Matong Low Res | Chlorine | 0.15 | | | |
| 14/12/2023 | Matong Low Res | Temperature | 25.4 | | | |
| 26/2/2024 | Matong Low Res | Temperature | 26.4 | | | |
| 14/12/2023 | Matong Res | High Temperature | 26.5 | | | |
| 26/2/2024 | Matong Res | High Temperature | 26.9 | | | |



Customer Complaints

Table 25. Customer complaints registered in the 2023/24 reporting period.

| Month | Total Complaints | Discoloured Water | Burst Main | Taste/Odour Related | No Supply/Low Pressure | Leaking Meter | Messy or unsafe jobsite | Unable to Isolate meter | Other |
|--------|------------------|-------------------|------------|---------------------|------------------------|---------------|-------------------------|-------------------------|-------|
| Jul-23 | 7 | 5 | | | | 1 | 1 | | |
| Aug-23 | 22 | 21 | | | 1 | | | | |
| Sep-23 | 28 | 22 | 1 | 1 | 3 | | 1 | | |
| Oct-23 | 19 | 14 | | | 5 | | | | |
| Nov-23 | 26 | 21 | | | 5 | | | | |
| Dec-23 | 38 | 31 | | | 3 | | | | 4 |
| Jan-24 | 17 | 16 | | | | | | | 1 |
| Feb-24 | 33 | 25 | | | 4 | | 1 | | 3 |
| Mar-24 | 23 | 20 | | | 2 | | | | 1 |
| Apr-24 | 18 | 15 | | 1 | 1 | 1 | | | |
| May-24 | 29 | 21 | | | 3 | 2 | | | 3 |
| Jun-24 | 15 | 11 | 1 | | | | | | 3 |

There was a total of 275 complaints made during the reporting period 2023/24. The majority of complaints that were made pertained to dirty or discoloured water totalling 222; this is an increase of 20 compared to 255 complaints recorded in 2022/23. These complaints allowed staff to determine that the townships of Coolamon, Junee and Temora require attention. To mitigate against complaints, GWCC invests in cleaning reservoirs and flushing dead ends regularly; however, GWCC are looking to invest and trial new mains cleaning technology in the coming years.

In previous years (2019 & 2022), GWCC has procured the services of No-Des, a contractor that has the ability to clear water mains with no loss of water to the environment. These contractors cleaned approximately 65 km of water mains in the Coolamon and nearby townships during each run. Whilst undertaking this flushing/cleaning, turbidity's throughout the town were recorded as high as 171 NTU, with an average of approximately 25 NTU. Comparing against historical records of the number of complaints, this method has drastically reduced the number of customer complaints received from these areas.

As illustrated within the following graphics, pre and post chem testing was undertaken to validate the utilisation of the system. As is depicted the reduction in turbidity was significant after utilisation and the spike detailed from 32-34 due to a burst that occurred at the time. This then correlated into the chlorine residual consistency detailed in lower graphic.



Figure 7 – Pre & Post testing for NTU in Coolamon Retic

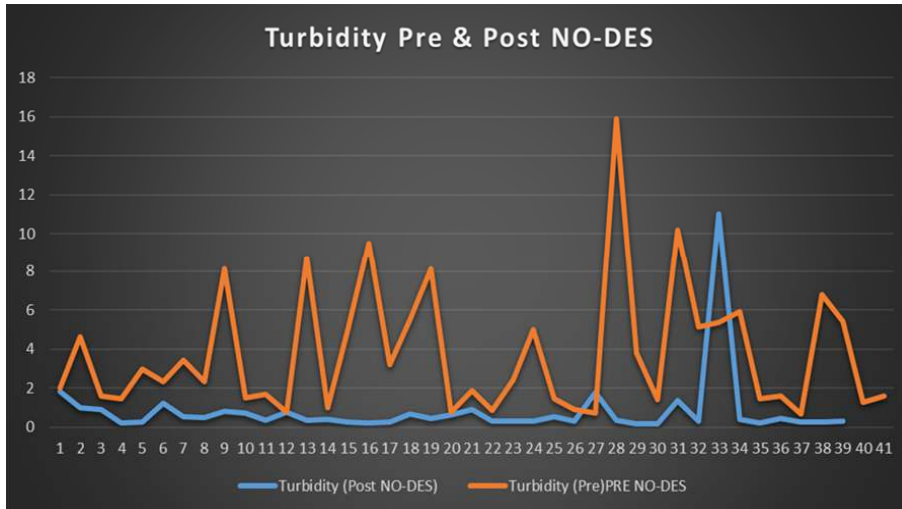
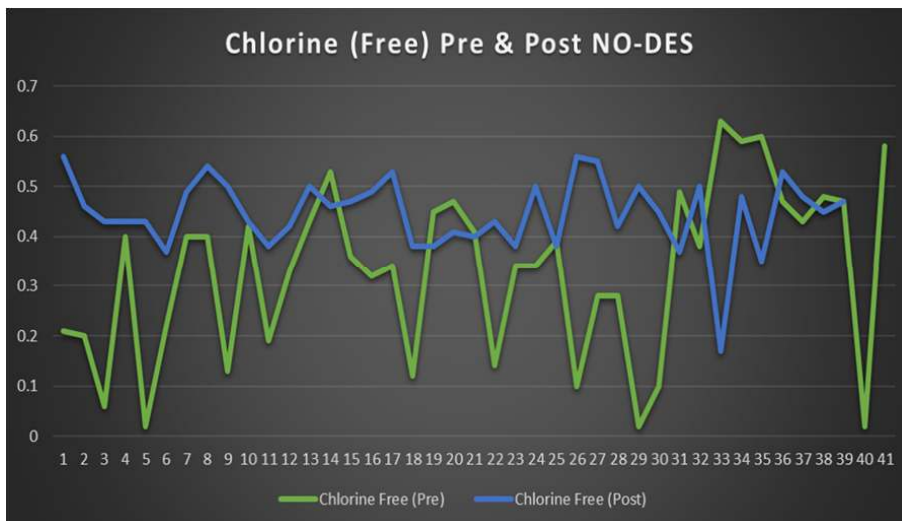


Figure 8 – Pre & Post testing of chlorine residuals in Coolamon retic



GWCC did not engage the services of No-Des this financial year 2023/24, which is believed to have resulted in an increase in complaints. GWCC is looking to regularly implement these services, via the current negotiation on the procurement of a unit for in-house utilisation. This will allow Council to clean pipes more often across all of Council's drinking water scheme as when and as required.



Further to the implementation of automated flushing system on the notorious dead end Kingdom Drive in February 2019, GWCC has received no complaints from customers serviced on this pipeline since. As such, the flushing system installed has now been rolled out to three locations within the township.

A study into discoloured water events (2020) found iron and manganese to be the primary cause of complaints in the Coolamon township it is not yet recommended to undertake the development of a new water treatment process to reduce discoloured water events; however the economic feasibility of installing a treatment plant will next be explored if the management of the reticulation system via the utilisation of a No-Des unit proves unsuccessful.

Water Quality Incidents

Table 26. Summary of incidents and emergencies, recommendations and preventative actions.

| Details of Incident/Emergency | Investigation Recommendations | Preventive Action Undertaken |
|---|--|--------------------------------|
| One incident of E. coli was detected at the Wyalong school in Wyalong in February 2024. It was noted that 2 mpn/100mL was detected in a single sample, however no other samples or reason supported this finding, with free chlorine of the sample measuring 0.3mg/L. | The same location was sampled the following day which had no E. coli results. Internal testing also had no E. coli detected and hence believed the cause to be due to human error. | Reinforce sampling procedures. |

Staff Development and Training

Incident and Emergency Response Training

GWCC have implemented and completed Incident and Emergency response training. This training has been undertaken by relevant staff and stakeholders. GWCC Management had also issued a request to NSW Health for funding for scenario training which was completed in conjunction with our Bulk Councils.

NOTE: currently internal training is undertaken by Water Quality staff at the Jugiong Water Treatment plant for emergency response management as part of the Pollution Incident Response Management Plan requirements (PIRMP).

Table 27 below indicates all of the training that GWCC staff have undertaken during the reporting period of 2023/24. In addition to this list GWCC’s Manager Production & Services & the Water Quality Technical Officer completed a Statement of Attainment in ‘How to Plan and Implement a World Class Water Quality Management System Audit’ in April 2024 via Risk Edge.

Table 27. Full list of staff training for the 2023/24 reporting period.

| Name | Course | Completion date |
|---------------------|--------------|-----------------|
| Dilrosh Jayawardene | HV Switching | 11/07/2023 |
| Blake Hingerty | CPR | 20/07/2023 |
| Chris Scott | CPR | 20/07/2023 |
| Christopher Fealy | CPR | 20/07/2023 |
| Daniel Flack | CPR | 20/07/2023 |
| Jack Fuller | CPR | 20/07/2023 |



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| | | |
|-----------------|------------------------|------------|
| Liam Welch | CPR | 20/07/2023 |
| Michael Lewis | CPR | 20/07/2023 |
| Rodney Ryan | CPR | 20/07/2023 |
| Sean Tiernan | CPR | 20/07/2023 |
| Shane Hartshorn | CPR | 20/07/2023 |
| Stephen Ledgard | CPR | 20/07/2023 |
| Drew Matthews | Confined Spaces | 23/08/2023 |
| Isaac Reardon | CPR | 18/09/2023 |
| Isaac Reardon | First Aid | 18/09/2023 |
| James Carr | CPR | 18/09/2023 |
| James Carr | First Aid | 18/09/2023 |
| Joshua Hale | CPR | 18/09/2023 |
| Joshua Hale | First Aid | 18/09/2023 |
| Liam Moston | CPR | 18/09/2023 |
| Liam Moston | First Aid | 18/09/2023 |
| Liam Pattison | CPR | 18/09/2023 |
| Liam Pattison | First Aid | 18/09/2023 |
| Mark Carroll | CPR | 18/09/2023 |
| Mark Carroll | First Aid | 18/09/2023 |
| Matthew Bett | CPR | 18/09/2023 |
| Matthew Bett | First Aid | 18/09/2023 |
| Neil Boyton | CPR | 18/09/2023 |
| Neil Boyton | First Aid | 18/09/2023 |
| Ray McCarthy | CPR | 18/09/2023 |
| Ray McCarthy | First Aid | 18/09/2023 |
| Andrew Derrick | CPR | 19/09/2023 |
| Andrew Derrick | First Aid | 19/09/2023 |
| Bradley Moye | CPR | 19/09/2023 |
| Bradley Moye | First Aid | 19/09/2023 |
| Brendon Ford | CPR | 19/09/2023 |
| Brendon Ford | First Aid | 19/09/2023 |
| Lewis Allen | CPR | 19/09/2023 |
| Lewis Allen | First Aid | 19/09/2023 |
| Matthew Cooper | CPR | 19/09/2023 |
| Matthew Cooper | First Aid | 19/09/2023 |
| Michael Diggins | CPR | 19/09/2023 |
| Michael Diggins | First Aid | 19/09/2023 |
| Ray McCarthy | LVR | 12/10/2023 |
| Adam Ward | CPR | 23/02/2024 |
| Nathan Gardiner | Working at Heights | 1/03/2024 |
| Andrew Derrick | Work Safely at Heights | 11/04/2024 |
| Lewis Allen | Work Safely at Heights | 11/04/2024 |



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| | | |
|---------------------|------------------------|------------|
| Mark Carroll | Work Safely at Heights | 11/04/2024 |
| Matthew Cooper | Work Safely at Heights | 11/04/2024 |
| Michael Diggins | Work Safely at Heights | 11/04/2024 |
| Shane Hartshorn | Work Safely at Heights | 11/04/2024 |
| Blake Hingerty | Work Safely at Heights | 1/05/2024 |
| Chris Fealy | Work Safely at Heights | 1/05/2024 |
| David Chandler | Work Safely at Heights | 1/05/2024 |
| Dilrosh Jayawardene | Work Safely at Heights | 1/05/2024 |
| Jack Fuller | Work Safely at Heights | 1/05/2024 |
| James Butler | Working at Heights | 1/05/2024 |
| Liam Pattison | Work Safely at Heights | 1/05/2024 |
| Matt Bett | Working at Heights | 1/05/2024 |
| Neil Boyton | Work Safely at Heights | 1/05/2024 |
| Ray McCarthy | Work Safely at Heights | 1/05/2024 |
| Shane Baldry | Work Safely at Heights | 1/05/2024 |
| Sonya Kovacevic | Working at Heights | 1/05/2024 |
| Brendan Nilsen | Work Safely at Heights | 2/05/2024 |
| Chris Scott | Work Safely at Heights | 2/05/2024 |
| Jeremy Coleman | Work Safely at Heights | 2/05/2024 |
| Liam Welch | Work Safely at Heights | 2/05/2024 |
| Mitchell Farlow | Work Safely at Heights | 2/05/2024 |
| Rob Drummond | Work Safely at Heights | 2/05/2024 |
| Rod Ryan | Work Safely at Heights | 2/05/2024 |
| Neil Boyton | Confined Spaces | 4/06/2024 |
| Barry Shepherd | CPR | 25/06/2024 |
| Brendon Ford | CPR | 25/06/2024 |
| Chris Fealy | CPR | 25/06/2024 |
| Daniel Flack | CPR | 25/06/2024 |
| Isaac Reardon | CPR | 25/06/2024 |
| Josh Hale | CPR | 25/06/2024 |
| Liam Moston | CPR | 25/06/2024 |
| Liam Pattison | CPR | 25/06/2024 |
| Matt Cooper | CPR | 25/06/2024 |
| Michael Diggins | CPR | 25/06/2024 |
| Stephen Ledgard | CPR | 25/06/2024 |
| Adam Ward | CPR | 27/06/2024 |
| Andrew Derrick | CPR | 27/06/2024 |
| Brad Moyer | CPR | 27/06/2024 |
| Chris Breen | CPR | 27/06/2024 |
| Chris Scott | CPR | 27/06/2024 |
| Ian Basham | CPR | 27/06/2024 |
| Jack Fuller | CPR | 27/06/2024 |



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| | | |
|-----------------|-----|------------|
| James Carr | CPR | 27/06/2024 |
| Lewis Allen | CPR | 27/06/2024 |
| Mark Carroll | CPR | 27/06/2024 |
| Mike Read | CPR | 27/06/2024 |
| Mitchell Farlow | CPR | 27/06/2024 |
| Neil Boyton | CPR | 27/06/2024 |
| Nicol Kelly | CPR | 27/06/2024 |
| Rob Drummond | CPR | 27/06/2024 |
| Sean Tiernan | CPR | 27/06/2024 |

Continuous Improvement Plan

Table 28 below is a summary of all items in the Continuous Improvement plan that have been completed or actioned during the 2023/24 reporting period.

Table 28. Continuous improvement plan activities that have progressed, been completed, or been added during the period 2022/23.

| Action no. | Item | Progress | Date for completion | Who is responsible |
|------------|--|---|---------------------|---------------------------------|
| 29 | GWCC to consider installing online chlorine residual analyser at outlet of settling tanks to ensure 30 minutes contact time (Mt Arthur system) | magflow and analysers installed however not connected to clearscada system – Mt Arthur SCADA/Telemetry network to commence upgrade in 2022/23 financial year. Connection of water quality instrumentation to be completed after this. <i>In progress</i> | July 2023 | Manager Engineering |
| 76 | Bulk Service Level Agreements (SLA) | Draft SLA completed and currently under review. Change in staff at Bulk councils has made it difficult to resolve outstanding items for agreement – <i>In progress</i> | July 23 | Manager Production and Services |

Review of DWMS Implementation

Adoption of the Drinking Water Management System occurred in February 2018 and the implementation has been reviewed annually. GWCC has engaged Atom Consulting to undertake a review of the DWMS risk assessment and to undertake an audit readiness review of councils system. This will be utilised for updating the current Actions & Implementation plan for future delivery.

In addition to our regular annual reviews and the detail above, GWCC engaged their Internal Auditor, National Audits Group to undertake a review of Councils DWMS and its associated governance and reporting requirements. Results of this Audit are provided in Appendix D below.

Table 29. Summary of internal reviews.

| Date | Reviewer | Scope | Findings | Actions |
|-----------|-------------------------------|-----------------------|---|--------------------|
| 3/10/2019 | Geoff Veneris and Chris Breen | Drinking Water Policy | Fully Compliant – Council reviewed and endorsed the water policy on 23/08/19. | No Action required |



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| Date | Reviewer | Scope | Findings | Actions |
|------------|--|-------------------------|---|--|
| FY 2019/20 | Geoff Veneris and Chris Breen | Verification Monitoring | Council has undertaken all required verification monitoring | Continual compliance with NSW Health |
| FY 2020/21 | Geoff Veneris and Chris Breen | Operational Monitoring | GWCC has conducted extensive Operational Monitoring of all Water Source schemes (see Water Quality Section for breakdown of monitoring) | Continued Monitoring of all water source scheme Review of current sampling runs are needed |
| FY 2021/22 | Geoff Veneris and Chris Breen | Operational Monitoring | GWCC has conducted extensive Operational Monitoring of all Water Source schemes (see Water Quality Section for breakdown of monitoring) | Continued Monitoring of all water source scheme Review of current sampling runs are needed |
| FY 2022/23 | Geoff Veneris, Chris Breen and Mitchell Farlow | Operational Monitoring | GWCC has conducted extensive Operational Monitoring of all Water Source schemes (see Water Quality Section for breakdown of monitoring) | Continued Monitoring of all water source scheme Review of current sampling runs are needed |
| FY 2023/24 | Geoff Veneris, Chris Breen and Mitchell Farlow | Operational Monitoring | GWCC has conducted extensive operational monitoring of all Water Source schemes (see Water Quality Section for breakdown of monitoring and results) | Continued monitoring of all water source schemes. Review of current sampling runs are needed and updating of Drinking Water Database |

Table 30. Summary of external reviews.

| Date | Reviewer | Scope | Findings | Actions |
|-----------|-----------------------|---|----------|----------|
| June 2019 | National Audits Group | To review the effectiveness of Council's water quality systems and monitoring procedures and to assess compliance with the ADWG | Table 39 | Complete |

Reservoir inspections

GWCC conducted regular reservoir inspections throughout the reporting period. They have a schedule for weekly 'drive by' inspections, as well as a more detailed inspection regime that is carried out on a quarterly basis. Any issues found with the weekly or quarterly inspections are entered into a spreadsheet/database (CM9 doc number, 20/4023) and the appropriate section is notified of the works that will need to be carried out.

Reservoir inspections are given a priority ranking between 1 and 5, a ranking of 1 being the worst and needing immediate attention, a ranking of 5 being of lowest criticality. (At this point an



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electronic database has not been kept for all inspections). GWCC is currently working to implement the reservoir inspections in WaterOutlook so that all information can be gathered electronically and acted on accordingly.

For this reporting period, no reservoir inspections were conducted by Aqualift (Councils contracted divers for cleaning and inspection). Condition assessments were completed by an additional third-party contractor (FITT Resources) on nine reservoirs for the assessment of concrete condition and additional structural integrity, with the full report of their findings located in Appendix. C.



Appendix A – Water quality data

Water Quality Graphs

Jugiong Water Treatment Plant

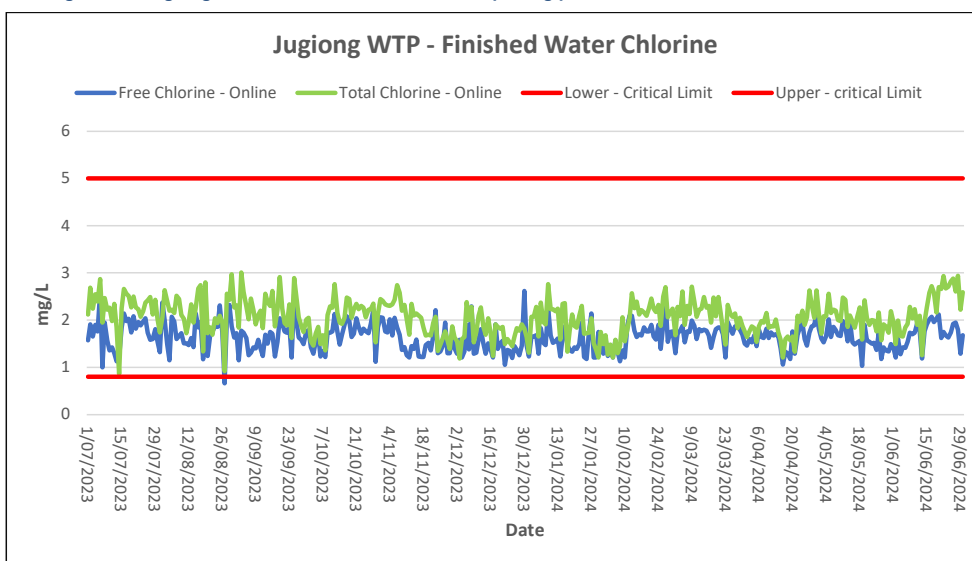
Jugiong Water Treatment Plant data has been represented in the following graphs and commentary. The following data has been taken from the new Water outlook Database that GWCC is currently building with an external party, Safegroup.

Data relevant to Critical Control and Operational Control is reported as follows:

Chlorine is the main Critical Control Point of the Jugiong WTP used to eliminate chlorine sensitive pathogens, Disinfection.

- The chlorine target leaving the WTP is 1.8mg/L with amber alerts sent if chlorine drops below 1.2mg/L or goes over 2mg/L.
- The alert becomes critical with DWMS protocols implemented when chlorine levels drop below 0.8mg/L in summer and 0.5mg/L in winter. Figure 9 7 below represents the finished water chlorine at the Jugiong WTP, both Free and Total. As can be seen, GWCC has only exceeded its lower critical limit (<0.5mg/L, winter, <0.8mg/L summer) or its upper critical limit (>5.0mg/L) for Free Chlorine 1 time throughout the reporting period.
- A free/residual chlorine of 0.66mg/L was the lowest recorded result on the 26/08/2023. The highest total chlorine recorded was on the 3/9/2023 with a value of 3.01mg/L.
- The average Free Chlorine for the reporting year was 1.64mg/L and average Total chlorine reading was 2.06mg/L.

Figure 9 7. Jugiong chlorine levels for the 2023/24 reporting period

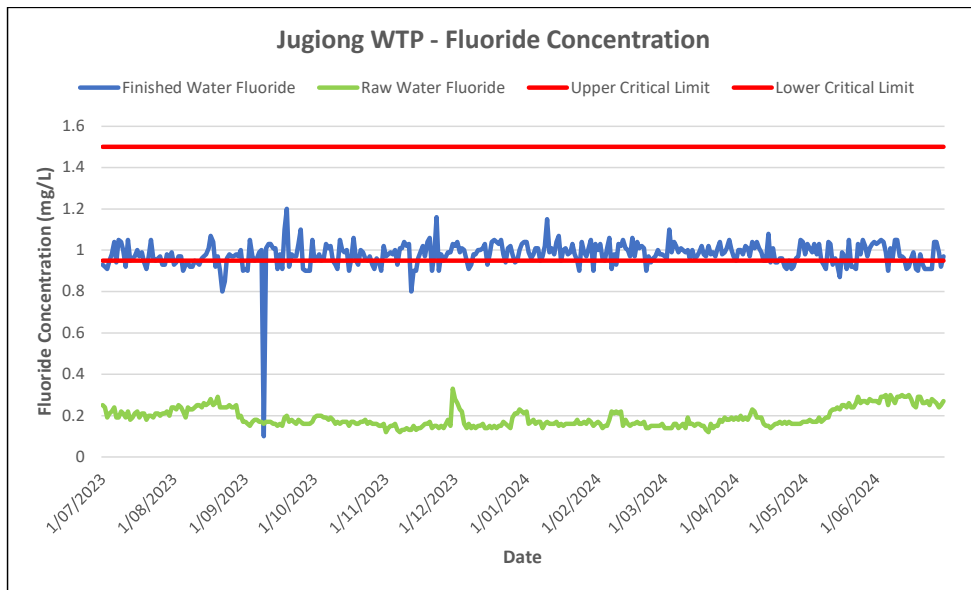




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Figure 10 8 represents the finished water fluoride (Blue line) and Raw Water Fluoride (Green Line) for the Jugiong water treatment plant. Fluoride levels both Raw and Finished has remained consistent throughout the reporting period with a minimum value of 0.1 mg/L (Finished Water concentration) and a maximum value of 1.2 mg/L (Finished water Concentration). The Finished water Fluoride at the Jugiong Water Treatment Plant has exceeded its minimum value of 0.95mg/L on several occasions throughout the reporting period. These exceedances were due to equipment failure or breakdown.

Figure 10 8. Jugiong fluoride levels for the 2023/24 reporting period





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Figure 11 9. Jugiong raw water turbidity for the 2023/24 reporting period

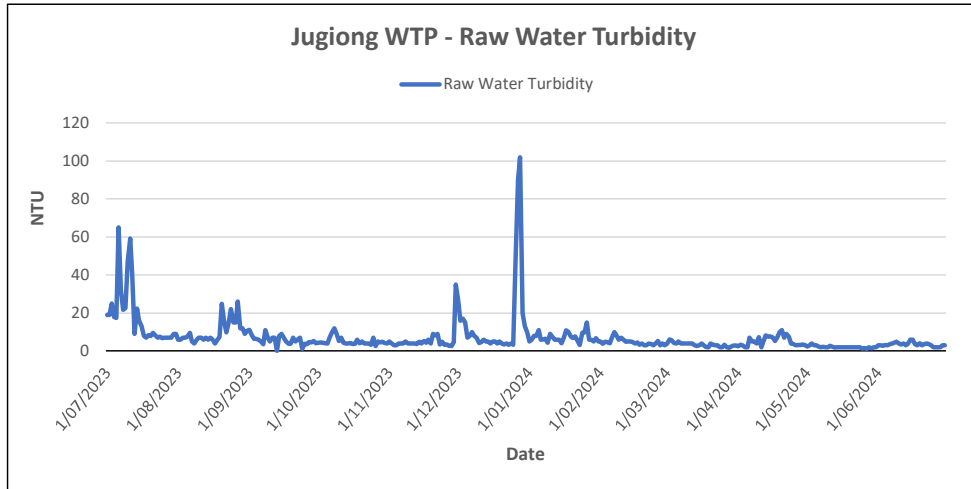


Figure 1210. Jugiong finished water turbidity for the 2023/24 reporting period

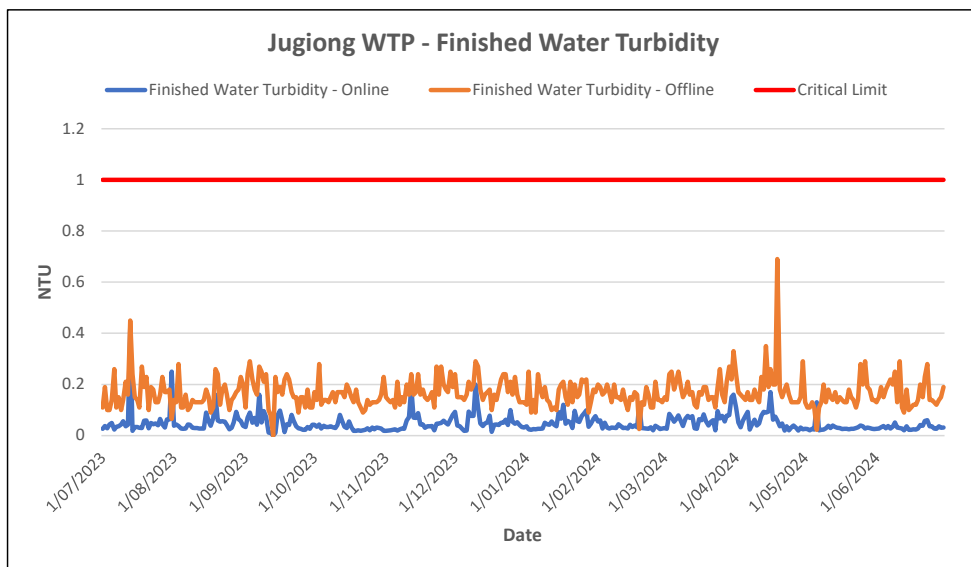
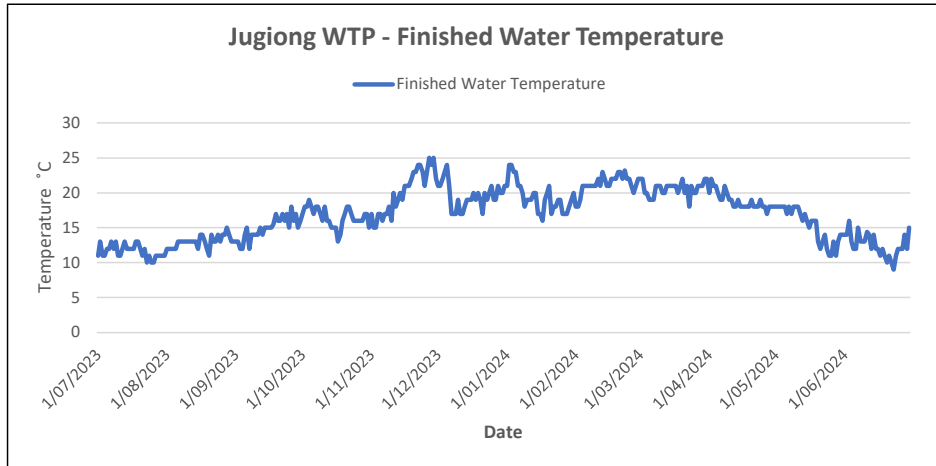




Figure 1311. Jugiong finished water temperature for the 2023/24 reporting period



Oura Treatment Plant

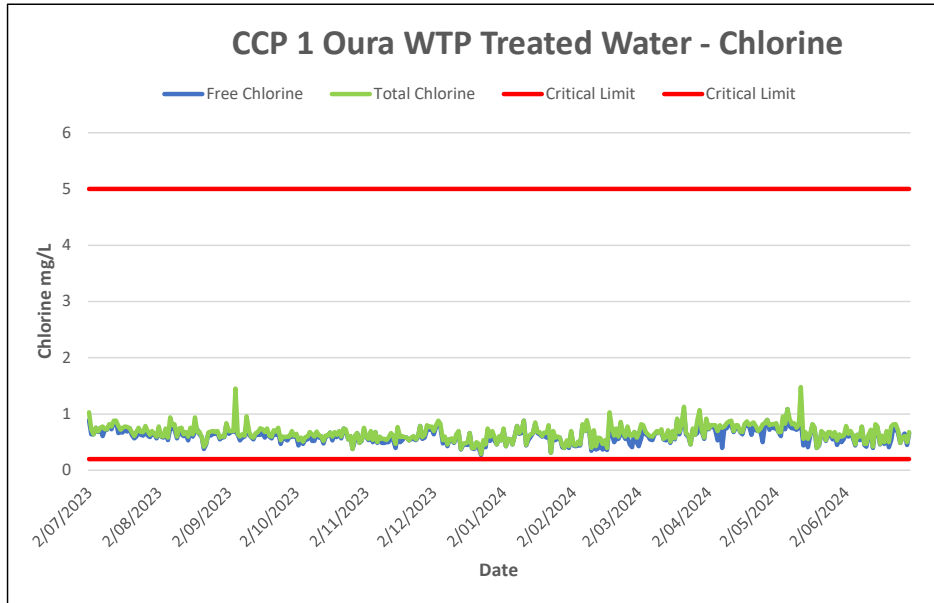
Since the implementation of Water Outlook at the Oura WTP some valuable data has been produced. This data is represented in the following graphs produced for the WTP's CCP's.

Chlorine is used at the Oura WTP for disinfection of the ground water extracted from bores in Gumly Borefield. It is used to eliminate chlorine sensitive pathogens, for disinfection. The chlorine target for GWCC exiting the Oura WTP is 0.5 mg/L. An amber alert is issued through WaterOutlook when chlorine levels drop below 0.3 mg/L and when they rise above 1.0 mg/L. A critical alarm and plant shutdown is issued when chlorine levels drop below 0.2 mg/L and rise above 5mg/L.

Fluoride is also added to the water at the Oura WTP. There is natural Fluoride detected in the water, therefore more is added to meet the NSW Health target range of 0.95mg/L to 1.05mg/L. this information is represented in the graphs below.



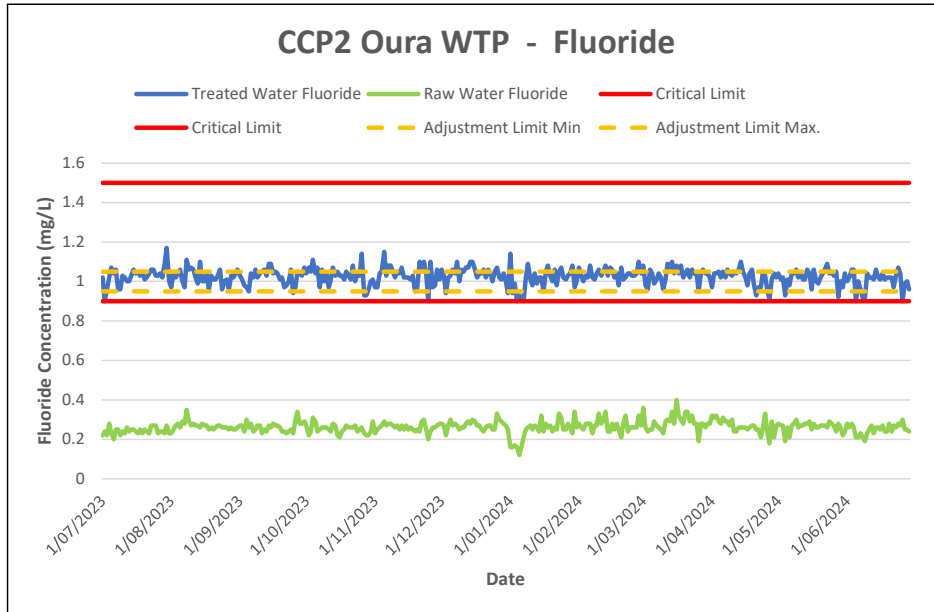
Figure 14 12. Oura chlorine levels for the 2023/24 reporting period



As can be seen in Figure 14 12, which uses a logarithmic scale on the vertical axis, the injection of chlorine into the Oura bore water has been extremely consistent throughout the reporting period. Averaging approx. 0.62mg/L (FCI) and 0.69mg/L (TCI) for the 12 months this is slightly higher than our target of 0.5mg/L but well within our CCP range of 0.2mg/L and 5mg/L.



Figure 15 13. Oura fluoride levels for the 2023/24 reporting period



As can be seen in Figure 15 13, the raw fluoride content from the Oura Bores is very consistent remaining between 0.12mg/L and 0.4mg/L for the reporting period 2023/24. Raw water fluoride averaged 0.26mg/L for the 2023/24 period. Treated Water Fluoride averaged 1.03mg/L for the 2023/24 reporting period.

The treated water fluoride was very consistent over the reporting period **recording 0 critical exceedances.**



Figure 16 14. Oura collection tank turbidity levels for the 2023/24 reporting period

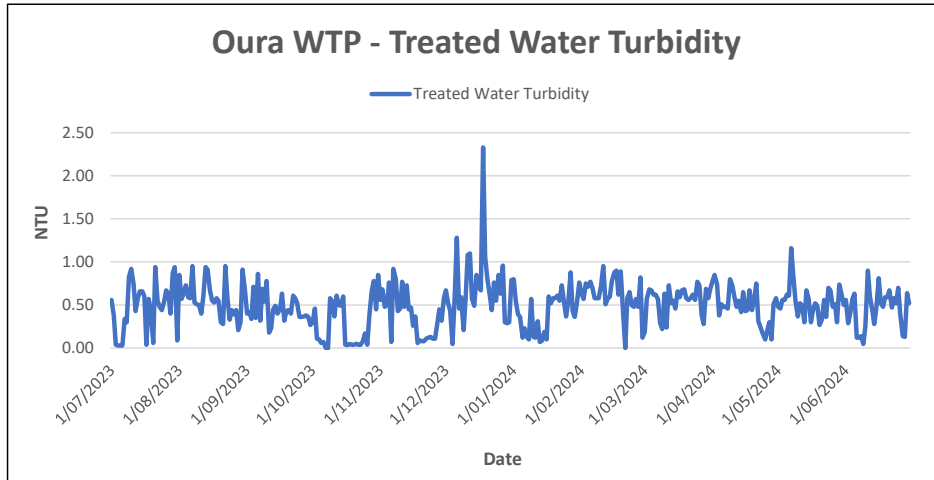


Figure 16 14 shows the turbidity at the Oura collection tank. Australian Drinking Water Guidelines (ADWG) indicates that turbidity should be <5 NTU (Nephelometric Turbidity Units). As can be seen, there have been **0 exceedances** of this limit for the 2023/24 reporting period.

Figure 17 15. Oura treated water temperature for the 2023/24 reporting period

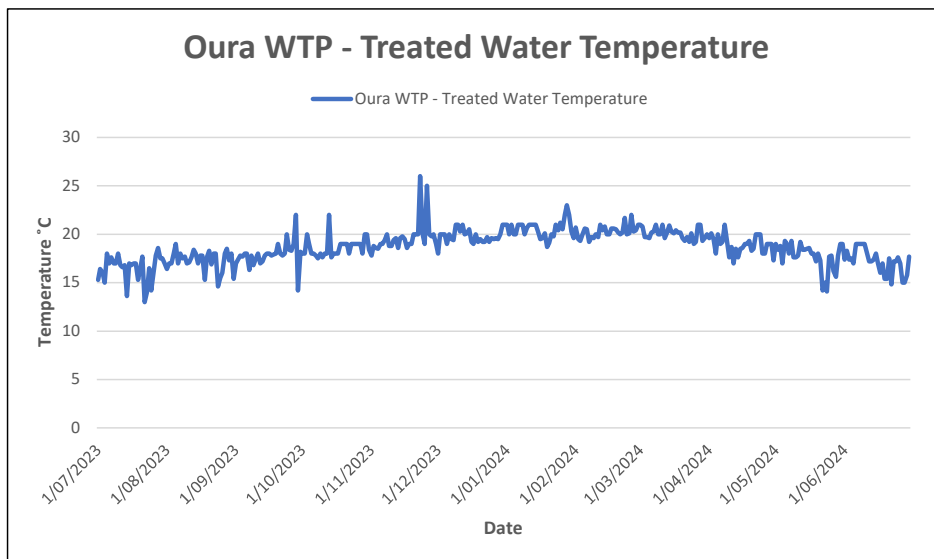


Figure 17 157 shows the relationship between the temperatures of the treated water with time over the reporting period. As you would surmise, it follows a seasonal trend in that the treated water is



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warmer in summer and colder in winter despite being extracted from groundwater sources. Two high readings were detailed within the data, and this was due to human error.

Water Quality Data Summary

Table 31. Raw water measured parameters pertaining to water quality in the 2023/24 reporting period - Jugiong

| Parameter | Minimum | Average | Maximum | Lower Critical Limit | Upper Critical Limit | No. Samples |
|-------------------|---------|---------|---------|----------------------|----------------------|-------------|
| Fluoride | 0.12 | 0.19 | 0.33 | | | 365 |
| Turbidity Online | 1.03 | 7.18 | 102 | | | 365 |
| Turbidity Offline | 1.27 | 7.94 | 113 | | | 365 |
| Colour | 3 | 47.7 | 425 | | | 365 |
| pH | 7.36 | 7.86 | 8.33 | | | 365 |
| Alkalinity | 40 | 106.4 | 190 | | | 365 |
| Hardness | 0 | 104.3 | 240 | | | 365 |
| Temperature | 9 | 17 | 25 | | | 365 |

Table 32. Raw water measured parameters pertaining to water quality in the 2023/24 reporting period - Oura

| Parameter | Minimum | Average | Maximum | Lower Critical Limit | Upper Critical Limit | No. Samples |
|-------------|---------|---------|---------|----------------------|----------------------|-------------|
| Fluoride | 0.12 | 0.26 | 0.4 | | 1.5 | 365 |
| pH | 6.08 | 6.77 | 8.01 | | | 365 |
| Temperature | 17.3 | 19.86 | 22.1 | | | 363 |
| Turbidity | 0.03 | 0.52 | 2.5 | | | 365 |

Table 33. Treated water measured parameters pertaining to water quality in the 2023/24 reporting period - Jugiong

| Parameter | Minimum | Average | Maximum | Lower Critical Limit | Upper Critical Limit | No. Samples |
|------------------------|---------|---------|---------|--|----------------------|-------------|
| Turbidity SCADA | 0.011 | 0.037 | 0.196 | | 1 | 365 |
| Turbidity Offline | 0 | 0.17 | 0.69 | | 1 | 365 |
| Colour | 0 | 2.9 | 20 | | | 365 |
| pH | 7.06 | 7.49 | 8.12 | | | 365 |
| Temperature | 9 | 17 | 25 | | | 365 |
| Alkalinity | 40 | 101.7 | 190 | | | 365 |
| Hardness | 40 | 105.2 | 210 | | | 365 |
| Free Chlorine - Online | 0.66 | 1.73 | 2.44 | | | 365 |
| Total chlorine Online | 0.86 | 2.1 | 3.01 | Summer: ≤ 0.8mg/L for > 30min Winter: ≤ 0.5mg/L for > 30min | ≥ 5.0mg/L | 365 |
| Fluoride | 0.8 | 0.98 | 1.2 | | | 365 |



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Table 34. Treated water measured parameters pertaining to water quality in the 2023/24 reporting period - Oura

| Parameter | Minimum | Average | Maximum | Lower critical limit | Upper critical limit | No. samples |
|-----------------------|---------|---------|---------|----------------------|----------------------|-------------|
| Fluoride | 0.28 | 1.02 | 1.17 | 0.9 | 1.5 | 365 |
| pH | 7.13 | 7.58 | 8.06 | | | 365 |
| Free Chlorine | 0.27 | 0.62 | 1.09 | 0.2 | 5 | 363 |
| Total Chlorine | 0.28 | 0.67 | 1.48 | | | 365 |
| Temperature | 13 | 18.71 | 26 | | | 363 |



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Reticulation Water Quality Reporting

Table 35. Water quality parameters in Jugiong reticulation - Chemistry

| Characteristic | Guideline Value | Units | Mean | Median | Min | Max | Sample Count | % meeting guideline values |
|-------------------------------------|-----------------|------------------|----------|----------|---------|---------|--------------|----------------------------|
| Aluminium | 0.2000 | mg/L | 0.0350 | 0.0350 | 0.03 | 0.04 | 2 | 100.00 |
| Antimony | 0.0030 | mg/L | 0.0001 | 0.0001 | 0.00005 | 0.0001 | 2 | 100.00 |
| Arsenic | 0.0100 | mg/L | 0.0005 | 0.0005 | 0.0005 | 0.0005 | 2 | 100.00 |
| Barium | 2.0000 | mg/L | 0.0219 | 0.0219 | 0.0219 | 0.0219 | 2 | 100.00 |
| Boron | 4.0000 | mg/L | 0.0076 | 0.0076 | 0.0068 | 0.0083 | 2 | 100.00 |
| Cadmium | 0.0020 | mg/L | 0.0001 | 0.0001 | 0.00005 | 0.00005 | 2 | 100.00 |
| Calcium | 10000.0000 | mg/L | 17.6000 | 17.6000 | 17 | 18.2 | 2 | 100.00 |
| Chloride | 250.0000 | mg/L | 27.5000 | 27.5000 | 22 | 33 | 2 | 100.00 |
| Chromium | 0.0500 | mg/L | 0.0008 | 0.0008 | 0.0005 | 0.001 | 2 | 100.00 |
| Copper | 2.0000 | mg/L | 0.0035 | 0.0035 | 0.003 | 0.004 | 2 | 100.00 |
| Fluoride | 1.5000 | mg/L | 0.9800 | 0.9800 | 0.94 | 1.02 | 2 | 100.00 |
| Fluoride (WU result) | 1.5000 | mg/L | 1.0000 | 1.0000 | 1 | 1 | 1 | 100.00 |
| Fluoride Ratio | 0.8 - 1.2 | | 0.9800 | 0.9800 | 0.98 | 0.98 | 1 | 100.00 |
| Iodine | 0.5000 | mg/L | 0.0150 | 0.0150 | 0.01 | 0.02 | 2 | 100.00 |
| Iron | 0.3000 | mg/L | 0.0050 | 0.0050 | 0.005 | 0.005 | 2 | 100.00 |
| Lead | 0.0100 | mg/L | 0.0002 | 0.0002 | 0.0001 | 0.0002 | 2 | 100.00 |
| Magnesium | 10000.0000 | mg/L | 10.4250 | 10.4250 | 9.16 | 11.69 | 2 | 100.00 |
| Manganese | 0.5000 | mg/L | 0.0123 | 0.0123 | 0.012 | 0.0126 | 2 | 100.00 |
| Mercury | 0.0010 | mg/L | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 2 | 100.00 |
| Molybdenum | 0.0500 | mg/L | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 2 | 100.00 |
| Nickel | 0.0200 | mg/L | 0.0019 | 0.0019 | 0.0002 | 0.0036 | 2 | 100.00 |
| Nitrate | 50.0000 | mg/L | 1.5000 | 1.5000 | 1 | 2 | 2 | 100.00 |
| Nitrite | 3.0000 | mg/L | 0.0500 | 0.0500 | 0.05 | 0.05 | 2 | 100.00 |
| pH | 6.5 - 8.5 | | 7.6500 | 7.6500 | 7.6 | 7.7 | 2 | 100.00 |
| Selenium | 0.0100 | mg/L | 0.0035 | 0.0035 | 0.0035 | 0.0035 | 2 | 100.00 |
| Silver | 0.1000 | mg/L | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 2 | 100.00 |
| Sodium | 180.0000 | mg/L | 38.5000 | 38.5000 | 36 | 41 | 2 | 100.00 |
| Sulfate | 250.0000 | mg/L | 52.0000 | 52.0000 | 44 | 60 | 2 | 100.00 |
| Total Dissolved Solids (TDS) | 10000.0000 | mg/L | 155.0000 | 155.0000 | 129 | 181 | 2 | 100.00 |
| Total Hardness as CaCO ₃ | 200.0000 | mg/L | 86.9000 | 86.9000 | 80.2 | 93.6 | 2 | 100.00 |
| True Colour | 15.0000 | Hazen Units (HU) | 1.0000 | 1.0000 | 1 | 1 | 2 | 100.00 |
| Turbidity | 5.0000 | NTU | 0.2500 | 0.2500 | 0.1 | 0.4 | 2 | 100.00 |
| Uranium | 0.0200 | mg/L | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 2 | 100.00 |
| Zinc | 3.0000 | mg/L | 0.0100 | 0.0100 | 0.01 | 0.01 | 2 | 100.00 |



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Table 36. Water quality parameters in Oura reticulation - Chemistry

| Characteristic | Guideline Value | Min | Mean | Max | Sample Count | % meeting guideline values |
|-------------------------------------|-----------------|-----|---------|----------|--------------|----------------------------|
| Aluminium | 0.2000 | | 0.005 | 0.0054 | 0.01 | 13 |
| Antimony | 0.0030 | | 0.00005 | 0.0001 | 0.00005 | 13 |
| Arsenic | 0.0100 | | 0.001 | 0.0010 | 0.001 | 13 |
| Barium | 2.0000 | | 0.0131 | 0.0173 | 0.0216 | 13 |
| Boron | 4.0000 | | 0.0145 | 0.0178 | 0.0222 | 13 |
| Cadmium | 0.0020 | | 0.00005 | 0.0001 | 0.00005 | 13 |
| Calcium | 10000.0000 | | 12 | 17.1077 | 20.9 | 13 |
| Chloride | 250.0000 | | 18 | 43.4615 | 72 | 13 |
| Chromium | 0.0500 | | 0.0005 | 0.0010 | 0.002 | 13 |
| Copper | 2.0000 | | 0.002 | 0.0029 | 0.007 | 13 |
| Fluoride | 1.5000 | | 0.91 | 1.0785 | 1.27 | 13 |
| Fluoride (WU result) | 1.5000 | | 0.94 | 1.0225 | 1.07 | 12 |
| Fluoride Ratio | 0.8 - 1.2 | | 0.74 | 0.9667 | 1.14 | 12 |
| Iodine | 0.5000 | | 0.01 | 0.0292 | 0.04 | 13 |
| Iron | 0.3000 | | 0.01 | 0.0338 | 0.12 | 13 |
| Lead | 0.0100 | | 0.0001 | 0.0002 | 0.0005 | 13 |
| Magnesium | 10000.0000 | | 10.56 | 13.6985 | 16.08 | 13 |
| Manganese | 0.5000 | | 0.0059 | 0.0415 | 0.0704 | 13 |
| Mercury | 0.0010 | | 0.0004 | 0.0004 | 0.0004 | 13 |
| Molybdenum | 0.0500 | | 0.0001 | 0.0002 | 0.0003 | 13 |
| Nickel | 0.0200 | | 0.0002 | 0.0021 | 0.0065 | 13 |
| Nitrate | 50.0000 | | 1 | 1.2308 | 2 | 13 |
| Nitrite | 3.0000 | | 0.05 | 0.0500 | 0.05 | 13 |
| pH | 6.5 - 8.5 | | 7.5 | 7.7385 | 7.9 | 13 |
| Selenium | 0.0100 | | 0.0035 | 0.0035 | 0.0035 | 13 |
| Silver | 0.1000 | | 0.0001 | 0.0001 | 0.0001 | 13 |
| Sodium | 180.0000 | | 20 | 32.0000 | 41 | 13 |
| Sulfate | 250.0000 | | 4 | 12.8462 | 21 | 13 |
| Total Dissolved Solids (TDS) | 10000.0000 | | 96 | 142.9231 | 203 | 13 |
| Total Hardness as CaCO ₃ | 200.0000 | | 73.5 | 99.1231 | 118.4 | 13 |
| True Colour | 15.0000 | | 0.5 | 0.6923 | 1 | 13 |
| Turbidity | 5.0000 | | 0.1 | 0.4000 | 1.1 | 13 |
| Uranium | 0.0200 | | 0.0003 | 0.0004 | 0.0005 | 13 |
| Zinc | 3.0000 | | 0.01 | 0.0108 | 0.02 | 13 |



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Table 37. Water quality parameters in Mt Arthur reticulation - Chemistry

| Characteristic | Guideline Value | Min | Mean | Max | Sample Count | % meeting guideline values |
|------------------------------|-----------------|---------|----------|---------|--------------|----------------------------|
| Aluminium | 0.2000 | 0.005 | 0.0075 | 0.01 | 2 | 100.00 |
| Antimony | 0.0030 | 0.00005 | 0.0001 | 0.00005 | 2 | 100.00 |
| Arsenic | 0.0100 | 0.0005 | 0.0005 | 0.0005 | 2 | 100.00 |
| Barium | 2.0000 | 0.0116 | 0.0125 | 0.0133 | 2 | 100.00 |
| Boron | 4.0000 | 0.0381 | 0.0392 | 0.0402 | 2 | 100.00 |
| Cadmium | 0.0020 | 0.00005 | 0.0001 | 0.00005 | 2 | 100.00 |
| Calcium | 10000.0000 | 11.9 | 12.1000 | 12.3 | 2 | 100.00 |
| Chloride | 250.0000 | 54 | 59.0000 | 64 | 2 | 100.00 |
| Chromium | 0.0500 | 0.0005 | 0.0008 | 0.001 | 2 | 100.00 |
| Copper | 2.0000 | 0.03 | 0.0395 | 0.049 | 2 | 100.00 |
| Fluoride | 1.5000 | 0.42 | 0.4350 | 0.45 | 2 | 100.00 |
| Iodine | 0.5000 | 0.03 | 0.0350 | 0.04 | 2 | 100.00 |
| Iron | 0.3000 | 0.12 | 0.1350 | 0.15 | 2 | 100.00 |
| Lead | 0.0100 | 0.0002 | 0.0003 | 0.0003 | 2 | 100.00 |
| Magnesium | 10000.0000 | 8.98 | 9.4250 | 9.87 | 2 | 100.00 |
| Manganese | 0.5000 | 0.0122 | 0.0142 | 0.0161 | 2 | 100.00 |
| Mercury | 0.0010 | 0.0004 | 0.0004 | 0.0004 | 2 | 100.00 |
| Molybdenum | 0.0500 | 0.0002 | 0.0005 | 0.0008 | 2 | 100.00 |
| Nickel | 0.0200 | 0.0002 | 0.0013 | 0.0024 | 2 | 100.00 |
| Nitrate | 50.0000 | 0.5 | 0.5000 | 0.5 | 2 | 100.00 |
| Nitrite | 3.0000 | 0.05 | 0.0500 | 0.05 | 2 | 100.00 |
| pH | 6.5 - 8.5 | 7.6 | 7.6000 | 7.6 | 2 | 100.00 |
| Selenium | 0.0100 | 0.0035 | 0.0035 | 0.0035 | 2 | 100.00 |
| Silver | 0.1000 | 0.0001 | 0.0001 | 0.0001 | 2 | 100.00 |
| Sodium | 180.0000 | 46 | 47.5000 | 49 | 2 | 100.00 |
| Sulfate | 250.0000 | 9 | 10.0000 | 11 | 2 | 100.00 |
| Total Dissolved Solids (TDS) | 10000.0000 | 147 | 158.0000 | 169 | 2 | 100.00 |
| Total Hardness as CaCO3 | 200.0000 | 67.7 | 69.0500 | 70.4 | 2 | 100.00 |
| True Colour | 15.0000 | 0.5 | 0.5000 | 0.5 | 2 | 100.00 |
| Turbidity | 5.0000 | 0.1 | 0.2000 | 0.3 | 2 | 100.00 |
| Uranium | 0.0200 | 0.00005 | 0.0001 | 0.00005 | 2 | 100.00 |
| Zinc | 3.0000 | 0.01 | 0.0100 | 0.01 | 2 | 100.00 |



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Table 38. Water quality parameters in the Mt Daylight reticulation- Chemistry

| Characteristic | Guideline Value | Min | Mean | Max | Sample Count | % meeting guideline values |
|-------------------------------------|-----------------|---------|----------|---------|--------------|----------------------------|
| Aluminium | 0.2000 | 0.005 | 0.0050 | 0.005 | 2 | 100.00 |
| Antimony | 0.0030 | 0.00005 | 0.0001 | 0.00005 | 2 | 100.00 |
| Arsenic | 0.0100 | 0.002 | 0.0025 | 0.003 | 2 | 100.00 |
| Barium | 2.0000 | 0.0684 | 0.0784 | 0.0883 | 2 | 100.00 |
| Boron | 4.0000 | 0.0375 | 0.0379 | 0.0383 | 2 | 100.00 |
| Cadmium | 0.0020 | 0.00005 | 0.0001 | 0.00005 | 2 | 100.00 |
| Calcium | 10000.0000 | 27 | 27.2000 | 27.4 | 2 | 100.00 |
| Chloride | 250.0000 | 111 | 114.5000 | 118 | 2 | 100.00 |
| Chromium | 0.0500 | 0.0005 | 0.0008 | 0.001 | 2 | 100.00 |
| Copper | 2.0000 | 0.003 | 0.0055 | 0.008 | 2 | 100.00 |
| Fluoride | 1.5000 | 0.53 | 0.5650 | 0.6 | 2 | 100.00 |
| Iodine | 0.5000 | 0.13 | 0.1300 | 0.13 | 2 | 100.00 |
| Iron | 0.3000 | 0.005 | 0.0075 | 0.01 | 2 | 100.00 |
| Lead | 0.0100 | 0.0001 | 0.0004 | 0.0007 | 2 | 100.00 |
| Magnesium | 10000.0000 | 23.19 | 24.3400 | 25.49 | 2 | 100.00 |
| Manganese | 0.5000 | 0.0006 | 0.0016 | 0.0026 | 2 | 100.00 |
| Mercury | 0.0010 | 0.0004 | 0.0004 | 0.0004 | 2 | 100.00 |
| Molybdenum | 0.0500 | 0.0022 | 0.0025 | 0.0027 | 2 | 100.00 |
| Nickel | 0.0200 | 0.0005 | 0.0006 | 0.0006 | 2 | 100.00 |
| Nitrate | 50.0000 | 0.5 | 0.5000 | 0.5 | 2 | 100.00 |
| Nitrite | 3.0000 | 0.05 | 0.0500 | 0.05 | 2 | 100.00 |
| pH | 6.5 - 8.5 | 7.2 | 7.3500 | 7.5 | 2 | 100.00 |
| Selenium | 0.0100 | 0.0035 | 0.0035 | 0.0035 | 2 | 100.00 |
| Silver | 0.1000 | 0.0001 | 0.0001 | 0.0001 | 2 | 100.00 |
| Sodium | 180.0000 | 92 | 92.5000 | 93 | 2 | 100.00 |
| Sulfate | 250.0000 | 41 | 44.5000 | 48 | 2 | 100.00 |
| Total Dissolved Solids (TDS) | 10000.0000 | 302 | 315.5000 | 329 | 2 | 100.00 |
| Total Hardness as CaCO ₃ | 200.0000 | 163.9 | 168.1500 | 172.4 | 2 | 100.00 |
| True Colour | 15.0000 | 0.5 | 0.7500 | 1 | 2 | 100.00 |
| Turbidity | 5.0000 | 0.1 | 0.1000 | 0.1 | 2 | 100.00 |
| Uranium | 0.0200 | 0.0028 | 0.0033 | 0.0037 | 2 | 100.00 |
| Zinc | 3.0000 | 0.01 | 0.0150 | 0.02 | 2 | 100.00 |



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Table 39. Microbiological results - Jugiong

| Characteristic | Guideline Value | Units | Mean | Median | Standard Deviation | Min | Max | Sample Count | Exception Count | 95th Percentile | 5th Percentile | % meeting guideline values |
|-----------------|-----------------|------------|---------|---------|--------------------|------|------|--------------|-----------------|-----------------|----------------|----------------------------|
| E. coli | 0.0000 | mpn/100 mL | 0.0000 | 0.0000 | 0.0000 | 0 | 0 | 78 | 0 | 0 | 0 | 100.00 |
| Free Chlorine | 0.2 - 5 | mg/L | 0.4187 | 0.3200 | 0.4278 | 0.02 | 1.96 | 78 | 27 | 1.47 | 0.02 | 65.38 |
| pH | 6.5 - 8.5 | | 7.8105 | 7.7450 | 0.3625 | 7.23 | 8.7 | 78 | 4 | 8.52 | 7.36 | 94.87 |
| Temperature | 30.0000 | C | 18.2115 | 18.3500 | 4.6247 | 8.7 | 25.4 | 78 | 0 | 25 | 11 | 100.00 |
| Total Chlorine | 5.0000 | mg/L | 0.6135 | 0.4500 | 0.5505 | 0.02 | 2.2 | 78 | 0 | 1.78 | 0.04 | 100.00 |
| Total Coliforms | 0.0000 | mpn/100 mL | 0.2821 | 0.0000 | 1.8155 | 0 | 14 | 78 | 2 | 0 | 0 | 97.44 |
| Turbidity | 5.0000 | NTU | 0.6341 | 0.5200 | 0.4097 | 0.23 | 2.4 | 78 | 0 | 1.48 | 0.25 | 100.00 |

Table 40. Microbiological results - Oura

| Characteristic | Guideline Value | Units | Mean | Median | Standard Deviation | Min | Max | Sample Count | Exception Count | 95th Percentile | 5th Percentile | % meeting guideline values |
|-----------------|-----------------|------------|---------|---------|--------------------|------|------|--------------|-----------------|-----------------|----------------|----------------------------|
| E. coli | 0.0000 | mpn/100 mL | 0.0076 | 0.0000 | 0.1233 | 0 | 2 | 263 | 1 | 0 | 0 | 99.62 |
| Free Chlorine | 0.2 - 5 | mg/L | 0.4949 | 0.4600 | 0.2944 | 0.02 | 1.82 | 263 | 33 | 1.03 | 0.1 | 87.45 |
| pH | 6.5 - 8.5 | | 8.0739 | 8.1000 | 0.3735 | 7.13 | 9.18 | 262 | 27 | 8.7 | 7.5 | 89.69 |
| Temperature | 30.0000 | C | 19.8487 | 19.8000 | 5.2402 | 9.9 | 32.2 | 263 | 4 | 28.4 | 12.4 | 98.48 |
| Total Chlorine | 5.0000 | mg/L | 0.5834 | 0.5000 | 0.3591 | 0.06 | 2.84 | 258 | 0 | 1.15 | 0.16 | 100.00 |
| Total Coliforms | 0.0000 | mpn/100 mL | 0.0418 | 0.0000 | 0.6195 | 0 | 10 | 263 | 2 | 0 | 0 | 99.24 |
| Turbidity | 5.0000 | NTU | 2.0383 | 0.5800 | 21.7519 | 0.09 | 352 | 261 | 2 | 1.25 | 0.29 | 99.23 |



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Table 41. Microbiological results – Mt Arthur

| Characteristic | Guideline Value | Units | Mean | Median | Standard Deviation | Min | Max | Sample Count | Exception Count | 95th Percentile | 5th Percentile | % meeting guideline values |
|-----------------|-----------------|------------|---------|---------|--------------------|------|------|--------------|-----------------|-----------------|----------------|----------------------------|
| E. coli | 0.0000 | mpn/100 mL | 0.0000 | 0.0000 | 0.0000 | 0 | 0 | 64 | 0 | 0 | 0 | 100.00 |
| Free Chlorine | 0.2 - 5 | mg/L | 0.3909 | 0.3700 | 0.2509 | 0.02 | 1.1 | 64 | 13 | 0.86 | 0.02 | 79.69 |
| pH | 6.5 - 8.5 | | 7.4744 | 7.4950 | 0.2735 | 7.03 | 8.3 | 64 | 0 | 7.94 | 7.09 | 100.00 |
| Temperature | 30.0000 | C | 20.2344 | 20.6500 | 5.8115 | 10.9 | 30.3 | 64 | 1 | 29.4 | 12.5 | 98.44 |
| Total Chlorine | 5.0000 | mg/L | 0.4725 | 0.4200 | 0.2790 | 0.03 | 1.32 | 64 | 0 | 0.93 | 0.08 | 100.00 |
| Total Coliforms | 0.0000 | mpn/100 mL | 0.2500 | 0.0000 | 2.0000 | 0 | 16 | 64 | 1 | 0 | 0 | 98.44 |
| Turbidity | 5.0000 | NTU | 0.6523 | 0.5600 | 0.3198 | 0.24 | 2.28 | 64 | 0 | 1.3 | 0.35 | 100.00 |

Table 42. Microbiological results – Mt Daylight

| Characteristic | Guideline Value | Units | Mean | Median | Standard Deviation | Min | Max | Sample Count | Exception Count | 95th Percentile | 5th Percentile | % meeting guideline values |
|-----------------|-----------------|------------|---------|---------|--------------------|-------|------|--------------|-----------------|-----------------|----------------|----------------------------|
| E. coli | 0.0000 | mpn/100 mL | 0.0000 | 0.0000 | 0.0000 | 0 | 0 | 24 | 0 | 0 | 0 | 100.00 |
| Free Chlorine | 0.2 - 5 | mg/L | 0.1983 | 0.1200 | 0.1765 | 0.01 | 0.52 | 24 | 14 | 0.5 | 0.02 | 41.67 |
| pH | 6.5 - 8.5 | | 7.3846 | 7.4050 | 0.2146 | 6.8 | 7.68 | 24 | 0 | 7.61 | 7.05 | 100.00 |
| Temperature | 30.0000 | C | 22.2375 | 22.3500 | 5.7349 | 12.5 | 32.4 | 24 | 3 | 31.1 | 13.3 | 87.50 |
| Total Chlorine | 5.0000 | mg/L | 0.3152 | 0.2500 | 0.2285 | 0.025 | 0.71 | 24 | 0 | 0.68 | 0.04 | 100.00 |
| Total Coliforms | 0.0000 | mpn/100 mL | 0.0417 | 0.0000 | 0.2041 | 0 | 1 | 24 | 1 | 0 | 0 | 95.83 |
| Turbidity | 5.0000 | NTU | 0.6538 | 0.4500 | 0.6211 | 0.21 | 3.2 | 24 | 0 | 1.28 | 0.23 | 100.00 |



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Appendix B - Continuous Improvement Plan

GWCCC DWMS Action and Improvement Plan
Table 43. GWCC DWMS Action and Improvement Plan

| No. | Action | Type | Status | Date completed/ closed | Comments | Priority | Responsibility | Action reference |
|-----|--|---------------|----------|---------------------------|---|-----------|--------------------------------|---|
| 1 | GWCC consider installing an online free chlorine analyser at Ora disinfection point (after 30 min contact time). | Capital works | Complete | | 25/11/2016 - 9 analysers purchased. As Ora is not disinfecting for primary kill, the analyser should be located as close as practical to the disinfection point. 15/10/2019 - Blueeye analyser installed; however has been found to be unreliable. Analyser has not be implemented for control however is registering trends. A new Burkert system will now be installed as a replacement. 1/9/2021 - Burkert Analyser has been | Very High | Manger Production and Services | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| | | | | installed and operating since early 2020 | | |
| 2 | GWCC to consider training staff in backflow prevention | Training | Complete | Sep-16 | | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 3 | GWCC consider conducting internal training on chlorine residual testing | Training | Complete | 2017 | | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 4 | GWCC to conduct internal training (or refresher training) on correct sampling techniques | Training | Complete | 2017 | 25/11/2016 - Register needs to be updated to capture internal training completed 15/10/2019 - All Water Qual staff have been inducted into proper sampling techniques; however a role out of all staff across the organisation whom may require sampling as part of their role will need to | Low GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| | | | | be undertaken. 25/8/2020 All new distribution staff inducted internally however; a register is yet to be developed. 1/9/2021 - all compliance sampling is conducted by Water Quality Staff now who are trained and specialised. The only testing that occurs from distribution staff is now just chlorine operational samples. Water Quality Staff continue development and all maintain their cert 3 in water treatment plant operations. | |
| 5 | GWCC to consider conducting a community education program on backflow prevention | Community engagement | Closed | 25-Nov 25/11/2016 - Action closed due to changed process. Refer to action 33 (implement backflow prevention program) | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 6 | GWCC to conduct bacto sampling after storm event if visual check of | Monitoring | Closed | 25-Nov 25/11/2016 - Action closed due to changed process. Refer to action 33 (implement backflow prevention program) | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| | bores show signs of being compromised | | | | | |
| 7 | GWCC to install an online turbidity meter in Murrumbidgee River to predict water quality decline | Capital works | Closed | Nov-16 | 25/11/2016 - Turbidity meter purchased. However this action is no longer required. Controls for WTP are established at the plant through the upgrade to ClearScada control system. Raw water turbidity is already measured and shuts the plant down if variation >20% occurs. Contact with WaterNSW will also provide any release changes that may impact on river turbidity. | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 8 | GWCC to roll out system of different levels of key access to increase security | Operations and maintenance | Complete | 2016 | 25/11/2016 - Keys purchased 25/8/2020, majority of all sites now completed with only remote site remaining | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 9 | GWCC to consider performing preventative maintenance on solenoid valves leading into | Operations and maintenance | Closed | Nov | 25/11/2016 - Considered as part of maintenance | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| | fluoride batching tank | | | | | |
| 10 | GWCC to check data entry to ensure no errors and record all incidents and causes of high readings (e.g. data entry error, human error, etc.) | Monitoring | Closed | 2017 | the implementation of a new water quality database (Wateroutlook) has allowed for the centralisation of all test results and automated reporting for any non-conformances. | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 11 | GWCC to consider purchasing electronic chlorine analyser to eliminate manganese interference with chlorine residual testing as per DPI Water recommendation (e.g. chlorosense kits) | Capital works | Closed | 2014 | 25/11/2016 - One at Jugiong and one at Ora | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 12 | GWCC to consider increasing monitoring of chlorine residual throughout system during power outages | Monitoring | Closed | 25-Nov | 25/11/2016 - Covered within incident management. 9 chlorine analysers to be installed 15/10/2019 - multiple sites now online via | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| | | | SCADA with battery backup operations. | |
| 13 | GWCC to Capital works consider installing online chlorine analysers at Oura PS | Closed | <p>25/11/2016 - analyser purchased. Currently being installed and connected to SCADA 2017.</p> <p>15/10/2019 - Analyser installed in lab. Reliability of the Blueeye unit is not good and a new unit will be installed in 2019. System is currently operating however no controls have been engaged from the analyser due to reliability of the unit. Trends are however being obtained.</p> <p>1/9/2021 works were complete and commissioned in early 2020</p> | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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|----|--|----------------------------------|--------|--|---|
| 14 | GWCC to develop a register of water carters | Procedures and documentation for | Closed | 2017 - Letters issued to all known water carters within supply area. No responses received from water carters regarding potable water services. Process will be controlled greater via the installation of automated filling stations which will be delivered as an ongoing capital delivery project. 15/10/2019 - Filling stations installed at Temora, Bardmedman and West Wyalong. No commercial water carters for potable services have been registered. | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 15 | GWCC to develop and maintain a register of RPZs within distribution system | Procedures and documentation | Closed | To be completed as part of <i>Action33 Implement backflow prevention program</i> | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| 16 | GWCC to consider and investigate and install the most suitable BFPD on the connection between Oura and Hylands Bridge (e.g. RPZ, break tank with air gap, etc.) | Capital works | Complete | 2017 risk assesment and report developed on the non-pot system and its potential for cross contamination. Further projects to progress to investigation stage in 2018. 15/10/2019 - Works still outstanding 25/8/2020 Works still outstanding 1/1/2022 A stop valve and non-return valve has been put in place to reduce any risk of backflow | High | Manager Engineering | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 17 | GWCC to ensure all hatches on reservoirs comply with AS/NZS | Operations and maintenance | Rolled into other action | To be completed as part of Action 36 To complete and submit circular 18 | | | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 18 | GWCC to implement a formal water quality monitoring regime at Mt Arthur to monitor pH, turbidity, free, and total chlorine | Monitoring | Rolled into other action | To be completed as part of Action 37 Complete formal review of monitoring plan, against ADWG, NSW Health | | | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| 19 | GWCC to implement a formal water quality monitoring regime at Mt Daylight to monitor pH, turbidity, free, and total chlorine | Monitoring | Rolled into other action | To be completed as part of <i>Action 37 Complete formal review of monitoring plan, against ADWG, NSW Health</i> | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 20 | GWCC to install a backflow prevention device between the GWCC reservoir and the reservoir managed by Carathool Shire Council to protect water quality in the Mt Daylight drinking water supply | Capital works | Closed | 25/11/2016 - Part of broader discussion on governance with Carathool Shire Council <i>25/8/2020 there is an airgap between water in reservoir and inlet therefore restricting any backflow</i> | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 21 | GWCC to consider purging reservoir as part of emergency response if contamination is suspected | Operations and maintenance | Closed | 25/11/2016 - Considered as part of emergency procedures | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| 22 | GWCC to consider alarming all reservoir hatch doors in case of sabotage or vandalism. Mt Daylight reservoir is a priority, which is the most remote | Operations and maintenance | Closed | | 25/11/2016 - Been considered, but currently not practical. Managed with weekly and quarterly inspections. | | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 23 | GWCC to complete live chlorine monitoring system for reticulation system (in progress) | Capital works | Complete | | 25/11/2016 - analyser purchased 15/10/2019 - analysers will be installed on demarcation boundaries for Bulk customers retics. No considerations for online retic monitoring is being considered at this stage as water quality team are building data to inform future decisions such as appropriate localities that warrant online monitoring. 25/8/2020 as per previous note on 15/10/2019 - 1/9/2021 as per previous advice and note that staff undertake significant | Low | Manager Production & Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| | | | | | amount of additional operational testing for the retic systems. | | |
| 24 | GWCC to consider developing SOP for fluoride hopper cleaning | Procedures and documentation | Complete | | 15/10/2019 - External training consultant required to facilitate, training and development of an SOP for Trades. This will occur upon completion of the new Code of Practice. 25/8/2020 SOP has been drafted and induction to be provided for all trades and WTP operators - 1/9/2021 new induction procedure was completed and implemented in 2020 | Very High | Manager Production & Services GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 25 | GWCC to consider developing SOPs for chlorine testing to include | Procedures and documentation | Closed | 30/06/2019 | 15/10/2019 - consideration of developing SOP's has been determined as not required. | | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| manganese interference with reagent | | | | | | |
| 26 | GWCC to develop SOPs for operational and supporting activities, such as plant operation, mains break repair, mains flushing, etc. | Procedures and documentation | Complete | 15/10/2019 - SOPs for WTP's and Water Quality division have been completed. Distribution SOP's now required in line with relevant training 25/8/2020 distribution staff to develop SOPs for their activities e.g. mains breaks - 1/9/2021 GWCC have now established a WHS committee and officers, continual improvement processes are in place and managed as part of this process. This includes all WHS documentation and SOP needs for the organisation | Medium | Manager Operations GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 27 | GWCC to include drinking water quality management in the annual report, as recommended in Element 10 of the ADWG | Procedures and documentation | Complete | 2018 First report and submitted in October 2018. | | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| 28 | Educate community member that owns the private bore in close proximity to Oura Borefield to ensure they are aware that the bore accesses the drinking water aquifer | Community engagement | Complete | 30/06/2020 | 25/11/2016 - Refer to new action 38 | High | Manager Engineering | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |
| 29 | GWCC to consider installing online chlorine residual analyser at outlet of settling tanks to ensure 30 minutes contact time (Mt Arthur system) | Capital works | In progress | | 25/11/2016 - Analyser purchased. Unit has been installed at Ganmain; however just waiting on connection for discharge water to sewer before commissioning occurs. 15/10/2019 - Analysers and Maglows to be installed in the Mt Arthur System to provide more data for potential treatment requirements. Investigations to Occur from January 2020 as part of MIPPS student placement. -25/8/2020 MIPPS student investigation | Low | Manager Production & Services | GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015) |



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| | | | | <p>project complete June 2020, further investigations in treatment options to occur</p> <p>- 1/9/2021 magflow and analysers installed however not connected to clearscada system.</p> <p>- 1/11/2022 Mt Arthur SCADA/Telemetry network to commence upgrade in 2022/23 financial year. Connection of water quality instrumentation to be completed after this.</p> <p>27/11/2024 – Upgrade has commenced and new and improved WQ instrumentation has been purchased for installation and integration</p> | | |
| 30 | GWCC to consider changing location of online chlorine analyser in the Mt Daylight system to ensure free chlorine | Capital works | Closed | 30/06/2020 | Consider as part of analyser installation. 15/10/2019 - Analyser installed at Naradhan Res's providing residual levels 15km down stream of dosing point. Anlayser needs to include controls to | <p>Medium</p> <p>Manager Production & Services</p> <p>GWCC DWMS Technical Note 2 Risk Assessment and Critical Control Point Workshop (HydroScience, 2015)</p> |



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| <p>measurement after 30 min contact time. Both the chlorine dosing and the chlorine analyser are located at the reservoir inlet</p> | | <p>inhibit Daylight pumps if residuals or CL2 dosing stops.</p> | | | | |
| <p>31 Determine the level of water quality training required for new staff and add to induction program</p> | <p>Training</p> | <p>Complete</p> | <p>15/10/2019 - Consideration of training will need to be developed in accordance with each individuals role. However in terms of induction and competency based requirements for all field staff, this needs to be developed. 25/8/2020 all new starter within WQ and distribution teams have been provided relevent inductions where required however formal register yet to be developed. - 1/9/2021 water quality staff now managing all compliance requirements of the DWMS. Their training is</p> | <p>Medium</p> | <p>Human Resource Coordinator</p> | <p>Added as part of action and improvement plan review (25 November 2016)</p> |



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| | | | being developed in line with the National Training Package 2020. We are working with the NSW Water Directorate and TWRRP Team for access to new training providers which has delayed our continual development requirements. Staff undertake a review of their Staff Development Plans every 6 months | | | |
| 32 | Develop and Training implement competency checklist/schedule on sampling methodology | Closed | 30/06/2020 | 15/10/2019 - Will be considered as part of an induction and training program for water quality testing. Internally competency sign off required 25/8/2020 has been considered and will form part of induction process and register - 1/9/2021 All compliance sampling conducted by Quality staff now whom hold a minimum of cert 3 in water treatment operations. | Low | Manager Production & Services Added as part of action and improvement plan review (25 November 2016) |



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| 33 | Implement backflow prevention program, including developing register of RPZs | Capital works | Closed | 30/06/2020 | 25/11/2016 - Budget approved, project underway. 15/10/2019 - Program has commenced and is nearing its completion for all rural high risk connections.25/8/2020 RPZD register of high risk connections has been completed | Very High | Manager Engineering | Added as part of action and improvement plan review (25 November 2016) |
| 34 | Develop a microbiological sampling SOP when bore head integrity has been potentially compromised (maintenance, flooding, vandalism) | Procedures and documentation | Closed | 30/06/2019 | 15/10/2019 - in line with action item 6 above. Emergency Response SOP's have been developed. Routine raw water testing now undertaken. | | | Added as part of action and improvement plan review (25 November 2016) |
| 35 | Investigate options for electronic card systems on standpipes to record water carter access | Capital works | Closed | 30/06/2019 | Temora and West Wyalong have been determined as priority locations for installation during the 18/19 financial year. 15/10/2019 - West Wyalong, Temora and Barmedman now installed and operational. | | | Added as part of action and improvement plan review (25 November 2016) |



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|----|---|----------------------------|----------|--|------|---------------------|--|
| 36 | To complete and submit circular 18 | Operations and maintenance | Complete | <p>The development of routine inspections and standard operating procedures have been completed in 2017. Work on the development of a centralised database that can issue out work orders and retain asset corrective action data is now being developed through Wateroutlook. 15/10/2019 - formal submission Circular 18 has not recieved any feedback from 2017. Consideration of new submission to be made. 25/8/2020 No change still no feedback from DPIE</p> | High | Manager Engineering | Added as part of action and improvement plan review (25 November 2016) |
| 37 | Complete formal review of monitoring plan, against ADWG, NSW Health | Monitoring | Complete | 2017 Works completed with independent review completed by Atom consulting in 2017. 15/10/2019 - Annual DWMS review is undertaken in October of every year and reported to NSW Health upon completion. | | | Added as part of action and improvement plan review (25 November 2016) |



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| 38 | Investigate bore 5 private ownership and licensing, in liaison with DPI Water. Considering water quality contamination risks from bore | Investigative studies | Closed | 30/06/2019 | 15/10/2019 - contact with Land Holder and DOI Water to occur 25/8/2020 no indication of active bore, GWCC to continue to monitor raw water of existing borefield | High | Manager Engineering | Added as part of action and improvement plan review (25 November 2016) |
| 39 | Ensure bore 1 wellhead security e.g. secure gaps in casement | Capital works | Closed | 2019 | contact with land holder to gain access and investigate bore closure to occur in 2018 15/10/2019 - 100% confirmation is not possible. Continued monitoring of our borefield raw water will identify any issues if such shall arise. | | | Added as part of action and improvement plan review (25 November 2016) |
| 40 | Review operational monitoring data | Monitoring | Complete | ongoing | Independent monitoring report completed by Atom Consulting with internal review also undertaken for development of better operational data gathering for population of Wateroutlook system. | | | Added as part of action and improvement plan review (25 November 2016) |
| 41 | Formulate a Drinking Water Quality Policy | Procedures and documentation | Closed | 2018 | Formulate a drinking Water Policy, to be completed before | | Manger Production and Services | Added as part of review/development of DWMS |



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| | | | | | August council meeting. 15/10/2019 - now complete | | |
| 42 | Ensure Drinking Water Quality policy is communicated and understood by staff | Training | | Closed | 2018 | Once policy has been adopted by council it is to be communicated and understood by staff 15/10/2019 - all policies are submitted to the Consultative Committee for review and made available online for all staff. | Manger Production and Services |
| 43 | construct diagrams of water supply system from catchment to consumer | Flow and supply from catchment to consumer | Procedures and documentation | Complete | 2017 | flow diagrams were updated to be placed into DWMS | |
| 44 | Assemble pertinent information and document key characteristics of the water supply system | | Procedures and documentation | Complete | 2017 | Information was generated for production of DWMS | Manger Production and Services |
| 45 | Assemble a team with appropriate knowledge and expertise | | Procedures and documentation | Closed | 2019 | Asset management asset required. 15/10/2019 - Water Quality team now established with more room to grow trainees in future years. | Manger Production and Services |



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| | | | | Engineering team has gone from 3 to 5 staff with an independant manager. | | |
| 46 | Identify existing preventive measures from catchment to consumer for each significant hazard or hazardous event and estimate the residual risk | Investigative studies | Complete | ongoing | <p>Ongoing risk reviews and actions are undertaken upon incident reporting/lessons learnt scenarios. As the organisations asset and operational maturity increases so to will the levels of assessment and outcomes.</p> <p>- 1/9/2021 GWCC staff monitor and maintain its raw water systems via monthly monitoring lab results. In addition to that we are altered by any changes to Murrumbidgee discharges from Water NSW.</p> | Low |
| 47 | Evaluate alternative or additional preventive measures where | | Closed | ongoing | 25/8/2020 as per item 46 above | |



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| improvement is required | | |
|--|----------|--|
| 48 Procedures and documentation Document all procedures and compile into an operations manual | Closed | 2019 SOPs have been generated and reviewed; they will need to be finalised. SWMS are currently being developed 15/10/2019 - All SOP's for WTP operations have now been complete. All documents have been made available on WaterOutlook. An operations manual is not deemed required at this stage. |
| 49 Identify procedures required for processes and activities from catchment to consumer | Complete | See point 48 above. 15/10/2019 - This needs to be investigated and developed into a management plan for each supply scheme. - 1/9/2021 this is documented and managed as part of our DWMS and associated annual reviews. |



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| 50 | Ensure monitoring data is representative and reliable | Monitoring | Complete | ongoing | Ongoing data auditing every 12 months will help confirm data is representative of water supplies. 15/10/2019 - Wateroutlook provides monthly data reports for review by the water quality team. All data is reviewed annually for consideration of any new improvements required for data and operational consistency. | Manger Production and Services |
| 51 | Determine the characteristics to be monitored in the distribution system and in water as supplied to the customer | Monitoring | Complete | 2017 | monitoring is carried out as per NSW Health drinking water Monitoring Program and operational requirements of GWCC. | |
| 52 | Establish and document a sampling plan for each characteristic, including the location and frequency of sampling | Monitoring | Complete | 2017 | Monitoring program to be audited every 12 months to ensure data is representative of the drinking water system | |



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| 53 | Establish a consumer complaint and response program, including appropriate training of employee | Community engagement | Complete | 2017 A register of customer complaints and outcomes and feedback to be developed. 15/10/2019 - CRM processes and indicators to be developed over the next 12 months with data recording and reporting mechanisms to be developed as well. This is an outstanding item in both Internal audit and NPR Audit. 25/8/2020 Draft operating procedure for complaints handling completed - 1/9/2020 process is now business as usual with utilisation of councils customer service complaints system utilised to log and report on issues | Medium | Manger Production and Services |
| 54 | Define communication protocols with the involvement of relevent agencies and prepare a contact list of key people, | Procedures and documentation | Closed | 2018 A register of conacts has been completed and Emergency Response Management Plan will need to be reviewed to add the list. 15/10/2019 - works now complete and reviewed annually. | | |



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| | agencies and businesses | | | | | |
| 55 | develop a public and media communications strategy | Community engagement | Complete | 2019 | See Ryan for update. 15/10/2019 - complete | |
| 56 | Develop mechanisms and communication procedures to increase employees awareness of and participation in drinking water quality management | Procedures and documentation | Complete | | Suggested by GM to have all staff trained in Cert II Water Operations. 15/10/2019 - induction based training should be undertaken by operational staff. Discussions with HR Coordinator to occur to develop long term plan. - 1/9/2021 GWCC issue relevant update emails, SOP's and guidelines to all staff when changes occur. Additional training including scenario training is undertaken as well. Scenario training was conducted with Bulk Councils involved in late 2020. | High Manger Production and Services |



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| 57 | Develop a comprehensive strategy for community consultation | Community engagement | Closed | | 2019 | Have communications officer develop comms strategy. 15/10/2019 - Complete | | |
| 58 | Assess requirements for effective community involvement | Community engagement | Complete | | 2019 | 15/10/2019 - As per Local Government Act, IP&R Framework and the Best Practice requirements for Water & Sewer. | | |
| 59 | Use information to improve management of the Water Supply system | Investigative studies | Implemented | ongoing | | Information will help GWCC to evolve with the requirements of its customers | Low | Manger Production and Services |
| 60 | establish programs to increase understanding of the water supply system | Community engagement | Complete | ongoing | | Programs may include education of water quality, treatment processes, distribution works, new capital works etc - 1/9/2021 GWCC continue to develop hydraulic models, P&ID, and validation systems for Councils networks. Council have also developed and undertaken an education program called "Depth Days" which provides tours of Jugiong WTP and gives | Medium | Manger Production and Services |



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| | | | | | an overview of catchment to tap process for students and/or community groups if requested. | |
| 61 | Validate processes and procedures to ensure that they are effective at controlling hazards | Procedures and documentation | Implemented | | Ongoing assessment current procedures will help produce and highlight the need for new or additional processes or information | |
| 62 | Revalidate processes periodically or when variations in conditions occur | Procedures and documentation | Implemented | | See Action and Improvement Plan Action item 61 above | |
| 63 | Validate the selection and design of new equipment and infrastructure to ensure continuing reliability | Investigative studies | Implemented | 2017 | Ongoing | |
| 64 | Periodically review documentation and revise as necessary | Procedures and documentation | Implemented | 2017 | Ongoing document will be review and updated as per the document review dates | |



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| 65 | develop a document control system to ensure current versions are in use | Procedures and documentation | Complete | | Systematic approach with all review documents and their respective review dates to be determined and a suitable timeline developed to make sure all docs are updated as required 25/8/2020 all systems built into Water Outlook | High | Manger Production and Services |
| 66 | Establish records management system and ensure that employees are trained to fill out records | Procedures and documentation | Implemented | 2018 | Wateroutlook is being developed by Safe group with a number of avenues of data collection to be made available once fully rolled out. 15/10/2019 - Additional CRM system is available for registering all documents, emails and correspondance | | Manger Production and Services |
| 67 | Document information pertinent to all aspects of drinking water quality mangement | Procedures and documentation | Implemented | | This will evolve as GWCC move forward, relevant information e.g. reservoir inspection sheets to be enetered into a database for reporting and so that any works can be followed up on and actioned if not complete | Very High | Manger Production and Services |



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| 68 | produce an annual report to be made available to customers, regulatory authorities and stakeholders | Procedures and documentation | Implemented | | DWMS Report may be made available once Water Quality Technical Officer has completed in July/August. 15/10/2019 - The annual report will be completed, submitted and made available to all relevant authorities in October of every year. | High | Manger Production and Services |
| 69 | establish procedures for effective internal and external reporting | Procedures and documentation | Closed | 2017 | The DWMS annual report to NSW Health will but completed for the first time by GWCC and the annual performance report will also be undertaken by GWCC staff as usual on an annual basis | | |
| 70 | Document and report results | Monitoring | Complete | 2017 | This will an evolving and ongoing | | |
| 71 | Collect and evaluate longterm data to assess performance and identify problems | Monitoring | Complete | 2017 | This will an evolving and ongoing | | |
| 72 | Document and communicate audit results | Monitoring | Complete | 2017 | Audit results are always documented and communicated so that any issues can be attended to or so that | | |



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| | | | | | good results are communicated for good reason | | |
| 73 | Establish processes for internal and external audits | Procedures and documentation | Complete | 2019 | 15/10/2019 - Internal Audit undertaken this year and should be completed every 3 years. Consideration of external audits should be undertaken at least every 5 years. | | |
| 74 | Evaluate the need for change | Investigative studies | Closed | ongoing | | | |
| 75 | Senior Executive review of the effectiveness of the management system | Investigative studies | Complete | | 15/10/2019 - Manex to review the Annual report and provide advice on any required changes. 25/8/2020 MANEX and council review annual report | | |
| 76 | Bulk User Service Level Agreement | Procedures and documentation | In Progress | Ongoing | Formal Service level agreement be developed and implemented for councils bulk water users; and b) This action be included into action and improvement plan within DWMS 25/8/2020 Funding has been awarded for the facilitation and development of WQ SLA | Medium | Manager production and Services Part B has been added to action and improvements plan (Oct 2019); PART A is in progress, Staff have submitted a request to Public Health for the engagement of an external facilitator to undertake the development of a new Service Level Agreement between GWCC and its Bulk Customers. Project to commence upon approval from Public Health for funding of the Consultant. |



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| | | | | | <p>between GWCC- Hilltops and GWCC and Coota Gundagai</p> <ul style="list-style-type: none"> - 1/9/2021 Water Qual component has been completed and a draft is currently being developed by Lindsay Taylor Lawyers. - 1/11/22 draft SLA completed and currently under review. Change in staff at bulk councils has made it difficult to resolve outstanding items for agreement. - 27/11/2024 SLA are complete GWCC is just waiting on CGRC to sign off and also waiting on Hilltops for their council to adopt via council resolution | | | |
| 77 | Complaints Mangement System | Procedures and documentation | Implemented | Ongoing | Investigate options for a complaints handling system that integrates with Council’s Asset Management and GIS Systems, and meets the requirements of the framework for the management of drinking | Medium | Manager production and Services | Management is unaware if a fully integrated complaints management system exists that could be implemented within GWCC cost effectively. However, Management will seek to improve its current capture of complaints through a more secure reporting system. This could be undertaken |



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| | | | | water and Council's performance. | | | through tools such as Civica or WaterOutlook | |
| 78 | Emergency response training | Training | Complete | ongoing | Incident and emergency response training to be developed and referred to in DWMS and undertaken by relevant employees and stakeholders. (To be Included in DWMS) 25/8/2020 - Health have funded the facilitation of Emergency response training including bulk councils to occur 2020/21 - 1/9/2020 GWCC and Hilltops and CGRC all participated within a scenario training workshop held late 2020 at Jugiong WTP. Council also has developed Incident Protocols for water quality incidents that are to be used for management. | Medium | Manager production and Services | Managemet have issued a request for this scenario training to be funded and facilitated through Public Health. If funding and facilitated by Health GWCC will seek to undertake the training as soon as practicably possible. It should be noted that internal training is undertaken annualy for emergency reponse maement at the Jugiong Water Treatment Plant as part of Council's Pollution Incident Response Management Plan. (HAS been included into DWMS under Traing) |



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| 79 | Backflow Prevention | Procedures and documentation | Complete | 2019 | a) The Backflow Prevention Policy be referred to within the Drinking Water Management System; (COMPLETE under section Rural Backflow Prevention Program) and b) Backflow device register be updated as required in accordance with the Backflow Prevention Policy (PP06). (Kevin will need to familiarise himself with this) | Medium | Manager production and Services | Staff will include Backflow Prevention commentary within the DWMS Annual Report which is set to be completed and submitted to Council by December 2019. |
| 80 | Water Quality reporting | Procedures and documentation | Complete | 2019 | Consideration be given to making water quality information publicly available. For example, through the formal reporting to Council meetings, and/or making the DWMS Annual Reporting information available on Council's website. | Low | Manager Production and Services | Staff will submit the Annual DWMS Report to Council for acknowledgment between October and December every year. (Report will be submitted to December Council meeting and subsequently displayed on the public website for the public to see |



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| 81 | Drinking Water Management System review | Procedures and documentation | Closed | 30/06/2020 | a) Following the annual review, the Drinking Water Management System be updated to reflect any changes that have been made; and b) Evidence of any review be retained such as meeting minutes, investigative studies, and reports to Council's Senior Management Team and/or Board Members. | low | Manager production and Services | As above |
| 82 | Evaluation and audit | Procedures and documentation | Complete | 2019 | a) Consult with the Local Public Health Unit to clarify their expectations regarding independent audit requirements; and b) Detail the scope and frequency of the independent audit of the Drinking Water Management System (DWMS) in the DWMS. | Low | Manager production and Services | Management are constantly engaged with Public Health and have formally requested a recommendation for a fixed auditing period. No fixed period has been provided, with feedback stating that a requirement for an independent and external audit will be required when Health direct GWCC to do so. |

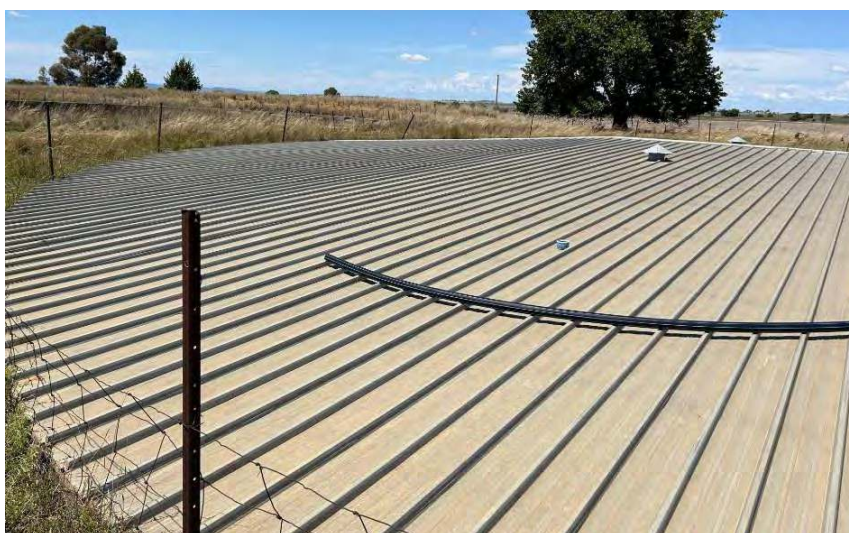
Appendix C - Full Reservoir Inspection Report 2023/24

For the reporting period 2023/24 no reservoirs were inspected or cleaned by ASAM Divers and as such no inspection reports are available for reporting. However FITT Resources have conducted some inspection of reservoirs and their findings are as follows.

MARINNA RESERVOIR

INSPECTION DETAILS

- Inspected By – Jasper Watt
- Inspected On – Mon 19th Feb 2024



SCOPE OF SERVICES

Scope of services included the following:

- Carry out Visual inspection of the External and Internal surfaces of the Reservoir limited to those parts of the structure that is readily and safely accessible.
- Limited diagnostic testing - Concrete cover meter test, Carbonation drill test and rebound hammer



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Tests (approx. 3 tests each) on selected wall locations

- Preparation and submission of Condition Assessment Report including Photos & Rating

The reporting will generically document the Reservoir condition and/or defects and risk issues.



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INSPECTION METHODOLOGY

Visual Inspection

A systematic visual inspection on the external wall, internal wall and Floor of the Reservoir was undertaken in an attempt to record locations or features associated with deterioration or distress. The purpose of the visual inspection was both to record the general condition of the structure and also specific defects observed.

Diagnostic Testing

Diagnostic testing i.e. Concrete cover meter test, Carbonation drill test and rebound hammer tests were carried out on selected wall locations.

FINDINGS & OBSERVATIONS

Minor repairs noted as below

- Internal access platform is starting to rust slightly – No action required at this time

Following components appears visually to be in sound condition

- Metal Roof
- Roof Access Hatch
- External Valves & Pipework
- Internal Wall – General
- Internal Wall - Concrete/Reo
- Internal Wall & Floor Joints
- Internal Access Ladder

Diagnostic testing indicated sound results as below

- Carbonation Test – 3 tests - All Pink
- Cover meter Test- 71mm & 67mm
- Rebound hammer Test – 37Mpa, 32Mpa & 36Mpa

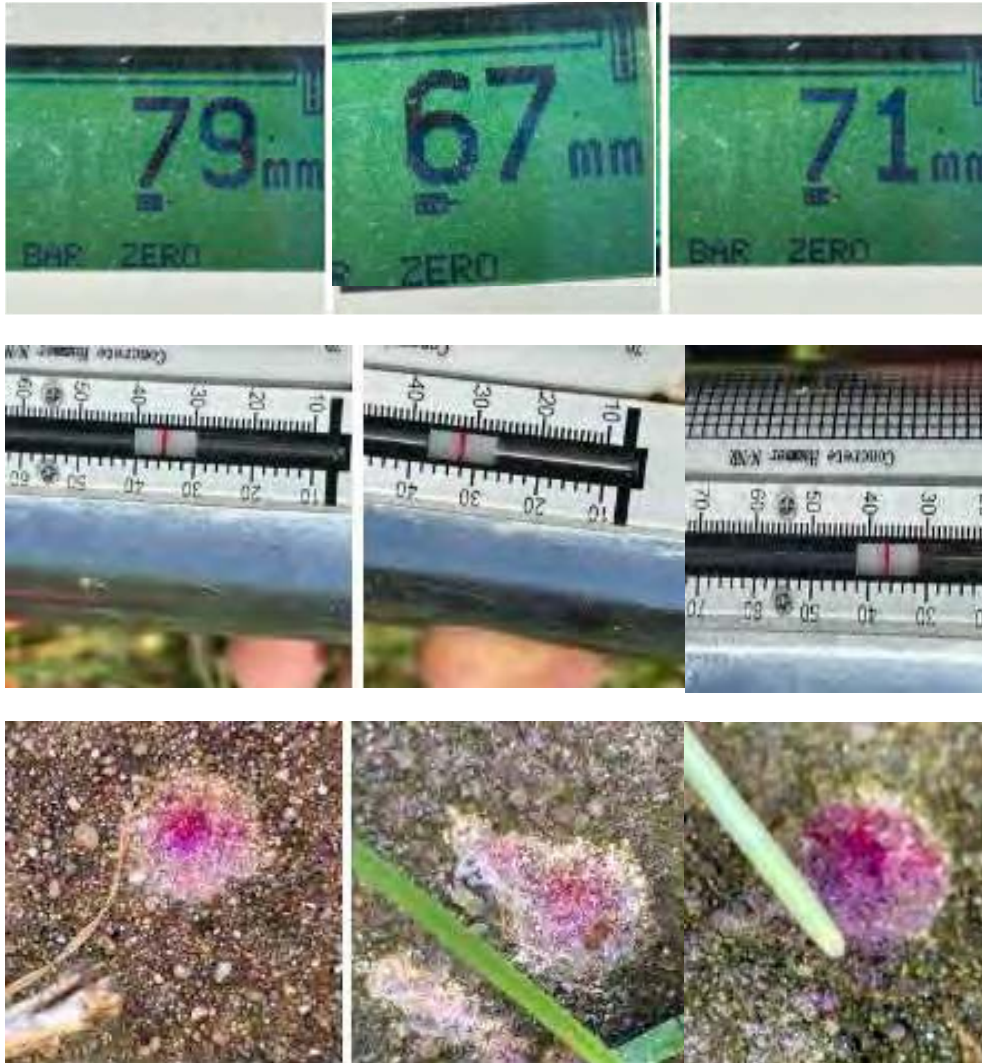


CONDITION ASSESSMENT RATING

| SL NO | ITEM DESCRIPTION | DEFECTS | GRADING KEY | REMARKS |
|-------|------------------------------|---------------------|-------------|--|
| 1 | External Wall - General | | 6 - N/A | Unable to see external walls – Reservoir is under ground |
| 2 | External Wall - Concrete/Reo | | 6 - N/A | Unable to see external walls – Reservoir is under ground |
| 3 | External Access Ladder | | 6 - N/A | Unable to see external walls – Reservoir is under ground |
| 4 | Metal Roof | | 2 - Good | |
| 5 | Roof Access Hatch | Slight Rust Present | 2 - Good | First Platform starting to rust |
| 6 | External Valves & Pipework | | 2 - Good | |
| 7 | Internal Wall - General | | 2 - Good | |
| 8 | Internal Wall - Concrete/Reo | | 2 - Good | |
| 9 | Internal Wall & Floor Joints | | 2 - Good | |
| 10 | Internal Access Ladder | | 2 - Good | |
| 11 | Internal Pipework | | 6 - N/A | Unable to see external walls – Reservoir is under ground |
| 12 | Floor Inlet & Scour point | | 6 - N/A | Unable to see external walls – Reservoir is under ground |

| | |
|--------------|--|
| 1- Excellent | No visible defects |
| 2 - Good | Slightly defective or deteriorated components |
| 3 - Fair | Moderately defective or deteriorated components |
| 4 - Poor | Defective or deteriorated components in need of repair/replacement |
| 5 - Bad | Seriously damaged components in need of immediate repair/replacement |
| 6 – N/A | Not Applicable |

SITE PHOTOS





Drinking Water Management System
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MIRROOL RESERVOIR**INSPECTION DETAILS**

- Inspected By – Jasper Watt
- Inspected On – Tuesday 20th February 2024

**SCOPE OF SERVICES**

Scope of services included the following:

- Carry out Visual inspection of the External and Internal surfaces of the Reservoir limited to those parts of the structure that is readily and safely accessible.
- Limited diagnostic testing - Concrete cover meter test, Carbonation drill test and rebound hammer Tests (approx. 3 tests each) on selected wall locations
- Preparation and submission of Condition Assessment Report including Photos & Rating - The reporting

The reporting will generically document the Reservoir condition and/or defects and risk issues.

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INSPECTION METHODOLOGY**Visual Inspection**

A systematic visual inspection on the external wall, internal wall and Floor of the Reservoir was undertaken in an attempt to record locations or features associated with deterioration or distress. The purpose of the visual inspection was both to record the general condition of the structure and also specific defects observed.

Diagnostic Testing

Diagnostic testing i.e. Concrete cover meter test, Carbonation drill test and rebound hammer tests were carried out on selected wall locations.

FINDINGS & OBSERVATIONS**Repairs noted as below**



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- External cross beam is severely damaged and requires repairs
- Injection to stop any water leaks
- External Pipework has dropped slight but no action is required – Council should Reinspect in a year
- Rust Repairs to access platform

Following components appears visually to be in sound condition

- External Access Ladder
- Metal Roof
- Internal Wall – General
- Internal Wall - Concrete/Reo

Diagnostic testing indicated sound results as below,

| BOTTOM CROSS BEAM | TOP CROSS BEAM |
|--|--|
| Carbonation Test – 3 tests- all pink | Carbonation Test – 3 tests- 2- 3mm before pink |
| Cover meter Test – Front face - 62mm, underside 25mm, 32mm 27mm | Cover meter Test – Front face - 58mm underside 16mm,15mm,14mm |
| Rebound hammer Test – Front Face Upper side - 56mpa 60mpa, 66mpa | Rebound hammer Test – Front Face 50mpa No rebound test on underside - too damaged |

CONDITION ASSESSMENT RATING

| SL NO | ITEM DESCRIPTION | DEFECTS | GRADING KEY | REMARKS |
|-------|------------------------------|---------------------------------|-------------|-----------------------------|
| 1 | External Wall - General | Significant water leaks | 4 - Poor | Reservoir was full of water |
| 2 | External Wall - Concrete/Reo | 1 x Cross beam has bad spalling | 5 - Bad | |
| 3 | External Access Ladder | Slight Rust present | 2 - Good | |
| 4 | Metal Roof | | 2 - Good | |
| 5 | Roof Access Hatch | | 2 - Good | |



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| | | | | |
|----|------------------------------|--|----------|-------------------------------|
| 6 | External Valves & Pipework | | 3 - Fair | Pipework has dropped slightly |
| 7 | Internal Wall - General | | 2 - Good | |
| 8 | Internal Wall - Concrete/Reo | | 2 - Good | |
| 9 | Internal Wall & Floor Joints | | 6 N/A | Unable to see |
| 10 | Internal Access Ladder | | 6 - N/A | Unable to see |
| 11 | Internal Pipework | | 6 - N/A | Unable to see |
| 12 | Floor Inlet & Scour point | | 6 - N/A | Unable to see |

| | |
|--------------|--|
| 1- Excellent | No visible defects |
| 2 - Good | Slightly defective or deteriorated components |
| 3 - Fair | Moderately defective or deteriorated components |
| 4 - Poor | Defective or deteriorated components in need of repair/replacement |
| 5 - Bad | Seriously damaged components in need of immediate repair/replacement |
| 6 - N/A | Not Applicable |



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DEFECTS & REPAIRS BASED ON ASSET INSPECTION

Top beam spalling Concrete repairs

- Remove old concrete and blast reo
- Treat exposed reo with Zinc rich Primer
- Reinstate to original level using High strength Repair mortar

Rust Repairs to Platform

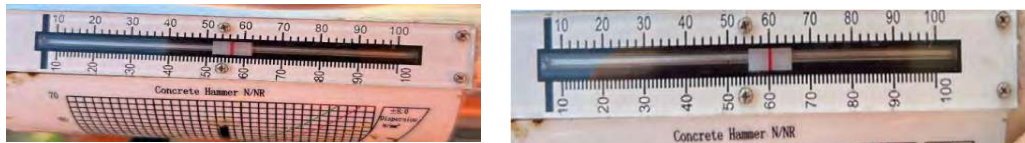
- Abrasive Grit Blast and apply anti corrosive Epoxy Primer

Spot Injection on reservoir where needed

- Carry out Leak Sealing as required using Polyurethane injection

SITE PHOTOS

BOTTOM BEAM



TOTALSEAL



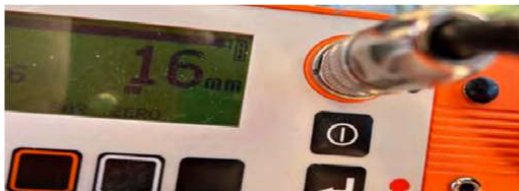


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TOP BEAM





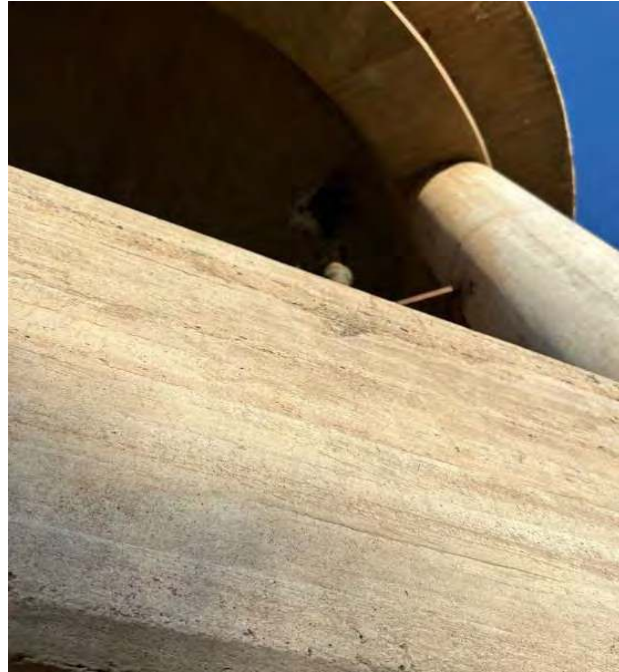
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TOTALSEAL®



TENANDRA RESERVOIR 1

INSPECTION DETAILS

- Inspected By – Jasper Watt
- Inspected On – Mon 19th February 24



SCOPE OF SERVICES

Scope of services included the following:

- Carry out Visual inspection of the External and Internal surfaces of the Reservoir limited to those parts Of the structure that is readily and safely accessible.
- Limited diagnostic testing - Concrete cover meter test, Carbonation drill test and rebound hammer Tests (approx. 3 tests each) on selected wall locations
- Preparation and submission of Condition Assessment Report including Photos & Rating

The reporting will generically document the Reservoir condition and/or defects and risk issues.



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INSPECTION METHODOLOGY

Visual Inspection

A systematic visual inspection on the external wall, internal wall and Floor of the Reservoir was undertaken in an attempt to record locations or features associated with deterioration or distress. The purpose of the visual inspection was both to record the general condition of the structure and also specific defects observed.

Diagnostic Testing

Diagnostic testing i.e. Concrete cover meter test, Carbonation drill test and rebound hammer tests were carried out on selected wall locations.

FINDINGS & OBSERVATIONS

Minor repairs noted as below

- Small cracks and slight water leaking on external walls of Reservoir that require repairs.

Following components appears visually to be in sound condition

- Metal Roof
- Internal Access Ladder
- Metal Roof
- Roof Access Hatch

Diagnostic testing indicated sound results as below

- Carbonation Test – **3 tests - all pink**
- Cover meter Test - **76mm, 51mm, 71mm**
- Rebound hammer Test – **38mpa, 40mpa, 34mpa**



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CONDITION ASSESSMENT RATING

| SL NO | ITEM DESCRIPTION | DEFECTS | GRADING KEY | REMARKS |
|-------|------------------------------|------------------------------|-------------|--|
| 1 | External Wall - General | Spalling concrete | 3 - Fair | |
| 2 | External Wall - Concrete/Reo | Small cracks visible | 3 - Fair | Reservoir is mostly under ground |
| 3 | External Access Ladder | | 6 - N/A | |
| 4 | Metal Roof | | 2 - Good | |
| 5 | Roof Access Hatch | | 2 - Good | |
| 6 | External Valves & Pipework | 2 mtr deep MH | 3 - Fair | |
| 7 | Internal Wall - General | Aggregate exposed moderately | 2 - Good | |
| 8 | Internal Wall - Concrete/Reo | | 6 - N/A | Unable To See reservoir is full of water |
| 9 | Internal Wall & Floor Joints | | 6 - N/A | Unable To See reservoir is full of water |
| 10 | Internal Access Ladder | | 2 - Good | |
| 11 | Internal Pipework | | 6 - N/A | Unable To See reservoir is full of water |
| 12 | Floor Inlet & Scour point | | 6 - N/A | Unable To See reservoir is full of water |

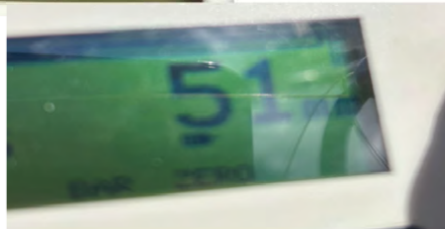
| | |
|---------------|--|
| 1 - Excellent | No visible defects |
| 2 - Good | Slightly defective or deteriorated components |
| 3 - Fair | Moderately defective or deteriorated components |
| 4 - Poor | Defective or deteriorated components in need of repair/replacement |
| 5 - Bad | Seriously damaged components in need of immediate repair/replacement |
| 6 - N/A | Not Applicable |

SITE PHOTOS





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TENANDRA RESERVOIR 2**INSPECTION DETAILS**

- Inspected By – Jasper Watt
- Inspected On – Mon 19th February 2024

**SCOPE OF SERVICES**

Scope of services included the following:

- Carry out Visual inspection of the External and Internal surfaces of the Reservoir limited to those parts of the structure that is readily and safely accessible.
- Limited diagnostic testing - Concrete cover meter test, Carbonation drill test and rebound hammer Tests (approx. 3 tests each) on selected wall locations
- Preparation and submission of Condition Assessment Report including Photos & Rating

The reporting will generically document the Reservoir condition and/or defects and risk issues.



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INSPECTION METHODOLOGY

Visual Inspection

A systematic visual inspection on the external wall, internal wall and Floor of the Reservoir was undertaken in an attempt to record locations or features associated with deterioration or distress. The purpose of the visual inspection was both to record the general condition of the structure and also specific defects observed.

Diagnostic Testing

Diagnostic testing i.e. Concrete cover meter test, Carbonation drill test and rebound hammer tests were carried out on selected wall locations.

FINDINGS & OBSERVATIONS

Minor repairs noted as below

- Leaking observed and Aggregate exposed on external and internal walls of Reservoir that require repairs.

Following components appears visually to be in sound condition

- Metal Roof
- Internal Access Ladder
- Metal Roof
- Roof Access Hatch

Diagnostic testing indicated sound results as below

- Carbonation Test – **3 tests done turned pink**
- Cover meter Test- **64mm, 65mm, 47mm**
- Rebound hammer Test – **48mpa, 40mpa, 46mpa**



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CONDITION ASSESSMENT RATING

| SL NO | ITEM DESCRIPTION | DEFECTS | GRADING KEY | REMARKS |
|-------|------------------------------|------------------------------|-------------|--|
| 1 | External Wall - General | Moderate spalling concrete | 3 - Fair | |
| 2 | External Wall - Concrete/Reo | Small cracks visible | 3 - Fair | |
| 3 | External Access Ladder | | 6 – N/A | |
| 4 | Metal Roof | | 2 - Good | |
| 5 | Roof Access Hatch | | 2 - Good | |
| 6 | External Valves & Pipework | | 4 - Poor | |
| 7 | Internal Wall - General | Aggregate exposed moderately | 2 - Good | |
| 8 | Internal Wall - Concrete/Reo | | 6 - N/A | Unable To See reservoir is full of water |
| 9 | Internal Wall & Floor Joints | | 6 - N/A | Unable To See reservoir is full of water |
| 10 | Internal Access Ladder | | 2 - Good | |
| 11 | Internal Pipework | | 6 - N/A | Unable To See reservoir is full of water |
| 12 | Floor Inlet & Scour point | | 6 - N/A | Unable To See reservoir is full of water |

| | |
|--------------|--|
| 1- Excellent | No visible defects |
| 2 - Good | Slightly defective or deteriorated components |
| 3 - Fair | Moderately defective or deteriorated components |
| 4 - Poor | Defective or deteriorated components in need of repair/replacement |
| 5 - Bad | Seriously damaged components in need of immediate repair/replacement |
| 6 – N/A | Not Applicable |



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DEFECTS BASED SITE INSPECTION

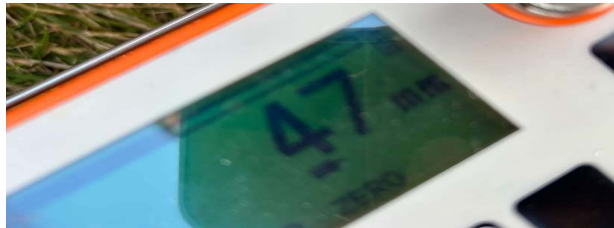
- Spalling Concrete Repairs
- Crack Injection for Water Leaks

SITE PHOTOS





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WALLENBEEEN RESERVOIR

INSPECTION DETAILS

- Inspected By – Jasper Watt
- Inspected On – Tuesday 20th February 2024



SCOPE OF SERVICES

Scope of services included the following:

- Carry out Visual inspection of the External and Internal surfaces of the Reservoir limited to those parts of the structure that is readily and safely accessible.
- Limited diagnostic testing - Concrete cover meter test, Carbonation drill test and rebound hammer Tests (approx. 3 tests each) on selected wall locations
- Preparation and submission of Condition Assessment Report including Photos & Rating

The reporting will generically document the Reservoir condition and/or defects and risk issues.



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INSPECTION METHODOLOGY

Visual Inspection

A systematic visual inspection on the external wall, internal wall and Floor of the Reservoir was undertaken in an attempt to record locations or features associated with deterioration or distress. The purpose of the visual inspection was both to record the general condition of the structure and also specific defects observed.

Diagnostic Testing

Diagnostic testing i.e. Concrete cover meter test, Carbonation drill test and rebound hammer tests were carried out on selected wall locations.

FINDINGS & OBSERVATIONS

Minor repairs noted as below

- External Wall has various cracks and Leaks that require repairs
- External Access Ladder is rusted and requires rust to be treated
- 4 x Internal roof Beams are very rusted and require repairs
- Internal pipework hooks are rusted and council should replace them soon

Following components appears visually to be in sound condition

- Roof Access Hatch
- Internal Walls

Diagnostic testing indicated sound results as below

- Carbonation Test – **3 tests done - all pink**
- Cover meter Test - **55mm, 47mm, 65mm, 38mm, 43mm, 50mm, 36-66 range**
- Rebound hammer Test – **40 Mpa, 36 Mpa, 44 Mpa, 36 Mpa**



CONDITION ASSESSMENT RATING

| SL NO | ITEM DESCRIPTION | DEFECTS | GRADING KEY | REMARKS |
|-------|------------------------------|-------------------------------|-------------|--|
| 1 | External Wall - General | Various cracks and Leaks | 4 - Poor | 5 x Leak points |
| 2 | External Wall - Concrete/Reo | | 3 - Fair | |
| 3 | External Access Ladder | | 6 - N/A | |
| 4 | Metal Roof | 4 x Internal Beams are Rusted | 5 - Bad | External roof condition is good |
| 5 | Roof Access Hatch | | 2 - Good | |
| 6 | External Valves & Pipework | Slight rust present | 3 - Fair | |
| 7 | Internal Wall - General | | 2 - Good | |
| 8 | Internal Wall - Concrete/Reo | | 6 - N/A | Unable To See reservoir is full of water |
| 9 | Internal Wall & Floor Joints | | 6 - N/A | Unable To See reservoir is full of water |
| 10 | Internal Access Ladder | | 6 - N/A | Unable To See reservoir is full of water |
| 11 | Internal Pipework | Significant Rust present | 4 - Poor | |
| 12 | Floor Inlet & Scour point | | 6 - N/A | Unable To See reservoir is full of water |

| | |
|---------------|--|
| 1 - Excellent | No visible defects |
| 2 - Good | Slightly defective or deteriorated components |
| 3 - Fair | Moderately defective or deteriorated components |
| 4 - Poor | Defective or deteriorated components in need of repair/replacement |
| 5 - Bad | Seriously damaged components in need of immediate repair/replacement |
| 6 - N/A | Not Applicable |

DEFECTS & REPAIRS BASED ON SITE INSPECTION

- **Roof beam Repairs for Rust Damage** - Abrasive Grit Blast and Coat with Anti corrosive coating
- **Crack Injection For Water Leaks** - Carry out Leak Sealing as required using Polyurethane injection

SITE PHOTOS



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WATABADGERY RESERVOIR 1

INSPECTION DETAILS

- Inspected By – Jasper Watt
- Inspected On – Wednesday 21st February 2024



SCOPE OF SERVICES

Scope of services included the following:

- Carry out Visual inspection of the External and Internal surfaces of the Reservoir limited to those parts of the structure that is readily and safely accessible.
- Limited diagnostic testing - Concrete cover meter test, Carbonation drill test and rebound hammer - Tests (approx. 3 tests each) on selected wall locations
- Preparation and submission of Condition Assessment Report including Photos & Rating
-

The reporting will generically document the Reservoir condition and/or defects and risk issues.

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INSPECTION METHODOLOGY

Visual Inspection

A systematic visual inspection on the external wall, internal wall and Floor of the Reservoir was undertaken in an attempt to record locations or features associated with deterioration or distress. The purpose of the visual inspection was both to record the general condition of the structure and also specific defects observed.

Diagnostic Testing

Diagnostic testing i.e. Concrete cover meter test, Carbonation drill test and rebound hammer tests were carried out on selected wall locations.

FINDINGS & OBSERVATIONS

Minor repairs noted as below

- External Wall has visible cracks that is 4 meters long that need to be repaired
- External Valves & Pipework is slightly rusted

Following components appears visually to be in sound condition

- External Wall - Concrete/Reo
- External Access Ladder
- Metal Roof
- Roof Access Hatch
- Internal Wall - General
- Internal Wall - Concrete/Reo
- Internal Wall & Floor Joints
- Internal Access Ladder
- Internal Pipework
- Floor Inlet & Scour point

Diagnostic testing indicated sound results as below

- Carbonation Test – **3 tests - all pink**
- Cover meter Test- **47mm, 52mm, 64mm**
- Rebound hammer Test – **52mpa, 54mpa, 52mpa**



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CONDITION ASSESSMENT RATING

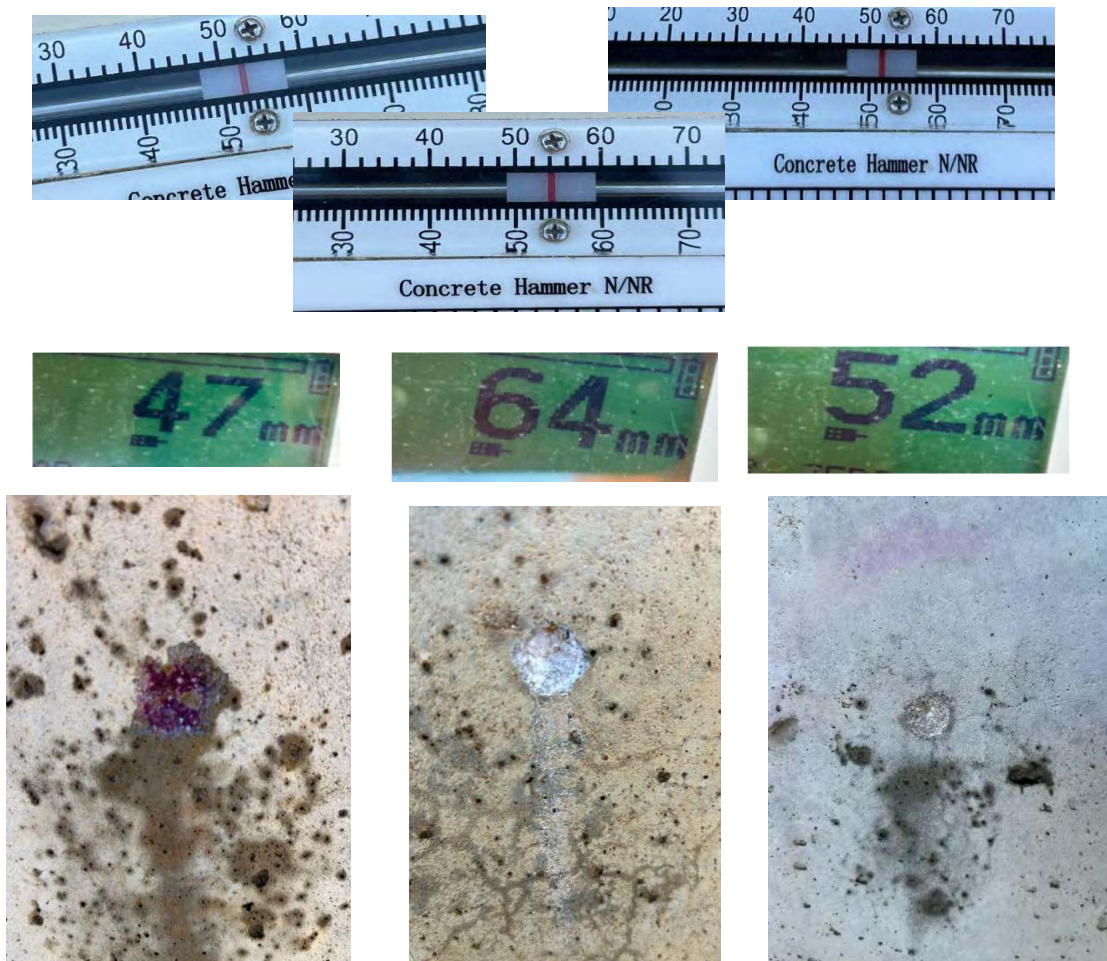
| SL NO | ITEM DESCRIPTION | DEFECTS | GRADING KEY | REMARKS |
|-------|------------------------------|--------------------------|-------------|--|
| 1 | External Wall - General | 1 large crack is visible | 3 - Fair | |
| 2 | External Wall - Concrete/Reo | | 2 - Good | |
| 3 | External Access Ladder | | 2 - Good | |
| 4 | Metal Roof | | 2 - Good | |
| 5 | Roof Access Hatch | | 2 - Good | |
| 6 | External Valves & Pipework | Slight rust present | 3 - Fair | |
| 7 | Internal Wall - General | | 2 - Good | |
| 8 | Internal Wall - Concrete/Reo | | 6 - N/A | Unable To See reservoir is full of water |
| 9 | Internal Wall & Floor Joints | | 6 - N/A | Unable To See reservoir is full of water |
| 10 | Internal Access Ladder | | 2 - Good | |
| 11 | Internal Pipework | | 6 - N/A | Unable To See reservoir is full of water |
| 12 | Floor Inlet & Scour point | | 6 - N/A | Unable To See reservoir is full of water |

| | |
|--------------|--|
| 1- Excellent | No visible defects |
| 2 - Good | Slightly defective or deteriorated components |
| 3 - Fair | Moderately defective or deteriorated components |
| 4 - Poor | Defective or deteriorated components in need of repair/replacement |
| 5 - Bad | Seriously damaged components in need of immediate repair/replacement |
| 6 - N/A | Not Applicable |

DEFECTS & REPAIRS BASED ON SITE INSPECTION

- **Crack Injection Repairs on External wall** - Carry out Leak Sealing as required using Polyurethane injection
- **Rust Repairs on External Valves & Pipework** - Abrasive Grit Blast and Coat with Anti corrosive coating

SITE PHOTOS





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WATABADGERY RESERVOIR 2

INSPECTION DETAILS

- Inspected By – Jasper Watt
- Inspected On – Wednesday 21st February 2024



SCOPE OF SERVICES

Scope of services included the following:

- Carry out Visual inspection of the External and Internal surfaces of the Reservoir limited to those parts of the structure that is readily and safely accessible.
- Limited diagnostic testing - Concrete cover meter test, Carbonation drill test and rebound hammer - Tests (approx. 3 tests each) on selected wall locations
- Preparation and submission of Condition Assessment Report including Photos & Rating

The reporting will generically document the Reservoir condition and/or defects and risk issues.



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INSPECTION METHODOLOGY

Visual Inspection

A systematic visual inspection on the external wall, internal wall and Floor of the Reservoir was undertaken in an attempt to record locations or features associated with deterioration or distress. The purpose of the visual inspection was both to record the general condition of the structure and also specific defects observed.

Diagnostic Testing

Diagnostic testing i.e. Concrete cover meter test, Carbonation drill test and rebound hammer tests were carried out on selected wall locations.

FINDINGS & OBSERVATIONS

Minor repairs noted as below

- External Valves & Pipework is slightly rusted

Following components appears visually to be in sound condition

- External Wall
- External Wall - Concrete/Reo
- External Access Ladder
- Metal Roof
- Roof Access Hatch
- Internal Wall - General
- Internal Wall - Concrete/Reo
- Internal Wall & Floor Joints
- Internal Access Ladder
- Internal Pipework
- Floor Inlet & Scour point

Diagnostic testing indicated sound results as below

- Carbonation Test – **3 tests - all pink**
- Cover meter Test- **50mm, 45mm, 46mm**
- Rebound hammer Test – **57mpa, 44mpa, 45mpa**



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CONDITION ASSESSMENT RATING

| SL NO | ITEM DESCRIPTION | DEFECTS | GRADING KEY | REMARKS |
|-------|------------------------------|---------------------|-------------|--|
| 1 | External Wall - General | | 2 - Good | |
| 2 | External Wall - Concrete/Reo | | 2 - Good | |
| 3 | External Access Ladder | | 2 - Good | |
| 4 | Metal Roof | | 2 - Good | |
| 5 | Roof Access Hatch | | 2 - Good | |
| 6 | External Valves & Pipework | Slight rust present | 3 - Fair | |
| 7 | Internal Wall - General | | 2 - Good | |
| 8 | Internal Wall - Concrete/Reo | | 6 - N/A | Unable To See reservoir is full of water |
| 9 | Internal Wall & Floor Joints | | 6 - N/A | Unable To See reservoir is full of water |
| 10 | Internal Access Ladder | | 2 - Good | |
| 11 | Internal Pipework | | 6 - N/A | Unable To See reservoir is full of water |
| 12 | Floor Inlet & Scour point | | 6 - N/A | Unable To See reservoir is full of water |

| | |
|---------------|--|
| 1 - Excellent | No visible defects |
| 2 - Good | Slightly defective or deteriorated components |
| 3 - Fair | Moderately defective or deteriorated components |
| 4 - Poor | Defective or deteriorated components in need of repair/replacement |
| 5 - Bad | Seriously damaged components in need of immediate repair/replacement |
| 6 - N/A | Not Applicable |

DEFECTS & REPAIRS BASED ON SITE INSPECTION

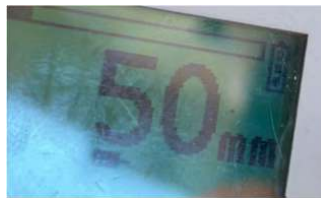
- **Rust Repairs on External Valves & Pipework - Abrasive Grit Blast and Coat with Anti corrosive coating**

SITE PHOTOS





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CARTWRIGHTS HILL RESERVOIR**INSPECTION DETAILS**

- Inspected By – Jasper Watt
- Inspected On – Mon 19th February 2024

**SCOPE OF SERVICES**

Scope of services included the following:

- Carry out Visual inspection of the External and Internal surfaces of the Reservoir limited to those parts of the structure that is readily and safely accessible.
- Limited diagnostic testing - Concrete cover meter test, Carbonation drill test and rebound hammer - Tests (approx. 3 tests each) on selected wall locations
- Preparation and submission of Condition Assessment Report including Photos & Rating

The reporting will generically document the Reservoir condition and/or defects and risk issues.



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INSPECTION METHODOLOGY

Visual Inspection

A systematic visual inspection on the external wall, internal wall and Floor of the Reservoir was undertaken in an attempt to record locations or features associated with deterioration or distress. The purpose of the visual inspection was both to record the general condition of the structure and also specific defects observed.

Diagnostic Testing

Diagnostic testing i.e. Concrete cover meter test, Carbonation drill test and rebound hammer tests were carried out on selected wall locations.

FINDINGS & OBSERVATIONS

Minor repairs noted as below

- 4 mtr of weeping areas are visible at base of reservoir.
- External surface of the Metal roof and Access hatch is in good condition with few rust spots.
- General corrosion observed on External Pipework and Valves.
- 2 x Support H-Beams causing spalling concrete

Following components appears visually to be in sound condition

- External Access Ladder
- Metal Roof
- Internal Walls
- Internal Concrete/Reo

Diagnostic testing indicated sound results as below

- Carbonation Test – **3 tests - all slightly pink**
- Cover meter Test- **17mm, 24mm, 22mm**
- Rebound hammer Test – **42mpa, 46mpa, 46mpa**



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CONDITION ASSESSMENT RATING

| SL NO | ITEM DESCRIPTION | DEFECTS | GRADING KEY | REMARKS |
|-------|------------------------------|--|-------------|--|
| 1 | External Wall - General | Spot leaking around reservoir base | 2 - Good | |
| 2 | External Wall - Concrete/Reo | 2 x Roof Support beams are causing spalling concrete | 3 - Fair | |
| 3 | External Access Ladder | | 2 - Good | |
| 4 | Metal Roof | | 2 - Good | |
| 5 | Roof Access Hatch | Moderate Rust Present | 3 - Fair | |
| 6 | External Valves & Pipework | Surface Rust | 2 - Good | |
| 7 | Internal Wall - General | | 2 - Good | |
| 8 | Internal Wall - Concrete/Reo | | 2 - Good | |
| 9 | Internal Wall & Floor Joints | | 6 - N/A | Unable To See reservoir is full of water |
| 10 | Internal Access Ladder | | 2 - Good | |
| 11 | Internal Pipework | | 6 - N/A | Unable To See reservoir is full of water |
| 12 | Floor Inlet & Scour point | | 6 - N/A | Unable To See reservoir is full of water |

| | |
|---------------|--|
| 1 - Excellent | No visible defects |
| 2 - Good | Slightly defective or deteriorated components |
| 3 - Fair | Moderately defective or deteriorated components |
| 4 - Poor | Defective or deteriorated components in need of repair/replacement |
| 5 - Bad | Seriously damaged components in need of immediate repair/replacement |
| 6 - N/A | Not Applicable |



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SITE PHOTOS



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MATONG RESERVOIR**INSPECTION DETAILS**

- Inspected By – Jasper Watt
- Inspected On – Tuesday 20th February 2024

**SCOPE OF SERVICES**

Scope of services included the following:

- Carry out Visual inspection of the External and Internal surfaces of the Reservoir limited to those parts of the structure that is readily and safely accessible.
- Limited diagnostic testing - Concrete cover meter test, Carbonation drill test and rebound hammer - Tests (approx. 3 tests each) on selected wall locations
- Preparation and submission of Condition Assessment Report including Photos & Rating

The reporting will generically document the Reservoir condition and/or defects and risk issues.



INSPECTION METHODOLOGY

Visual Inspection

A systematic visual inspection on the external wall, internal wall and Floor of the Reservoir was undertaken in an attempt to record locations or features associated with deterioration or distress. The purpose of the visual inspection was both to record the general condition of the structure and also specific defects observed.

Diagnostic Testing

Diagnostic testing i.e. Concrete cover meter test, Carbonation drill test and rebound hammer tests were carried out on selected wall locations.

FINDINGS & OBSERVATIONS

Repairs noted as below

- Construction Joint failed and needs to be repaired

Following components appears visually to be in sound condition

- External Access Ladder
- Metal Roof
- Roof Access Hatch
- External Valves & Pipework
- Internal Wall – General
- Internal Wall - Concrete/Reo

Diagnostic testing indicated sound results as below

- Carbonation Test – **3 test - 7mm deep - still not pink**
- Cover meter Test – **63mm, 59mm, 66mm**
- Rebound hammer Test – **46mpa, 44mpa, 46mpa**



CONDITION ASSESSMENT RATING

| SL NO | ITEM DESCRIPTION | DEFECTS | GRADING KEY | REMARKS |
|-------|------------------------------|---------------------------|-------------|---|
| 1 | External Wall - General | | 2 - Good | |
| 2 | External Wall - Concrete/Reo | Construction Joint failed | 4 - Poor | |
| 3 | External Access Ladder | | 2 - Good | |
| 4 | Metal Roof | | 2 - Good | |
| 5 | Roof Access Hatch | Slight Rust present | 3 - Fair | |
| 6 | External Valves & Pipework | | 2 - Good | |
| 7 | Internal Wall - General | | 2 - Good | |
| 8 | Internal Wall - Concrete/Reo | | 2 - Good | |
| 9 | Internal Wall & Floor Joints | | 6 N/A | Unable to see Reservoir was full of water |
| 10 | Internal Access Ladder | | 6 - N/A | Unable to see Reservoir was full of water |
| 11 | Internal Pipework | | 6 - N/A | Unable to see Reservoir was full of water |
| 12 | Floor Inlet & Scour point | | 6 - N/A | Unable to see Reservoir was full of water |

| | |
|--------------|--|
| 1- Excellent | No visible defects |
| 2 - Good | Slightly defective or deteriorated components |
| 3 - Fair | Moderately defective or deteriorated components |
| 4 - Poor | Defective or deteriorated components in need of repair/replacement |
| 5 - Bad | Seriously damaged components in need of immediate repair/replacement |
| 6 - N/A | Not Applicable |



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SITE PHOTOS





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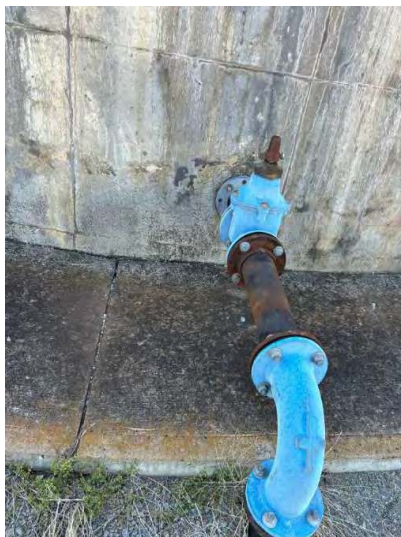


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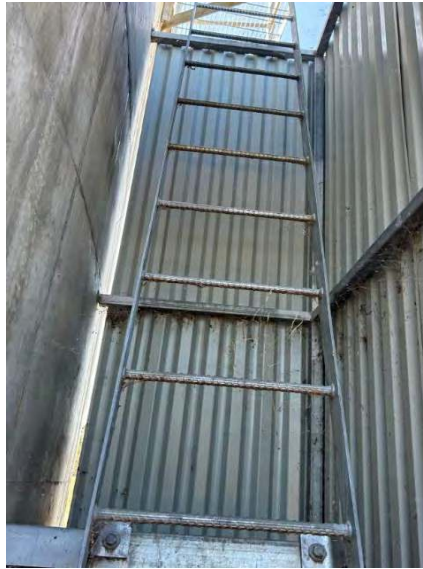


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Appendix D - External Auditor Report Summary

Table 44. External auditor report summary

| Number | Issue | Risk Rating | Recommendation | Management Response | Responsible Person | Action Date |
|--------|------------------------------------|-------------|---|--|-------------------------------|-------------|
| 1 | Bulk User Service Level Agreements | Medium | a) Formal service level agreements be developed and implemented for Council's bulk water users; and b) This action be included in the Action and Improvement Plan within the Drinking Water Management System | Staff have submitted a request to Public Health for the engagement of an external facilitator to undertake the development of a new Service Level Agreement between GWCC and its Bulk Customers. Project to commence upon approval from Public Health for funding of the Consultant. | Manager Production & Services | Aug-20 |
| 2 | Complaints Management | Medium | Investigate options for a complaints handling system that integrates with Council's Asset Management and GIS Systems, and meets the requirements of the framework for the management of drinking water and Council's performance. | Management is unaware if a fully integrated complaints management system exists that could be implemented within GWCC cost effectively. However, Management will seek to improve its current capture of complaints through a more secure reporting system. This could be undertaken through tools such as Civica or WaterOutlook | Manager Corporate Services | Jun-21 |



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| Number | Issue | Risk Rating | Recommendation | Management Response | Responsible Person | Action Date |
|--------|-----------------------------|-------------|--|--|-------------------------------|-------------|
| 3 | Emergency Response Training | Medium | Incident and emergency response plan training be developed and referred to in the Drinking Water Management System and undertaken by relevant employees and external stakeholders. | Management have issued a request for this scenario training to be funded and facilitated through Public Health. If funding and facilitated by Health GWCC will seek to undertake the training as soon as practicably possible. It should be noted that internal training is undertaken annually for emergency response management at the Jugiong Water Treatment Plant as part of Council's Pollution Incident Response Management Plan. | Manager Production & Services | Dec-20 |
| 4 | Backflow Prevention | Medium | a) The Backflow Prevention Policy be referred to within the Drinking Water Management System; and b) Backflow device register be updated as required in accordance with the Backflow Prevention Policy (PP06). | Staff will include Backflow Prevention commentary within the DWMS Annual Report which is set to be completed and submitted to Council by December 2019. | Manager Production & Services | Ongoing |



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| Number | Issue | Risk Rating | Recommendation | Management Response | Responsible Person | Action Date |
|--------|---|-------------|--|---|-------------------------------|-------------|
| 5 | Water Quality Reporting | Low | Consideration be given to making water quality information publicly available. For example, through the formal reporting to Council meetings, and/or making the DWMS Annual Reporting information available on Council's website. | Staff will submit the Annual DWMS Report to Council for acknowledgment between October and December every year. | Manager Production & Services | Ongoing |
| 6 | Drinking Water Management System Review | Low | a) Following the annual review, the Drinking Water Management System be updated to reflect any changes that have been made; and b) Evidence of any review be retained such as meeting minutes, investigative studies, and reports to Council's Senior Management Team and/or Board Members. | As per item 5 above. Staff will submit the Annual report to Council between the October and December period. The report will highlight any issues, modifications and achievements gained throughout the year. | Manager Production & Services | Ongoing |



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| Number | Issue | Risk Rating | Recommendation | Management Response | Responsible Person | Action Date |
|--------|----------------------|-------------|--|---|-------------------------------|-------------|
| 7 | Evaluation and Audit | Low | a) Consult with the Local Public Health Unit to clarify their expectations regarding independent audit requirements; and b) Detail the scope and frequency of the independent audit of the Drinking Water Management System (DWMS) in the DWMS. | Management are constantly engaged with Public Health and have formally requested a recommendation for a fixed auditing period. No fixed period has been provided, with feedback stating that a requirement for an independent and external audit will be required when Health direct GWCC to do so. | Manager Production & Services | Complete |

PFAS results in water quality results section



Appendix E: Water Quality Monitoring Program

Below is the 2024 Water Quality Monitoring Program for Pesticides, Comprehensive Chemical and Radiological Analysis for all Drinking Water Schemes

GOLDENFIELDS WATER COUNTY COUNCIL

WATER SAMPLING PROGRAM (JAN. 2024).

PESTICIDE – BI-ANNUAL CHEMICAL ANALYSIS – MONTHLY BORES & ALGAL.

PESTICIDE ANALYSIS.

January ---- 13 Grong Grong

February ----6 Weethalle, 7 Barmedman,8 Calleen.

April ---- All Bores; Oura, Mt Arthur, Mt Daylight and 5 Jugiong W.T.P. Raw Water intake.

July ----9 Ungarie, 11 Wyalong, Hylands Bridge.

BI-ANNUAL CHEMICAL ANALYSIS.

February ---- (424Weethalle allocated sample) 17 Temora retic,19 Barmedman,20 Calleen,21 Ungarie. 22 West Wyalong retic, 23 Wyalong retic.

March ---- 25 Junee retic,26 Barellan, 27 Bethungra, 29 Ganmain,30 Matong, 31 Grong Grong, 32 Stockinbingal and 33 Wallendbeen. (213Coolamon allocated sample)

April ---- 3 Junee B/T No1. inlet, 4 Temora B/T inlet, 5 Wyalong B/T inlet, 12 Ardlethan, 13 Beckom,14 Marrar,15 Aria Park,16 Illabo, (Jugiong c.w.Pump Station outlet allocated sample) 8 Cowangs Reservoir Outlet, 9 Coota Bradman st, 10 Harden Town Meter Offtake,11 Young T/S.

July ----(424Weethalle allocated sample) 17 Temora retic,19 Barmedman,20 Calleen, 21 Ungarie, 22 West Wyalong retic, 23 Wyalong retic.

September ----25 Junee,26 Barellan,27 Bethungra, 29 Ganmain,30 Matong,31 Grong Grong, 32 Stockinbingal and 33 Wallendbeen. (213Coolamon allocated sample)

October ---- 3 Junee B/T No1. inlet, 4 Temora B/T inlet, 5 Wyalong B/T, 12 Ardlethan, 13 Beckom, 14 Marrar, 15 Aria Park, 16 Illabo, (Jugiong c.w. Pump Station outlet, allocated sample) 8 Cowangs Reservoir Outlet, 9 Coota Bradman st, 10 Harden Town Meter Off take, 11 Young T/S.

Oura Pump station outlet, allocated sample collected monthly in conjunction with Fluoride testing.

Jugiong Raw and finish water during poor quality instances in river.

Jugiong monthly river, raw water, clarified, filtered, finished.

Raw Water SAMPLING (comprehensive Chemical)



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Monthly - Oura Bores, Matong Bores Mt Daylight Bores,

Six Monthly - Hylands Bridge.

Blue green Algae testing Jugiong, Hylands Bridge seasonal (summer monthly)

RADIOLOGICAL TESTING: - BORES every 2 years. SURFACE WATER every 5 years.



| GOLDENFIELDS WATER COUNTY COUNCIL | | | | | | |
|--|--|------|----------------------|-------------------------|--------------------|--------|
| Microbiological Analysis Sampling 2024 | | | | | | |
| MONTH | DAY | DATE | SOURCE | NUMBERS | | RUN No |
| | | | | DELIVERY TO Wagga Wagga | DELIVERY TO Temora | |
| JANUARY | WEDNESDAY | 10 | Ariah Park--Coolamon | 11 | 15 | 1 |
| | WEDNESDAY | 17 | Young Cootamundra | 6 | 15 | 1 |
| | WEDNESDAY | 17 | Temora--June | 9 | 21 | 1 |
| | Wednesday | 24 | Wyalong--Daylight | 8 | 15 | 1 |
| | WEDNESDAY | 31 | Ariah Park--Coolamon | 11 | 15 | 2 |
| FEBRUARY | WEDNESDAY | 7 | Young--Cootamundra | 6 | 15 | 2 |
| | WEDNESDAY | 14 | Temora--June | 9 | 21 | 2 |
| | WEDNESDAY | 14 | Wyalong--Daylight | 8 | 15 | 2 |
| | WEDNESDAY | 21 | Ariah Park--Coolamon | 11 | 15 | 3 |
| | WEDNESDAY | 28 | Young--Cootamundra | 6 | 15 | 3 |
| MARCH | WEDNESDAY | 6 | Temora--June | 9 | 21 | 3 |
| | WEDNESDAY | 13 | Wyalong--Daylight | 8 | 15 | 3 |
| | WEDNESDAY | 20 | Ariah Park--Coolamon | 11 | 15 | 1 |
| | WEDNESDAY | 27 | Young--Cootamundra | 6 | 15 | 1 |
| April | WEDNESDAY | 3 | Temora--June | 9 | 21 | 1 |
| | WEDNESDAY | 9 | Wyalong--Daylight | 8 | 15 | 1 |
| | WEDNESDAY | 16 | Ariah Park--Coolamon | 11 | 15 | 2 |
| | WEDNESDAY | 24 | Young--Cootamundra | 6 | 15 | 2 |
| MAY | WEDNESDAY | 1 | Temora--June | 9 | 21 | 2 |
| | WEDNESDAY | 8 | Wyalong--Daylight | 8 | 15 | 2 |
| | WEDNESDAY | 15 | Ariah Park--Coolamon | 11 | 15 | 3 |
| | WEDNESDAY | 22 | Young--Cootamundra | 6 | 15 | 3 |
| | WEDNESDAY | 29 | Temora--June | 9 | 21 | 3 |
| JUNE | WEDNESDAY | 5 | Wyalong--Daylight | 8 | 15 | 3 |
| | WEDNESDAY | 12 | Ariah Park--Coolamon | 11 | 15 | 1 |
| | WEDNESDAY | 19 | Young--Cootamundra | 6 | 15 | 1 |
| | WEDNESDAY | 26 | Temora--June | 9 | 21 | 1 |
| JULY | WEDNESDAY | 3 | Wyalong--Daylight | 8 | 15 | 1 |
| | WEDNESDAY | 10 | Ariah Park--Coolamon | 11 | 15 | 2 |
| | WEDNESDAY | 17 | Young--Cootamundra | 6 | 15 | 2 |
| | WEDNESDAY | 24 | Temora--June | 9 | 21 | 2 |
| | WEDNESDAY | 31 | Wyalong--Daylight | 8 | 15 | 2 |
| AUGUST | WEDNESDAY | 7 | Ariah Park--Coolamon | 11 | 15 | 3 |
| | WEDNESDAY | 14 | Young--Cootamundra | 6 | 15 | 3 |
| | WEDNESDAY | 21 | Temora--June | 9 | 21 | 3 |
| | WEDNESDAY | 28 | Wyalong--Daylight | 8 | 15 | 3 |
| SEPTEMBER | WEDNESDAY | 4 | Ariah Park--Coolamon | 11 | 15 | 1 |
| | WEDNESDAY | 11 | Young--Cootamundra | 6 | 15 | 1 |
| | WEDNESDAY | 18 | Temora--June | 9 | 21 | 1 |
| | WEDNESDAY | 25 | Wyalong--Daylight | 8 | 15 | 1 |
| OCTOBER | WEDNESDAY | 2 | Ariah Park--Coolamon | 11 | 15 | 2 |
| | WEDNESDAY | 9 | Young--Cootamundra | 6 | 15 | 2 |
| | WEDNESDAY | 16 | Temora--June | 9 | 21 | 2 |
| | WEDNESDAY | 23 | Wyalong--Daylight | 8 | 15 | 2 |
| | WEDNESDAY | 30 | Ariah Park--Coolamon | 11 | 15 | 3 |
| NOVEMBER | WEDNESDAY | 6 | Young--Cootamundra | 6 | 15 | 3 |
| | WEDNESDAY | 13 | Temora--June | 9 | 21 | 3 |
| | WEDNESDAY | 20 | Wyalong--Daylight | 8 | 15 | 3 |
| | WEDNESDAY | 27 | Ariah Park--Coolamon | 11 | 15 | 1 |
| DECEMBER | WEDNESDAY | 4 | Young--Cootamundra | 6 | 15 | 1 |
| | WEDNESDAY | 11 | Temora--June | 9 | 21 | 1 |
| | TUESDAY | 17 | Wyalong--Daylight | 8 | 15 | 1 |
| | Numbers to Temora local lab will increase with the additions of Mirrool and Mandamah on runs Additionally Routine Raw Water source testing with Jugiong tested monthly. | | | | | |
| NOTE | Samples for Health Department are on a four weekly cycle. Minor variations will occur due to Laboratory closures etc. samples delivered to Wagga base hospital Greater Murray Water testing Laboratory | | | | | |
| | Robert Johnson | | | | | |
| | Senior Hospital Scientist/Microbiology NSW Health Pathology | | | | | |
| | Wagga Wagga Base Hospital, Edward St, Wagga Wagga NSW 2650 | | | | | |
| | Tel (02) 69336737 Fax (02) 336744 mailto:robert.johnson@health.nsw.gov.au | | | | | |
| | Tony Coby | | | | | |



Appendix F: PFAS Sampling Results

Sample Reference 24Jun-0150 = Oura Bore 2

Sample Reference 24Jun-0151 = Oura Bore 3

Sample Reference 24Jun-0152 = Jugiong River

Sample Reference 24Jun-0153 = Jugiong Clear Water

| | | |
|--|-----------------------------|---------------------------|
| Attention : MICHAEL GLAZIER | Sampled By : CLIENT | |
| Project Name : | | |
| Your Client Services Manager : Danny Slee | Phone : 02 9449 0169 | |
| Lab Reg No. | Sample Ref | Sample Description |
| N24/014205 | 24JUN-0150 | WATER 19.06.24 |
| N24/014206 | 24JUN-0151 | WATER 21.06.24 |
| N24/014207 | 24JUN-0152 | WATER 18.06.24 |
| N24/014208 | 24JUN-0153 | WATER 18.06.24 |

| Lab Reg No. | | N24/014205 | N24/014206 | N24/014207 | N24/014208 | |
|---|-------|-------------|-------------|-------------|-------------|--------|
| Date Sampled | | 19-JUN-2024 | 21-JUN-2024 | 18-JUN-2024 | 18-JUN-2024 | |
| Sample Reference | | 24JUN-0150 | 24JUN-0151 | 24JUN-0152 | 24JUN-0153 | |
| | Units | | | | | Method |
| PFAS (per-and poly-fluoroalkyl substances) | | | | | | |
| PFBA (375-22-4) | ug/L | <0.05 | <0.05 | <0.05 | <0.05 | NR70 |
| PFPeA (2706-90-3) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFHxA (307-24-4) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFHpA (375-85-9) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFOA (335-67-1) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFNA (375-95-1) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFDA (335-76-2) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFUdA (2058-94-8) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFDoA (307-55-1) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFTrDA (72629-94-8) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFTeDA (376-06-7) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFHxDA (67905-19-5) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFODA (16517-11-6) | ug/L | <0.05 | <0.05 | <0.05 | <0.05 | NR70 |
| FOUEA (70887-84-2) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFDS (335-77-3) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFPeS (2706-91-4) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFHxS (355-46-4) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFHpS (375-92-8) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFOS (1763-23-1) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFNS (68259-12-1) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFBS (375-73-5) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFOSA (754-91-6) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| N-MeFOSA (31506-32-8) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| N-EtFOSA (4151-50-2) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| N-MeFOSAA (2355-31-9) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| N-EtFOSAA(2991-50-6) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| N-MeFOSE (24448-09-7) | ug/L | <0.05 | <0.05 | <0.05 | <0.05 | NR70 |



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Report No. RN1433795

| Lab Reg No. | | N24/014205 | N24/014206 | N24/014207 | N24/014208 | |
|---|-------|-------------|-------------|-------------|-------------|--------|
| Date Sampled | | 19-JUN-2024 | 21-JUN-2024 | 18-JUN-2024 | 18-JUN-2024 | |
| Sample Reference | | 24JUN-0150 | 24JUN-0151 | 24JUN-0152 | 24JUN-0153 | |
| | Units | | | | | Method |
| PFAS (per- and poly-fluoroalkyl) substances) | | | | | | |
| N-EtFOSE (1691-99-2) | ug/L | <0.05 | <0.05 | <0.05 | <0.05 | NR70 |
| 4:2 FTS (757124-72-4) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| 6:2 FTS (27619-97-2) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| 8:2 FTS (39108-34-4) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| 10:2 FTS (120226-60-0) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| 8:2 diPAP (678-41-1) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFBA (Surrogate Recovery) | % | 120 | 126 | 125 | 121 | NR70 |
| PFPeA (Surrogate Recovery) | % | 123 | 129 | 133 | 138 | NR70 |
| PFHxA (Surrogate Recovery) | % | 122 | 127 | 120 | 123 | NR70 |
| PFHpA (Surrogate Recovery) | % | 114 | 124 | 124 | 118 | NR70 |
| PFOA (Surrogate Recovery) | % | 116 | 119 | 129 | 127 | NR70 |
| PFNA (Surrogate Recovery) | % | 96 | 108 | 113 | 98 | NR70 |
| PFDA (Surrogate Recovery) | % | 92 | 101 | 105 | 99 | NR70 |
| PFUdA (Surrogate Recovery) | % | 59 | 71 | 82 | 73 | NR70 |
| PFDoA (Surrogate Recovery) | % | 43 | 56 | 63 | 52 | NR70 |
| PFTeDA (Surrogate Recovery) | % | 49 | 60 | 63 | 45 | NR70 |
| PFHxDA (Surrogate Recovery) | % | 68 | 80 | 86 | 82 | NR70 |
| FOUEA (Surrogate Recovery) | % | 65 | 77 | 79 | 87 | NR70 |
| PFBS (Surrogate Recovery) | % | 118 | 120 | 114 | 118 | NR70 |
| PFHxS (Surrogate Recovery) | % | 116 | 115 | 119 | 127 | NR70 |
| PFOS (Surrogate Recovery) | % | 106 | 118 | 114 | 125 | NR70 |
| PFOSA (Surrogate Recovery) | % | 53 | 79 | 61 | 47 | NR70 |
| N-MeFOSA (Surrogate Recovery) | % | 26 | 35 | 28 | 25 | NR70 |
| N-EtFOSA (Surrogate Recovery) | % | 24 | 35 | 26 | 24 | NR70 |
| N-MeFOSAA (Surrogate Recovery) | % | 42 | 52 | 56 | 46 | NR70 |
| N-EtFOSAA (Surrogate Recovery) | % | 40 | 54 | 52 | 40 | NR70 |
| N-MeFOSE (Surrogate Recovery) | % | 44 | 58 | 43 | 43 | NR70 |
| N-EtFOSE (Surrogate Recovery) | % | 43 | 59 | 44 | 42 | NR70 |
| 4:2 FTS (Surrogate Recovery) | % | 109 | 105 | 139 | 120 | NR70 |
| 6:2 FTS (Surrogate Recovery) | % | 92 | 86 | 114 | 111 | NR70 |
| 8:2 FTS (Surrogate Recovery) | % | 75 | 100 | 88 | 85 | NR70 |
| 8:2 diPAP (Surrogate Recovery) | % | 52 | 69 | 74 | 64 | NR70 |
| Dates | | | | | | |
| Date extracted | | 3-JUL-2024 | 3-JUL-2024 | 3-JUL-2024 | 3-JUL-2024 | |
| Date analysed | | 3-JUL-2024 | 3-JUL-2024 | 3-JUL-2024 | 3-JUL-2024 | |

N24/014205
to
N24/014208



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Sample Reference 24May-0309 = Oura Bore 2

Sample Reference 24May-0310 = Oura Bore 4

| | | | |
|---------------------------------------|---|---------------------------|---------------|
| Client : | CHARLES STURT UNIVERSITY BOOROOMA STREET WAGGA WAGGA NSW 2678 | Job No. : | CHAR06/240605 |
| Attention : | MICHAEL GLAZIER | Quote No. : | QT-02257 |
| Project Name : | | Order No. : | PU151787 |
| Your Client Services Manager : | Danny Slee | Date Received : | 05-JUN-2024 |
| | | Sampled By : | CLIENT |
| | | Phone : | |
| Lab Reg No. | Sample Ref | Sample Description | |
| N24/O12579 | 24MAY-0309 | WATER 30.05.24 | |
| N24/O12580 | 24MAY-0310 | WATER 30.05.24 | |

| Lab Reg No. | | N24/O12579 | N24/O12580 | | | |
|---|-------|-------------|-------------|--|--|--------|
| Date Sampled | | 30-MAY-2024 | 30-MAY-2024 | | | |
| Sample Reference | Units | 24MAY-0309 | 24MAY-0310 | | | Method |
| PFAS (per-and poly-fluoroalkyl substances) | | | | | | |
| PFBA (375-22-4) | ug/L | <0.05 | <0.05 | | | NR70 |
| PFPeA (2706-90-3) | ug/L | <0.02 | <0.02 | | | NR70 |
| PFHxA (307-24-4) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFHpA (375-85-9) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFOA (335-67-1) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFNA (375-95-1) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFDA (335-76-2) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFUdA (2058-94-8) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFDoA (307-55-1) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFTrDA (72629-94-8) | ug/L | <0.02 | <0.02 | | | NR70 |
| PFTeDA (376-06-7) | ug/L | <0.02 | <0.02 | | | NR70 |
| PFHxDA (67905-19-5) | ug/L | <0.02 | <0.02 | | | NR70 |
| PFODA (16517-11-6) | ug/L | <0.05 | <0.05 | | | NR70 |
| FOUEA (70887-84-2) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFDS (335-77-3) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFPeS (2706-91-4) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFHxS (355-46-4) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFHpS (375-92-8) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFOS (1763-23-1) | ug/L | <0.02 | <0.02 | | | NR70 |
| PFNS (68259-12-1) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFBS (375-73-5) | ug/L | <0.01 | <0.01 | | | NR70 |
| PFOSA (754-91-6) | ug/L | <0.01 | <0.01 | | | NR70 |
| N-MeFOSA (31506-32-8) | ug/L | <0.02 | <0.02 | | | NR70 |
| N-EtFOSA (4151-50-2) | ug/L | <0.02 | <0.02 | | | NR70 |
| N-MeFOSAA (2355-31-9) | ug/L | <0.01 | <0.01 | | | NR70 |
| N-EtFOSAA(2991-50-6) | ug/L | <0.01 | <0.01 | | | NR70 |
| N-MeFOSE (24448-09-7) | ug/L | <0.05 | <0.05 | | | NR70 |
| N-EtFOSE (1691-99-2) | ug/L | <0.05 | <0.05 | | | NR70 |
| 4:2 FTS (757124-72-4) | ug/L | <0.01 | <0.01 | | | NR70 |



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| Lab Reg No. | | N24/012579 | N24/012580 | | |
|---|-------|-------------|-------------|--|--------|
| Date Sampled | | 30-MAY-2024 | 30-MAY-2024 | | |
| Sample Reference | | 24MAY-0309 | 24MAY-0310 | | |
| | Units | | | | Method |
| PFAS (per-and poly-fluoroalkyl substances) | | | | | |
| 6:2 FTS (27619-97-2) | ug/L | <0.01 | <0.01 | | NR70 |
| 8:2 FTS (39108-34-4) | ug/L | <0.01 | <0.01 | | NR70 |
| 10:2 FTS (120226-60-0) | ug/L | <0.01 | <0.01 | | NR70 |
| 8:2 diPAP (678-41-1) | ug/L | <0.02 | <0.02 | | NR70 |
| PFBA (Surrogate Recovery) | % | 106 | 114 | | NR70 |
| PFPeA (Surrogate Recovery) | % | 99 | 111 | | NR70 |
| PFHxA (Surrogate Recovery) | % | 104 | 115 | | NR70 |
| PFHpA (Surrogate Recovery) | % | 104 | 106 | | NR70 |
| PFOA (Surrogate Recovery) | % | 104 | 114 | | NR70 |
| PFNA (Surrogate Recovery) | % | 85 | 88 | | NR70 |
| PFDA (Surrogate Recovery) | % | 72 | 74 | | NR70 |
| PFuDA (Surrogate Recovery) | % | 55 | 58 | | NR70 |
| PFDoA (Surrogate Recovery) | % | 49 | 56 | | NR70 |
| PFTeDA (Surrogate Recovery) | % | 50 | 52 | | NR70 |
| PFHxDA (Surrogate Recovery) | % | 58 | 82 | | NR70 |
| FOUEA (Surrogate Recovery) | % | 65 | 65 | | NR70 |
| PFBS (Surrogate Recovery) | % | 103 | 111 | | NR70 |
| PFHxS (Surrogate Recovery) | % | 101 | 105 | | NR70 |
| PFOS (Surrogate Recovery) | % | 81 | 88 | | NR70 |
| PFOSA (Surrogate Recovery) | % | 48 | 54 | | NR70 |
| N-MeFOSA (Surrogate Recovery) | % | 33 | 33 | | NR70 |
| N-EtFOSA (Surrogate Recovery) | % | 32 | 34 | | NR70 |
| N-MeFOSAA (Surrogate Recovery) | % | 50 | 49 | | NR70 |
| N-EtFOSAA (Surrogate Recovery) | % | 52 | 48 | | NR70 |
| N-MeFOSE (Surrogate Recovery) | % | 51 | 54 | | NR70 |
| N-EtFOSE (Surrogate Recovery) | % | 49 | 60 | | NR70 |
| 4:2 FTS (Surrogate Recovery) | % | 99 | 97 | | NR70 |
| 6:2 FTS (Surrogate Recovery) | % | 92 | 86 | | NR70 |
| 8:2 FTS (Surrogate Recovery) | % | 54 | 62 | | NR70 |
| 8:2 diPAP (Surrogate Recovery) | % | 36 | 57 | | NR70 |
| Dates | | | | | |
| Date extracted | | 12-JUN-2024 | 12-JUN-2024 | | |
| Date analysed | | 12-JUN-2024 | 12-JUN-2024 | | |

N24/012579
to
N24/012580

PFOS and PFHxS are quantified using a combined branched and linear standard.



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Sample Reference 23 Nov-0048 = Oura Bore 2

Sample Reference 23 Nov-0049 = Oura Bore 3

Sample Reference 23 Nov-0050 = Oura Bore 4

Sample Reference 23 Nov-0051 = Oura Bore 6

| | | | | | |
|---|-------------------|---|--|--|--|
| Client : CHARLES STURT UNIVERSITY BOOROOMA STREET WAGGA WAGGA NSW 2678 | | Job No. : CHAR06/231103/1 Quote No. : QT-02232 Order No. : Date Received : 03-NOV-2023 Sampled By : CLIENT | | | |
| Attention : MICHAEL GLAZIER Project Name : Your Client Services Manager : Danny Slee | | Phone : 02 9449 0169 | | | |
| Lab Reg No. | Sample Ref | Sample Description | | | |
| N23/023078 | 23NOV-0048 | WATER 30.10.23 | | | |
| N23/023079 | 23NOV-0049 | WATER 30.10.23 | | | |
| N23/023080 | 23NOV-0050 | WATER 30.10.23 | | | |
| N23/023081 | 23NOV-0051 | WATER 30.10.23 | | | |

| Lab Reg No. | | N23/023078 | N23/023079 | N23/023080 | N23/023081 | |
|---|-------|-------------|-------------|-------------|-------------|--------|
| Date Sampled | | 30-OCT-2023 | 30-OCT-2023 | 30-OCT-2023 | 30-OCT-2023 | |
| Sample Reference | Units | 23NOV-0048 | 23NOV-0049 | 23NOV-0050 | 23NOV-0051 | Method |
| PFAS (per-and poly-fluoroalkyl substances) | | | | | | |
| PFBA (375-22-4) | ug/L | <0.05 | <0.05 | <0.05 | <0.05 | NR70 |
| PFPeA (2706-90-3) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFHxA (307-24-4) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFHpA (375-85-9) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFOA (335-07-1) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFNA (375-95-1) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFDA (335-76-2) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFUdA (2058-94-8) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFDoA (307-55-1) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFTrDA (72629-94-8) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFTeDA (376-06-7) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFHxDA (67905-19-5) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFODA (16517-11-6) | ug/L | <0.05 | <0.05 | <0.05 | <0.05 | NR70 |
| FOUEA (70887-84-2) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFDS (335-77-3) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFPeS (2706-91-4) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFHxS (355-46-4) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFHpS (375-92-8) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFOS (1763-23-1) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFNS (68259-12-1) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFBS (375-73-5) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| PFOSA (754-91-6) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| N-MeFOSA (31506-32-8) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| N-EtFOSA (4151-50-2) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| N-MeFOSAA (2355-31-9) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| N-EtFOSAA(2991-50-6) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| N-MeFOSE (24448-09-7) | ug/L | <0.05 | <0.05 | <0.05 | <0.05 | NR70 |



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REPORT OF ANALYSIS

Page: 2 of 3
Report No. RN1410892

| Lab Reg No. | | N23/023078 | N23/023079 | N23/023080 | N23/023081 | |
|---|-------|-------------|-------------|-------------|-------------|--------|
| Date Sampled | | 30-OCT-2023 | 30-OCT-2023 | 30-OCT-2023 | 30-OCT-2023 | |
| Sample Reference | | 23NOV-0048 | 23NOV-0049 | 23NOV-0050 | 23NOV-0051 | |
| | Units | | | | | Method |
| PFAS (per-and poly-fluoroalkyl substances) | | | | | | |
| N-EtFOSE (1691-99-2) | ug/L | <0.05 | <0.05 | <0.05 | <0.05 | NR70 |
| 4:2 FTS (757124-72-4) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| 6:2 FTS (27619-97-2) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| 8:2 FTS (39108-34-4) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| 10:2 FTS (120226-60-0) | ug/L | <0.01 | <0.01 | <0.01 | <0.01 | NR70 |
| 8:2 diPAP (678-41-1) | ug/L | <0.02 | <0.02 | <0.02 | <0.02 | NR70 |
| PFBA (Surrogate Recovery) | % | 111 | 108 | 104 | 106 | NR70 |
| PFPeA (Surrogate Recovery) | % | 101 | 101 | 101 | 101 | NR70 |
| PFHxA (Surrogate Recovery) | % | 115 | 113 | 104 | 115 | NR70 |
| PFHpA (Surrogate Recovery) | % | 109 | 105 | 106 | 112 | NR70 |
| PFOA (Surrogate Recovery) | % | 109 | 108 | 103 | 108 | NR70 |
| PFNA (Surrogate Recovery) | % | 102 | 97 | 93 | 104 | NR70 |
| PFDA (Surrogate Recovery) | % | 93 | 98 | 88 | 99 | NR70 |
| PFUdA (Surrogate Recovery) | % | 92 | 93 | 84 | 96 | NR70 |
| PFDoA (Surrogate Recovery) | % | 83 | 87 | 77 | 88 | NR70 |
| PFTeDA (Surrogate Recovery) | % | 83 | 81 | 72 | 90 | NR70 |
| PFHxDA (Surrogate Recovery) | % | 116 | 106 | 94 | 110 | NR70 |
| FOUEA (Surrogate Recovery) | % | 93 | 87 | 78 | 91 | NR70 |
| PFBS (Surrogate Recovery) | % | 126 | 116 | 111 | 122 | NR70 |
| PFHxS (Surrogate Recovery) | % | 117 | 116 | 108 | 117 | NR70 |
| PFOS (Surrogate Recovery) | % | 119 | 106 | 108 | 107 | NR70 |
| PFOSA (Surrogate Recovery) | % | 85 | 93 | 79 | 88 | NR70 |
| N-MeFOSA (Surrogate Recovery) | % | 77 | 81 | 71 | 82 | NR70 |
| N-EtFOSA (Surrogate Recovery) | % | 76 | 79 | 67 | 82 | NR70 |
| N-MeFOSAA (Surrogate Recovery) | % | 81 | 82 | 68 | 78 | NR70 |
| N-EtFOSAA (Surrogate Recovery) | % | 85 | 81 | 72 | 76 | NR70 |
| N-MeFOSE (Surrogate Recovery) | % | 98 | 97 | 90 | 104 | NR70 |
| N-EtFOSE (Surrogate Recovery) | % | 90 | 92 | 80 | 93 | NR70 |
| 4:2 FTS (Surrogate Recovery) | % | 121 | 116 | 119 | 122 | NR70 |
| 6:2 FTS (Surrogate Recovery) | % | 106 | 93 | 96 | 102 | NR70 |
| 8:2 FTS (Surrogate Recovery) | % | 100 | 85 | 79 | 88 | NR70 |
| 8:2 diPAP (Surrogate Recovery) | % | 80 | 81 | 73 | 95 | NR70 |
| Dates | | | | | | |
| Date extracted | | 10-NOV-2023 | 10-NOV-2023 | 10-NOV-2023 | 10-NOV-2023 | |
| Date analysed | | 10-NOV-2023 | 10-NOV-2023 | 10-NOV-2023 | 10-NOV-2023 | |

N23/023078
to
N23/023081

15.2 PURCHASE OF NEW WATER MAINS CLEANING TECHNOLOGY**Author:** Production & Services Manager**Authoriser:** Production & Services Manager**Attachments:** Nil**RECOMMENDATION**

That Council

1. Note the information detailed within this report.
2. Approve a project capital budget allocation of \$720,000 (gst excl).
3. Note and approve the additional annual operational budget allocation of \$200,000 required for two additional staff and consumables needed per annum commencing in the 2025/26 financial year.
4. Pursuant to s55(3)(i) of the Local Government Act 1993, the Board considers that due to the unavailability of competitive or reliable tenderers, that a satisfactory result would not be achieved by inviting tenders before entering into a contract for the purchase of a specialised water treatment mains cleaning unit. These extenuating circumstances are specifically due to:
 - (a) Detection Services being the only supplier within Australia that holds the rights to the technology, and
 - (b) Goldenfields Water is unable to develop the technology with another supplier due to Intellectual Property rights.
5. Approve the General Manager and/or their delegate to negotiate a supply agreement for the purchase of a Goldenfields Water owned and operated mobile treatment unit.
6. Report project results back to the Board on a regular basis and provide a final report on the permanent resourcing requirements during the 2026/2027 financial year.

ALIGNMENT WITH BUSINESS ACTIVITY STRATEGIC PLAN

Priority 1 High Quality, Secure and Efficient Water Supplies

BACKGROUND

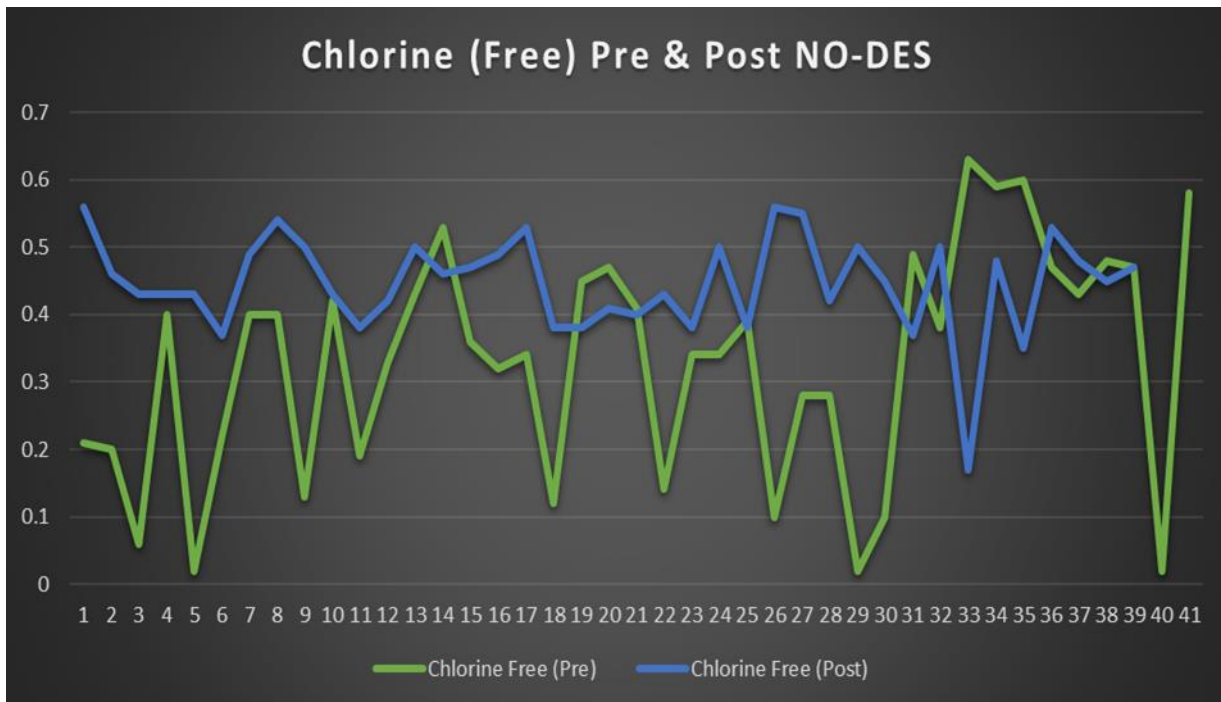
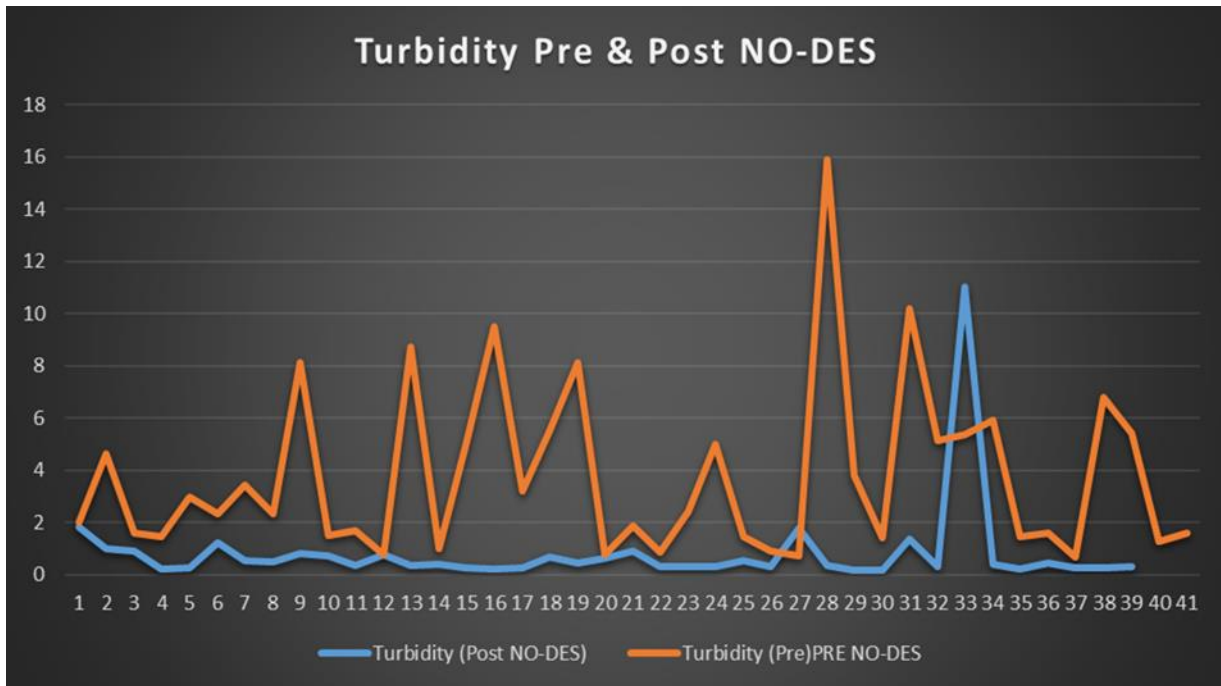
There was a total of 275 complaints made during the financial year 2023/24. The majority of complaints that were made, pertained to discoloured water totalling 222 complaints (80%).

These complaints have historically derived from the townships of Coolamon, Junee and Temora. Currently in order to mitigate against complaints, GWCC invests in cleaning reservoirs and flushing dead ends regularly on both a preventative and reactive cycle.

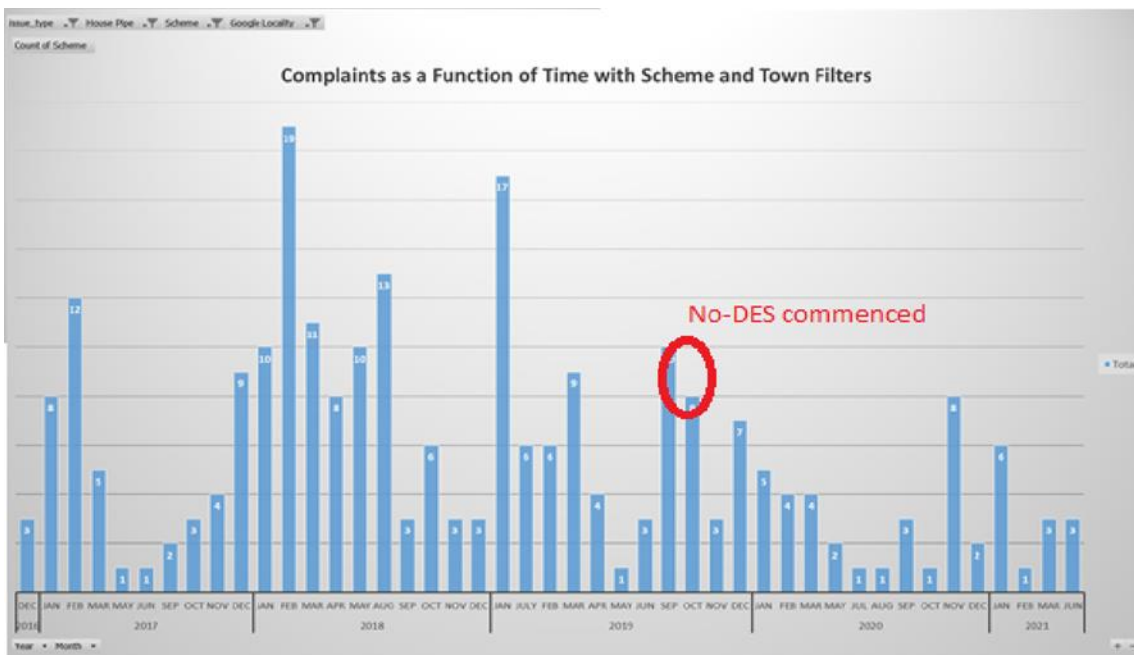
In previous years (2019 & 2022), GWCC had procured the services of No-Des, a contractor that had the ability to clear water mains with no loss of water to the environment and minimised disruptions to the customers. These contractors cleaned approximately 100 km of water mains in the Junee, Coolamon and nearby townships as part of trial process for staff investigating future options.

Whilst undertaking this flushing/cleaning, turbidity levels throughout the town were recorded as high as 171 NTU, with an average of approximately 25 NTU during the operation of the trial. Staff undertook a pre & post chemical analysis of the townships, in order to assess the effectiveness of the technology in resolving some of these issues.

As illustrated within the following graphics, pre and post water chemistry testing was undertaken to validate the utilisation of the system. As is depicted within the images below, the reduction in turbidity was significant after utilisation and the spike detailed from areas 32-34 was due to a burst that occurred at the time. This then correlated into the chlorine residual consistency detailed in lower graphic.



As you can see from the below customer complaint trends, a reduction in peak complaints during the period following cleaning achieved a significant reduction in complaints.



REPORT

With a successful trial of the system, Goldenfields Staff have previously workshopped with the Board to investigate the opportunity to purchase the technology. Staff have been working closely with Detection Services in order to try and negotiate the possibility of the purchase with the unit owned and operated by the County Council.

In mid-2024, staff visited Detection Services in Queensland where the design and manufacture of a new unit was currently underway and being commissioned for their New Zealand team.

Staff noted numerous modifications that it would require in order to purchase a unit at the satisfactory of Council. Namely larger filtration system, mechanical and electrical standardisation and separated generator system due to weight restrictions.

A price has been provided in principle for the system, which was within previous budgetary allocations, where \$500,000 was carried from previous years within Councils plant budget.

Staff have requested the removal of the generator and the purchase of the truck from the request to supply, as this will allow staff to tender/quote these provisions as per the requirements under the Local Government Act and associated regulation. However, as recommended in this report, an exemption from tendering will be required for the manufacture and supply of a No-Des unit.

Staff are currently working with Detection Services in how, Terms and Conditions of the purchase would need to be accommodated, noting the Intellectual Property rights and the potential limits of operating within our servicing footprint to our constituent councils and associated customers. Once the Board provides final approval for the project to proceed, staff will look to negotiate and finalise this process as soon as possible.

It is expected that the project will require two additional operational staff to run the unit under the current Production & Services structure for a two-year trial basis. Once the project has been proven successful, a permanent structure will be reported back to the Board for approval.

Noting previous costs to hire and engage contractors to undertake this work once per annum, the project is expected to provide a return on investment within 6-8 years. The asset purchase will have an associated minimum life of 15 years and has the additional value-added option of undertaking councils' mains disinfection process, saving additional costs on a separate chlorine dosing unit.

FINANCIAL IMPACT STATEMENT

The recommendation imposes an additional allocation of \$220,000 on top of the previously allocated \$500,000 in capital from the plant budget and an additional allocation of \$200,000 of operational costs per annum for resourcing and consumables commencing in the 2025/26 financial year.

15.3 WATER PRODUCTION REPORT

Author: Water Quality Technical Officer
Authoriser: Production & Services Manager
Attachments: Nil

RECOMMENDATION

That Council receive and note the Water Production Report

ALIGNMENT WITH BUSINESS ACTIVITY STRATEGIC PLAN

Priority 3 A Healthy Natural Environment

BACKGROUND

Goldenfields Water provides the essential water requirements of about 40,000 people spread over an area in excess of 20,000 square kilometres between the Lachlan & Murrumbidgee Rivers in the South West of NSW.

Goldenfields Waters' supply system consists of five separate water schemes, Jugiong, Oura, Mt Arthur, Mt Daylight and Hylands Bridge. Goldenfields Water carries out water supply functions within the Local Government areas of Bland, Coolamon, Cootamundra, Hilltops, Junee, Temora, and parts of Narrandera and Wagga Wagga.

Hilltops Shire Council, Cootamundra Gundagai Shire Council and Riverina Water County Council are retailers, who purchase bulk water from Goldenfields and supply the water to retail customers in their respective local government areas.

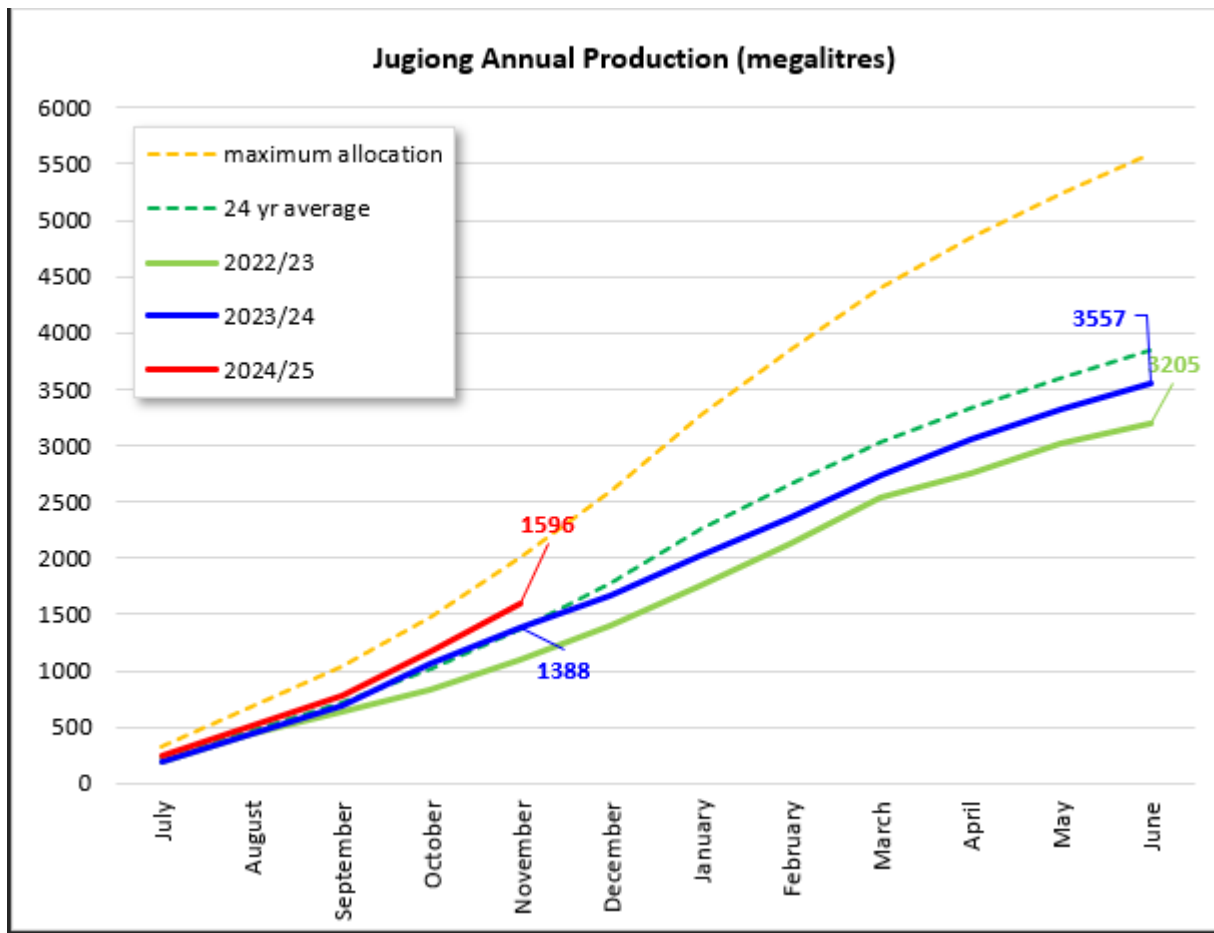
REPORT**Jugiong drinking Water Scheme**

The Jugiong drinking water scheme sources water from the Murrumbidgee River and has an extraction licence entitlement of 5590ML per annum. Water from the Murrumbidgee River is treated through a 40ML/day, conventional Water Treatment Plant that consists of: Coagulation, Flocculation, Clarification, Filtration, Disinfection and Fluoridation.

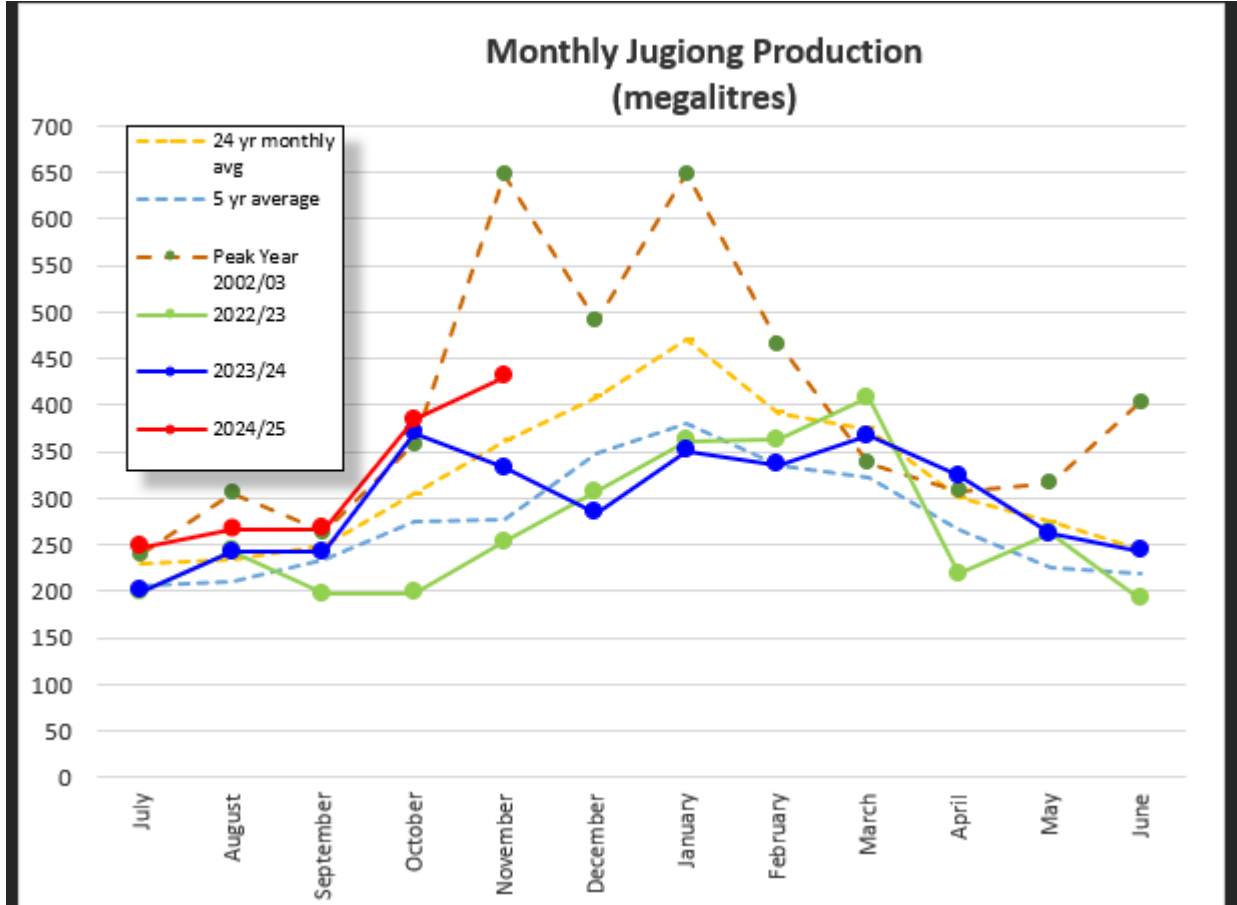
The Jugiong Scheme has 14 sets of reservoirs and 8 pumping stations. The Jugiong Scheme supplies bulk water to the Hilltops and Cootamundra-Gundagai Regional Councils for supply to the townships of Cootamundra, Harden and Young with a population of approximately 6800, 2200 and 8000 respectively.

Goldenfields Water also provides additional retail supply to approximately 600 customers in the villages of Stockinbingal, Wallendbeen and Springdale.

For the first 5 months of the 2024/25 financial year, 1596ML of water had been extracted from the Murrumbidgee River and processed at the Jugiong Water Treatment plant. This is slightly higher than for the 2023/24 FY where 1388ML was extracted. An increase of 208ML. This is illustrated in the graph below.



Jugiong monthly production started slightly higher in July with 248ML extracted and treated for the month. August saw a further increase in production with 267ML and September was similar to August with 267ML extracted and treated. October saw a large increase in production with 385ML produced with a further increase in November with 430ML produced and treated.

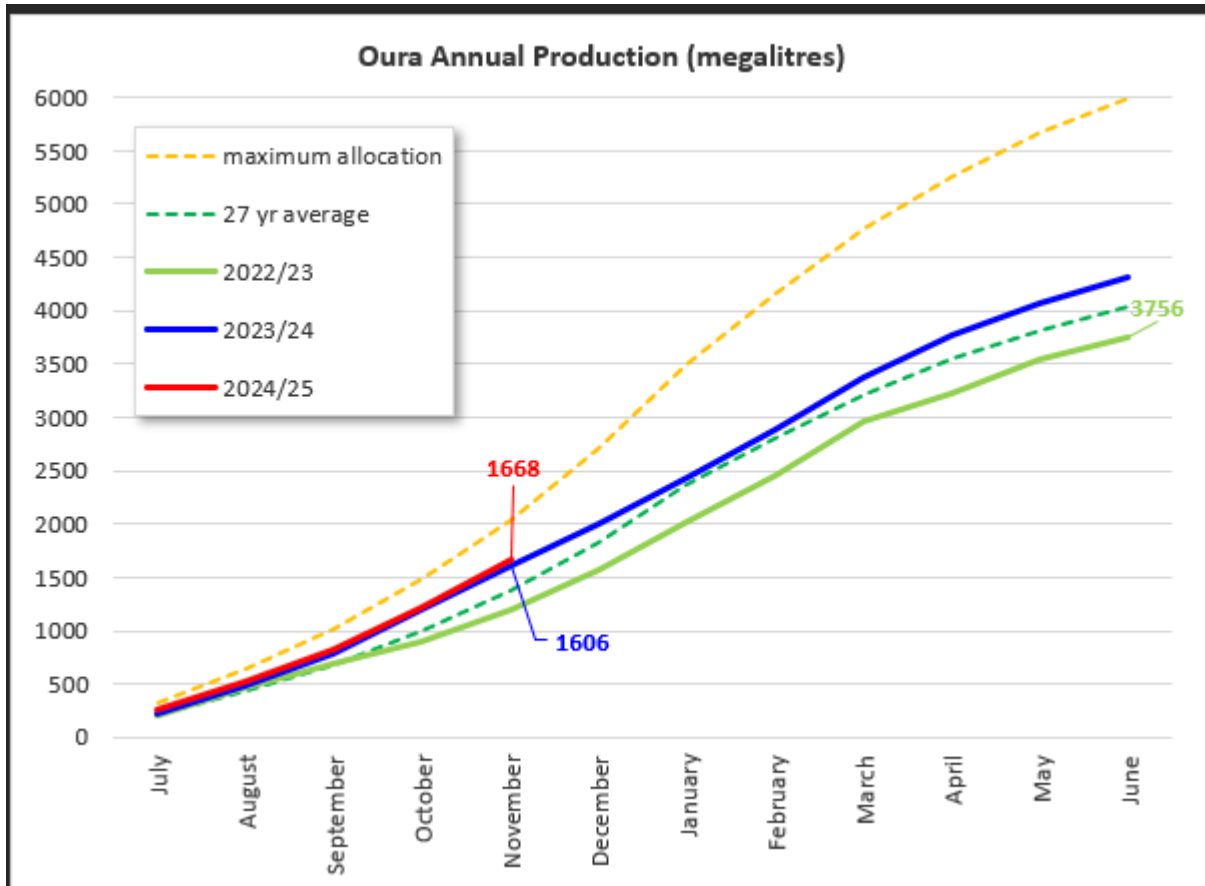


Oura Drinking Water Scheme

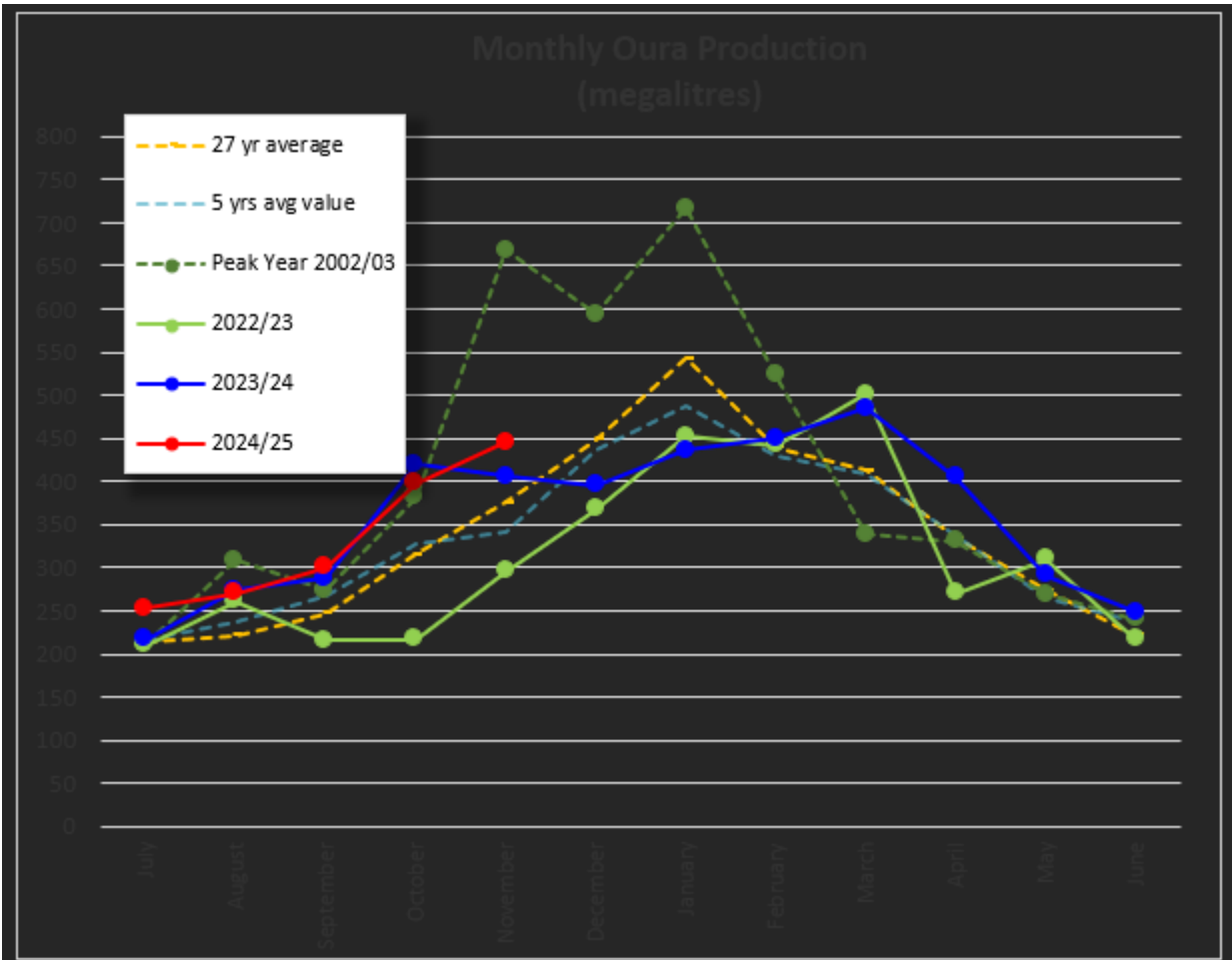
The water source at Oura is the Murrumbidgee inland alluvial aquifer, this water is extracted from 4 bores namely: Bores 2, 3, 4 and 6. The raw water then goes through a treatment process at the Oura Water Treatment Plant that includes Aeration, Disinfection and Fluoridation.

The Oura scheme has 33 sets of reservoirs, and 19 pumping stations, produces drinking water for approximately 14,600 people in the Bland, Coolamon, Junee, Narrandera and Temora Shires. The Oura scheme can also supply water to the Northern side of the rural area of Wagga Wagga City when required.

For the first 5 months of the 2024/25 financial year, 1668ML of water has been extracted from the Oura Borefield and processed at the Oura Water Treatment Plant. This is an increase in production compared to 2023/24 FY where 1606ML of water was extracted for the same period. An increase in production of 62ML. This is depicted in the graph below.



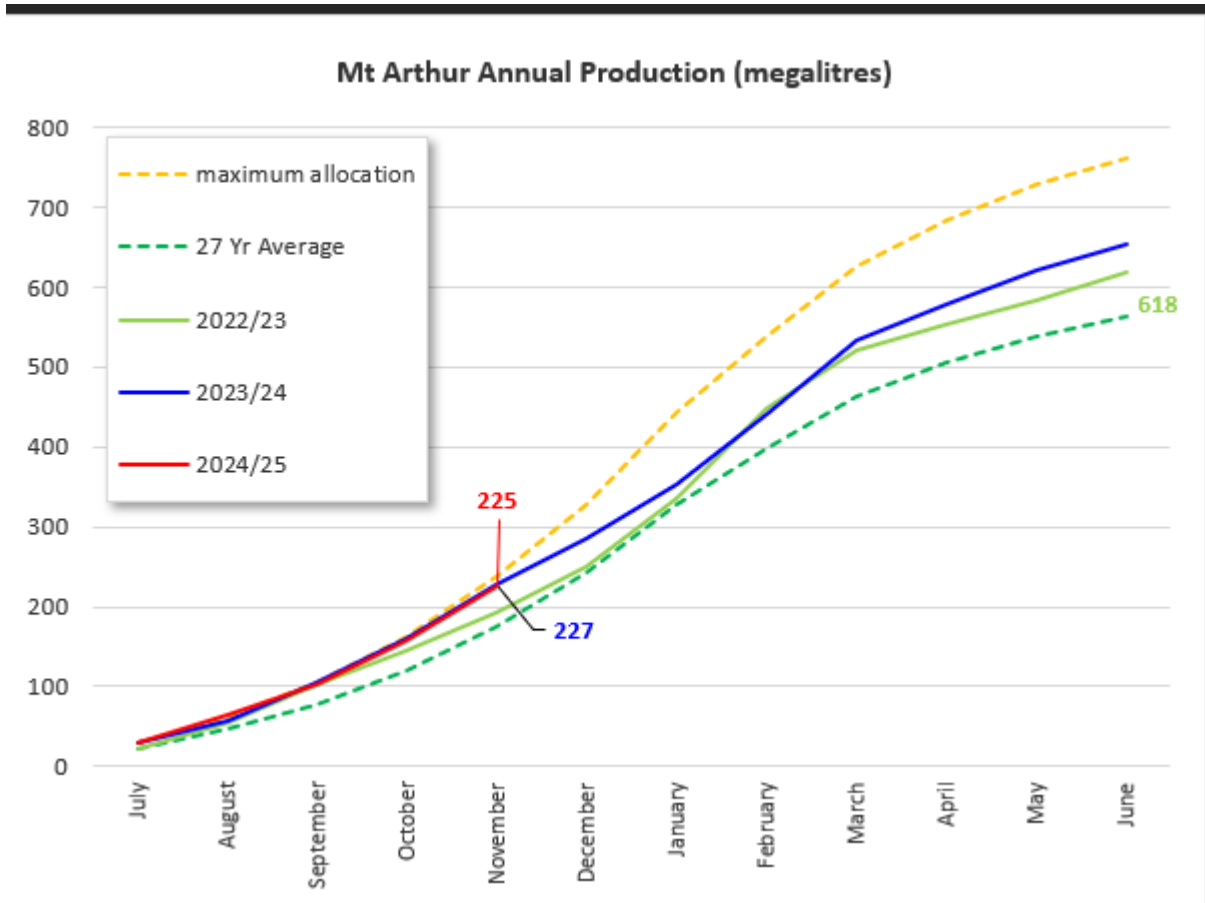
Oura monthly water production has started slightly higher in July where 253ML was extracted from the Oura bores. August saw an increase in production where 271ML was extracted, a further increase in production for September saw 300ML extracted, October saw a large increase with 398ML extracted and November also had a further increase with 446ML extracted and treated.



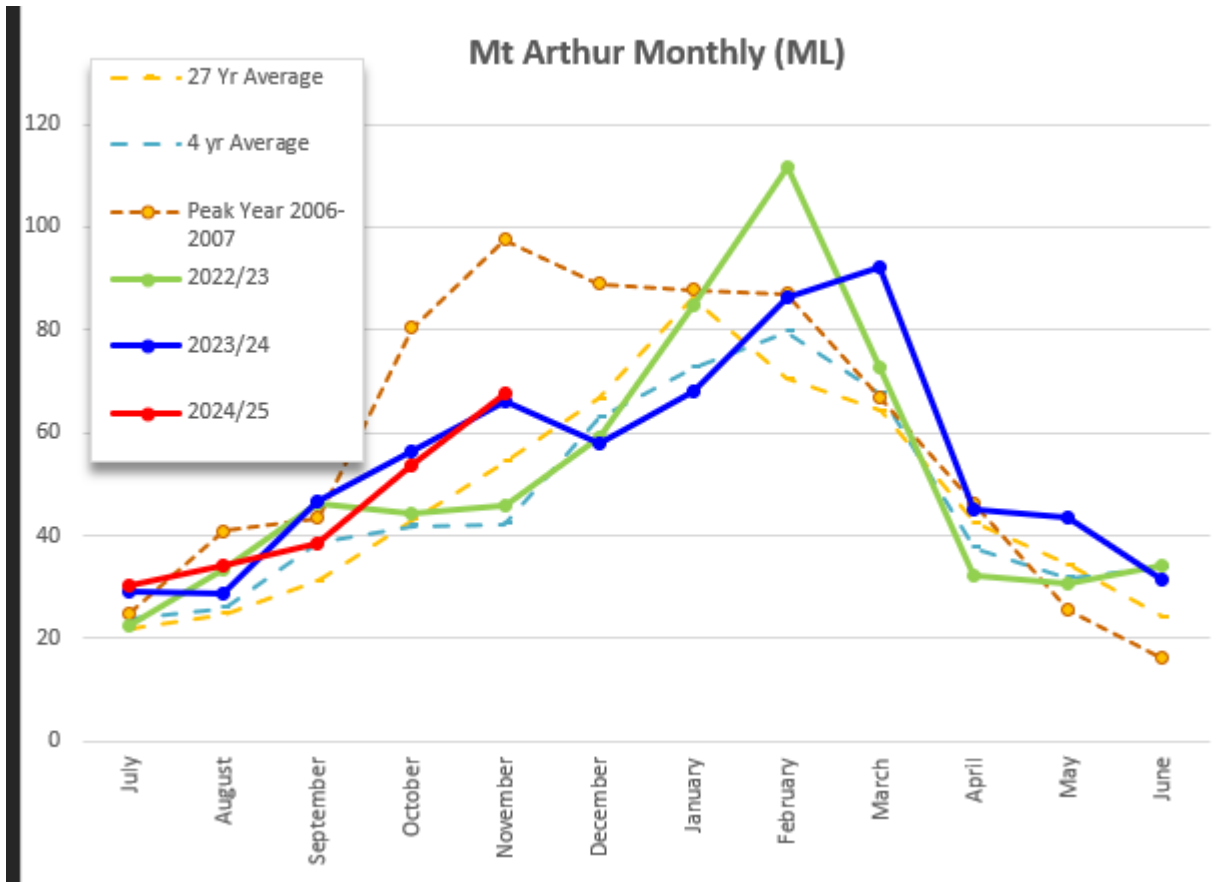
Mount Arthur Drinking Water Scheme

The Mount Arthur Water Source is from the Lachlan Fold belt Aquifer System. The water is extracted via two bores, bores 1 and 2 located in the Wagga Wagga City Council area South of Matong. The water is disinfected before distribution through 9 sets of reservoirs supplying approximately 2400 people with water in the Coolamon shire.

For the first 5 months of the 2024/25 financial year, 225ML of water has been extracted from the Mt Arthur Borefield. This is a slight decrease compared to the 2023/24 FY where 227ML was extracted from the Mt Arthur bores for the same period. A decrease of 2ML. As can be seen in the graph below, production is trending in similar fashion to previous years.



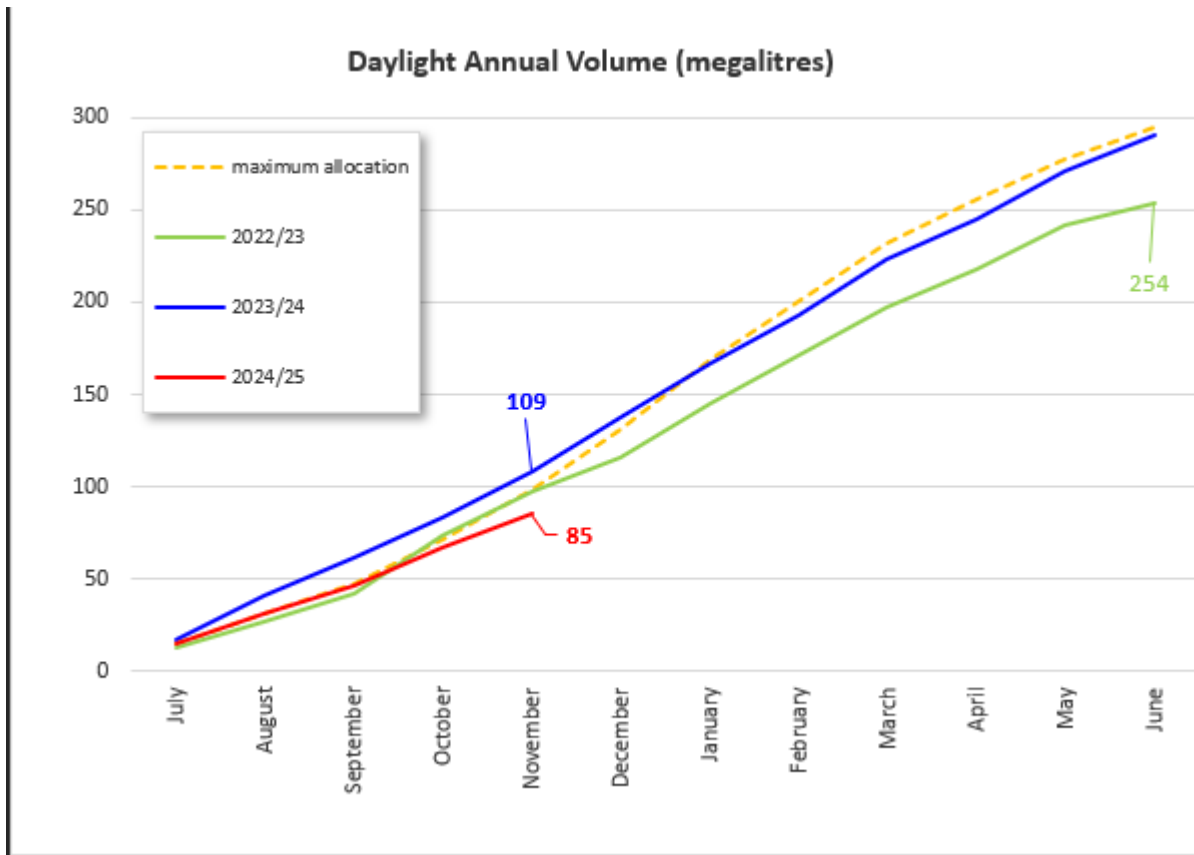
Mt Arthur monthly water production started slightly higher to previous years with 30ML of water extracted from the bores in July. August saw a slight increase in Production to 34ML extracted and September saw a further increase in production to 39ML extracted. Both October and November have seen further increases in production with 54ML and 68ML respectively extracted and treated.



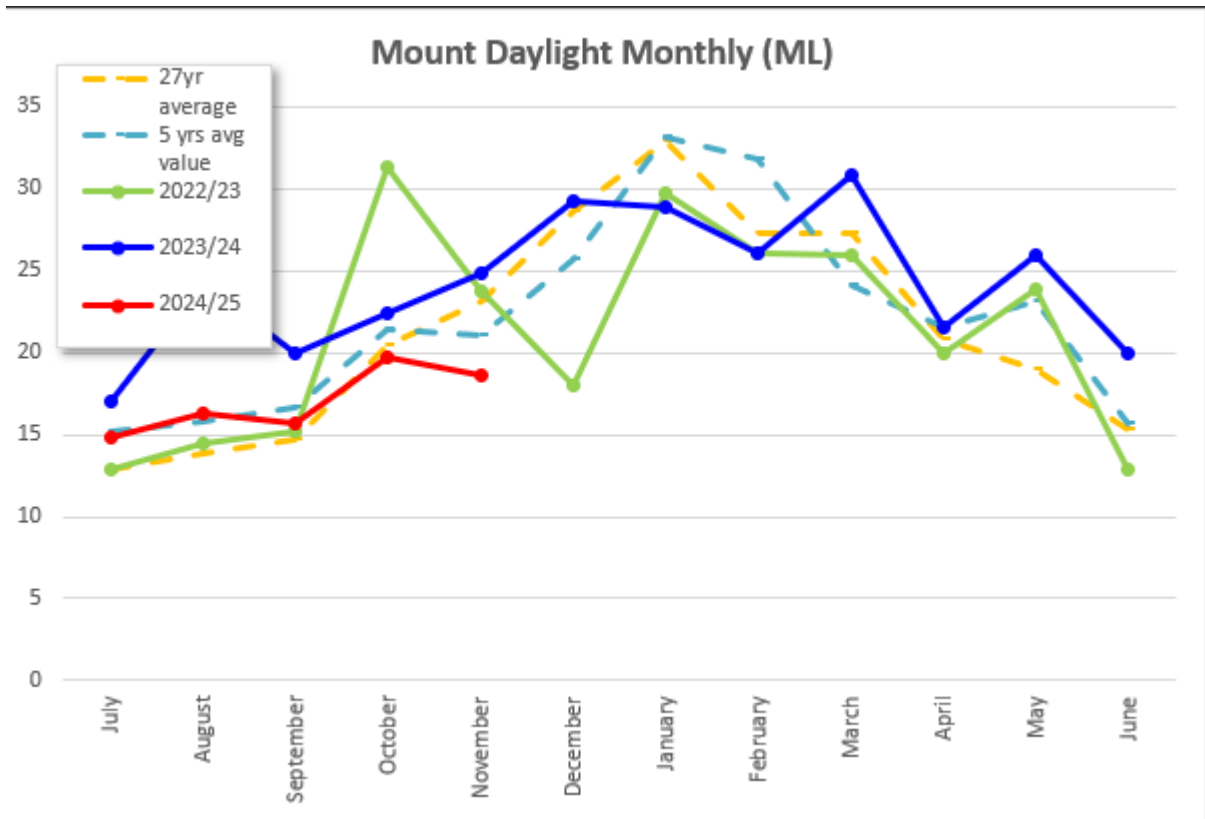
Mount Daylight Drinking Water Scheme

The Mount Daylight water source is from the Lower Lachlan alluvium aquifer. The Mount Daylight bores are jointly operated with Carathool Shire Council. Carathool Shire Council is responsible for bore management. There are 7 sets of reservoirs in the Mt Daylight scheme. Mt Daylight supplies water to approximately 125 people in the villages of Naradhan, Weethalle and Tallimba which is located within the Bland Shire.

For the first 5 months of the 2024/25 financial year 109ML of water has been extracted from the Mt Daylight Borefield. This is a decrease in volume of 24ML compared to the 2023/24 FY where 85ML was produced over the same period.



The monthly extraction totals for the Mt Daylight bores started very consistently with July seeing 15ML extracted with a slight increase in August with 16ML, September was slightly lower in production with 15ML extracted. October saw a further increase with 20ML extracted before a decrease in production only saw 19ML produced and extracted.

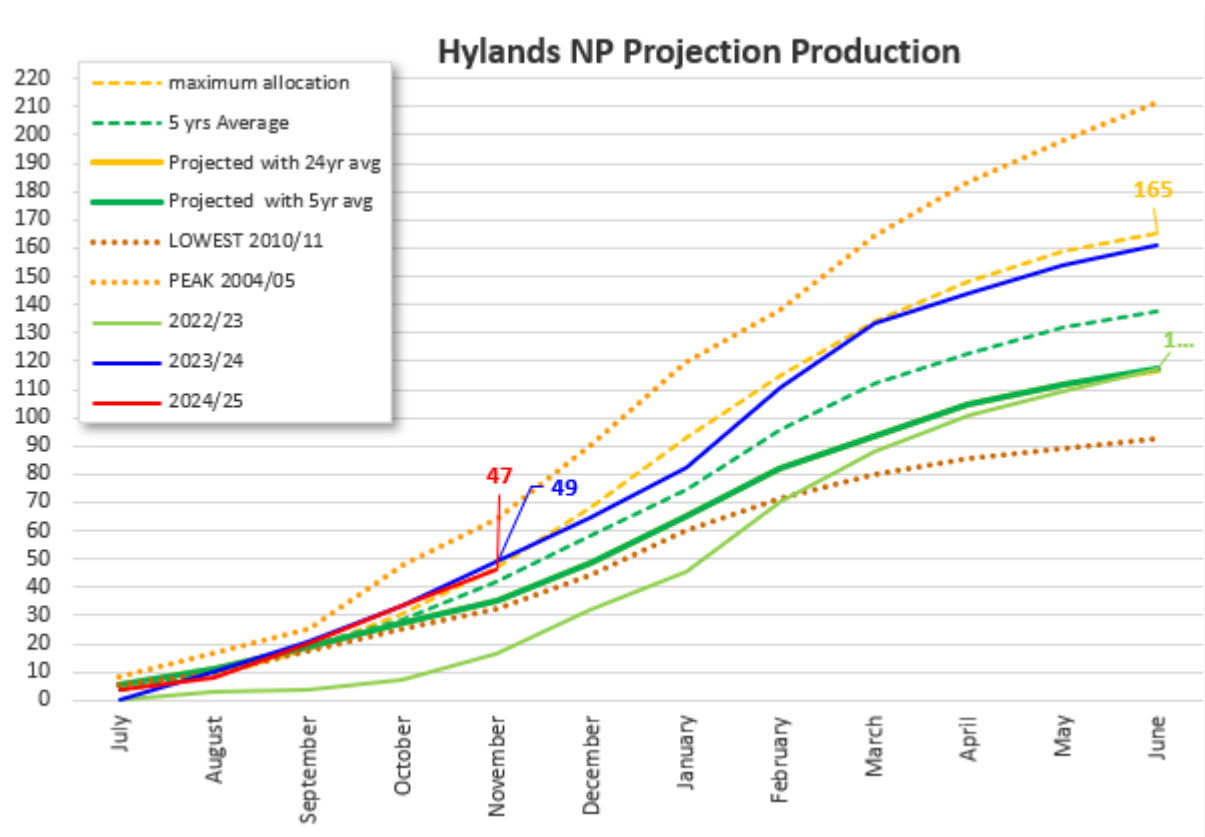


Hylands Bridge - Non-Potable

Hylands Bridge supplies Non-Potable water to Barellan and Binya. The water is sourced through the Murrumbidgee Irrigation Area where Goldenfields Water holds 165ML shareholding for water entitlement.

For the first 5 months of the 2024/25 financial year 47ML of water has been extracted from the Hylands Bridge Raw Water Scheme. This is a small decrease compared to the same period last year where 49ML had been extracted.

Note: A comparison between GWCC Production meter and Murrumbidgee Irrigation (MI) Production meter has indicated that there is a discrepancy between the two meters. GWCC will replace our old meter with a new meter as soon as one becomes available. GWCC's meter is reading between 30-35% higher than MI meter. (GWCC have replaced the old meter with a new one, this work was carried out on the 2nd of July 2024).



FINANCIAL IMPACT STATEMENT

The recommendation does not impact on Council's financial position.

LOCAL PREFERENCE

N/A

16 ENGINEERING MANAGER**16.1 CAPITAL WORKS PROGRESS REPORT****Author:** Engineering Manager**Authoriser:** General Manager**Attachments:**
1. [Attachment A - Capital Works Report](#) ↓
2. [Attachment B - Major Capital Projects Report](#) ↓**RECOMMENDATION**

That Council receive and note the Capital Works Progress Report as of 30 November 2024.

ALIGNMENT WITH BUSINESS ACTIVITY STRATEGIC PLAN

Priority 1 High Quality, Secure and Efficient Water Supplies

BACKGROUND

Capital works represents an important part of Council's activities and expenditure. This report details expenditure and progress for the year to date on programmed and emergent capital works.

REPORTCurrent Financial Year Progress

The financial year capital works is progressing well. We are approximately 40% of the way through the financial year and have spent 37% of the budget. The capital works report Attachment A includes the original budget and any subsequent budget variations previously approved and the actuals as of 30 November 2024. A few projects to note as follows:

- The urban construction crew has been working in Coolamon and recently moved to Temora to finish pipework improvements around Loftus Street and Milvale Road.
- The rural construction crew has recently finished works in Aria Park and Ardlethan and have been working on replacing a failing pipeline in old Junee. Early next year they will be heading out to south of Weethalle to replace failing pipelines in the area.
- The meter replacement program is well underway. Efficiencies are expected to be gained as processes and systems are further improved to meet the delivery capacity of the distribution staff members.
- Major capital works are progressing well as detailed further below.

Major Capital Works Projects

Major capital projects often span over multiple financial years. Attachment B provides details on the major capital works projects currently being delivered and compares their total project costs against the total project budget as well as commentary on the project progress.

FINANCIAL IMPACT STATEMENT

The recommendation does not impact on Council's financial position.

Attachment A

Capital Works Expenditure Progress Report

November 2024

| Project Name | Full Year Budget* | YTD Actual | Variance |
|---|-------------------|------------------|------------------|
| Income | | | |
| Sale of Plant | (500,000) | (267,543) | (232,457) |
| Total Capital Income | (500,000) | (267,543) | (232,457) |
| | | | |
| Network Asset Class | | | |
| Reticulation Renewals - GWCC Wide | 1,000,000 | - | 1,000,000 |
| Wyalong Reliability Project Pre Work | - | 509 | (509) |
| Bygoo Road Replacement - Ardlethan | - | 54,634 | (54,634) |
| Coolamon Town Retic - Replacement of old pipeline assets within Coolamon township | - | 36,447 | (36,447) |
| Hoskins Street Pipeline Replacement - Polaris to Kitchener | - | 388,103 | (388,103) |
| Loftus Street Pipeline Raising | - | 53,695 | (53,695) |
| Milvale Road Pipe Extension Dead End Removal | - | 29,379 | (29,379) |
| Mains Retic Subtotal | 1,000,000 | 562,769 | 437,231 |
| | | | |
| Kingsvale to Young Pipeline Upgrade | 10,000 | 55,799 | (45,799) |
| Rosehill to Harden Bypass | 1,263,000 | 46 | 1,262,954 |
| District Metering Installs | 20,000 | - | 20,000 |
| Oura to Junee Connection Upgrades | 20,000 | - | 20,000 |
| Thanowring Road Temora Pipeline Upgrade | - | 286,589 | (286,589) |
| Marrar Urban Renewal | - | 505 | (505) |
| Rosehill Pipeline Replacement | - | 2,579 | (2,579) |
| Mains Trunk Subtotal | 1,313,000 | 345,520 | 967,480 |
| | | | |
| Jansens - Daylight Scheme | 700,000 | 1,965 | 698,035 |
| Turner Property Replacement | - | 87,606 | (87,606) |
| Mains Rural Subtotal | 700,000 | 89,571 | 610,429 |
| | | | |
| Mains - Developer Paid - GWCC Wide - Budget | 40,000 | - | 40,000 |
| Campbells Lane Coolamon - Developer Connection | - | 2,544 | (2,544) |
| Mains Developer Paid Subtotal | 40,000 | 2,544 | 37,456 |
| | | | |
| Urban Meter & Taggle Replacement Program | 250,000 | 98,318 | 151,682 |
| Rural Meter & Taggle Replacement Program | 250,000 | 26,352 | 223,649 |
| New Water Service Connections - Oura | - | 5,186 | (5,186) |
| New Water Service Connections - Jugiong | - | 528 | (528) |
| New Water Service Connections - Mr Arthur | - | 4,578 | (4,578) |
| New Non Residential Backflow - Oura | - | 13,360 | (13,360) |
| New Non Residential Backflow - Jugiong | - | 5,925 | (5,925) |
| Bulk Customer and High Usage Meter Replacements | - | 1,042 | (1,042) |
| Connections Subtotal | 500,000 | 155,288 | 344,712 |
| | | | |
| PRV Renewals | 50,000 | - | 50,000 |

| Project Name | Full Year Budget* | YTD Actual | Variance |
|---|-------------------|------------------|------------------|
| PRV Replacement - Hylands | - | 8,757 | (8,757) |
| PRV Replacement - Jugiong | - | 320 | (320) |
| PRV Replacement - Mt Arthur | - | 10,643 | (10,643) |
| PRV Replacement - Oura | - | 3,288 | (3,288) |
| PRV Subtotal | 50,000 | 23,008 | 26,992 |
| Total Network Asset Class | 3,603,000 | 1,178,698 | 2,424,302 |
| Pump Stations Asset Class | | | |
| Marinna Pump Station - Investigation, Design & Install | 320,000 | 60,018 | 259,982 |
| Daylight Bore Flood Protection | 80,000 | 3,001 | 76,999 |
| Oura Bore 2 - Renewal | 50,000 | - | 50,000 |
| Oura Bore 3 - Cleaning and relining Oura Bore 3 | - | - | - |
| Replace Wyalong WPS Bypass Actuator | - | 1,804 | (1,804) |
| Gantry Crane | 75,000 | 6,495 | 68,505 |
| Mt Arthur Bore Renewal | - | 1,783 | (1,783) |
| PS - Eng Subtotal | 525,000 | 73,100 | 451,900 |
| Oura Pump Station Renewal | 5,280,000 | 1,794,960 | 3,485,040 |
| Jugiong High Voltage | 1,500,000 | 1,421,532 | 78,468 |
| Pump Station - Mech (Pump Renewals/Rebuilds) | 300,000 | - | 300,000 |
| PS Hylands Bridge | 60,000 | 568 | 59,432 |
| Jugiong Raw Water Well Renewal | - | 9,930 | (9,930) |
| West Wyalong Transfer Pump Station | - | 141 | (141) |
| Jugiong CWPS1 Pump 1 - 2022 | - | 465 | (465) |
| Ardlethan Booster Pump Overhaul | - | 9,592 | (9,592) |
| Pump Station Valve Renewals - Mt. Arthur | - | 4,303 | (4,303) |
| PS - Mech Subtotal | 360,000 | 24,999 | 335,001 |
| Pump Station Electrical | 250,000 | 109,463 | 140,537 |
| PS Renewals - Meter Sites | 80,000 | - | 80,000 |
| Supply and install new Switchboard to improve site to minimum standards | - | 54,643 | (54,643) |
| Coolamon Pump Station Switchboard Renewal | - | 2,789 | (2,789) |
| PS - Elec Subtotal | 330,000 | 166,895 | 163,105 |
| Total Pump Stations Asset Class | 7,995,000 | 3,481,487 | 4,513,513 |
| Reservoir Asset Class | | | |
| Reservoir External Adhoc Renewals - GWCC Wide | 100,000 | 115 | 99,885 |
| Wombat BT Renewal | 15,000 | - | 15,000 |
| Site Fencing | 20,000 | 9,975 | 10,025 |
| West Wyalong TS Res - Internal Coating Repairs | - | 33,846 | (33,846) |
| West Wyalong Standpipe Reservoir | 12,000 | 16,955 | (4,955) |
| Res- Eng Subtotal | 147,000 | 60,891 | 86,109 |
| Oura Reservoirs & Aerator | 5,443,703 | 1,928,551 | 3,515,153 |

| Project Name | Full Year Budget* | YTD Actual | Variance |
|--|-------------------|------------------|-------------------|
| Internal Adhoc Renewals | 50,000 | 1,516 | 48,484 |
| Switchboard Renewals - GWCC Wide | 10,000 | 160 | 9,840 |
| Grong Grong Reservoir Switchboard Renewal | - | 11,192 | (11,192) |
| Matong Reservoir Switchboard Renewal | - | 7,332 | (7,332) |
| Res - Elec Subtotal | 10,000 | 18,683 | (8,683) |
| Total Reservoir Asset Class | 5,650,703 | 2,009,641 | 3,641,062 |
| Treatment Asset Class | | | |
| Treatment Plant - Site Mechanical Renewals | 30,000 | - | 30,000 |
| Jugiong WTP - Valve & Pneumatic Upgrade | - | 4,196 | (4,196) |
| Res - Elec Subtotal | 30,000 | 4,196 | 25,804 |
| Oura HV Elec Upgrade | - | 2,022 | (2,022) |
| Mt Arthur Aeration Tower | 200,000 | - | 200,000 |
| Total Treatment Asset Class | 230,000 | 6,219 | 223,781 |
| Comms Network | | | |
| Microwave Link Sites for Scada | 400,000 | 41,115 | 358,885 |
| Total Comms Network | 400,000 | 41,115 | 358,885 |
| Plant & Equipment | | | |
| Water Quality Instrumentation Renewal | - | 28,290 | (28,290) |
| Plant & Equipment Purchases | 800,000 | 422,965 | 377,035 |
| No-Des Truck | 500,000 | - | 500,000 |
| Total Plant & Equipment | 1,300,000 | 451,255 | 848,745 |
| Other | | | |
| Furniture & Office Equipment | 10,000 | - | 10,000 |
| Information Technology | 80,000 | - | 80,000 |
| Land & Building Upgrades | 50,000 | 446 | 49,554 |
| New Temora Depot Building | 52,000 | 58,393 | (6,393) |
| Total Other | 192,000 | 58,839 | 133,161 |
| Emergency | | | |
| Emergency Works - GWCC Wide - Budget | 200,000 | - | 200,000 |
| Total Emergency | 200,000 | - | 200,000 |
| Total Capital Works Expenditure | 19,570,703 | 7,227,255 | 12,343,448 |

*This column represents the adjusted budget which is the adopted budget plus Council approved budget revotes from 2023/24 and change to Oura Pump Station Renewal budget approved on 14 August 2024.

Attachment B
Major Capital Works

Expenditure to 30 November 2024

| DESCRIPTION | YEAR | TIMEFRAME | ACTUAL | TOTAL BUDGET | VARIANCE | PROGRESS COMMENTS |
|---|---|------------------|---|---------------------|--------------------|--|
| Jugiong High Voltage Detailed designs for works, new HV building, purchase of HV equipment and electrical equipment install | 20/21 21/22 22/23 23/24 24/25 Total | Jan-21 to Dec-24 | \$61,185.63 \$1,664,286.64 \$3,426,271.48 \$2,405,253.34 \$1,421,531.97 \$8,978,529.06 | \$9,255,000 | \$276,471 | Currently tracking on budget. Due for completion within following 2 months |
| Oura Reservoirs and Aerator Construction of 2 x 4ML reservoirs and aeration tower at Oura WTP plus ancillary pipework and electricals | 21/22 22/23 23/24 24/25 Total | May-23 to Apr-24 | \$130,686.84 \$500,756.99 \$6,845,511.32 \$1,928,550.50 \$9,405,505.65 | \$12,643,703 | \$3,238,197 | This project has experienced some delays to ensure quality assurance in the finished product. The current anticipated completion date is February 2025 for the majority of the works. The reservoirs roofs has been delayed as a result of delays in overseas manufacturing and are anticipated to be finished in April. Project Managers are currently anticipating the project will come in below budgets. |
| Oura pump station and dosing rooms Construction of new pump station including 3 high voltage pumps and additional dosing systems | 22/23 23/24 24/25 Total | Oct-23 to Mar-26 | \$31,455.76 \$332,039.25 \$1,794,960.19 \$2,158,455.20 | \$7,605,943 | \$5,447,488 | Pumps and motors have been selected and procured and delivered to site. A consultant has been engaged for the design of the flouride and chlorine dosing systems. A contractor has been engaged for Design and Construction contract for the pump station and dosing buildings. The construction contract is anticipated to be completed by March 2026. |
| Kingsvale to Young pipeline Upgrade of approx. 12km of pipeline | 22/23 23/24 24/25 Total | Dec-22 to Aug-26 | \$109,228.12 \$158,847.18 \$55,799.31 \$323,874.61 | \$8,300,000 | \$7,976,125 | Detailed design nearly complete. |
| Thanowring Road Pipeline Construction of 40km of trunk pipeline | 18/19 19/20 20/21 21/22 22/23 23/24 24/25 Total | Jan-22 to Aug-24 | \$16,928.26 \$50,611.01 \$236,738.94 \$990,386.89 \$548,046.67 \$2,099,306.85 \$286,589.22 \$4,228,607.84 | \$7,000,000 | \$2,771,392 | The construction is complete. This project was completed well under total project budget. There will be some additional works required at the Thanowring road offtake to improve operation in the near future, however depending on the extent and whether there is a railway underbore required, these are estimated to cost less than \$250,000. |

17 GENERAL MANAGER**17.1 FEBRUARY COUNCIL MEETING DATE CHANGE**

Author: Executive Assistant

Authoriser: General Manager

Attachments: Nil

RECOMMENDATION

That Council adopt the February Ordinary Meeting be moved to Thursday 13 March 2025 to commence at 1:30pm at Jugiong Water Treatment Plant.

ALIGNMENT WITH BUSINESS ACTIVITY STRATEGIC PLAN

Priority 2 Customer Service Focus

BACKGROUND

Goldenfields Water County Council meetings are held on the fourth Thursday of every second month at the Temora Office, commencing at 10.00am. The February ordinary Council Meeting has been resolved to be held 27 February 2025.

REPORT

It is proposed that the 27 February 2025 meeting being changed to Thursday 13 March 2025 at 1:30pm at the Jugiong Water Treatment Plant.

Councillor training has been scheduled to be included alongside the first meeting of council in 2025.

FINANCIAL IMPACT STATEMENT

The recommendation does not impact on Council's financial position.

17.2 COUNCIL RESOLUTIONS UPDATE REPORT

Author: Executive Assistant

Authoriser: General Manager

Attachments: 1. Council Meeting Resolutions Action Table [↓](#)

RECOMMENDATION

That Council note the Council Resolutions Update Report.

ALIGNMENT WITH BUSINESS ACTIVITY STRATEGIC PLAN

Priority 1 High Quality, Secure and Efficient Water Supplies

BACKGROUND

The General Manager is responsible for ensuring that Council's resolutions are implemented efficiently and in a timely manner.

REPORT

After a Council meeting is held, actions required from the resolutions made are listed and distributed to the Management Team for their attention. This list is included on the fortnightly Management meeting agenda to ensure timely completion of tasks.

The resolutions update table attached is provided to the Board to deliver an overview of the tasks completed since the previous meeting and to identify any outstanding tasks that still require action. This allows greater transparency for the Board into the actioning of the resolutions made and a timely reminder for Management to progress these actions.

FINANCIAL IMPACT STATEMENT

The recommendation does not impact on Council's financial position.



| Resolution No. | Resolution | Action Required | Status Update | Responsible Officer |
|----------------|---|--|--|----------------------------|
| 22.110 | RESOLVED on the motion of Crs McGlynn and White that the Board delegate to the General Manager to discuss with staff to look at long term solutions to protect the infrastructure. | Consider long term solutions to protect Ballyrogan Bores | Geoff advised they are now seeking legal advice. | General Manager |
| 23.063 | RESOLVED on the motion of Crs Sinclair and Callow that Council: a. Note the information detailed within the report b. Adopt the Draft PP032 Easement and Acquisition Policy c. Council proceed with the compulsory acquisition of the interest in the land described as 6m wide easement through Lot 1 DP 1119238, Lot 132 DP 753600 and Lot 2 DP 701208 for the purpose of a water supply pipeline in accordance with the requirements of the Land Acquisition (Just Terms Compensation) Act 1991 d. Council make an application to the Minister and the Governor for approval to acquire a 6m wide easement through Lot 1 DP 1119238, Lot 132 DP 753600 and Lot 2 DP 701208 by compulsory process under section 186(1) of the Local Government Act 1993 e. That the land is to be classified as operational land | | The PP032 Easement and Acquisition Policy has been adopted. The compulsory acquisition process is underway. Detailed designs have confirmed the correct area of easement required and a registered survey has been undertaken. The next step will be an application to the minister. Updated valuation reports have been received. | Engineering Manager |
| 24.009 | RESOLVED on the motion of Crs Stadtmiller and McGlynn that Council: | | Update report provided at the December 2024 Meeting. | Corporate Services Manager |



| Resolution No. | Resolution | Action Required | Status Update | Responsible Officer |
|----------------|---|-----------------|--|---------------------|
| | <ul style="list-style-type: none"> a) Proceed to recoup costs of current usage and ownership. b) Approve a payment plan for property owners up to a period of 4 years. c) Approve a discounted rate of 20% to all affected accounts. | | | |
| 24.011 | <p>RESOLVED on the motion of Crs Sinclair and Callow that Council:</p> <ul style="list-style-type: none"> 1) Council proceed with the compulsory acquisition of the interest in the land described as 6m wide easement through Lot 222 DP 753610, Lot 6 DP 798666, Lot 1 DP 722205, Lot 132 DP 1089613 and Lot 135 DP 753590 for the purpose of a water supply pipeline in accordance with the requirements of the Land Acquisition (Just Terms Compensation) Act 1991. 2) Council make an application to the Minister and the Governor for approval to acquire a 6m wide easement through the lots noted above by compulsory process under section 186(1) of the Local Government Act 1993. 3) That the land is to be classified as operational land. | | <p>The compulsory acquisition process is underway. Registered survey has been completed and the application to the minister is being developed. This includes an updated land valuation report to be completed.</p> <p>Updated valuation reports have been received.</p> | Engineering Manager |
| 24.019 | <p>RESOLVED on the motion of Crs McAlister and Sinclair that:</p> <ul style="list-style-type: none"> a) Agree to a funding contribution to Narrandera Shire Council of \$332,008 towards the Barellan Sewer Project specifically for water main replacements | | Goldenfields Water have paid \$332,008 to Narrandera Shire Council to contribute towards the water mains replacements undertaken as | Engineering Manager |



| Resolution No. | Resolution | Action Required | Status Update | Responsible Officer |
|----------------|--|-----------------|---|-------------------------------|
| | b) Donate 10ML of water to Narrandera Shire Council for the Barellan Sewer Project, utilising water from the Hylands Bridge scheme where practical. | | part of the Barellan Sewer Project. The donation of the water is still outstanding. The latest communication from the contractors is that approximately only half of the water will now be required. | |
| 24.052 | <p>RESOLVED on the motion of Crs McAlister and White that the Board:</p> <p>1. Pursuant to s55(3)(i) of the Local Government Act 1993, the Board considers that a satisfactory result would not be achieved by inviting tenders before entering into a contract for the purchase of energy, due to extenuating circumstances, being:</p> <p>a. current energy market volatility and significant risk in entering into a fixed agreement</p> <p>b. flexibility in purchasing processes is required for speed of acting on low price demands within the National Energy Market (NEM)</p> <p>2. provide the General Manager or their delegate the delegation to negotiate the purchase of energy and enter into any such Agreements necessary to continue the efficient operations of Goldenfields Waters supply network.</p> | | GWCC have signed a supply agreement for large sights with Stanwell for 4 year term; however we are still seeking offers for our small sites. | Production & Services Manager |



| Resolution No. | Resolution | Action Required | Status Update | Responsible Officer |
|----------------|---|-----------------|--|-------------------------------|
| | 3. Note that staff will report back to the Board if any negative variation to the 2024/25 budgetary provisions will be expected | | | |
| 24.056 | <p>RESOLVED on the motion of Crs McAlister and McGlynn that the Board resolves:</p> <p>a. To award the Design & Construction lump sum contract for the Oura Pump Station and Dosing Design and Construction tender to Van Mal Group Construction Pty Ltd for \$6,259,440 incl GST.</p> <p>b. Authorise the General Manager or their delegate to enter into a contract with Van Mal Construction Group Pty Ltd.</p> <p>c. Approve an updated budget allocation of \$10,760,000 noting an allowance of 5% contingency as detailed in the report.</p> | | Completed. | Production & Services Manager |
| 24.058 | <p>RESOLVED on the motion of Crs McAlister and Sinclair that the Board resolves:</p> <p>1. Warren Rushby be appointed Independent Chair of the Goldenfields Water County Council Audit, Risk and Improvement Committee (ARIC) for a two year term.</p> <p>2. Lucy Roberts and Matthew Suter be appointed independent members of the Goldenfields Water County Council ARIC for a term of two years.</p> <p>3. Council appoint a Councillor as a non-voting member of the ARIC at the first meeting of the newly elected Council following the forthcoming Local Government Elections.</p> | | <p>Third committee member appointed being Nicole Legovich and Council non-voting member being Graham Sinclair.</p> <p>Completed.</p> | Corporate Services Manager |



| Resolution No. | Resolution | Action Required | Status Update | Responsible Officer |
|----------------|---|-----------------|--|----------------------------|
| 24.065 | <p>RESOLVED on the motion of Crs Sinclair and McAlister that the Board:</p> <ol style="list-style-type: none"> 1. Receive and note the report detailing Water Billing, Concealed and Debt Recovery. 2. Receive and endorse Account number 44104264, calculated leak reduction for 50% for Quarter 2 and 25% for Quarter 3 water billing for 2023-24 financial year. | | Account number 44104264, calculated leak reduction has progressed. | Corporate Services Manager |
| 24.072 | <p>RESOLVED on the motion of Crs Piper and Sinclair that:</p> <ol style="list-style-type: none"> 1. The Financial Statements for the year ended 30 June 2024 be referred to Council's Auditor, Audit Office of New South Wales, 2. Council make a resolution in accordance with Section 413(2)(c) that the Financial Statements have been prepared in accordance with: <ol style="list-style-type: none"> i. the Local Government Act 1993 (NSW) (as amended) and the Regulations made there under ii. the Australian Accounting Standards and professional pronouncements iii. the Local Government Code of Accounting Practice and Financial Reporting iv. presents fairly the Council's operating results and financial position for the year v. accords with Council's accounting and other records | | Completed and lodged with the OLG by the 31 October deadline. | Corporate Services Manager |



| Resolution No. | Resolution | Action Required | Status Update | Responsible Officer |
|----------------|---|-----------------|---|---------------------|
| | <p>vi. that Council is not aware of any matter that would render these statements false or misleading in any way</p> <p>3. Council adopt the abovementioned Statement and that the Chairperson, Councillor, General Manager and Responsible Accounting Officer be authorised to sign the 'Statement by Councillors and Management' in relation to Council's 2023/24 Financial Statements and Special Purpose Financial Reports and be attached thereto.</p> <p>4. The General Manager be delegated the authority to issue the audited Financial Statements immediately upon receipt of the Auditor's Reports, subject to their being no material changes or audit issues.</p> <p>5. Council present the final audited Financial Statements and Auditor's Report to the public at its ordinary meeting to be held in October 2024.</p> | | | |
| 24.094 | RESOLVED on the motion of Crs Piper and Sinclair that Council maintains the current calculations for the determination of Bland Shire Council's funding contribution towards the Wyalong Water Reliability Project. | | Completed. GWCC General Manager has formally written to Bland Shire General Manager. | Engineering Manager |
| 24.105 | <p>RESOLVED on the motion of Crs Austin and Cooper that Council:</p> <p>1. Note the information provided within the report and attachments.</p> <p>2. Offer a 10% reduction in Developer Infrastructure Charges to MLK Properties Temora Pty</p> | | GWCC has advised the Developer of the outcome. The letter of offer has been delayed while GWCC and Temora Shire Council negotiate terms of the required MOU to enable the | Engineering Manager |



| Resolution No. | Resolution | Action Required | Status Update | Responsible Officer |
|----------------|---|-----------------|---|---------------------|
| | <p>Ltd ATF MLK Properties Temora Unit Trust, Lot 16 DP 1236221 in accordance with the Regional Economic Development provision of PP008 Developer Charges Policy, subject to a signed MOU between Goldenfields Water County Council and Temora Shire Council being achieved.</p> <p>3. Delegate to the General Manager the function of negotiating, finalising and entering into voluntary planning agreement with MLK Properties Temora Pty Ltd ATF MLK Properties Temora Unit Trust in relation to the Springdale Free Range Egg Farm, Lot 16 DP 1236221</p> | | <p>reduction in Developer Infrastructure Charges to be facilitated.</p> | |

17.3 PP019 CODE OF MEETING PRACTICE POLICY

Author: Executive Assistant

Authoriser: General Manager

Attachments: 1. PP019 Code of Meeting Practice Policy [↓](#)

RECOMMENDATION

That Council adopt PP019 Code of Meeting Practice Policy.

ALIGNMENT WITH BUSINESS ACTIVITY STRATEGIC PLAN

Priority 2 Customer Service Focus

BACKGROUND

Council is required to adopt a code of meeting practice that incorporates the mandatory provisions of the Model Meeting Code prescribed by the Regulation. Councils adopted meeting code must not contain provisions that are inconsistent with the mandatory provisions.

Councils adopted meeting code may also incorporate the non-mandatory provisions of the Model Code and any other supplementary provisions adopted by Council.

REPORT

The Order of Business on page 18 has been amended to reflect our current meeting practice whilst still meeting the Local Government Model Code of Conduct.

FINANCIAL IMPACT STATEMENT

The recommendation does not impact on Council's financial position.



Policy No. PP019

Code of Meeting Practice

Goldenfields Water
ABN 54 357 453 921

84 Parkes Street
Temora NSW 2666

PO Box 220
Temora NSW 2666

T (02) 6977 3200
F (02) 6977 3299

office@gwcc.nsw.gov.au
www.gwcc.nsw.gov.au



Policy No. PP019

Code of Meeting Practice

INFORMATION ABOUT THIS POLICY

POLICY INFORMATION

| | |
|--|---|
| Date Adopted by Board: | Board Resolution No. 17/043. 19/073, 22/059 |
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| | 15/11/2024 | Order of Business updated to reflect current meeting practice. |
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FURTHER DOCUMENT INFORMATION AND RELATIONSHIPS

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|---|---|
| Related Legislation | Model Code of Conduct Local Government Act 1993 Local Government Regulations 2021 |
| Related Policies | Code of Conduct |
| Related Procedures, Protocols, Statements and Documents | |



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1 INTRODUCTION

This Code of Meeting Practice is to be referred to as the Goldenfields Water Code of Meeting Practice ('the Code') and is prescribed under section 360 of the Local Government Act 1993 (the Act) and the Local Government (General) Regulation 2005 (the Regulation).

The code applies to all meetings of council and committees of council of which all the members are councillors (committees of council). Council committees whose members include persons other than councillors may adopt their own rules for meetings unless the council determines otherwise.

A council and a committee of the council of which all the members are councillors must conduct its meetings in accordance with the code of meeting practice adopted by the council.

2 MEETING PRINCIPLES

2.1 Council and committee meetings should be:

Transparent: Decisions are made in a way that is open and accountable.

Informed: Decisions are made based on relevant, quality information.

Inclusive: Decisions respect the diverse needs and interests of the local community.

Principled: Decisions are informed by the principles prescribed under Chapter 3 of the Act.

Trusted: The community has confidence that councillors and staff act ethically and make decisions in the interests of the whole community.

Respectful: Councillors, staff and meeting attendees treat each other with respect.

Effective: Meetings are well organised, effectively run and skilfully chaired.

Orderly: Councillors, staff and meeting attendees behave in a way that contributes to the orderly conduct of the meeting.

3 BEFORE THE MEETING

Timing of ordinary council meetings

3.1 Not adopted - Superseded by 3.2.

3.2 The council shall, by resolution, set the frequency, time, date and place of its ordinary meetings.

Council has resolved to meet on the fourth Thursday of every second month.

In October of each year Council will adopt a calendar (schedule) for meeting dates.

Note: Under section 396 of the Act, county councils are required to meet at least four (4) times each year.



Extraordinary meetings

- 3.3 If the chairperson receives a request in writing, signed by at least two (2) councillors, chairperson must call an extraordinary meeting of the council to be held as soon as practicable, but in any event, no more than fourteen (14) days after receipt of the request. The chairperson can be one of the two councillors requesting the meeting.

Note: Clause 3.3 reflects section 366 of the Act.

Notice to the public of council meetings

- 3.4 The council must give notice to the public of the time, date and place of each of its meetings, including extraordinary meetings and of each meeting of committees of the council.

Note: Clause 3.4 reflects section 9(1) of the Act.

- 3.5 For the purposes of clause 3.4, notice of a meeting of the council and of a committee of council is to be published before the meeting takes place. The notice must be published on the council's website, and in such other manner that the council is satisfied is likely to bring notice of the meeting to the attention of as many people as possible.

- 3.6 For the purposes of clause 3.4, notice of more than one (1) meeting may be given in the same notice.

Notice to councillors of ordinary council meetings

- 3.7 The general manager must send to each councillor, at least three (3) days before each meeting of the council, a notice specifying the time, date and place at which the meeting is to be held, and the business proposed to be considered at the meeting.

Note: Clause 3.7 reflects section 367(1) of the Act.

- 3.8 The notice and the agenda for, and the business papers relating to, the meeting may be given to councillors in electronic form, but only if all councillors have facilities to access the notice, agenda and business papers in that form.

Note: Clause 3.8 reflects section 367(3) of the Act.

Notice to councillors of extraordinary meetings

- 3.9 Notice of less than three (3) days may be given to councillors of an extraordinary meeting of the council in cases of emergency.

Note: Clause 3.9 reflects section 367(2) of the Act.

Giving notice of business to be considered at council meetings

- 3.10 A councillor may give notice of any business they wish to be considered by the council at its next ordinary meeting by way of a notice of motion. To be included on the agenda of the meeting, the notice of motion must be in writing and must be submitted 7 business days before the meeting is to be held.



- 3.11 A councillor may, in writing to the general manager, request the withdrawal of a notice of motion submitted by them prior to its inclusion in the agenda and business paper for the meeting at which it is to be considered.
- 3.12 If the general manager considers that a notice of motion submitted by a councillor for consideration at an ordinary meeting of the council has legal, strategic, financial or policy implications which should be taken into consideration by the meeting, the general manager may prepare a report in relation to the notice of motion for inclusion with the business papers for the meeting at which the notice of motion is to be considered by the council.
- 3.13 A notice of motion for the expenditure of funds on works and/or services other than those already provided for in the council's current adopted operational plan must identify the source of funding for the expenditure that is the subject of the notice of motion. If the notice of motion does not identify a funding source, the general manager must either:
- (a) prepare a report on the availability of funds for implementing the motion if adopted for inclusion in the business papers for the meeting at which the notice of motion is to be considered by the council, or
 - (b) by written notice sent to all councillors with the business papers for the meeting for which the notice of motion has been submitted, defer consideration of the matter by the council to such a date specified in the notice, pending the preparation of such a report.

Questions with notice

- 3.14 A councillor may, by way of a notice submitted under clause 3.10, ask a question for response by the general manager about the performance or operations of the council.
- 3.15 A councillor is not permitted to ask a question with notice under clause 3.14 that comprises a complaint against the general manager or a member of staff of the council, or a question that implies wrongdoing by the general manager or a member of staff of the council.
- 3.16 The general manager or their nominee may respond to a question with notice submitted under clause 3.14 by way of a report included in the business papers for the relevant meeting of the council or orally at the meeting.

Agenda and business papers for ordinary meetings

- 3.17 The general manager must cause the agenda for a meeting of the council or a committee of the council to be prepared as soon as practicable before the meeting.
- 3.18 The general manager must ensure that the agenda for an ordinary meeting of the council states:
- (a) all matters to be dealt with arising out of the proceedings of previous meetings of the council, and
 - (b) if the Chairperson is the chairperson – any matter or topic that the chairperson proposes, at the time when the agenda is prepared, to put to the meeting, and
 - (c) all matters, including matters that are the subject of staff reports and reports of committees, to be considered at the meeting, and
 - (d) any business of which due notice has been given under clause 3.10.



- 3.19 Nothing in clause 3.18 limits the powers of the Chairperson to put a Chairpersons minute to a meeting under clause 9.6.
- 3.20 The general manager must not include in the agenda for a meeting of the council any business of which due notice has been given if, in the opinion of the general manager, the business is, or the implementation of the business would be, unlawful. The general manager must report, without giving details of the item of business, any such exclusion to the next meeting of the council.
- 3.21 Where the agenda includes the receipt of information or discussion of other matters that, in the opinion of the general manager, is likely to take place when the meeting is closed to the public, the general manager must ensure that the agenda of the meeting:
- (a) identifies the relevant item of business and indicates that it is of such a nature (without disclosing details of the information to be considered when the meeting is closed to the public), and
 - (b) states the grounds under section 10A(2) of the Act relevant to the item of business.
- Note: Clause 3.21 reflects section 9(2A)(a) of the Act.**
- 3.22 The general manager must ensure that the details of any item of business which, in the opinion of the general manager, is likely to be considered when the meeting is closed to the public, are included in a business paper provided to councillors for the meeting concerned. Such details must not be included in the business papers made available to the public and must not be disclosed by a councillor or by any other person to another person who is not authorised to have that information.

Statement of ethical obligations

- 3.23 Business papers for all ordinary and extraordinary meetings of the council and committees of the council must contain a statement reminding councillors of their oath or affirmation of office made under section 233A of the Act and their obligations under the council's code of conduct to disclose and appropriately manage conflicts of interest.

Availability of the agenda and business papers to the public

- 3.24 Copies of the agenda and the associated business papers, such as correspondence and reports for meetings of the council and committees of council, are to be published on the council's website, and must be made available to the public for inspection, or for taking away by any person free of charge at the offices of the council, at the relevant meeting and at such other venues determined by the council.

Note: Clause 3.23 reflects section 9(2) and (4) of the Act.

- 3.25 Clause 3.24 does not apply to the business papers for items of business that the general manager has identified under clause 3.21 as being likely to be considered when the meeting is closed to the public.

**Note: Clause 3.24 reflects section 9(2A)(b) of the Act.**

3.26 For the purposes of clause 3.24, copies of agendas and business papers must be published on the council's website and made available to the public at a time that is as close as possible to the time they are available to councillors.

Note: Clause 3.26 reflects section 9(3) of the Act.

3.27 A copy of an agenda, or of an associated business paper made available under clause 3.24, may in addition be given or made available in electronic form.

Note: Clause 3.27 reflects section 9(5) of the Act.

Agenda and business papers for extraordinary meetings

- 3.28 The general manager must ensure that the agenda for an extraordinary meeting of the council deals only with the matters stated in the notice of the meeting.
- 3.29 Despite clause 3.27, business may be considered at an extraordinary meeting of the council, even though due notice of the business has not been given, if:
- (a) a motion is passed to have the business considered at the meeting, and
 - (b) the business to be considered is ruled by the chairperson to be of great urgency on the grounds that it requires a decision by the council before the next scheduled ordinary meeting of the council.
- 3.30 A motion moved under clause 3.28(a) can be moved without notice but only after the business notified in the agenda for the extraordinary meeting has been dealt with.
- 3.31 Despite clauses 10.20–10.30, only the mover of a motion moved under clause 3.28(a) can speak to the motion before it is put.
- 3.32 A motion of dissent cannot be moved against a ruling of the chairperson under clause 3.28(b) on whether a matter is of great urgency.

Pre-meeting briefing sessions

- 3.33 Prior to each ordinary meeting of the council, the general manager may arrange a pre-meeting briefing session to brief councillors on business to be considered at the meeting. Pre-meeting briefing sessions may also be held for extraordinary meetings of the council and meetings of committees of the council.
- 3.34 Pre-meeting briefing sessions are to be held in the absence of the public.
- 3.35 Pre-meeting sessions may be held by audio-visual link.
- 3.36 The general manager or a member of staff nominated by the general manager is to preside at pre-meeting briefing sessions.
- 3.37 Councillors must not use pre-meeting briefing sessions to debate or make preliminary decisions on items of business they are being briefed on, and any debate and decision-making must be left to the formal council or committee meeting at which the item of business is to be considered.



Policy No. PP019

Code of Meeting Practice

- 3.38 Councillors (including the Chairperson) must declare and manage any conflicts of interest they may have in relation to any item of business that is the subject of a briefing at a pre-meeting briefing session, in the same way that they are required to do so at a council or committee meeting. The council is to maintain a written record of all conflict of interest declarations made at pre-meeting briefing sessions and how the conflict of interest was managed by the councillor who made the declaration.



4 PUBLIC FORUMS

- 4.1 The council may hold a public forum prior to each ordinary meeting of the council for the purpose of hearing oral submissions from members of the public on items of business to be considered at the meeting. Public forums may also be held prior to extraordinary council meetings and meetings of committees of the council.
- 4.2 Not adopted
- 4.3 Public forums are to be chaired by the chairperson or their nominee.
- 4.4 To speak at a public forum, a person must first make an application to the council in the approved form. Applications to speak at the public forum must be received by 3 business days before the date on which the public forum is to be held, and must identify the item of business on the agenda of the council meeting the person wishes to speak on, and whether they wish to speak 'for' or 'against' the item.
- 4.5 A person may apply to speak on no more than 2 items of business on the agenda of the council meeting.
- 4.6 Legal representatives acting on behalf of others are not to be permitted to speak at a public forum unless they identify their status as a legal representative when applying to speak at the public forum.
- 4.7 The general manager or their delegate may refuse an application to speak at a public forum. The general manager or their delegate must give reasons in writing for a decision to refuse an application.
- 4.8 No more than 2 speakers are to be permitted to speak 'for' or 'against' each item of business on the agenda for the council meeting.
- 4.9 If more than the permitted number of speakers apply to speak 'for' or 'against' any item of business, the general manager or their delegate may request the speakers to nominate from among themselves the persons who are to address the council on the item of business. If the speakers are not able to agree on whom to nominate to address the council, the general manager or their delegate is to determine who will address the council at the public forum.
- 4.10 If more than the permitted number of speakers apply to speak 'for' or 'against' any item of business, the general manager or their delegate may, in consultation with the chairperson or the chairperson's nominated chairperson, increase the number of speakers permitted to speak on an item of business, where they are satisfied that it is necessary to do so to allow the council to hear a fuller range of views on the relevant item of business.
- 4.11 Approved speakers at the public forum are to register with the council any written, visual or audio material to be presented in support of their address to the council at the public forum, and to identify any equipment needs no more than 3 days before the public forum. The general manager or their delegate may refuse to allow such material to be presented.
- 4.12 The general manager or their delegate is to determine the order of speakers at the public forum.
- 4.13 Each speaker will be allowed 5 minutes to address the council. One extension of one minute may be granted at the discretion of the General Manager and Chairperson. This time is to be strictly enforced by the chairperson.

- 4.14 Speakers at public forums must not digress from the item on the agenda of the council meeting they have applied to address the council on. If a speaker digresses to irrelevant matters, the chairperson is to direct the speaker not to do so. If a speaker fails to observe a direction from the chairperson, the speaker will not be further heard.
- 4.15 A councillor (including the chairperson) may, through the chairperson, ask questions of a speaker following their address at a public forum. Questions put to a speaker must be direct, succinct and without argument.
- 4.16 Speakers are under no obligation to answer a question put under clause 4.14. Answers by the speaker, to each question are to be limited to 1 minute.
- 4.17 Speakers at public forums cannot ask questions of the council, councillors or council staff.
- 4.18 The general manager or their nominee may, with the concurrence of the chairperson, address the council for up to 5 minutes in response to an address to the council at a public forum after the address and any subsequent questions and answers have been finalised.
- 4.19 Where an address made at a public forum raises matters that require further consideration by council staff, the general manager may recommend that the council defer consideration of the matter pending the preparation of a further report on the matters.
- 4.20 When addressing the council, speakers at public forums must comply with this code and all other relevant council codes, policies and procedures. Speakers must refrain from engaging in disorderly conduct, publicly alleging breaches of the council's code of conduct or making other potentially defamatory statements.
- 4.21 If the chairperson considers that a speaker at a public forum has engaged in conduct of the type referred to in clause 4.19, the chairperson may request the person to refrain from the inappropriate behaviour and to withdraw and unreservedly apologise for any inappropriate comments. Where the speaker fails to comply with the chairperson's request, the chairperson may immediately require the person to stop speaking.
- 4.22 Clause 4.20 does not limit the ability of the chairperson to deal with disorderly conduct by speakers at public forums in accordance with the provisions of Part 15 of this code.
- 4.23 Where a speaker engages in conduct of the type referred to in clause 4.19, the general manager or their delegate may refuse further applications from that person to speak at public forums for such a period as the general manager or their delegate considers appropriate.
- 4.24 Councillors (including the Chairperson) must declare and manage any conflicts of interest they may have in relation to any item of business that is the subject of an address at a public forum, in the same way that they are required to do so at a council or committee meeting. The council is to maintain a written record of all conflict of interest declarations made at public forums and how the conflict of interest was managed by the councillor who made the declaration.

Note: Public forums should not be held as part of a council or committee meeting. Council or committee meetings should be reserved for decision-making by the council or committee of council. Where a public forum is held as part of a council or committee meeting, it must be conducted in accordance with the other requirements of this code relating to the conduct of council and committee meetings.



5 COMING TOGETHER

Attendance by councillors at meetings

- 5.1 All councillors must make reasonable efforts to attend meetings of the council and of committees of the council of which they are members.

Note: A councillor may not attend a meeting as a councillor (other than the first meeting of the council after the councillor is elected or a meeting at which the councillor takes an oath or makes an affirmation of office) until they have taken an oath or made an affirmation of office in the form prescribed under section 233A of the Act.

- 5.2 A councillor cannot participate in a meeting of the council or of a committee of the council unless personally present at the meeting, unless permitted to attend the meeting by audio-visual link under this code.

- 5.3 Not adopted.

- 5.4 Where a councillor is unable to attend one or more ordinary meetings of the council, the councillor should request that the council grant them a leave of absence from those meetings. This clause does not prevent a councillor from making an apology if they are unable to attend a meeting. However, the acceptance of such an apology does not constitute the granting of a leave of absence for the purposes of this code and the Act.

- 5.5 A councillor's request for leave of absence from council meetings should, if practicable, identify (by date) the meetings from which the councillor intends to be absent and the grounds upon which the leave of absence is being sought.

- 5.6 The council must act reasonably when considering whether to grant a councillor's request for a leave of absence.

- 5.7 A councillor's civic office will become vacant if the councillor is absent from three (3) consecutive ordinary meetings of the council without prior leave of the council, or leave granted by the council at any of the meetings concerned, unless the holder is absent because they have been suspended from office under the Act, or because the council has been suspended under the Act, or as a consequence of a compliance order under section 438HA.

Note: Clause 5.7 reflects section 234(1)(d) of the Act.

- 5.8 A councillor who intends to attend a meeting of the council despite having been granted a leave of absence should, if practicable, give the general manager at least two (2) days' notice of their intention to attend.

The quorum for a meeting

- 5.9 The quorum for a meeting of the council is a majority of the councillors of the council who hold office at that time and are not suspended from office.

Note: Clause 5.9 reflects section 368(1) of the Act.



- 5.10 Clause 5.9 does not apply if the quorum is required to be determined in accordance with directions of the Minister in a performance improvement order issued in respect of the council.

Note: Clause 5.10 reflects section 368(2) of the Act.

- 5.11 A meeting of the council must be adjourned if a quorum is not present:
- (a) at the commencement of the meeting where the number of apologies received for the meeting indicates that there will not be a quorum for the meeting, or
 - (b) within half an hour after the time designated for the holding of the meeting, or
 - (c) at any time during the meeting.
- 5.12 In either case, the meeting must be adjourned to a time, date, and place fixed:
- (a) by the chairperson, or
 - (b) in the chairperson's absence, by the majority of the councillors present, or
 - (c) failing that, by the general manager.
- 5.13 The general manager must record in the council's minutes the circumstances relating to the absence of a quorum (including the reasons for the absence of a quorum) at or arising during a meeting of the council, together with the names of the councillors present.
- 5.14 Where, prior to the commencement of a meeting, it becomes apparent that a quorum may not be present at the meeting, or that the health, safety or welfare of councillors, council staff and members of the public may be put at risk by attending the meeting because of a natural disaster or a public health emergency, the chairperson may, in consultation with the general manager and, as far as is practicable, with each councillor, cancel the meeting. Where a meeting is cancelled, notice of the cancellation must be published on the council's website and in such other manner that the council is satisfied is likely to bring notice of the cancellation to the attention of as many people as possible.
- 5.15 Where a meeting is cancelled under clause 5.14, the business to be considered at the meeting may instead be considered, where practicable, at the next ordinary meeting of the council or at an extraordinary meeting called under clause 3.3.

Meetings held by audio-visual link

- 5.16 A meeting of the council or a committee of the council may be held by audio-visual link where the chairperson determines that the meeting should be held by audio-visual link because of a natural disaster or a public health emergency. The chairperson may only make a determination under this clause where they are satisfied that attendance at the meeting may put the health and safety of councillors and staff at risk. The chairperson must make a determination under this clause in consultation with the general manager and, as far as is practicable, with each councillor.



5.17 Where the chairperson determines under clause 5.16 that a meeting is to be held by audio-visual link, the general manager must:

- (a) give written notice to all councillors that the meeting is to be held by audio-visual link, and
- (b) take all reasonable steps to ensure that all councillors can participate in the meeting by audio-visual link, and
- (c) cause a notice to be published on the council's website and in such other manner the general manager is satisfied will bring it to the attention of as many people as possible, advising that the meeting is to be held by audio-visual link and providing information about where members of the public may view the meeting.

5.18 This code applies to a meeting held by audio-visual link under clause 5.16 in the same way it would if the meeting was held in person.

Note: Where a council holds a meeting by audio-visual link under clause 5.16, it is still required under section 10 of the Act to provide a physical venue for members of the public to attend in person and observe the meeting.

Attendance by councillors at meetings by audio-visual link

5.19 Councillors may attend and participate in meetings of the council and committees of the council by audio-visual link with the approval of the council or the relevant committee.

5.20 A request by a councillor for approval to attend a meeting by audio-visual link must be made in writing to the general manager prior to the meeting in question and must provide reasons why the councillor will be prevented from attending the meeting in person.

5.21 Councillors may request approval to attend more than one meeting by audio-visual link. Where a councillor requests approval to attend more than one meeting by audio-visual link, the request must specify the meetings the request relates to in addition to the information required under clause 5.20.

5.22 The council must comply with the Health Privacy Principles prescribed under the Health Records and Information Privacy Act 2002 when collecting, holding, using and disclosing health information in connection with a request by a councillor to attend a meeting by audio-visual link.

5.23 A councillor who has requested approval to attend a meeting of the council or a committee of the council by audio-visual link may participate in the meeting by audio-visual link until the council or committee determines whether to approve their request and is to be taken as present at the meeting. The councillor may participate in a decision in relation to their request to attend the meeting by audio-visual link.

5.24 A decision whether to approve a request by a councillor to attend a meeting of the council or a committee of the council by audio-visual link must be made by a resolution of the council or the committee concerned. The resolution must state:



- (a) the meetings the resolution applies to, and
- (b) the reason why the councillor is being permitted to attend the meetings by audio-visual link where it is on grounds other than illness, disability, or caring responsibilities.

5.25 If the council or committee refuses a councillor's request to attend a meeting by audio-visual link, their link to the meeting is to be terminated.

5.26 A decision whether to approve a councillor's request to attend a meeting by audio-visual link is at the council's or the relevant committee's discretion. The council and committees of the council must act reasonably when considering requests by councillors to attend meetings by audio-visual link. However, the council and committees of the council are under no obligation to approve a councillor's request to attend a meeting by audio-visual link where the technical capacity does not exist to allow the councillor to attend the meeting by these means.

5.27 The council and committees of the council may refuse a councillor's request to attend a meeting by audio-visual link where the council or committee is satisfied that the councillor has failed to appropriately declare and manage conflicts of interest, observe confidentiality or to comply with this code on one or more previous occasions they have attended a meeting of the council or a committee of the council by audio-visual link.

5.28 This code applies to a councillor attending a meeting by audio-visual link in the same way it would if the councillor was attending the meeting in person. Where a councillor is permitted to attend a meeting by audio-visual link under this code, they are to be taken as attending the meeting in person for the purposes of the code and will have the same voting rights as if they were attending the meeting in person.

5.29 A councillor must give their full attention to the business and proceedings of the meeting when attending a meeting by audio-visual link. The councillor's camera must be on at all times during the meeting except as may be otherwise provided for under this code.

5.30 A councillor must be appropriately dressed when attending a meeting by audio-visual link and must ensure that no items are within sight of the meeting that are inconsistent with the maintenance of order at the meeting or that are likely to bring the council or the committee into disrepute.

Entitlement of the public to attend council meetings

5.31 Everyone is entitled to attend a meeting of the council and committees of the council. The council must ensure that all meetings of the council and committees of the council are open to the public.

Note: Clause 5.31 reflects section 10(1) of the Act.



- 5.32 Clause 5.31 does not apply to parts of meetings that have been closed to the public under section 10A of the Act.
- 5.33 A person (whether a councillor or another person) is not entitled to be present at a meeting of the council or a committee of the council if expelled from the meeting:
- (a) by a resolution of the meeting, or
 - (b) by the person presiding at the meeting if the council has, by resolution, authorised the person presiding to exercise the power of expulsion.

Note: Clause 5.33 reflects section 10(2) of the Act.

Note: If adopted, clauses 15.14 and 15.15 confer a standing authorisation on all chairpersons of meetings of the council and committees of the council to expel persons from meetings. If adopted, clause 15.14 authorises chairpersons to expel any person, including a councillor, from a council or committee meeting. Alternatively, if adopted, clause 15.15 authorises chairpersons to expel persons other than councillors from a council or committee meeting.

Webcasting of meetings

- 5.34 Each meeting of the council or a committee of the council is to be recorded by means of an audio or audio-visual device.
- 5.35 At the start of each meeting of the council or a committee of the council, the chairperson must inform the persons attending the meeting that:
- (a) the meeting is being recorded and made publicly available on the council's website, and
 - (b) persons attending the meeting should refrain from making any defamatory statements.
- 5.36 The recording of a meeting is to be made publicly available on the council's website:
- (a) at the same time as the meeting is taking place, or
 - (b) as soon as practicable after the meeting.
- 5.37 The recording of a meeting is to be made publicly available on the council's website for at least 12 months after the meeting.
- 5.38 Clauses 5.36 and 5.37 do not apply to any part of a meeting that has been closed to the public in accordance with section 10A of the Act.

Note: Clauses 5.34 – 5.38 reflect section 236 of the Regulation.

- 5.39 Recordings of meetings may be disposed of in accordance with the *State Records Act 1998*.



Attendance of the general manager and other staff at meetings

5.40 The general manager is entitled to attend, but not to vote at, a meeting of the council or a meeting of a committee of the council of which all of the members are councillors.

Note: Clause 5.40 reflects section 376(1) of the Act.

5.41 The general manager is entitled to attend a meeting of any other committee of the council and may, if a member of the committee, exercise a vote.

Note: Clause 5.41 reflects section 376(2) of the Act.

5.42 The general manager may be excluded from a meeting of the council or a committee while the council or committee deals with a matter relating to the standard of performance of the general manager or the terms of employment of the general manager.

Note: Clause 5.42 reflects section 376(3) of the Act.

5.43 The attendance of other council staff at a meeting, (other than as members of the public) shall be with the approval of the general manager.

5.44 The general manager and other council staff may attend meetings of the council and committees of the council by audio-visual link. Attendance by council staff at meetings by audio-visual link (other than as members of the public) shall be with the approval of the general manager.

6 THE CHAIRPERSON

The chairperson at meetings

6.1 The Chairperson, or at the request of or in the absence of the Chairperson, the deputy Chairperson (if any) presides at meetings of the council.

Note: Clause 6.1 reflects section 369(1) of the Act.

6.2 If the Chairperson and the deputy Chairperson (if any) are absent, a councillor elected to chair the meeting by the councillors present presides at a meeting of the council.

Note: Clause 6.2 reflects section 369(2) of the Act.

Election of the chairperson in the absence of the Chairperson and deputy Chairperson

6.3 If no chairperson is present at a meeting of the council at the time designated for the holding of the meeting, the first business of the meeting must be the election of a chairperson to preside at the meeting.

6.4 The election of a chairperson must be conducted:

(a) by the general manager or, in their absence, an employee of the council designated by the general manager to conduct the election, or

(b) by the person who called the meeting or a person acting on their behalf if neither the general manager nor a designated employee is present at the meeting, or if there is no general manager or designated employee.



- 6.5 If, at an election of a chairperson, two (2) or more candidates receive the same number of votes and no other candidate receives a greater number of votes, the chairperson is to be the candidate whose name is chosen by lot.
- 6.6 For the purposes of clause 6.5, the person conducting the election must:
- (a) arrange for the names of the candidates who have equal numbers of votes to be written on similar slips, and
 - (b) then fold the slips so as to prevent the names from being seen, mix the slips and draw one of the slips at random.
- 6.7 The candidate whose name is on the drawn slip is the candidate who is to be the chairperson.
- 6.8 Any election conducted under clause 6.3, and the outcome of the vote, are to be recorded in the minutes of the meeting.

Chairperson to have precedence

- 6.9 When the chairperson rises or speaks during a meeting of the council:
- (a) any councillor then speaking or seeking to speak must cease speaking and, if standing, immediately resume their seat, and
 - (b) every councillor present must be silent to enable the chairperson to be heard without interruption.

7 MODES OF ADDRESS

- 7.1 If the chairperson is the mayor, they are to be addressed as 'Mr Mayor' or 'Madam Mayor'.
- 7.2 Where the chairperson is not the mayor, they are to be addressed as either 'Mr Chairperson' or 'Madam Chairperson'.
- 7.3 A councillor is to be addressed as 'Councillor [surname]'.
- 7.4 A council officer is to be addressed by their official designation or as Mr/Ms [surname].

8 ORDER OF BUSINESS FOR ORDINARY COUNCIL MEETINGS

- 8.1 Not adopted. Superseded by 8.2.
- 8.2 The general order of business for an ordinary meeting of the council shall be:
1. Opening and Welcome
 2. Acknowledgement of Country
 3. Leave of Absence / Apologies
 4. Attendance of Councillors by Audio Visual Link
 5. Webcasting of Council Meetings
 6. Presentations
 7. Disclosure and Declarations of Interest
 8. Business Without Notice - Urgent
 9. Confirmation of Minutes
 10. Chairperson Minute



11. Reports from Committees
12. Correspondence
13. Matters submitted by Corporate Services Manager
14. Matters submitted by Operations Manager
15. Matters submitted by Production and Services Manager
16. Matters submitted by Engineering Manager
17. Matters submitted by the General Manager
18. Business With Notice
19. Notices of Motion
20. Confidential Reports
21. Report of Confidential Resolutions
22. Next Meeting
23. Close of Business

Note: Councils must use either clause 8.1 or 8.2.

- 8.3 The order of business as fixed under clause 8.2 may be altered for a particular meeting of the council if a motion to that effect is passed at that meeting. Such a motion can be moved without notice.

Note: If adopted, Part 13 allows council to deal with items of business by exception.

- 8.4 Despite clauses 10.20–10.30, only the mover of a motion referred to in clause 8.3 may speak to the motion before it is put.

9 CONSIDERATION OF BUSINESS AT COUNCIL MEETINGS

Business that can be dealt with at a council meeting

- 9.1 The council must not consider business at a meeting of the council:
- (a) unless a councillor has given notice of the business, as required by clause 3.10, and
 - (b) unless notice of the business has been sent to the councillors in accordance with clause 3.7 in the case of an ordinary meeting or clause 3.9 in the case of an extraordinary meeting called in an emergency.
- 9.2 Clause 9.1 does not apply to the consideration of business at a meeting, if the business:
- (a) is already before, or directly relates to, a matter that is already before the council, or
 - (b) is the election of a chairperson to preside at the meeting, or
 - (c) subject to clause 9.9, is a matter or topic put to the meeting by way of a chairpersons minute, or
 - (d) is a motion for the adoption of recommendations of a committee, including, but not limited to, a committee of the council.
- 9.3 Despite clause 9.1, business may be considered at a meeting of the council even though due notice of the business has not been given to the councillors if:
- (a) a motion is passed to have the business considered at the meeting, and



- (b) the business to be considered is ruled by the chairperson to be of great urgency on the grounds that it requires a decision by the council before the next scheduled ordinary meeting of the council.
- 9.4 A motion moved under clause 9.3(a) can be moved without notice. Despite clauses 10.20–10.30, only the mover of a motion referred to in clause 9.3(a) can speak to the motion before it is put.
- 9.5 A motion of dissent cannot be moved against a ruling by the chairperson under clause 9.3(b).

Chairpersons minutes

- 9.6 Subject to clause 9.9, if the chairperson is the chairperson at a meeting of the council, the chairperson may, by minute signed by the chairperson, put to the meeting without notice any matter or topic that is within the jurisdiction of the council, or of which the council has official knowledge.
- 9.7 A chairpersons minute, when put to a meeting, takes precedence over all business on the council's agenda for the meeting. The chairperson (but only if the chairperson is the Chairperson) may move the adoption of a chairpersons minute without the motion being seconded.
- 9.8 A recommendation made in a chairpersons minute put by the chairperson is, so far as it is adopted by the council, a resolution of the council.
- 9.9 A chairpersons minute must not be used to put without notice matters that are routine and not urgent, or matters for which proper notice should be given because of their complexity. For the purpose of this clause, a matter will be urgent where it requires a decision by the council before the next scheduled ordinary meeting of the council.
- 9.10 Where a chairpersons minute makes a recommendation which, if adopted, would require the expenditure of funds on works and/or services other than those already provided for in the council's current adopted operational plan, it must identify the source of funding for the expenditure that is the subject of the recommendation. If the chairpersons minute does not identify a funding source, the council must defer consideration of the matter, pending a report from the general manager on the availability of funds for implementing the recommendation if adopted.



Staff reports

- 9.11 A recommendation made in a staff report is, so far as it is adopted by the council, a resolution of the council.

Reports of committees of council

- 9.12 The recommendations of a committee of the council are, so far as they are adopted by the council, resolutions of the council.
- 9.13 If in a report of a committee of the council distinct recommendations are made, the council may make separate decisions on each recommendation.

Questions

- 9.14 A question must not be asked at a meeting of the council unless it concerns a matter on the agenda of the meeting or notice has been given of the question in accordance with clauses 3.10 and 3.14.
- 9.15 A councillor may, through the chairperson, put a question to another councillor about a matter on the agenda.
- 9.16 A councillor may, through the general manager, put a question to a council employee about a matter on the agenda. Council employees are only obliged to answer a question put to them through the general manager at the direction of the general manager.
- 9.17 A councillor or council employee to whom a question is put is entitled to be given reasonable notice of the question and, in particular, sufficient notice to enable reference to be made to other persons or to documents. Where a councillor or council employee to whom a question is put is unable to respond to the question at the meeting at which it is put, they may take it on notice and report the response to the next meeting of the council.
- 9.18 Councillors must put questions directly, succinctly, respectfully and without argument.
- 9.19 The chairperson must not permit discussion on any reply to, or refusal to reply to, a question put to a councillor or council employee.

10 RULES OF DEBATE

Motions to be seconded

- 10.1 Unless otherwise specified in this code, a motion or an amendment cannot be debated unless or until it has been seconded.

Notices of motion

- 10.2 A councillor who has submitted a notice of motion under clause 3.10 is to move the motion the subject of the notice of motion at the meeting at which it is to be considered.



- 10.3 If a councillor who has submitted a notice of motion under clause 3.10 wishes to withdraw it after the agenda and business paper for the meeting at which it is to be considered have been sent to councillors, the councillor may request the withdrawal of the motion when it is before the council.
- 10.4 In the absence of a councillor who has placed a notice of motion on the agenda for a meeting of the council:
- (a) any other councillor may, with the leave of the chairperson, move the motion at the meeting, or
 - (b) the chairperson may defer consideration of the motion until the next meeting of the council.

Chairperson's duties with respect to motions

- 10.5 It is the duty of the chairperson at a meeting of the council to receive and put to the meeting any lawful motion that is brought before the meeting.
- 10.6 The chairperson must rule out of order any motion or amendment to a motion that is unlawful or the implementation of which would be unlawful.
- 10.7 Before ruling out of order a motion or an amendment to a motion under clause 10.6, the chairperson is to give the mover an opportunity to clarify or amend the motion or amendment.
- 10.8 Any motion, amendment, or other matter that the chairperson has ruled out of order is taken to have been lost.

Motions requiring the expenditure of funds

- 10.9 A motion or an amendment to a motion which if passed would require the expenditure of funds on works and/or services other than those already provided for in the council's current adopted operational plan must identify the source of funding for the expenditure that is the subject of the motion. If the motion does not identify a funding source, the council must defer consideration of the matter, pending a report from the general manager on the availability of funds for implementing the motion if adopted.

Amendments to motions

- 10.10 An amendment to a motion must be moved and seconded before it can be debated.
- 10.11 An amendment to a motion must relate to the matter being dealt with in the original motion before the council and must not be a direct negative of the original motion. An amendment to a motion which does not relate to the matter being dealt with in the original motion, or which is a direct negative of the original motion, must be ruled out of order by the chairperson.
- 10.12 The mover of an amendment is to be given the opportunity to explain any uncertainties in the proposed amendment before a seconder is called for.



- 10.13 If an amendment has been lost, a further amendment can be moved to the motion to which the lost amendment was moved, and so on, but no more than one (1) motion and one (1) proposed amendment can be before council at any one time.
- 10.14 While an amendment is being considered, debate must only occur in relation to the amendment and not the original motion. Debate on the original motion is to be suspended while the amendment to the original motion is being debated.
- 10.15 If the amendment is carried, it becomes the motion and is to be debated. If the amendment is lost, debate is to resume on the original motion.
- 10.16 An amendment may become the motion without debate or a vote where it is accepted by the councillor who moved the original motion.

Foreshadowed motions

- 10.17A councillor may propose a foreshadowed motion in relation to the matter the subject of the original motion before the council, without a seconder during debate on the original motion. The foreshadowed motion is only to be considered if the original motion is lost or withdrawn and the foreshadowed motion is then moved and seconded. If the original motion is carried, the foreshadowed motion lapses.
- 10.18 Where an amendment has been moved and seconded, a councillor may, without a seconder, foreshadow a further amendment that they propose to move after the first amendment has been dealt with. There is no limit to the number of foreshadowed amendments that may be put before the council at any time. However, no discussion can take place on foreshadowed amendments until the previous amendment has been dealt with and the foreshadowed amendment has been moved and seconded.
- 10.19 Foreshadowed motions and foreshadowed amendments are to be considered in the order in which they are proposed. However, foreshadowed motions cannot be considered until all foreshadowed amendments have been dealt with.

Limitations on the number and duration of speeches

- 10.20A councillor who, during a debate at a meeting of the council, moves an original motion, has the right to speak on each amendment to the motion and a right of general reply to all observations that are made during the debate in relation to the motion, and any amendment to it at the conclusion of the debate before the motion (whether amended or not) is finally put.
- 10.21A councillor, other than the mover of an original motion, has the right to speak once on the motion and once on each amendment to it.
- 10.22A councillor must not, without the consent of the council, speak more than once on a motion or an amendment, or for longer than five (5) minutes at any one time.
- 10.23 Despite clause 10.22, the chairperson may permit a councillor who claims to have been misrepresented or misunderstood to speak more than once on a motion or an amendment, and for longer than five (5) minutes on that motion or amendment to enable the councillor to make a statement limited to explaining the misrepresentation or misunderstanding.
- 10.24 Despite clause 10.22, the council may resolve to shorten the duration of speeches to expedite the consideration of business at a meeting.



- 10.25 Despite clauses 10.20 and 10.21, a councillor may move that a motion or an amendment be now put:
- (a) if the mover of the motion or amendment has spoken in favour of it and no councillor expresses an intention to speak against it, or
 - (b) if at least two (2) councillors have spoken in favour of the motion or amendment and at least two (2) councillors have spoken against it.
- 10.26 The chairperson must immediately put to the vote, without debate, a motion moved under clause 10.25. A seconder is not required for such a motion.
- 10.27 If a motion that the original motion or an amendment be now put is passed, the chairperson must, without further debate, put the original motion or amendment to the vote immediately after the mover of the original motion has exercised their right of reply under clause 10.20.
- 10.28 If a motion that the original motion or an amendment be now put is lost, the chairperson must allow the debate on the original motion or the amendment to be resumed.
- 10.29 All councillors must be heard without interruption and all other councillors must, unless otherwise permitted under this code, remain silent while another councillor is speaking.
- 10.30 Once the debate on a matter has concluded and a matter has been dealt with, the chairperson must not allow further debate on the matter.

11 VOTING

Voting entitlements of councillors

11.1 Each councillor is entitled to one (1) vote.

Note: Clause 11.1 reflects section 370(1) of the Act.

11.2 The person presiding at a meeting of the council has, in the event of an equality of votes, a second or casting vote.

Note: Clause 11.2 reflects section 370(2) of the Act.

11.3 Where the chairperson declines to exercise, or fails to exercise, their second or casting vote, in the event of an equality of votes, the motion being voted upon is lost.

11.4 Not adopted.

Voting at council meetings

11.5 A councillor who is present at a meeting of the council but who fails to vote on a motion put to the meeting is taken to have voted against the motion.

11.6 If a councillor who has voted against a motion put at a council meeting so requests, the general manager must ensure that the councillor's dissenting vote is recorded in the council's minutes.

11.7 The decision of the chairperson as to the result of a vote is final, unless the decision is immediately challenged and not fewer than two (2) councillors rise and call for a division.



- 11.8 When a division on a motion is called, the chairperson must ensure that the division takes place immediately. The general manager must ensure that the names of those who vote for the motion and those who vote against it are recorded in the council's minutes for the meeting.
- 11.9 When a division on a motion is called, any councillor who fails to vote will be recorded as having voted against the motion in accordance with clause 11.5 of this code.
- 11.10 Voting at a meeting, including voting in an election at a meeting, is to be by open means (such as on the voices, by show of hands or by a visible electronic voting system). However, the council may resolve that the voting in any election by councillors for chairperson or deputy chairperson is to be by secret ballot.
- 11.11 Not adopted.

Voting on planning decisions

- 11.12 The general manager must keep a register containing, for each planning decision made at a meeting of the council or a council committee (including, but not limited to a committee of the council), the names of the councillors who supported the decision and the names of any councillors who opposed (or are taken to have opposed) the decision.
- 11.13 For the purpose of maintaining the register, a division is taken to have been called whenever a motion for a planning decision is put at a meeting of the council or a council committee.
- 11.14 Each decision recorded in the register is to be described in the register or identified in a manner that enables the description to be obtained from another publicly available document.
- 11.15 Clauses 11.12–11.14 apply also to meetings that are closed to the public.

Note: Clauses 11.12–11.15 reflect section 375A of the Act.

Note: The requirements of clause 11.12 may be satisfied by maintaining a register of the minutes of each planning decision.



12 COMMITTEE OF THE WHOLE

12.1 The council may resolve itself into a committee to consider any matter before the council.

Note: Clause 12.1 reflects section 373 of the Act.

12.2 All the provisions of this code relating to meetings of the council, so far as they are applicable, extend to and govern the proceedings of the council when in committee of the whole, except the provisions limiting the number and duration of speeches.

Note: Clauses 10.20–10.30 limit the number and duration of speeches.

12.3 The general manager or, in the absence of the general manager, an employee of the council designated by the general manager, is responsible for reporting to the council the proceedings of the committee of the whole. It is not necessary to report the proceedings in full but any recommendations of the committee must be reported.

12.4 The council must ensure that a report of the proceedings (including any recommendations of the committee) is recorded in the council's minutes. However, the council is not taken to have adopted the report until a motion for adoption has been made and passed.

13 DEALING WITH ITEMS BY EXCEPTION

13.1 The council or a committee of council may, at any time, resolve to adopt multiple items of business on the agenda together by way of a single resolution.

13.2 Before the council or committee resolves to adopt multiple items of business on the agenda together under clause 13.1, the chairperson must list the items of business to be adopted and ask councillors to identify any individual items of business listed by the chairperson that they intend to vote against the recommendation made in the business paper or that they wish to speak on.

13.3 The council or committee must not resolve to adopt any item of business under clause 13.1 that a councillor has identified as being one they intend to vote against the recommendation made in the business paper or to speak on.

13.4 Where the consideration of multiple items of business together under clause 13.1 involves a variation to the order of business for the meeting, the council or committee must resolve to alter the order of business in accordance with clause 8.3.

13.5 A motion to adopt multiple items of business together under clause 13.1 must identify each of the items of business to be adopted and state that they are to be adopted as recommended in the business paper.

13.6 Items of business adopted under clause 13.1 are to be taken to have been adopted unanimously.

13.7 Councillors must ensure that they declare and manage any conflicts of interest they may have in relation to items of business considered together under clause 13.1 in accordance with the requirements of the council's code of conduct.

14 CLOSURE OF COUNCIL MEETINGS TO THE PUBLIC

Grounds on which meetings can be closed to the public

14.1 The council or a committee of the council may close to the public so much of its meeting as comprises the discussion or the receipt of any of the following types of matters:

- (a) personnel matters concerning particular individuals (other than councillors),
- (b) the personal hardship of any resident or ratepayer,
- (c) information that would, if disclosed, confer a commercial advantage on a person with whom the council is conducting (or proposes to conduct) business,
- (d) commercial information of a confidential nature that would, if disclosed:
 - (i) prejudice the commercial position of the person who supplied it, or
 - (ii) confer a commercial advantage on a competitor of the council, or
 - (iii) reveal a trade secret,
- (e) information that would, if disclosed, prejudice the maintenance of law,
- (f) matters affecting the security of the council, councillors, council staff or council property,
- (g) advice concerning litigation, or advice that would otherwise be privileged from production in legal proceedings on the ground of legal professional privilege,
- (h) information concerning the nature and location of a place or an item of Aboriginal significance on community land,
- (i) alleged contraventions of the council's code of conduct.

Note: Clause 14.1 reflects section 10A(1) and (2) of the Act.

14.2 The council or a committee of the council may also close to the public so much of its meeting as comprises a motion to close another part of the meeting to the public.

Note: Clause 14.2 reflects section 10A(3) of the Act.

Matters to be considered when closing meetings to the public

14.3 A meeting is not to remain closed during the discussion of anything referred to in clause 14.1:

- (a) except for so much of the discussion as is necessary to preserve the relevant confidentiality, privilege or security, and
- (b) if the matter concerned is a matter other than a personnel matter concerning particular individuals, the personal hardship of a resident or ratepayer or a trade secret – unless the council or committee concerned is satisfied that discussion of the matter in an open meeting would, on balance, be contrary to the public interest.

**Note: Clause 14.3 reflects section 10B(1) of the Act.**

14.4 A meeting is not to be closed during the receipt and consideration of information or advice referred to in clause 14.1(g) unless the advice concerns legal matters that:

- (a) are substantial issues relating to a matter in which the council or committee is involved, and
- (b) are clearly identified in the advice, and
- (c) are fully discussed in that advice.

Note: Clause 14.4 reflects section 10B(2) of the Act.

14.5 If a meeting is closed during the discussion of a motion to close another part of the meeting to the public (as referred to in clause 14.2), the consideration of the motion must not include any consideration of the matter or information to be discussed in that other part of the meeting other than consideration of whether the matter concerned is a matter referred to in clause 14.1.

Note: Clause 14.5 reflects section 10B(3) of the Act.

14.6 For the purpose of determining whether the discussion of a matter in an open meeting would be contrary to the public interest, it is irrelevant that:

- (a) a person may misinterpret or misunderstand the discussion, or
- (b) the discussion of the matter may:
 - (i) cause embarrassment to the council or committee concerned, or to councillors or to employees of the council, or
 - (ii) cause a loss of confidence in the council or committee.

Note: Clause 14.6 reflects section 10B(4) of the Act.

14.7 In deciding whether part of a meeting is to be closed to the public, the council or committee concerned must consider any relevant guidelines issued by the Departmental Chief Executive of the Office of Local Government.

Note: Clause 14.7 reflects section 10B(5) of the Act.

Notice of likelihood of closure not required in urgent cases

14.8 Part of a meeting of the council, or of a committee of the council, may be closed to the public while the council or committee considers a matter that has not been identified in the agenda for the meeting under clause 3.21 as a matter that is likely to be considered when the meeting is closed, but only if:

- (a) it becomes apparent during the discussion of a particular matter that the matter is a matter referred to in clause 14.1, and
- (b) the council or committee, after considering any representations made under clause 14.9, resolves that further discussion of the matter:



- (i) should not be deferred (because of the urgency of the matter), and
- (ii) should take place in a part of the meeting that is closed to the public.

Note: Clause 14.8 reflects section 10C of the Act.

Representations by members of the public

14.9 The council, or a committee of the council, may allow members of the public to make representations to or at a meeting, before any part of the meeting is closed to the public, as to whether that part of the meeting should be closed.

Note: Clause 14.9 reflects section 10A(4) of the Act.

14.10A representation under clause 14.9 is to be made after the motion to close the part of the meeting is moved and seconded.

14.11 Where the matter has been identified in the agenda of the meeting under clause 3.21 as a matter that is likely to be considered when the meeting is closed to the public, in order to make representations under clause 14.9, members of the public must first make an application to the council in the approved form. Applications must be received by 3 business days before the meeting at which the matter is to be considered.

14.12 The general manager (or their delegate) may refuse an application made under clause 14.11. The general manager or their delegate must give reasons in writing for a decision to refuse an application.

14.13 No more than 2 speakers are to be permitted to make representations under clause 14.9.

14.14 If more than the permitted number of speakers apply to make representations under clause 14.9, the general manager or their delegate may request the speakers to nominate from among themselves the persons who are to make representations to the council. If the speakers are not able to agree on whom to nominate to make representations under clause 14.9, the general manager or their delegate is to determine who will make representations to the council.

14.15 The general manager (or their delegate) is to determine the order of speakers.

14.16 Where the council or a committee of the council proposes to close a meeting or part of a meeting to the public in circumstances where the matter has not been identified in the agenda for the meeting under clause 3.21 as a matter that is likely to be considered when the meeting is closed to the public, the chairperson is to invite representations from the public under clause 14.9 after the motion to close the part of the meeting is moved and seconded. The chairperson is to permit no more than 2 speakers to make representations in such order as determined by the chairperson.

14.17 Each speaker will be allowed 5 minutes to make representations, and this time limit is to be strictly enforced by the chairperson. Speakers must confine their representations to whether the meeting should be closed to the public. If a speaker digresses to irrelevant matters, the chairperson is to direct the speaker not to do so. If a speaker fails to observe a direction from the chairperson, the speaker will not be further heard.

Expulsion of non-councillors from meetings closed to the public



14.18 If a meeting or part of a meeting of the council or a committee of the council is closed to the public in accordance with section 10A of the Act and this code, any person who is not a councillor and who fails to leave the meeting when requested, may be expelled from the meeting as provided by section 10(2)(a) or (b) of the Act.

14.19 If any such person, after being notified of a resolution or direction expelling them from the meeting, fails to leave the place where the meeting is being held, a police officer, or any person authorised for the purpose by the council or person presiding, may, by using only such force as is necessary, remove the first-mentioned person from that place and, if necessary restrain that person from re-entering that place for the remainder of the meeting.

Obligations of councillors attending meetings by audio-visual link

14.20 Councillors attending a meeting by audio-visual link must ensure that no other person is within sight or hearing of the meeting at any time that the meeting is closed to the public under section 10A of the Act.

Information to be disclosed in resolutions closing meetings to the public

14.21 The grounds on which part of a meeting is closed must be stated in the decision to close that part of the meeting and must be recorded in the minutes of the meeting. The grounds must specify the following:

- (a) the relevant provision of section 10A(2) of the Act,
- (b) the matter that is to be discussed during the closed part of the meeting,
- (c) the reasons why the part of the meeting is being closed, including (if the matter concerned is a matter other than a personnel matter concerning particular individuals, the personal hardship of a resident or ratepayer or a trade secret) an explanation of the way in which discussion of the matter in an open meeting would be, on balance, contrary to the public interest.

Note: Clause 14.21 reflects section 10D of the Act.

Resolutions passed at closed meetings to be made public

14.22 If the council passes a resolution during a meeting, or a part of a meeting, that is closed to the public, the chairperson must make the resolution public as soon as practicable after the meeting, or the relevant part of the meeting, has ended, and the resolution must be recorded in the publicly available minutes of the meeting.

14.23 Resolutions passed during a meeting, or a part of a meeting, that is closed to the public must be made public by the chairperson under clause 14.22 during a part of the meeting that is webcast.



15 KEEPING ORDER AT MEETINGS

Points of order

- 15.1 A councillor may draw the attention of the chairperson to an alleged breach of this code by raising a point of order. A point of order does not require a seconder.
- 15.2 A point of order cannot be made with respect to adherence to the principles contained in clause 2.1.
- 15.3 A point of order must be taken immediately it is raised. The chairperson must suspend the business before the meeting and permit the councillor raising the point of order to state the provision of this code they believe has been breached. The chairperson must then rule on the point of order – either by upholding it or by overruling it.

Questions of order

- 15.4 The chairperson, without the intervention of any other councillor, may call any councillor to order whenever, in the opinion of the chairperson, it is necessary to do so.
- 15.5 A councillor who claims that another councillor has committed an act of disorder, or is out of order, may call the attention of the chairperson to the matter.
- 15.6 The chairperson must rule on a question of order immediately after it is raised but, before doing so, may invite the opinion of the council.
- 15.7 The chairperson's ruling must be obeyed unless a motion dissenting from the ruling is passed.

Motions of dissent

- 15.8 A councillor can, without notice, move to dissent from a ruling of the chairperson on a point of order or a question of order. If that happens, the chairperson must suspend the business before the meeting until a decision is made on the motion of dissent.
- 15.9 If a motion of dissent is passed, the chairperson must proceed with the suspended business as though the ruling dissented from had not been given. If, as a result of the ruling, any motion or business has been rejected as out of order, the chairperson must restore the motion or business to the agenda and proceed with it in due course.
- 15.10 Despite any other provision of this code, only the mover of a motion of dissent and the chairperson can speak to the motion before it is put. The mover of the motion does not have a right of general reply.



Acts of disorder

15.11A councillor commits an act of disorder if the councillor, at a meeting of the council or a committee of the council:

- (a) contravenes the Act, the Regulation or this code, or
- (b) assaults or threatens to assault another councillor or person present at the meeting, or
- (c) moves or attempts to move a motion or an amendment that has an unlawful purpose or that deals with a matter that is outside the jurisdiction of the council or the committee, or addresses or attempts to address the council or the committee on such a motion, amendment or matter, or
- (d) insults, makes unfavourable personal remarks about, or imputes improper motives to any other council official, or alleges a breach of the council's code of conduct, or
- (e) says or does anything that is inconsistent with maintaining order at the meeting or is likely to bring the council or the committee into disrepute.

Note: Clause 15.11 reflects section 182 of the Regulation.

15.12The chairperson may require a councillor:

- (a) to apologise without reservation for an act of disorder referred to in clauses 15.11(a), (b), or
- (b) to withdraw a motion or an amendment referred to in clause 15.11(c) and, where appropriate, to apologise without reservation, or (e), or
- (c) to retract and apologise without reservation for any statement that constitutes an act of disorder referred to in clauses 15.11(d) and (e).

How disorder at a meeting may be dealt with

15.13If disorder occurs at a meeting of the council, the chairperson may adjourn the meeting for a period of not more than fifteen (15) minutes and leave the chair. The council, on reassembling, must, on a question put from the chairperson, decide without debate whether the business is to be proceeded with or not. This clause applies to disorder arising from the conduct of members of the public as well as disorder arising from the conduct of councillors.



Expulsion from meetings

15.14 Not adopted.

15.15 All chairpersons of meetings of the council and committees of the council are authorised under this code to expel any person other than a councillor, from a council or committee meeting, for the purposes of section 10(2)(b) of the Act. Councillors may only be expelled by resolution of the council or the committee of the council.

Note: Councils may use either clause 15.14 or clause 15.15.

15.16 Clause 15.15, does not limit the ability of the council or a committee of the council to resolve to expel a person, including a councillor, from a council or committee meeting, under section 10(2)(a) of the Act.

15.17 A councillor may, as provided by section 10(2)(a) or (b) of the Act, be expelled from a meeting of the council for having failed to comply with a requirement under clause 15.12. The expulsion of a councillor from the meeting for that reason does not prevent any other action from being taken against the councillor for the act of disorder concerned.

Note: Clause 15.17 reflects section 233(2) of the Regulation.

15.18 A member of the public may, as provided by section 10(2)(a) or (b) of the Act, be expelled from a meeting of the council for engaging in or having engaged in disorderly conduct at the meeting.

15.19 Where a councillor or a member of the public is expelled from a meeting, the expulsion and the name of the person expelled, if known, are to be recorded in the minutes of the meeting.

15.20 If a councillor or a member of the public fails to leave the place where a meeting of the council is being held immediately after they have been expelled, a police officer, or any person authorised for the purpose by the council or person presiding, may, by using only such force as is necessary, remove the councillor or member of the public from that place and, if necessary, restrain the councillor or member of the public from re-entering that place for the remainder of the meeting.

How disorder by councillors attending meetings by audio-visual link may be dealt with

15.21 Where a councillor is attending a meeting by audio-visual link, the chairperson or a person authorised by the chairperson may mute the councillor's audio link to the meeting for the purposes of enforcing compliance with this code.

15.22 If a councillor attending a meeting by audio-visual link is expelled from a meeting for an act of disorder, the chairperson of the meeting or a person authorised by the chairperson, may terminate the councillor's audio-visual link to the meeting.



Use of mobile phones and the unauthorised recording of meetings

- 15.23 Councillors, council staff and members of the public must ensure that mobile phones are turned to silent during meetings of the council and committees of the council.
- 15.24 A person must not live stream or use an audio recorder, video camera, mobile phone or any other device to make a recording of the proceedings of a meeting of the council or a committee of the council without the prior authorisation of the council or the committee.
- 15.25 Without limiting clause 15.18, a contravention of clause 15.24 or an attempt to contravene that clause, constitutes disorderly conduct for the purposes of clause 15.18. Any person who contravenes or attempts to contravene clause 15.24, may be expelled from the meeting as provided for under section 10(2) of the Act.
- 15.26 If any such person, after being notified of a resolution or direction expelling them from the meeting, fails to leave the place where the meeting is being held, a police officer, or any person authorised for the purpose by the council or person presiding, may, by using only such force as is necessary, remove the first-mentioned person from that place and, if necessary, restrain that person from re-entering that place for the remainder of the meeting.

16 CONFLICTS OF INTEREST

- 16.1 All councillors and, where applicable, all other persons, must declare and manage any conflicts of interest they may have in matters being considered at meetings of the council and committees of the council in accordance with the council's code of conduct. All declarations of conflicts of interest and how the conflict of interest was managed by the person who made the declaration must be recorded in the minutes of the meeting at which the declaration was made.
- 16.2 Councillors attending a meeting by audio-visual link must declare and manage any conflicts of interest they may have in matters being considered at the meeting in accordance with the council's code of conduct. Where a councillor has declared a pecuniary or significant non-pecuniary conflict of interest in a matter being discussed at the meeting, the councillor's audio-visual link to the meeting must be suspended or terminated and the councillor must not be in sight or hearing of the meeting at any time during which the matter is being considered or discussed by the council or committee, or at any time during which the council or committee is voting on the matter.



17 DECISIONS OF THE COUNCIL

Council decisions

17.1 A decision supported by a majority of the votes at a meeting of the council at which a quorum is present is a decision of the council.

Note: Clause 17.1 reflects section 371 of the Act in the case of councils and section 400T(8) in the case of joint organisations.

17.2 Decisions made by the council must be accurately recorded in the minutes of the meeting at which the decision is made.

Rescinding or altering council decisions

17.3 A resolution passed by the council may not be altered or rescinded except by a motion to that effect of which notice has been given under clause 3.10.

Note: Clause 17.3 reflects section 372(1) of the Act.

17.4 If a notice of motion to rescind a resolution is given at the meeting at which the resolution is carried, the resolution must not be carried into effect until the motion of rescission has been dealt with.

Note: Clause 17.4 reflects section 372(2) of the Act.

17.5 If a motion has been lost, a motion having the same effect must not be considered unless notice of it has been duly given in accordance with clause 3.10.

Note: Clause 17.5 reflects section 372(3) of the Act.

17.6 A notice of motion to alter or rescind a resolution, and a notice of motion which has the same effect as a motion which has been lost, must be signed by three (3) councillors if less than three (3) months has elapsed since the resolution was passed, or the motion was lost.

Note: Clause 17.6 reflects section 372(4) of the Act.

17.7 If a motion to alter or rescind a resolution has been lost, or if a motion which has the same effect as a previously lost motion is lost, no similar motion may be brought forward within three (3) months of the meeting at which it was lost. This clause may not be evaded by substituting a motion differently worded, but in principle the same.

Note: Clause 17.7 reflects section 372(5) of the Act.

17.8 The provisions of clauses 17.5–17.7 concerning lost motions do not apply to motions of adjournment.

Note: Clause 17.8 reflects section 372(7) of the Act.



17.9 A notice of motion submitted in accordance with clause 17.6 may only be withdrawn under clause 3.11 with the consent of all signatories to the notice of motion.

17.10 Not adopted.

17.11A motion to alter or rescind a resolution of the council may be moved on the report of a committee of the council and any such report must be recorded in the minutes of the meeting of the council.

Note: Clause 17.11 reflects section 372(6) of the Act.

17.12 Not adopted.

17.13 Not adopted.

17.14 Not adopted.

Recommitting resolutions to correct an error

17.15 Not adopted

17.16 Not adopted

17.17 Not adopted

17.18 Not adopted

17.19 Not adopted

17.20 Not adopted

18 TIME LIMITS ON COUNCIL MEETINGS

Not adopted.

19 AFTER THE MEETING

Minutes of meetings

19.1 The council is to keep full and accurate minutes of the proceedings of meetings of the council.

Note: Clause 19.1 reflects section 375(1) of the Act.

19.2 At a minimum, the general manager must ensure that the following matters are recorded in the council's minutes:

- (a) the names of councillors attending a council meeting and whether they attended the meeting in person or by audio-visual link,
- (b) details of each motion moved at a council meeting and of any amendments moved to it,
- (c) the names of the mover and seconder of the motion or amendment,
- (d) whether the motion or amendment was passed or lost, and
- (e) such other matters specifically required under this code.



19.3 The minutes of a council meeting must be confirmed at a subsequent meeting of the council.

Note: Clause 19.3 reflects section 375(2) of the Act.

19.4 Any debate on the confirmation of the minutes is to be confined to whether the minutes are a full and accurate record of the meeting they relate to.

19.5 When the minutes have been confirmed, they are to be signed by the person presiding at the subsequent meeting.

Note: Clause 19.5 reflects section 375(2) of the Act.

19.6 The confirmed minutes of a meeting may be amended to correct typographical or administrative errors after they have been confirmed. Any amendment made under this clause must not alter the substance of any decision made at the meeting.

19.7 The confirmed minutes of a council meeting must be published on the council's website. This clause does not prevent the council from also publishing unconfirmed minutes of its meetings on its website prior to their confirmation.

Access to correspondence and reports laid on the table at, or submitted to, a meeting

19.8 The council and committees of the council must, during or at the close of a meeting, or during the business day following the meeting, give reasonable access to any person to inspect correspondence and reports laid on the table at, or submitted to, the meeting.

Note: Clause 19.8 reflects section 11(1) of the Act.

19.9 Clause 19.8 does not apply if the correspondence or reports relate to a matter that was received or discussed or laid on the table at, or submitted to, the meeting when the meeting was closed to the public.

Note: Clause 19.9 reflects section 11(2) of the Act.

19.10 Clause 19.8 does not apply if the council or the committee resolves at the meeting, when open to the public, that the correspondence or reports are to be treated as confidential because they relate to a matter specified in section 10A(2) of the Act.

Note: Clause 19.10 reflects section 11(3) of the Act.

19.11 Correspondence or reports to which clauses 19.9 and 19.10 apply are to be marked with the relevant provision of section 10A(2) of the Act that applies to the correspondence or report.

Implementation of decisions of the council

19.12 The general manager is to implement, without undue delay, lawful decisions of the council.

Note: Clause 19.12 reflects section 335(b) of the Act.



20 COUNCIL COMMITTEES

Application of this Part

20.1 This Part only applies to committees of the council whose members are all councillors.

Council committees whose members are all councillors

20.2 The council may, by resolution, establish such committees as it considers necessary.

20.3 A committee of the council is to consist of the chairperson and such other councillors as are elected by the councillors or appointed by the council.

20.4 The quorum for a meeting of a committee of the council is to be:

- (a) such number of members as the council decides, or
- (b) if the council has not decided a number – a majority of the members of the committee.

Functions of committees

20.5 The council must specify the functions of each of its committees when the committee is established but may from time to time amend those functions.

Notice of committee meetings

20.6 The general manager must send to each councillor, regardless of whether they are a committee member, at least three (3) days before each meeting of the committee, a notice specifying:

- (a) the time, date and place of the meeting, and
- (b) the business proposed to be considered at the meeting.

20.7 Notice of less than three (3) days may be given of a committee meeting called in an emergency.

Attendance at committee meetings

20.8 A committee member (other than the chairperson) ceases to be a member of a committee if the committee member:

- (a) has been absent from three (3) consecutive meetings of the committee without having given reasons acceptable to the committee for the member's absences, or
- (b) has been absent from at least half of the meetings of the committee held during the immediately preceding year without having given to the committee acceptable reasons for the member's absences.

20.9 Clause 20.8 does not apply if all of the members of the council are members of the committee.

Non-members entitled to attend committee meetings



- 20.10A councillor who is not a member of a committee of the council is entitled to attend, and to speak at a meeting of the committee. However, the councillor is not entitled:
- (a) to give notice of business for inclusion in the agenda for the meeting, or
 - (b) to move or second a motion at the meeting, or
 - (c) to vote at the meeting.

Chairperson and deputy chairperson of council committees

20.11 The chairperson of each committee of the council must be:

- (a) the chairperson, or
- (b) if the chairperson does not wish to be the chairperson of a committee, a member of the committee elected by the council, or
- (c) if the council does not elect such a member, a member of the committee elected by the committee.

20.12 The council may elect a member of a committee of the council as deputy chairperson of the committee. If the council does not elect a deputy chairperson of such a committee, the committee may elect a deputy chairperson.

20.13 If neither the chairperson nor the deputy chairperson of a committee of the council is able or willing to preside at a meeting of the committee, the committee must elect a member of the committee to be acting chairperson of the committee.

20.14 The chairperson is to preside at a meeting of a committee of the council. If the chairperson is unable or unwilling to preside, the deputy chairperson (if any) is to preside at the meeting, but if neither the chairperson nor the deputy chairperson is able or willing to preside, the acting chairperson is to preside at the meeting.

Procedure in committee meetings

20.15 Subject to any specific requirements of this code, each committee of the council may regulate its own procedure. The provisions of this code are to be taken to apply to all committees of the council unless the council or the committee determines otherwise in accordance with this clause.

20.16 Whenever the voting on a motion put to a meeting of the committee is equal, the chairperson of the committee is to have a casting vote as well as an original vote unless the council or the committee determines otherwise in accordance with clause 20.15.

20.17 Not adopted.

20.18 Voting at a council committee meeting is to be by open means (such as on the voices, by show of hands or by a visible electronic voting system).



Closure of committee meetings to the public

20.19 The provisions of the Act and Part 14 of this code apply to the closure of meetings of committees of the council to the public in the same way they apply to the closure of meetings of the council to the public.

20.20 If a committee of the council passes a resolution, or makes a recommendation, during a meeting, or a part of a meeting that is closed to the public, the chairperson must make the resolution or recommendation public as soon as practicable after the meeting or part of the meeting has ended, and report the resolution or recommendation to the next meeting of the council. The resolution or recommendation must also be recorded in the publicly available minutes of the meeting.

20.21 Resolutions passed during a meeting, or a part of a meeting that is closed to the public must be made public by the chairperson under clause 20.20 during a part of the meeting that is webcast.

Disorder in committee meetings

20.22 The provisions of the Act and this code relating to the maintenance of order in council meetings apply to meetings of committees of the council in the same way as they apply to meetings of the council.

Minutes of council committee meetings

20.23 Each committee of the council is to keep full and accurate minutes of the proceedings of its meetings. At a minimum, a committee must ensure that the following matters are recorded in the committee's minutes:

- (a) the names of councillors attending a meeting and whether they attended the meeting in person or by audio-visual link.
- (b) details of each motion moved at a meeting and of any amendments moved to it,
- (c) the names of the mover and seconder of the motion or amendment,
- (d) whether the motion or amendment was passed or lost, and
- (e) such other matters specifically required under this code.



20.24 Not adopted.

20.25 The minutes of meetings of each committee of the council must be confirmed at a subsequent meeting of the committee.

20.26 Any debate on the confirmation of the minutes is to be confined to whether the minutes are a full and accurate record of the meeting they relate to.

20.27 When the minutes have been confirmed, they are to be signed by the person presiding at that subsequent meeting.

20.28 The confirmed minutes of a meeting may be amended to correct typographical or administrative errors after they have been confirmed. Any amendment made under this clause must not alter the substance of any decision made at the meeting.

20.29 The confirmed minutes of a meeting of a committee of the council must be published on the council's website. This clause does not prevent the council from also publishing unconfirmed minutes of meetings of committees of the council on its website prior to their confirmation.

21 IRREGULARITIES

21.1 Proceedings at a meeting of a council or a council committee are not invalidated because of:

- (a) a vacancy in a civic office, or
- (b) a failure to give notice of the meeting to any councillor or committee member, or
- (c) any defect in the election or appointment of a councillor or committee member, or
- (d) a failure of a councillor or a committee member to declare a conflict of interest, or to refrain from the consideration or discussion of, or vote on, the relevant matter, at a council or committee meeting in accordance with the council's code of conduct, or
- (e) a failure to comply with this code.

Note: Clause 21.1 reflects section 374 of the Act.

22 DEFINITIONS

The Act: means the Local Government Act 1993

Act of disorder: means an act of disorder as defined in clause 15.11 of this code

Amendment: in relation to an original motion, means a motion moving an amendment to that motion

Audio recorder: any device capable of recording speech

Audio-visual link: means a facility that enables audio and visual communication between persons at different places

Business day: means any day except Saturday or Sunday or any other day the whole or part of which is observed as a public holiday throughout New South Wales



Chairperson: in relation to a meeting of the council – means the person presiding at the meeting as provided by section 369 of the Act and clauses 6.1 and 6.2 of this code, and in relation to a meeting of a committee – means the person presiding at the meeting as provided by clause 20.11 of this code

This code: means the council's adopted code of meeting practice

Committee of the council: means a committee established by the council in accordance with clause 20.2 of this code (being a committee consisting only of councillors) or the council when it has resolved itself into committee of the whole under clause 12.1

Council official: has the same meaning it has in the Model Code of Conduct for Local Councils in NSW

Day: means calendar day

Division: means a request by two councillors under clause 11.7 of this code requiring the recording of the names of the councillors who voted both for and against a motion

Foreshadowed amendment: means a proposed amendment foreshadowed by a councillor under clause 10.18 of this code during debate on the first amendment

Foreshadowed motion: means a motion foreshadowed by a councillor under clause 10.17 of this code during debate on an original motion

Open voting: means voting on the voices or by a show of hands or by a visible electronic voting system or similar means

Planning decision: means a decision made in the exercise of a function of a council under the Environmental Planning and Assessment Act 1979 including any decision relating to a development application, an environmental planning instrument, a development control plan or a development contribution plan under that Act, but not including the making of an order under Division 9.3 of Part 9 of that Act

Performance improvement order: means an order issued under section 438A of the Act

Quorum: means the minimum number of councillors or committee members necessary to conduct a meeting

The Regulation: means the Local Government (General) Regulation 2021

Webcast: a video or audio broadcast of a meeting transmitted across the internet either concurrently with the meeting or at a later time

Year: means the period beginning 1 July and ending the following 30 June

17.4 2022-2024 STATE OF OUR WATER REPORT

Author: Executive Assistant

Authoriser: General Manager

Attachments: 1. **2022-2024 State of our Water Report - *Tabled Separately***

RECOMMENDATION

That Council receive and adopt the 2022-2024 State of our Water Report.

ALIGNMENT WITH BUSINESS ACTIVITY STRATEGIC PLAN

Priority 1 High Quality, Secure and Efficient Water Supplies

BACKGROUND

The Local Government Act 1993 requires that in the year in which an ordinary election of councillors is to be held Council must also provide a report detailing achievement in implementing the Business Activity Strategic Plan over the term, referred to as the State of the Region report. This report satisfies that requirement.

REPORT

Section 428 of the Local Government Act 1993, requires Council to prepare a State of our City Report (formally referred to as End of Term report), outlining the progress of implementation and effectiveness of the Business Activity Strategic Plan. It is required to be endorsed within two council meetings after the election.

FINANCIAL IMPACT STATEMENT

The recommendation does not impact on Council's financial position.

17.5 COMMUNITY ENGAGEMENT STRATEGY 2025**Author:** HR Coordinator**Authoriser:** General Manager**Attachments:** 1. 2025 Community Engagement Strategy - *Tabled Separately***RECOMMENDATION**

That Council receive and adopt the Community Engagement Strategy 2025.

ALIGNMENT WITH BUSINESS ACTIVITY STRATEGIC PLAN

Priority 2 Customer Service Focus

BACKGROUND

In accordance with Section 402A of the Local Government Act 1993, Goldenfields Water County Council is required to have a strategy (*called its Community Engagement Strategy*) for engagement with the local community when developing its plans, policies and programs and for the purpose of determining its activities (other than routine administrative matters).

REPORT

The Community Engagement Strategy 2022 was reviewed in line with IP&R guidelines

2.3 The Strategy must be reviewed by 31 December in the year of the local government elections as part of the broader review of the Community Strategic Plan (or Business Activity Strategic Plan for county councils)

The Community Engagement Strategy has been reviewed and updated for 2025.

FINANCIAL IMPACT STATEMENT

The recommendation does not impact on Council's financial position.

18 BUSINESS WITH NOTICE

19 NOTICES OF MOTIONS

Nil

20 CONFIDENTIAL REPORTS**RECOMMENDATION**

That Council considers the confidential report(s) listed below in a meeting closed to the public in accordance with Section 10A(2) of the Local Government Act 1993 at [enter time](#):

20.1 Billing Update

This matter is considered to be confidential under Section 10A(2) - (b) of the Local Government Act, and the Council is satisfied that discussion of this matter in an open meeting would, on balance, be contrary to the public interest as it deals with discussion in relation to the personal hardship of a resident or ratepayer.

20.2 General Manager Performance Agreement

This matter is considered to be confidential under Section 10A(2) - (a) of the Local Government Act, and the Council is satisfied that discussion of this matter in an open meeting would, on balance, be contrary to the public interest as it deals with personnel matters concerning particular individuals (other than councillors).

- 21 REPORT OF CONFIDENTIAL RESOLUTIONS**
- 22 NEXT MEETING**
- 23 MEETING CLOSE**