DWQMP Regular Audit Report

Quiplie Shire Council
June 2025

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EXECUTIVE SUMMARY

Background

Viridis Consultants Pty Ltd (Viridis) conducted the regular audit of Quilpie Shire Council's (QSC) approved Drinking Water Quality Management Plan (DWQMP). The audit is a requirement of the *Water Supply (Safety and Reliability) Act 2008* (the Act). The scope of the audit was in accordance with the Guideline for the preparation, review and audit of drinking water quality management plans (October 2022).

The audit was conducted on 21-22 May 2025. The audit sample included site inspections, interviews with relevant staff and observation of documentation and records. This report includes the findings and conclusions from the regular audit of the DWQMP.

Positives

The auditor was especially pleased to note the following:

- Staff interviewed were engaged.
- Operators had a good understanding of the supply system.
- Operational monitoring at Eromanga was undertaken well.
- There has been investment in swimlocal and full commissioning is planned in the next few months.
- Despite the impact from the recent flooding, the water services remained operational.
- The new Director of Infrastructure has a positive attitude towards the continual improvement.

Compliance Summary

The degree to which the audit criteria was fulfilled is summarised in Table 1, sixteen (16) requirements needed to be audited. There was a low level of compliance noted.

The auditor concluded based on the results of the audit that:

- the auditability of data reported in the drinking water service annual reports should be improved (implementation of swimlocal as has been planned will improve this in the future).
- the implementation of the DWQMP should be improved, especially on the implementation of the monitoring program (*E. coli* testing in the distribution)
- the plan is largely relevant, but implementation of the opportunities for improvement (OFIs) identified will strengthen it
- the objectives of the audit were fulfilled without any issues.

Table 1 Compliance Summary

Compliance Codes	Number of Findings
Conformance	8
Minor Non-Conformance	6
Major Non-Conformance	1
No requirement	1

There was one major non-compliance, and six minor non-compliances issued resulting in 12 recommendations (RECs) and five OFIs.

Recommendations

- **Monitoring Data**
  REC 1: Establish a centralised location for saving water quality data, including the in-house testing, operational monitoring and laboratory testing. Ensure a manager (or equivalent) reviews the implementation and results. [There has been investment in swimlocal and full commissioning is planned in the next few months].
- **Annual Report Accuracy**
  REC 2: Establish a process to ensure the accuracy of the information in the Annual Report, including the accuracy of data (for example by improving record keeping). When approving the DWQMP annual reports, ensure all information is accurate and reflects the current circumstances (for example the Risk Management Improvement Plan (RMIP)).
- **Chlorine**
  REC 3: Review the suitability of the chlorine chemical used at Eromanga to ensure it is suitable for use in drinking water.
- **Mains Hygiene**
  REC 4: Determine the preventive measures required for mains hygiene and ensure all staff have adequate tools and materials to implement the actions.
- **Preventive Measures**
  REC 5: Establish inspection processes for borehead and reservoir integrity (e.g., quarterly) and all other preventive measures to ensure the preventive measures in the DWQMP are implemented, and there are records available to confirm that they are implemented.
- **Sampling and In-House Testing**
  REC 6: A procedure for water quality sampling, and in-house testing needs to be developed. The procedure must include the process for taking samples, sending samples to the laboratory and the procedure for in-house testing. The procedure should also include Quality Assurance/Quality Control (QA/QC) procedures recommended by IDEXX to ensure the in-house testing results are reliable. All staff should be trained in the implementation of the procedures.
- **Procedures**
  REC 7: Develop the required operational procedures for the implementation of the preventive measures and ensure water hygiene and water quality considerations are included. Record keeping processes must also be included. Procedures should include at a minimum water quality sampling, borehead and reservoir inspection. All staff should be trained in the implementation of the procedures.
- **Event – Missed Samples**
  REC 8: Ensure that failure to take samples is notified to the Regulator as an event. Consider adding failure to take a verification sample to the DWQMP incident management process as a notifiable incident (event) to ensure that when samples are missed, the Regulator is notified in accordance with the Decision Notice.
- **Training**
  REC 9: Deliver training to all staff responsible for implementing the monitoring program in the sampling and in-house lab procedures (once developed).
- **Monitoring**
  REC 10: As a high priority, re-commence the operational and verification sampling program, including the fortnightly in-house *E. coli* testing and quarterly laboratory analysis. Consider preparing and establishing a sampling schedule and communicating the responsibility for sampling clearly to the relevant team members. Consider displaying the schedule in the office and check in each week/fortnight with the sampler to confirm that the program is understood and being implemented.

- **Improvement Plan**
  REC 11: Ensure the RMIP is implemented as required, and it is kept up to date. Consider developing the RMIP as an editable spreadsheet (or similar), which can be regularly reviewed and updated (for example monthly/quarterly) to ensure all actions are captured and are being progressed.
- **Record Keeping**
  REC 12: Investigate and establish a central location for recording DWQMP records and documentation. Consider a suitable naming convention so that relevant documentation can be searched for and retrieved when required. [Council has planned the use of swimlocal in the next few months and improved use of InfoExpert].

Opportunities for Improvement

- **Reservoir Commissioning**
  OFI 1: Develop a commissioning procedure for the new Reservoir at Eromanga that includes decontamination and testing before connection.
- **Backflow**
  OFI 2: Undertake a Risk Assessment on potential high-risk connections (such as the Butchers Blocks and the Lake) to determine if backflow prevention is required. Ensure all existing backflow prevention devices are tested as required by plumbing regulations.
- **Incident Response and Management Testing**
  OFI 3: Consider testing the DWQMP incident process as a periodic scenario or desktop exercise.
- **Review Record**
  OFI 4: At the next review of the DWQMP, keep a record of the review process.
- **Process Flow Diagram (PFD)**
  OFI 5: Review and update the Eromanga PFD to accurately reflect the chlorine dosing volumes (at the next review of the DWQMP).

1. INTRODUCTION

Viridis Consultants Pty Ltd (Viridis) has been engaged as part of a joint procurement by the South West Queensland Water and Sewerage Alliance (SWQWSA) to undertake the regular (external) audit of Quilpie Shire Council (QSC) (service provider identification (SPID) number 108) approved Drinking Water Quality Management Plan (DWQMP).

As required by the *Water Supply (Safety and Reliability) Act 2008* (the Act), QSC is operating its drinking water service under an approved DWQMP and is required to complete the regular audit of its approved DWQMP by 1 July 2025.

This report includes the findings and conclusions from the regular audit undertaken in 2025.

1.1. Objectives

The objectives of the audit are to:

- undertake an audit of the DWQMP to fulfil the requirements of the Act and approval notice
- conduct the audit in line with the Regulator's *Guideline for the preparation, review and audit of drinking water quality management plans (October 2022).*

1.2. Audit Client

QSC is the audit client.

1.3. Regulatory Regime

The statutory requirements for DWQMP regular audits are detailed in the Act. The relevant provisions in the Act for providing audit reports are:

- Section 99(2)(c) - if the regulator approves the plan, the notice of the decision or information notice for the decision, will state that if the regulator requires audits of the approved plan – the intervals at which the audits must be conducted.
- Section 99(4) - the interval for regular audits will not be less than two years.
- Section 105(2) - the regular audit report for the plan must be prepared by a person:
    - is not the provider or employee of the provider
    - is not the owner or employee of a prescribed related entity of a relevant infrastructure owner
    - is not employed in the operation of the provider's infrastructure.
- Section 105(3)(a) – the auditor must be a person who is certified under the Drinking Water Quality Management System Auditor Certification Scheme to conduct an audit of the type to which the report relates or has a qualification the regulator is satisfied is at least equivalent to this certification.
- Section 108(1) - the provider must arrange for regular audit reports to be prepared about the provider's plans and compliance with the plans.
- Section 108(2) - regular audit reports must be prepared in accordance with the notice given by the regulator under section 99 and provided to the regulator within 30 business days after its completion.
- Section 108(3) states that the purpose of the regular audit report for the plan is:
    - to be prepared by the auditor in accordance with any guidelines about preparing the report made by the regulator
    - to verify the accuracy of the monitoring and performance data provided to the regulator under the plan
    - to assess the service provider's compliance with the plan and its conditions

- to assess the relevance of the plan in relation to the provider's drinking water service.
- Section 575 states that the provider must keep a copy of the audit report available for inspection and purchase by the public during office hours on business days at the office of the service provider.

1.4. Auditing Team

1.4.1. Audit Team Leader

Tasleem Hasan is the audit team leader. Tasleem's qualifications to undertake this audit are detailed below:

Education

- Master of Science (Chemistry)
- Bachelor of Science (Chemistry/Mathematics)

Auditor certification held with Exemplar Global

- Lead Water Quality Management Systems Auditor:
  - Drinking Water
  - Recycled Water

Experience

- >50 audits undertaken, ranging from regulatory, compliance and process improvement audits.
- Audit clients have included small supplies to very large metropolitan supplies.
- DWQMP development, review and implementation for >50 utilities across QLD and NSW.

1.4.2. Onsite Lead Auditor

The onsite audit was undertaken by Karen Pither of Pither Consulting, who was utilised by Viridis as a sub-contractor for the onsite inspections and interviews. Karen's qualifications to undertake this audit are detailed below:

Education

- Bachelor of Ecology and Conservation Biology

Auditor certification held with Exemplar Global

- Lead Water Quality Management Systems Auditor:
  - Drinking Water
  - Recycled Water

Experience

- Undertakes several audits each year, ranging from regulatory, compliance and operational improvement audits.
- Experience and formal training in auditing ISO management systems.
- Facilitated environment and water quality assessments, including undertaking regulatory and compliance reviews, performance assessments, data analysis and risk quantification.

2. AUDIT METHODOLOGY

2.1. Audit Scope

The scope of the audit was to:

- verify the accuracy of monitoring and performance data given to the regulator under the plan
- assess compliance with the plan and its conditions
- assess the relevance of the plan in relation to the drinking water service

2.2. Audit Standard

ISO 19011:2018 Guidelines for auditing management systems was used to ensure good auditing practice.

2.3. Audit Criteria and Period

The audit focused on the implementation of the DWQMP and relevance of the plan to manage risks to water quality. The criteria for assessing compliance were:

- the approved versions of the DWQMP active during the audit period.
- approval information notices during the audit period.

The audit period was from the last regular DWQMP (2021) to current.

2.4. Audit Process

The audit was undertaken in accordance with the methodology outlined in the Audit Standard. The audit steps and responsible parties are outlined in Table 2.

Table 2 Audit Steps

Step Description	Responsibility
Initiate audit / engage auditor	QSC
Information request	Viridis
Supply audit evidence requested	QSC
Prepare Audit Plan	Viridis
Audit preparation	Viridis
Opening meeting (onsite)	Viridis/ QSC
Attend interviews and site inspection (onsite)	Viridis/ QSC
Closing meeting (onsite)	Viridis/ QSC
Draft audit report preparation	Viridis
Review and provide comments on draft report	QSC
Final audit report	Viridis
Signed statutory declarations	Viridis/ QSC
Submit final audit report and statutory declarations to the regulator	Viridis

2.5. Audit Grades

Table 3 identifies the grades used for this audit.

Table 3 Audit Grades

Compliance Codes	Definitions
Compliant	Indicates compliance of audit findings with audit criteria.
Minor Non-Compliance	Does not comply, however, deficiency does not compromise the delivery of products or outcomes and does not compromise the ability to achieve defined objectives.
Major Non-Compliance	Does not comply. Deficiency compromises the delivery of products or outcomes, and the ability to achieve defined objectives.
No requirement	There was no requirement to meet this criterion within the audit period.

A recommendation (REC) is provided for requirements which do not comply, that is, minor or major non-compliance.

An opportunity for improvement (OFI) is identified for activities which comply but may also be improved.

2.6. Quality Assurance Process

This audit was carried out in accordance with the Viridis Quality Manual, which aligns to standard *ISO 9001 Quality Management Systems*. Quality assurance activities undertaken during the audit comprised of:

- compliance with the Viridis Quality Manual
- document control and approval processes
- quality review of the report.

2.7. Sampling

Audits by nature are a sampling exercise; as such there is a risk that the audit evidence examined is not representative. The audit sample included onsite inspection of the supply infrastructure, interviews with relevant staff and observation of documentation and records.

2.8. Audit Schedule

Refer to Table 4 for the audit schedule.

Table 4 Audit Agenda

Start	Finish	Details	People Required
Wednesday 21/05 – QSC- Site Visit and Opening Meeting			
8:00	11:30	Auditor drives to Quilpie	NA
11:30	12:30	Lunch	NA
12:30	13:00	QSC- Opening meeting / Introduction to audit Location: Quilpie Works Depot, Anzac Parade, Quilpie -26.615034, 144.255489	• DWQMP in charge • Other relevant auditees, as available • Senior executives, as available

Start	Finish	Details	People Required
13:00	13:30	• Review outcomes of previous DWQMP regular audit	• DWQMP in charge • Relevant personnel
13:30	15:30	Quilpie water supply infrastructure - Site visit Location: Council will guide • Compliance with plan / Relevance of plan ○ Process steps ○ Monitoring and CCPs ○ Calibration ○ Preventive measures ○ Changes in catchment ○ Staff training – operators, water sampler	• DWQMP in charge • Relevant personnel
15:30		End of day Stay in Quilpie	NA
Thursday 22/05 – Interviews, Site Visit and Closing Meeting			
7:00	8:30	Drive to Eromanga	NA
8:30	10:00	Eromanga Water Treatment Plant (WTP) site visit Location: Burt St, Eromanga -26.66676,143.27578 • Compliance with plan / Relevance of plan ○ Process steps ○ Monitoring and CCPs ○ Calibration ○ Preventive measures ○ Changes in catchment ○ Staff training – operators, water sampler	• DWQMP in charge • Relevant personnel
10:00	11:30	Drive back to Quilpie	NA
11:30	12:00	Lunch	NA
12:00	12:30	Interviews – Location: Quilpie Depot • Verify accuracy of data ○ Data for the DWQMP Annual Report • DWQMP - Assess compliance with Plan ○ Implementation of the verification monitoring program	• DWQMP in charge • Person responsible for monitoring data, review and evaluation • Relevant personnel
12:30	13:00	• DWQMP - Assess compliance with Plan ○ Implementation of process for managing incidents and emergencies	• DWQMP in charge • Incident / Event reporting person • Relevant personnel
13:00	13:30	• DWQMP - Assess compliance with Plan ○ Implementation of operational and maintenance procedures – reservoirs / repairs in reticulation	• DWQMP in charge • Relevant personnel
13:30	14:00	• DWQMP - Assess compliance with Plan ○ Document management system, including document reviews and version control ○ Maintain records using information management systems	• DWQMP in charge • Relevant personnel

Start	Finish	Details	People Required
14:00	14:30	• DWQMP - Assess compliance with Plan ○ Implementation of the risk management improvement program	• DWQMP in charge • Relevant personnel
14:30	15:00	• DWQMP - Assess compliance with Plan ○ Provisions and conditions in the approval notice - DWQMP regular reviews	• DWQMP in charge • Relevant personnel
15:00	15:30	Tea break and auditor time	NA
15:30	16:00	QSC Closing Meeting Finding summary and next steps	• DWQMP in charge • Other relevant auditees, as available • Senior executives, as available
16:00		End of day Stay in Quilpie	NA
Friday 23/05 – Travel			
AM		Drive to Charleville	NA
PM		Flight out	NA

2.9. Auditees

The auditees were as follows:

- Eng Lim (Director Infrastructure Services)
- Brian Weeks (Deputy Director Infrastructure Services)
- Jason Daunis (Eromanga Town Orderly/Plumber)
- Billy Russell (Senior Plumber)

3. STATUS OF RECOMMENDATIONS FROM PREVIOUS AUDIT

The status of the recommendations from the previous regular audit of the DWQMP (undertaken in 2021) was discussed with the provider and is noted in Table 5 below. The status of OFIs from the last audit is not discussed here.

Table 5 Status of Previous Regular Audit Recommendations

Quilpie 2021 DWQMP Audit Outcomes	Status / Comments
REC 1: Determine whether a documented mains repair procedure exists. If not, one should be prepared. If it does exist, ensure relevant staff are aware of the procedure and have been trained in the relevant requirements.	Not completed – refer to findings of audit
REC 2: Review both schemes and identify whether there are any hazardous activities undertaken at particular locations, and if so, install appropriate backflow prevention at these connections. Review and update the preventative measures and Risk Assessment with respect to backflow risks.	Partially completed – refer to audit findings
REC 3: Determine the appropriate frequency for *E. coli* testing, update the DWQMP if required, and ensure the DWQMP commitments are met.	Monitoring implementation to be improved – refer to findings of audit
REC 4: Review and update the verification monitoring program and/or implement the program as per the approved DWQMP.	Monitoring implementation to be improved – refer to findings of audit
REC 5: Ensure that the document and records management system is being used, and that staff are able to locate key documents and records. Council should not be reliant on any one individual to be able to locate key documents and records.	Not completed – refer to findings of audit
REC 6: Ensure DWQMP commitments are given a realistic implementation timeframe, and regularly monitor progress of actions against their required completion dates.	Not completed – refer to findings of audit

4. AUDIT FINDINGS

The audit was carried out as described in Section 2. The completed Audit Checklist is in Appendix A, which provides the detailed findings for the audit. These findings have been summarised in the following subsections.

4.1. Accuracy of Monitoring and Performance Data

Compliance grade by component:

- Verification data generated **Minor Non-Compliance**
- Data Accuracy in the DWQMP (annual) Reports **Minor Non-Compliance**
- Data Accuracy in periodic reports **No Requirement**

There were two minor non-conformances noted for this audit area.

4.2. Compliance with the Plan and its Conditions

Compliance grade by component:

- Implementation of preventive measures **Minor Non-Compliance**
- Implementation of operational and maintenance procedures **Minor Non-Compliance**
- Implementation of process for managing incidents and emergencies **Compliant**
- Implementation of operational and verification monitoring programs **Major Non-compliance**
- Implementation of the risk management improvement program **Minor Non-compliance**
- Reviews undertaken **Compliant**
- Maintaining records **Minor Non-compliance**

There was one major and four minor non-conformances noted for this audit area.

4.3. Relevance of the Plan

Compliance grade by component:

- Service description and details of infrastructure **Compliant**
- Catchment characteristics and water quality information **Compliant**
- Risk Assessment and risk management **Compliant**
- Incident Management **Compliant**
- Operational and verification monitoring **Compliant**
- Improvement Plan **Compliant**

There was full conformance noted for this audit area, although some aspects that may impact relevance were picked up under Compliance with the Plan and its Conditions. These should be considered to strengthen the plan relevance further.

5. AUDIT CONCLUSIONS

The audit objectives were completed successfully, though a low level of compliance was noted.

There was one major and six minor non-compliances identified.

The operational and verification monitoring programs (in relation to *E. coli*) were found to be inconsistently executed, with several required *E. coli* samples missed. In addition, there is inadequate recordkeeping and lack of a centralised data management system, which has hindered the ability to verify annual reporting accuracy and monitoring program effectiveness.

Operational procedures for preventive measures, sampling, and quality assurance are either missing or informally implemented without proper documentation or staff training. The Risk Management Improvement Plan (RMIP), while present in the annual report, is not actively maintained, resulting in actions being closed out without adequate completion or supporting evidence.

Despite the gaps noted, the operators demonstrated strong operational knowledge of the water supply systems, particularly at Eromanga, with adequate operation of the WTP and its processes. In addition, upper-level management demonstrated a positive attitude towards continual improvement.

It is good to note that there has been investment in swimlocal and full commissioning is planned in the next few months. This will greatly improve data management and also address a few of the audit findings.

Addressing the identified gaps and implementing the recommended actions will improve the effectiveness and resilience of Council's drinking water quality system and help achieve improved compliance with the DWQMP regulatory requirements in the future.

6. GLOSSARY

Word	Description
ADWG	Australian Drinking Water Guidelines
CCP	Critical Control Point
DWQMP	Drinking Water Quality Management Plan
DWQ	Drinking Water Quality
E. coli	*Escherichia coli*
HBT	Health Based Target
mg/L	Milligram per Litre
NA	Not Applicable
OFI	Opportunity for Improvement
O&M	Operations and Maintenance
QH	Queensland Health
QLD	Queensland
RA	Risk Assessment
REC	Recommendation
RMIP	Risk Management Improvement Plan
Regulator, DLGWV	Department of Local Government Water and Volunteers
SCADA	Supervisory Control and Data Acquisition
SOP	Standard Operating Procedure
swimlocal	swimlocal™ is the database system used by Service Providers to report their water and sewerage data to government agencies.
SWQWSA	South West Queensland Water and Sewerage Alliance
The Act	Water Supply (Safety and Reliability) Act 2008
Viridis	Viridis Consultants Pty Ltd
WQ	Water Quality
WTP	Water Treatment Plant

DOCUMENT HISTORY AND TRACKING

Document History

Version	Section/s Modified	Brief Description of Amendment	Author	Approver	Issue Date
0.1	NA	Draft – internal review	Tasleem Hasan	Tasleem Hasan	28/05/2025
0.2	Several	Draft for client feedback	Tasleem Hasan	Tasleem Hasan	29/05/2025
1.0	Some	Clarity on some findings improved following discussions with QSC. Report finalised.	Tasleem Hasan	Tasleem Hasan	23/06/2025

Document Tracking

Document Name	DWQMP Regular Audit Report
Prepared By	Tasleem Hasan
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Viridis Consultants Pty Ltd
PO Box 131
Bulimba Qld 4171
Australia
1300 799 310
www.viridis.net.au
ABN: 49 129 185 271

A. AUDIT CHECKLIST

Qld DWQMP Regulatory Audit

Tasleem Hasan

Complete

Score	51.5 / 65.5 (78.63%)	Flagged items	7	Actions	18

Audit Details	
Auditee - WSP	Quilpie Shire Council
WSP Number	108
Audit Date/s	21 – 22 May 2025
Audit Team Leader	Tasleem Hasan
Onsite Auditor	Karen Pither
Location of audit	Quilpie and Eromanga
Date of last audit	31.08.2021
Audit Period	September 2021 – May 2025
DWQMP	
Approved DWQMP Date	7/9/2022
Approved DWQMP Version	7/9/2022
Approval notice date	12 October 2022

Flagged items & Actions

7 flagged, 18 actions

Flagged items

7 flagged, 15 actions

Data Accuracy / Verification Data

Does the verification monitoring data presented in the Annual Report match the requirement of the approved DWQMP parameter?

Minor Non-Compliance

Monitoring data

REC1: Establish a centralised location for saving water quality data, including the in-house testing, operational monitoring and laboratory testing. Ensure a manager (or equivalent) reviews the implementation and results. [There has been investment in swimlocal and full commissioning is planned in the next few months].

Data Accuracy / Annual Reports

Is the data in the annual reports accurate

Minor Non-Compliance

Annual report accuracy

REC2: Establish a process to ensure the accuracy of the information in the Annual Report, including the accuracy of data (for example by improving record keeping). When approving the DWQMP annual reports, ensure all information is accurate and reflects the current circumstances (for example the Risk Management Improvement Plan (RMIP)).

Compliance with the DWQMP and its Conditions / Preventive Measures

Preventive measures for managing hazards and hazardous events are implemented

Minor Non-Compliance

Reservoir commissioning

OFI1: Develop a commissioning procedure for the new Reservoir at Eromanga that includes decontamination and testing before connection.

Chlorine

REC3: Review the suitability of the chlorine chemical used at Eromanga to ensure it is suitable for use in drinking water.

Backflow

OFI2: Undertake a risk assessment on potential high-risk connections (such as the Butchers Blocks and the Lake) to determine if backflow prevention is required. Ensure all existing backflow prevention devices are tested as required by plumbing regulations.

Mains hygiene

REC4: Determine the preventive measures required for mains hygiene and ensure all staff have adequate tools and materials to implement the actions.

Preventive measures

REC5: Establish inspection processes for borehead and reservoir integrity (e.g., quarterly) and all other preventive measures to ensure the preventive measures in the DWQMP are implemented, and there are records available to confirm that they are implemented.

Compliance with the DWQMP and its Conditions / O&M Procedures

O&M Procedures are current and implemented — Minor Non-Compliance

Sampling and in-house testing

REC6: A procedure for water quality sampling, and in-house testing needs to be developed. The procedure must include the process for taking samples, sending samples to the laboratory and the procedure for in-house testing. The procedure should also include Quality Assurance/Quality Control (QA/QC) procedures recommended by IDEXX to ensure the in-house testing results are reliable. All staff should be trained in the implementation of the procedures.

Procedures

REC7: Develop the required operational procedures for the implementation of the preventive measures and ensure water hygiene and water quality considerations are included. Record keeping processes must also be included. Procedures should include at a minimum water quality sampling, borehead and reservoir inspection. All staff should be trained in the implementation of the procedures.

Compliance with the DWQMP and its Conditions / Monitoring

Operational and verification monitoring programs implemented — Major Non-Compliance

Event - missed samples

REC8: Ensure that failure to take samples is notified to the Regulator as an event. Consider adding failure to take a verification sample to the DWQMP incident management process as a notifiable incident (event) to ensure that when samples are missed, the Regulator is notified in accordance with the Decision Notice.

Training

REC9: Deliver training to all staff responsible for implementing the monitoring program in the sampling and in-house lab procedures (once developed).

Monitoring

REC10: As a high priority, re-commence the operational and verification sampling program, including the fortnightly in-house *E. coli* testing and quarterly laboratory analysis. Consider preparing and establishing a sampling schedule and communicating the responsibility for sampling clearly to the relevant team members. Consider displaying the schedule in the office and check in each week/fortnight with the sampler to confirm that the program is understood and being implemented.

Compliance with the DWQMP and its Conditions / Improvement Plan

RMIP is implemented — Minor Non-Compliance

Improvement plan

REC11: Ensure the RMIP is implemented as required, and it is kept up to date. Consider developing the RMIP as an editable spreadsheet (or similar), which can be regularly reviewed and updated (for example monthly/quarterly) to ensure all actions are captured and are being progressed.

Compliance with the DWQMP and its Conditions / Records Management

Records are maintained — Minor Non-Compliance

Record keeping

REC12: Investigate and establish a central location for recording DWQMP records and documentation. Consider a suitable naming convention so that relevant documentation can be searched for and retrieved when required. [Council has planned the use of swimlocal in the next few months and improved use of InfoExpert].

Other actions — 3 actions

Compliance with the DWQMP and its Conditions / Incidents and Emergencies

Incident and emergency management protocols were implemented — Compliant

Incident response and management testing

OFI3: Consider testing the DWQMP incident process as a periodic scenario or desktop exercise.

Compliance with the DWQMP and its Conditions / Reviews

Reviews undertaken — Compliant

Review record

OFI4: At the next review of the DWQMP, keep a record of the review process.

DWQMP relevance / Service Description

Service description and details of infrastructure (including schematics/process flow diagrams) — Compliant

Process flow diagram

OFI5: Review and update the Eromanga Process Flow Diagram (PFD) to accurately reflect the chlorine dosing volumes (at the next review of the DWQMP)..

Data Accuracy

2 flagged, 2 actions, 1.5 / 3 (50%)

Verification Data

1 flagged, 1 action, 0.5 / 1 (50%)

Where is the verification monitoring program detailed in the DWQMP, does it clearly specify parameter, frequency and location?

Table 6.3 and Table 6.4 in the DWQMP

Table 6.3 details the verification monitoring for Quilpie, Table 6.4 details the verification program for Euromanga
The tables include parameters, frequencies and sampling locations.

How is data stored (e.g., spreadsheets, database, emails etc.) and is it reliable?

Not reliable

Certificates of analysis are stored in InfoExpert, however there is no reliable central location or naming conventions.
The results of in-house *E. coli* testing are recorded on a form and emailed to the Director. Examples of some (December 2024) emails were retrieved from InfoExpert, but there is no central location for storing the data, and there are no clear naming conventions for saving or searching for these records. Two examples were available but it was not possible to audit the verification monitoring program implementation, or review the accuracy of information in the Annual report.

Does the verification monitoring data presented in the Annual Report match the requirement of the approved DWQMP, parameter?

Minor Non-Compliance

The verification data is not saved consistently or in a central location. It is not possible to review the implementation of the verification monitoring program, or the data provided in the annual report. It is noted that the annual report (23-24 provided) notes that only 2 of 8 *E. coli* samples were taken and 14 out of 78 fortnightly (in-house) samples.

Monitoring data

REC1: Establish a centralised location for saving water quality data, including the in-house testing, operational monitoring and laboratory testing. Ensure a manager (or equivalent) reviews the implementation and results. [There has been investment in swimlocal and full commissioning is planned in the next few months].

What data is missing and has it been reported to the Regulator?

As per the annual reports

Missing samples is identified in the tables in the annual report. Missed samples have not been reported to the Regulator previously, but requirement was made clear as part of the audit process.

Annual Reports

1 flagged, 1 action, 1 / 2 (50%)

Is there a consistent process for the preparation of annual reports and is it reliable?

Partial

A consultant prepares the annual report based on information provided by Council. It was not possible to review the process for preparing the annual report, and it was unclear if the report was reviewed properly internally by Council.

Check frequency of testing in the DWQMP - does this tally with the Annual Report?

No

The Annual report noted that 2 *E. coli* (Quarterly) samples for each scheme were recorded in the 23/24 financial year. 8 laboratory samples were required as well as fortnightly in-house sampling (noted as operational monitoring in the DWQMP).
It was not possible to verify the accuracy of the testing frequency in the Annual Report.

Do the statistics match the raw data for selected parameters?

No

It was not possible to verify the accuracy of the data due to the absence of complete record keeping processes. It was also noted that the improvement plan in the Annual Report did not reflect the current status of actions, for example, it indicated that the preparation of operational procedures had been completed however they had not been completed.

Is the data in the annual reports accurate	Minor Non-Compliance

Due to inadequacies with record keeping, it was not possible to verify the accuracy of the data in the annual report, inaccuracies in the improvement plan status were identified.

Annual report accuracy

REC2: Establish a process to ensure the accuracy of the information in the Annual Report, including the accuracy of data (for example by improving record keeping). When approving the DWQMP annual reports, ensure all information is accurate and reflects the current circumstances (for example the RMIP).

Periodic reporting condition

Is there a periodic reporting condition in the DWQMP approval notice	No
Is the reported periodic data accurate	No Requirement

Compliance with the DWQMP and its Conditions

5 flagged, 15 actions, 21 / 29 (72.41%)

Preventive Measures

1 flagged, 5 actions, 5.5 / 7 (78.57%)

Have preventive measures been identified?

Yes

The risk assessment identifies preventive measures in the column 'Existing Preventive Measures / Barriers' and includes an assessment of residual risk, which provides an assessment of the adequacy of the controls.
Examples include:
- Chain-link fencing and locked gates around bores
- Artesian water flows at ~75°C and O&M Procedures (Trunk Main Shut Down – Planned & Unplanned Maintenance)
- Disinfection UV treatment (for Eromanga)
- Bore heads are sealed

Are preventive measures actionable and clear?

Yes

Preventive measures are high level but they are clear and simple.
Examples include:
- O&M Procedures in place (Trunk Main Shut Down – Planned & Unplanned Maintenance)
- Vermin Proofing
- RO Microfiltration UV treatment (for Eromanga)
- Chain-link fencing and locked gates around bores
- Bore heads are sealed

The operational monitoring table provides more guidance on the implementation of the preventive measures.

Photo 1 (at Eromanga)

Photo 2 (a pressure reduction station)

Are preventive measures being appropriately implemented (refer to site inspections)?

Partial

The O&M Manual is available for Eromanga WTP and the operator is undertaking operational monitoring and checks as required. These are recorded on the weekly check sheet, which was observed in hard copy at the WTP and appeared complete for the examples reviewed.
Other preventive measures are largely informal, due to the absence of operational procedures. Operators clearly explained the requirements for managing network hygiene when working on mains, however these processes are undocumented.
Chain link fences and locks were implemented on all bores, and at the Eromanga WTP.
Boreheads are sealed and appear to be in good condition.
Air gaps were noted for disconnected bores.
Backflow prevention (not mentioned in the risk assessment) had been installed on the Quilpie sewage treatment plant and truck wash bay and sewage pump stations. There may be other high-risk connections that need to be assessed, such as the butchers blocks and the Lake.
A new reservoir has been constructed at Eromanga and needs to be commissioned and decontaminated prior to connection.
Separate hoses for the Vac-truck have been purchased – a clean water and dirty water hose to ensure separation and prevent contamination.
It was noted that the suitability of the chlorine chemical for drinking water at Eromanga could not be confirmed. The label of the 20L bottle indicated that it was suitable for pools and it had been purchased at the local hardware.

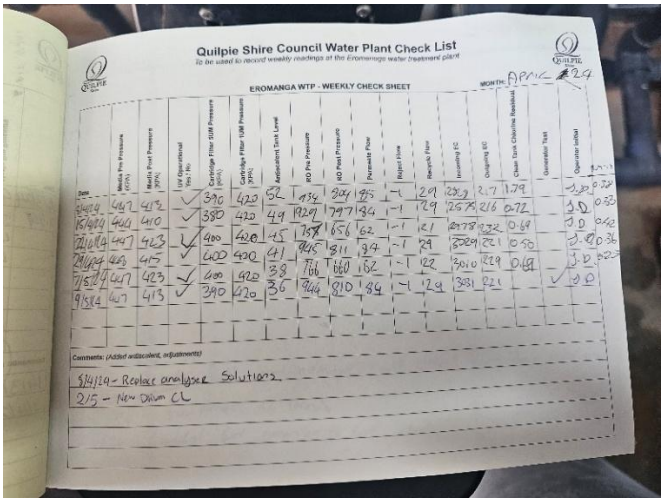

Photo 3

Are staff appropriately trained to implement preventive measures?

Yes

Both operators/plumbers are trade qualified plumbers, with either Cert III in water operations (completed in December 2024) or completion of a Simmonds and Bristow WTP training course (records not available).
Both operators were very knowledgeable about the supply system, water treatment plant (in Eromanga) and protection of public health and the supply of safe drinking water. Both operators interviewed displayed a personal responsibility for providing safe drinking water.

Are preventive measures effective at managing risks?

Yes

Review of the operational data at Eromanga WTP indicated that the treatment processes operate within the critical limits for risk management, for example free chlorine residual was above 0.5 mg/L out of the WTP and into the network.
The condition assessment and diving inspection for the Eromanga reservoir indicated that there were no critical deficiencies.
Operators advised that they disinfect their tools between jobs and ensure hygienic practices when working on mains.

Are records being maintained for implementation?

Partial

The operational monitoring at Eromanga was completed and full records were available. The diving inspection of the Eromanga reservoir was available.
There were no other records for review of the Quilpie scheme.

Preventive measures for managing hazards and hazardous events are implemented

Minor Non-Compliance

Preventive measures have been identified and were largely found to be implemented, however there was an absence of formalized processes and records for some of the preventive measures.
Treatment processes at Eromanga appeared to be well managed.

Reservoir commissioning

OFI1: Develop a commissioning procedure for the new Reservoir at Eromanga that includes decontamination and testing before connection.

Chlorine

REC3: Review the suitability of the chlorine chemical used at Eromanga to ensure it is suitable for use in drinking water.

Backflow

OFI2: Undertake a risk assessment on potential high-risk connections (such as the Butchers Blocks and the Lake) to determine if backflow prevention is required. Ensure all existing backflow prevention devices are tested as required by plumbing regulations.

Mains hygiene

REC4: Determine the preventive measures required for mains hygiene and ensure all staff have adequate tools and materials to implement the actions.

Preventive measures

REC5: Establish inspection processes for borehead and reservoir integrity (for example quarterly) and all other preventive measures to ensure the preventive measures in the DWQMP are implemented, and there are records available to confirm that they are implemented.

O&M Procedures

1 flagged, 2 actions, 2 / 4 (50%)

Are the required procedures in place?

Partial

The O&M Manual for Eromanga was available in the audit for review.
Other critical procedures for the implementation of preventive measures are under development and have not yet been completed. Whilst operators and plumbers (interviewed) were aware of their responsibilities and the implementation of preventive measures, this is informal and relies on operators taking initiative to learn the requirements independently.
The Hygienic Mains Repair procedure has not been developed to ensure water hygiene and water quality considerations.
Borehead and reservoir inspection procedures need to be developed, with relevant record keeping processes.
A procedure for water quality sampling, and in-house testing needs to be developed. The procedure must include the process for taking samples, sending samples to the laboratory and the procedure for in-house testing. Record keeping processes must also be specified. The procedure should also include QA/QC procedures recommended by IDEXX to ensure the results of in-house testing are reliable.

Are procedures accessible?

No

The DWQMP and Eromanga O&M Manual are available on InfoExpert but other procedures are not developed and therefore not available to staff.

Is there a process for document management to ensure currency?

No

There does not appear to be a process for reviewing and managing document currency.

Is training provided on implementing procedures correctly?

Partial

The DWQMP and Eromanga O&M Manual are available on InfoExpert but other procedures are not developed and therefore no training in procedures has been delivered.
It was discussed that training is on the job and mentoring by senior staff.

Are O&M procedures being implemented (refer to site inspections)? Partial

Procedures are not developed and therefore there are no records of implementation.
As detailed above, preventive measures are implemented, but informal.

O&M Procedures are current and implemented Minor Non-Compliance

There is a need to develop some key procedures.

Sampling and in-house testing

REC6: A procedure for water quality sampling, and in-house testing needs to be developed. The procedure must include the process for taking samples, sending samples to the laboratory and the procedure for in-house testing. The procedure should also include QA/QC procedures recommended by IDEXX to ensure the in-house testing results are reliable. All staff should be trained in the implementation of the procedures.

Procedures

REC7: Develop the required operational procedures for the implementation of the preventive measures and ensure water hygiene and water quality considerations are included. Record keeping processes must also be included. Procedures should include at a minimum water quality sampling, borehead and reservoir inspection. All staff should be trained in the implementation of the procedures.

Incidents and Emergencies

1 action, 5 / 6 (83.33%)

Is there a documented IERP for drinking water? Yes

The DWQMP outlines the incident management procedure for water quality incidents.
The Disaster Management Plan Version 12 Feb 2024, Annexure B: Natural Hazard Risk Assessment outlines the risks relevant to the water supplies e.g., septic's in Eromanga are included in the risk assessment.

Is it adequate and current (reviewed regularly and the identification and notification of events and incidents is clear)? Yes

The IERP and Disaster Management Plan include procedures for managing water quality incidents and events as well as reporting requirements
Table 5.4 of the DWQMP identifies the levels of incident types and the requirements for reporting incidents to the Regulator.

Is there a contact list and is it current, and does it include sensitive customers? Yes

Sensitive users are identified in Table 5.6 DWQMP.

Has training been undertaken on the IERP, including scenario training? Partial

Training is undertaken for the Disaster Group (records not provided). The plan was recently tested in the actual flood event (April 2025).
There is no specific training for a water quality event.

Were there any incidents and events identified by the auditee in the audit period and was the IERP followed? N/A

QSC advised that no incidents have been noted or identified to the Regulator in the audit period, however it is noted that there is an absence of adequate water quality monitoring records to confirm if there should have been any incidents reported to the Regulator.

Were incidents reported to the and the Regulator as required? N/A

No incidents have been noted or identified to the Regulator in the audit period.

Were the corrective and preventative actions appropriate and implemented?

N/A

No incidents have been noted or identified to the Regulator in the audit period.

Were events, as defined in the decision notice, and incidents, in accordance with the water quality criteria, identified and notified (i.e. were any missed)?

Partial

Missed verification monitoring was not reported to the Regulator, mentioned earlier.

Incident and emergency management protocols were implemented

Compliant

No incidents have been noted or identified to the Regulator in the audit period. The Incident Management Arrangements in the DWQMP whilst high-level reflect the types of water quality incidents that could occur and the reporting requirements are captured in the incident management process.

Incident response and management testing

OFI3: Consider testing the DWQMP incident process as periodic scenario or desktop exercise.

Monitoring

1 flagged, 4 actions, 2 / 3 (66.67%)

Are verification and operational monitoring programs clearly documented, parameter, location, frequency?

Yes

Section 6 of the DWQMP identify the operational and verification monitoring required for the Quilpie and Eromanga supply systems.
Parameters, frequency, sample location and corrective actions are identified.
It is noted that in-house *E. coli* testing is defined in the operational monitoring, and the laboratory testing (quarterly) is identified as verification testing.

Is data appropriately recorded (operational data may be onsite)?

No

In-house records were observed for 19/12/24 Eromanga and 24/12/24 Quilpie. The water sample analysis is recorded on a pdf and sent through to the Director via email. The emails are saved to InfoExpert. It was noted that the emails are saved without proper naming conventions.
Operational monitoring for Eromanga was recorded in the weekly record carbon copy booklet.
There does not appear to be a spreadsheet or central location for recording in-house *E. coli* testing or laboratory testing.

Are both the verification and operational monitoring programs being implemented (check data)?

No

Operational monitoring is undertaken at Eromanga. The records were complete and filled out at least weekly for the pages reviewed 7/7/2023 – 7/8/2023, 21/1/24-30/1/24, 3/2/25-24/2/25, 8/4/25-9/5/25. Records are kept in a carbon copy spreadsheet and scanned and emailed to the Director. When visiting Eromanga WTP there were full records of each operational parameter available for review. The results also indicated that the WTP operated within the limits specified in the Operational Monitoring Table in the DWQMP.
In-house records were observed for 19/12/24 Eromanga and 24/12/24 Quilpie. The water sample analysis is recorded on a pdf and sent through to the director via email. The emails are saved to InfoExpert. It was noted that the emails are saved without proper naming conventions so it was not possible to search and confirm if the required sampling had been undertaken. In addition, it was not possible to retrieve the laboratory sampling results in InfoExpert due to unclear naming conventions.
There does not appear to be a spreadsheet or central location for recording in-house *E. coli* testing or laboratory testing.
It is not possible to verify the implementation of the monitoring programs
There does not appear to be any results from December 2024 to the current date and it is considered that the monitoring plans have not been fully implemented.
In-house laboratory consumables and reagents will expire in August 2025.

Are samplers and analysts appropriately trained?

Partial

Whilst operators were experienced and knowledgeable, there is no auditable sampling or analysis procedure, and there does not appear to be any formal or documented training in the process.

Operational and verification monitoring programs implemented

Major Non-Compliance

The information and reports shared indicated that verification sampling was missed, it may have been taken, when possible, but the verification monitoring program was not fully implemented. There could be several reasons (e.g., staff leave etc.), however, it does not negate the fact that there has been a non-compliance with the implementation of the DWQMP.
The issue is also highlighted in the DWQMP annual report 23-24. For Quilpie supply - only 2 out 8 external micro samples were tested, and only 14 out of 78 in-house *E. coli* samples were tested. The report earlier than this 22-23 shows similar issue with in-house testing not completed as required. Eromanga – only 18 out 78 *E. coli* tested in-house.

Event - missed samples

REC8: Ensure that failure to take samples is notified to the Regulator as an event. Consider adding failure to take a verification sample to the DWQMP incident management process as a notifiable incident (event) to ensure that when samples are missed, the Regulator is notified in accordance with the Decision Notice.

Training

REC9: Deliver training to all staff responsible for implementing the monitoring program in the sampling and in-house lab procedures (once developed).

Monitoring

REC10: As a high priority, re-commence the operational and verification sampling program, including the fortnightly in-house *E. coli* testing and quarterly laboratory analysis. Consider preparing and establishing a sampling schedule and communicating the responsibility for sampling clearly to the relevant team members. Consider displaying the schedule in the office and check in each week/fortnight with the sampler to confirm that the program is understood and being implemented.

Improvement Plan

1 flagged, 1 action, 1.5 / 3 (50%)

Is the RMIP clearly documented?

Partial

The RMIP is included in the DWQMP Annual Report, however it indicates that some items that have been closed out but have not actually been completed.

Is there a process to update the RMIP and is it current?

Partial

The RMIP (outside of the DWQMP annual report) could not be located.

Are actions being closed out in accordance with the RMIP?

No

Actions on the RMIP had been closed out but have not actually been completed, for example,
• Review and update Operation and Maintenance Procedures that address the microbial contamination risks for the maintenance and repair of water mains was noted as completed but this has not been completed.
• Consolidate all drinking water data and documentation so that it can be managed centrally was marked as completed but this has not been completed.
Actions from the previous DWQMP Audit had not been captured on the improvement plan.

Do annual reports reflect the status of the RMIP at the time of reporting?

No

As per above

Is there a process to add actions as they are identified, through risk assessments, audits or similar?

No

The RMIP is only captured in the Annual Report and is not actively maintained or even reviewed.

RMIP is implemented

Minor Non-Compliance

The RMIP is not effective at capturing and tracking water quality improvements.

Improvement plan

REC11: Ensure the RMIP is implemented as required, and it is kept up to date. Consider, developing the RMIP as an editable spreadsheet (or similar), which can be regularly reviewed and updated (for example monthly/quarterly) to ensure all actions are captured and are being progressed.

Reviews

1 action, 4.5 / 5 (90%)

Have reviews been undertaken in accordance with the decision notice conditions?

Yes

The DWQMP was last amended in 07/09/2022. The Decision notice for the approval stated 'Your DWQMP, as received on 6 October 2022; meets the requirements of the Act and the relevant guidelines for the drinking water supply schemes addressed'. There were no records relating to the review.

Were reviews undertaken in accordance with the Guideline (analysis of data, risk assessment etc..)?

Yes

The Regulator has approved the plan. However, there were no records relating to the review therefore it is unclear if the guideline was followed. It is noted that the DWQMP generally reflects the requirements of the Guidelines.

Were any reviews undertaken appropriately documented (e.g., report)?

Partial

There were no records relating to the review.
The DWQMP includes highlighted sections and edits that are presumably the result of the review.

Are review findings addressed appropriately through update and amendment of the approved DWQMP?

Yes

The DWQMP was last amended in 07/09/2022. The Decision notice for the approval stated 'Your DWQMP, as received on 6 October 2022; meets the requirements of the Act and the relevant guidelines for the drinking water supply schemes addressed'.

Reviews undertaken

Compliant

Review record

OFI4: At the next review of the DWQMP, keep a record of the review process.

Records Management

1 flagged, 1 action, 0.5 / 1 (50%)

Is it clear where different types of data should be recorded (water quality, maintenance, calibrations, inspections, training etc.)?

No

Records are kept on the CRM InfoExpert. It was noted in the audit that many records are saved without suitable naming conventions, therefore, it is impossible to retrieve and search for relevant information. For example, many records relating to water quality were saved as a random four-digit number.

Is the storage method appropriate (e.g., not emails, C: Drive, USB stick etc.)?

Partial

As per above, but InfoExpert is used

Is data being collected and recorded consistently and accurately?

No

As per above

Records are maintained	Minor Non-Compliance

Record keeping

REC12: Investigate and establish a central location for recording DWQMP records and documentation. Consider a suitable naming convention so that relevant documentation can be searched for and retrieved when required. [Council has planned the use of swimlocal in the next few months and improved use of InfoExpert].

DWQMP relevance

1 action, 14 / 16 (87.5%)

Service Description

1 action, 1.5 / 2 (75%)

Is the process description in the DWQMP accurate, including schematics?

Partial

The scheme descriptions and flow diagrams are largely consistent with the scheme characteristics observed in the audit.
The process flow diagram for Eromanga generally reflects the current characteristics of the scheme except for the chlorine dosing arrangements. The process flow diagram indicates a 2kL chlorine tank, however when onsite, the chlorine was supplied from a 20L plastic bottle bought from the local hardware.

Has there been any change to a process or a new process included?

No

Service description and details of infrastructure (including schematics/process flow diagrams)

Compliant

Process flow diagram

OFI5: Review and update the Eromanga PFD to accurately reflect the chlorine dosing volumes (at the next review of the DWQMP).

Catchment

3 / 3 (100%)

Have catchment characteristics been assessed and reviewed for changes?

Yes

The catchment descriptions reflect the circumstances that could be observed in the audit.

Is raw water quality data used to guide risk reviews?

Yes

Raw water sampling appears to have been considered in the risk assessment. Section 3 of the DWQMP references water quality data that was considered in the risk assessment.

Auditor assessment - does raw water data or catchment changes suggest any new risks which should be considered?

No

The risk assessment appears to capture the considerations from the raw water data.

Has an HBT catchment category been identified and is it accurate?

No

Catchment categories have not been captured yet. The DWMQP is due to be reviewed later this year and this may be captured in the review.

Catchment characteristics and water quality data

Compliant

Risk assessment and risk Management

4 / 4 (100%)

Have any new or changed processes been reflected in the DWQMP?

N/A

No new risks were evident.

Has the risk assessment been reviewed to address any newly identified hazards or a change in the risk profile of existing hazards? N/A

No new risks were evident.

Does the risk assessment cover relevant hazardous events? Yes

The risk assessment covers the types of incidents expected for the supply systems

Is the level of risk in the DWQMP compatible with the actual risk on the ground? Yes

The level of risk in the risk assessment is considered reasonable, however the implementation of the preventive measures should be reviewed to better characterize residual risk.

Are preventive measures adequate to achieve the risk mitigation identified in the DWQMP? Yes

Preventive measures identified are adequate (noting that they need to be implemented)

Hazard identification, risk assessment and preventive measures Compliant

Incident Management 1 / 1 (100%)

Have incidents identified preventive measures to prevent or reduce to risk of reoccurrence? N/A

QSC advised that there were no records of incidents notified to the Regulator. This could not be verified as there is an absence of record keeping in relation to compliance with the water quality criteria in the audit period.

Have preventive measures been amended or added as required in response to an event or incident? N/A

QSC advised that there were no records of incidents notified to the Regulator. This could not be verified as there is an absence of record keeping in relation to compliance with the water quality criteria in the audit period.

Outcomes from any incident management activities which required a change to the preventive measures Compliant

However, reporting of missed verification samples is an Event which was not reported to the Regulator. This has been captured earlier.

RMIP 1.5 / 2 (75%)

Do the improvement actions adequately address the identified risks? Partial

The RMIP is located within the DWQMP Annual Report and was not located on the server.
It was noted that the RMIP is not a living document that is regularly reviewed or updated.

Are the relevant improvement items included in the RMIP? No

Items for improvement are not recorded (for example, it was discussed that there were issues with the chlorine analyser (at Eromanga) and it is difficult to understand the actions that are being undertaken and are to be undertaken. Recommendations from the previous audit (still outstanding) were not captured on the RMIP.

RMIP Relevance Compliant

The RMIP is not effective at capturing and tracking water quality improvements. A non-compliance for this was identified with the RMIP implementation earlier so is not being duplicated here.

Monitoring	3 / 4 (75%)

From the site inspection - is the operational monitoring adequate (parameters, location, frequency)? — Partial

Operational Monitoring of the WTP at Eromanga is undertaken and there were verifiable records available at the plant in the carbon copy book. The book had been populated for the audit period as required. Daily bore readings are taken at Eromanga.
The DWQMP identifies fortnightly in-house *E. coli* testing in both networks and at the Eromanga bores.

Does the DWQMP include CCPs — Partial

CCPs are not identified however the Operational Monitoring Table identifies critical and alert limits, as well as corrective actions.

Is verification monitoring representative of the network and of the risks/hazards? — Yes

The verification monitoring program locations and frequencies are representative of the network and the risks.

Operational and verification monitoring programs — Compliant

Site Inspections	15 / 17.5 (85.71%)
Raw water	2.5 / 3 (83.33%)
Raw water 1	1.5 / 2 (75%)
Location/Scheme	Quilpie
Source type (e.g., bore, run of river, lake)	GAB
Are there sources of pathogens in the inner catchment?	NA
GAB	
Is there raw water monitoring undertaken at the intake?	No
The Verification Program includes quarterly *E. coli* samples from one bore (rotating) however results of the monitoring program were not available and it was uncertain if sampling had been undertaken in accordance with the program.	
Is the catchment description correct, including the flow diagram?	Yes.
The catchment description and process flow diagram accurately reflect the scheme characteristics.	
Is the HBT catchment category correct?	N/A
A catchment category assessment has not been undertaken, however it is expected to be a category 1 protected source.	
Are there any required maintenance activities required and are these undertaken (e.g., pumps, screens, aerators)?	Partial
Operators visit the bores daily, however there are no records to demonstrate implementation.	
What preventive measures are identified in the raw water (a sample of those to be audited)?	Borehead protection, security at bores.
The GAB is considered a protected raw water source, no relevant raw water preventive measures.	
Are preventive measures being implemented?	Yes

Preventive measures include Borehead protection, security at the bores, temperature and positive pressure. These are in place.
Operators are aware of water hygiene when working on mains but there are no documented procedures.
Backflow prevention (BFP) has been installed on the Quilpie sewage plant and the truck wash, however it may be relevant to assess if the Lake Tourist Park and the Butchers Blocks require backflow protection. Mining sites around Eromanga may also be assessed.
Additionally, the Backflow Prevention (BFP) devices should be tested annually.

Photo 4 (public wash bay)

Photo 5

Any other issues?

The Operator/Plumber was extremely knowledgeable and aware of water quality management and the importance of managing safe drinking water.
The current status of the supply to the Lake should be clarified, and a risk assessment undertaken to determine if a non-return valve is required. It is noted that it is unclear if the supply is currently operational.

Raw water 2	1 / 1 (100%)
Location/Scheme	Eromanga
Source type (e.g., bore, run of river, lake)	Sub-Artesian Basin
Are there sources of pathogens in the inner catchment?	Yes

The bores are reasonably shallow and each house has a bore for irrigation, therefore the bore field is largely unprotected (e.g. from flood water).
It was discussed in the recent flood event the bore water conductivity decreased indicating a strong influence from the surface water into the aquifer.
In the catchment and in close proximity to the bore field are septic tanks, sewage infrastructure, livestock, pets and wildlife.

Is there raw water monitoring undertaken at the intake? No

The Verification Program includes quarterly *E. coli* samples from one bore (rotating) however results of the monitoring program were not available and it was uncertain if sampling had been undertaken in accordance with the program.

Is the catchment description correct, including the flow diagram? Yes

The catchment description and process flow diagram accurately reflect the scheme characteristics.

Is the HBT catchment category correct? N/A

A catchment category assessment has not been undertaken

Are there any required maintenance activities required and are these undertaken (e.g., pumps, screens, aerators)? Yes

At Eromanga, the weekly check sheet records the operational data and information such as a check of the UV and generator.

What preventive measures are identified in the raw water (a sample of those to be audited)? NA

No preventive measures are noted for the raw water source.
It is noted that council undertakes repairs to bores when required, however privately owned bores are also within the bore field and these are not managed by Council

Are preventive measures being implemented? N/A

As above

Any other issues?

None

WTP 7.5 / 8.5 (88.24%)

WTP 1 7.5 / 8.5 (88.24%)

Water treatment Plant Eromanga

Is WTP description correct including the flow diagram? Partial

The PFD generally reflects the current characteristics of the scheme except for the chlorine dosing arrangements. The process flow diagram indicates a 2 kL chlorine tank, however when onsite, the chlorine was supplied from a 20 L plastic bottle bought from the local hardware.

Is the chemical dosing as detailed in the plan? Yes

Except the dosing vessel size, as per above

Are the processes working as they should? Yes

Operational monitoring showed that the treatment steps (MF, UV, RO and chlorine dosing) are operating within the defined critical limits.
It is noted that the operator was very knowledgeable and clearly understood the operation of the WTP.

Are there any plant or process bypasses in place?	Yes
It was discussed that the RO membranes can be bypassed however this would result in high conductivity, which would present an aesthetic issue but the water would not be considered unsafe.	
What preventive measures are in place at the WTP (a sample of those to be audited)?	MF, UV, RO, chlorine
Operational monitoring showed that the treatment steps (MF, UV, RO and chlorine dosing) are operating within the defined critical limits.	
Are preventive measures being implemented?	Yes
The WTP is well operated and the treatment processes are functioning as required (based on the operational data observed in the audit)	
Is there an operator checklist that is implemented?	Yes
Yes, the operator weekly checklist was observed and is populated as required. The results on the checklist confirmed good operation of the WTP and its processes.	
Is operational monitoring undertaken and records maintained?	Yes
Yes, the operator weekly checklist was observed and is populated as required. The results on the checklist confirmed good operation of the WTP and its processes.	
Are benchtop and online instruments appropriately calibrated?	No
The Turbidity instrument is a new item however due to remoteness, all instruments are currently uncalibrated.	
Review SCADA trends, do they indicate that the WTP has been operated in accordance with the DWQMP	Yes

There is no full SCADA but some monitoring is undertaken online. Bore flows are measured online.
Raw water tank volume percentage is online
Media pressure for the MF system is monitored but there is currently no operational, alert or critical limit.
The online EC monitoring confirmed that the RO system is being monitored. The plant was on standby during the inspection therefore the critical limit could not be observed, but the operator explained how it is monitored and this is confirmed through the weekly check sheet.
The chlorine analyser indicated that the free chlorine residual was within the acceptable range, however this instrument is currently under maintenance as it is not set appropriately for the temperature of water.
An external consultant is working with the operator and council to improve data reliability from the instrument.

Photo 6

Are operators appropriately trained? Yes

The operator explained that they had completed training in the operation of the WTP through Simmons and Bristow. The operator was very knowledgeable about water quality, and took personal responsibility for the safety of drinking water.

Any other issues? Yes

The suitability of the chlorine purchased from the hardware needs to be risk assessed. It was noted that the label on the 20 L bottle indicated that the chemical was suitable for swimming pools. It did not mention if it was safe for use in drinking water.

Reservoir 5 / 6 (83.33%)

Reservoir 1 5 / 6 (83.33%)

Reservoir name/scheme/number Eromanga

Is security at the site adequate? Yes

The reservoir is located within the WTP compound, which is locked.

Is the reservoir vermin and ingress proof? Yes

The reservoir, whilst aged did not show areas where vermin could access the structure.

Is there any monitoring undertaken at the reservoir and is it undertaken? Yes

The clean water tank outlet is included in the monitoring programs and a free chlorine sample is required weekly, and *E. coli* (in-house) fortnightly, lab sample taken quarterly.
It is noted that there are gaps in implementing *E. coli* monitoring as identified.

What preventive measures are identified in reservoirs (a sample of those to be audited)?

Inspections

A diving inspection was undertaken in June 2023 and did not identify any major issues.
A new reservoir has been constructed and council will commission and bring it online when adequate resources are available. The current clean water tank will become a second raw water tank.
There is no interim reservoir inspection process, however the plant operator does observe the plant multiple times per week.

Photo 7

Are preventive measures being implemented?

Yes

As per above

Is there a reservoir inspection procedure?

No

A diving inspection was undertaken in June 2023 and did not identify any major issues.
There is no interim reservoir inspection process, however the plant operator does observe the plant multiple times per week.

Are reservoirs inspected as specified and is the frequency adequate?

Partial

As per above

Are reservoirs cleaned?

Partial

As per above

Is description correct including the flow diagram?

Yes

The scheme description and process flow diagram reflect the system components.

Any other issues

None