DWQMP Annual Report 2023 - 24

Woorabinda Aboriginal Shire Council

Contents

Executive Summary

Under the Water Supply (Safety and Reliability) Act 2008 (The Act), water suppliers in Queensland are required to operate under an approved Drinking Water Quality Management Plan (DWQMP) to protect public health. In Addition, the preparation of a DWQMP report per financial year is required by law.

Woorabinda Aboriginal Shire Council (WASC or Council) is a registered service provider operating the drinking water scheme for the Woorabinda Community under an approved DWQMP. The water scheme is comprised of one Weir, a Water Treatment Plant, two Reservoirs totaling 2.75ML, four Bores and a distribution network.

Council has undertaken effective risk management and water quality monitoring procedures to ensure safe drinking water for the Community. Council is continuing to improve, and various actions have been undertaken and/or are planned to ensure the Community continues to receive clean safe drinking water.

Introduction

This is the Drinking Water Quality Management Plan Annual Report for the Woorabinda Aboriginal Shire Council (Council or WASC) for the financial year 2023-24.

Scope

This report has been prepared to fulfil the legislative reporting requirements set out in the Water Supply (Safety and Reliability) Act 2008 (The Act).

Purpose

This annual report aims to be a reference document for the regulator, as well as customers and to show Council's performance in relation to the DWQMP under the Act.

Scheme Operated

Woorabinda Aboriginal Shire Council is a registered drinking water service provider with the Service Provider Identification (SPID) number **150**.

Woorabinda Aboriginal Shire Council manages and provides drinking water to the Woorabinda Community. The water supply scheme is comprised of one Weir, a Water Treatment Plant, two Reservoirs totaling 2.75ML, four Bores and distribution network.

It should be noted that the current town bores are unsustainable, and Council is seeking funding to bring these back online to improve the water security of the drinking water supply.

DWQMP Implementation

In the section we discuss the implementation of the DWQMP.

Risk Management

Councils have ensured effective risk management to assure the community get safe drinking water via efficient operation and implementation of the DWQMP.

Monitoring

Council ensures that the water quality supplied to the Community is safe and compliant with the DWQMP through extensive monitoring programs. These tests ensure Council identifies any water quality issues before it becomes an incident.

Council also undertakes operational monitoring; these tests are to ensure Council meets the DWQMP and that the performance of the processes is functioning effectively.

Council has the following systems in place for quality assurances:

- Council does Microbiological samples in-house, quality checks for testing are undertaken by a NATA accredited laboratory, Queensland Health Forensic and Scientific Services Laboratory (QHFSS).
- Staff have been appropriately trained to undertake these samplings.

Implementation of Risk Management Improvement Plan

Council maintains a culture of continuous improvement through implementing the Improvement Plan within the DWQMP and making progress towards strengthening the management of the water supply. A detailed status on the Improvement Plan implementation is presented in Appendix 1.

As part of the ongoing process of improvement, an updated DWQMP (version 7.7) was approved on 16 May 2024 to reflect changes in the infrastructure and operating environment.

Verification Monitoring

This section discusses the compliance of the water quality monitoring undertaken in the approved DWQMP, WASC during the reporting period ensured and supplied clean safe drinking water to the community.

A summary of the monthly microbiological samples tested at the external laboratory is included in table 1.

Table 1 Microbiological – Monthly external verification monitoring

Location	Parameter	No. of Samples to be collected	No. of samples actually tested	Water Quality Criteria (Spec)	No. of non-compliant samples
Reservoir Shed	E. coli (CFU/100mL)	12	12	Not Detected	0
	Total Coliforms (CFU/100mL)	12	12	N/A	0
Hospital	E. coli (CFU/100mL)	12	12	Not Detected	0
	Total Coliforms (CFU/100mL)	12	12	N/A	0
School	E. coli (CFU/100mL)	12	12	Not Detected	0
	Total Coliforms (CFU/100mL)	12	12	N/A	0
166 Munns Drive	E. coli (CFU/100mL)	2	0		
	Total Coliforms (CFU/100mL)	2	0		
WTP Lab Sink	E. coli (CFU/100mL)	10	10	Not Detected	0
	Total Coliforms (CFU/100mL)	10	10	N/A	0

Operators undertake E. coli testing in addition to the external laboratory and it was not detected within the reporting period.

All monitoring was compliant with the The ADWG.

Chlorine is monitored daily to ensure that there is a residual amount of chlorine to ensure safe drinking water as required by the ADWG, although there is no minimum in the ADWG it is recommended that it should be maintained above 0.2 mg/L, but Council refers to the DWQMP which is set at 0.1 mg/L.

Table 2 physio-chemical – weekly internal verification monitoring

Location	Parameter	Unit	Count	Min	Max	Average	ADWG Limit	Out of Spec
Reservoir	**Free Chlorine**	mg/L	315	0.13	3.6	1.21	5 (H)*	No
	pH	-	350	7	7.95	7.37	6.5 - 8.5 (A)	No
Hospital	**Free Chlorine**	mg/L	242	0.17	2.98	0.79	5 (H)*	No
	pH	-	242	7	7.8	7.34	6.5 - 8.5 (A)	No
School	**Free Chlorine**	mg/L	238	0.08	2.98	0.72	5 (H)*	No
	pH	-	239	7	7.77	7.47	6.5 - 8.5 (A)	No
166 Munns Drive	**Free Chlorine**	mg/L	0	N/A	N/A	N/A	5 (H)*	N/A
	pH	-	0	N/A	N/A	N/A	6.5 - 8.5 (A)	N/A
WTP Lab Sink	**Free Chlorine**	mg/L	217	0.1	2.2	0.83	5 (H)*	No
	pH	-	217	7	7.88	7.35	6.5 - 8.5 (A)	No

A – Aesthetics guideline (spec) as per the ADWG. Does not impact public health.

H – Health -based guidelines (spec) as per the ADWG. Requires investigation and corrective actions.

*ADWG limit is for total chlorine, free chlorine is a subset of total chlorine.

Table 3 Physio-chemical – external verification monitoring

Analysis	Unit	Raw	WTP	Reticulation	ADGW Limit	Out of Spec
Trihalomethanes (THMs)						
Trihalomethanes (Total)	µg/L	N/A	160	160	250	No
Chloroforms	µg/L	N/A	140	140	250	No
Bromodichloromethanes	µg/L	N/A	19	18	250	No
Dibromochloromethanes	µg/L	N/A	1	1	250	No
Bromoform	µg/L	N/A	<1	<1	250	No
Total Metals						
Aluminium	mg/L	2.2	0.026	0.084	0.2 (A)	No
Arsenic	mg/L	0.0019	0.0012	0.0013	0.01 (H)	No
Cadmium	mg/L	<0.0001	<0.0001	<0.0001	0.002 (H)	No
Chromium	mg/L	0.0012	0.0002	0.0002	0.05 (H)	No
Copper	mg/L	0.006	0.22	0.22	2 (H) 1 (A)	No
Iron	mg/L	2.1	0.013	0.044	0.3 (A)	No
Lead	mg/L	0.0024	0.0018	0.0004	0.01 (H)	No
Manganese	mg/L	0.29	0.0044	0.010	0.5 (H) 0.1 (A)	No
Nickel	mg/L	0.0032	0.0012	0.0010	0.2 (H)	No
Zinc	mg/L	0.044	0.027	0.006	3 (A)	No

A – Aesthetics guideline (spec) as per the ADWG. Does not impact public health.

H – Health -based guidelines (spec) as per the ADWG. Requires investigation and corrective actions.

Table 4. Pesticides and Cyanotoxins

Sample location	Pesticide	Total count of tests	No of tests passed	Compliance %	Laboratory name	Planned Count
Treated water outlet	Pesticides / herbicides	2	2	100%	QHFSS	2
Raw water inlet	Pesticides / herbicides	2	2	100%	QHFSS	2
Sample location	**Bluegreen algae**	**Total count of tests**	**No of tests passed**	**Compliance %**	**Laboratory name**	**Planned Count**
Treated water	Cyanotoxins	2	2	100%	QHFSS	2
Raw water inlet	Cyanotoxins	2	2	100%	QHFSS	2

Incidents Reported to the Regulator

There were four drinking water incidents in the reporting period of 2023-24, as outlined in Table 4 below.

Table 5 Incidents Reported in the 2023-24 FY

Case Number	Date Reported	Incident Type	Case Status	What Happened	What actions were taken
DWI-150-24-10810	25/01/2024	Failure to test or missing data	In progress	WASC submitted initial notification form, for failing to undertake pesticide monitoring within the 2022-2023 period.	Updated record sheets, daily monitoring sheets, operator training and ongoing monitoring by Council
DWI-150-24-10809	25/01/2024	Failure to test or missing data	In progress	WASC submitted initial notification form, for failing to undertake E. coli monitoring between April and June 2023, after unable to source Colilert and HPC testing chemical from the supplier due to supply shortage.	Updated record sheets, daily monitoring sheets, operator training and ongoing monitoring by Council

DWI-150-24-10754	02/01/2024	Event	In progress	- Recent rainfall in area has seen flooding of the Dawson River with source water turbidity increasing. - WASC advised that operator identified elevated turbidity at the WTP on 29/12/2023, actual result values are not currently known. - Operator also advised that some dirty water was evident in the town over the weekend.	Boil water alert until water turbidity levels were below critical control point, procedure to contact WSR in daily monitoring sheet booklet.
DWI-150-23-10530	17/10/2023	Event	In progress	Woorabinda called Matt Field (allocated officer) to advise of potential water security concerns with outflow from the WTP at 12 L/s having difficulty keeping up with demand (peak 19 L/s). Reservoir (0.75ML) was at approx. 50% capacity at 10am this morning.	Council put in a Water Restriction until tank lining were installed and water levels in tank were back to acceptable levels, Council implemented internal alert levels for water restrictions, i.e. 60% - low level alert. 55% - low level water restrictions implemented.

Customer Complaints

All complaints are verbally expressed or through online complaints via Facebook etc. No complaints were received in the reporting period.

DWQMP Review Outcome

No review or audit was conducted in the reporting period.

Glossary

Glossary	Definition
DWQMP	Drinking Water Quality Management Plan
The Act	Water Supply (Safety and Reliability) Act 2008
Council or WASC	Woorabinda Aboriginal Shire Council
SPID	Service Provider Identification
ADWG	Australian Drinking Water Guidelines
QHFSS	Queensland Health Forensic and Scientific Service
WTP	Water Treatment Plant
DRDMW	Department of Regional Development, Manufacturing and Water

Appendices

Appendix 1 – Risk Management Improvement Program

ID	Action	Status	Comments
1	Consider future of water treatment Operations, including options of outsourcing some, more or all aspects of water treatment	Suggested by Peter Mosse. Considered by WASC but not needed.	Peter Mosse referred to external operators.
2	Investigate adequacy of visits and maintenance of the intake and header tank. Update plan if preventive measures are inadequate to be able to notice flood or vandalism damage or blue-green algae blooms etc. Monthly visits to be arranged (external tender) to ensure preventative maintenance is performed.	WASC Operators and staff monitoring.	In a service contract with Austek to monitor and service and dosing pumps etc. that they've installed, contractors on site to service in case of failure
10	Develop a cyber-security whole of service risk management plan, including telemetry failure backup plan, and improved management of contractor-held operational information. Replace Water Treatment Plant PLC unit.	Austek, Fourier.	Quote sourced for security cameras; council has an employee that has completed the Cyber-security course.
11	Purchase generator for Baralaba Weir to ensure continuity of raw water supply; consider whether an additional generator is required for bore water supply (mobile or fixed)	Awaiting funding. Future works.	Awaiting funding. Future works.
12	Security review of water assets, including installation of fencing as required (e.g., Baralaba Pump Station and Reservoirs)	Awaiting funding. Future works.	Awaiting funding. Future works.
13	Review of WTP building – chemical storage, chemical separation, ventilation/exhaust fans, lighting, overall building structural integrity	Awaiting funding. Future works.	Awaiting funding. Future works.
15	Review Operator vehicle suitability to ensure staff can access all areas including raw water infrastructure to carry out key tasks	Awaiting funding. Future works.	Complete
16	Develop critical spares list and purchase critical spares, including but not limited to: actuated valves, solenoids, transfer pumps, PLC cards, level sensors, compressor(s), water separator/air shut-off valves, air line in WTP	Awaiting funding. Future works.	In Progress, waiting further funding

18	Review possibility of including a raw water tank at the top of the Baralaba-Woorabinda range to mitigate loss of raw water supply (proposed size – 2ML)	Awaiting funding. Future works.	Awaiting funding. Future works.
19	Review accessibility of raw water lines so that maintenance can be performed as required (e.g., resolve current access issue due to land erosion)	Awaiting funding. Future works.	Awaiting funding. Future works.
22	Rectify bore issues and return additional bores to service to provide additional reliability of supply	Awaiting funding. Future works.	Awaiting funding. Future works. Bore 1 brought back online but awaiting further tests before distributing into the water treatment plant
23	Develop a manganese monitoring program (surface and bore water, and post-oxidation) to assist in reviewing the need for potassium permanganate dosing.	Work with CQPHU	Testing ongoing
24	After sufficient manganese data is collected, review need to redirect bore water to the raw water tank (instead of filtered water tank). A mixer may be required for the raw water tank if this occurs	Suggested by Peter Mosse Considered. Original design is working fine with no issues.	Further analysis needed once all bores are back online, original design is working fine with no issues.
26	Undertake professional jar testing to determine optimum coagulant chemical and dose rate(s)	Optimisation with current chemicals undertaken, but performance still not ideal. Need to consider alternatives.	Samples sent to IPS for further testing to find the best coagulant to determine the optimum coagulant for raw water supply.
29	Calibrate all water quality analysers, implement an internal analyser cross check and simple maintenance procedure (including appropriate record keeping), and implement an external analyser servicing & calibration contract	Awaiting funding. Future works to upgrade and install all water quality analysers, put out the tender when funding becomes available	On going
32	Install dedicated, individual filter outlet turbidity analysers	Awaiting funding. Future works.	Awaiting funding. Future works.
34	Change source of carbon filter backwash water to filtered water tank (i.e. unchlorinated)	Awaiting funding. Future works.	This was suggested by Peter Mosse, need

			engineer consultants to redesign
38	Undertake THM monitoring	Working with CQPHU	Complete
40	Consider reinstatement of chlorine trim dosing at reservoirs	Awaiting funding. Future works.	Awaiting funding. Future works.
47	Establish service contract for all WTP mechanical and electrical equipment	Austek	Currently in service support contract with Austek, 30 June 2025
56	Following DWQMP approval, provide refresher training to all Water staff in DWQMP requirements. Undertake refresher training on an annual basis thereafter	Working with CQPHU	Will take place 24-25 reporting period
58	Implement improved record keeping practices to ensure monitoring and maintenance information is securely stored and readily accessible (including maintenance and calibration of online instruments)	Austek	Jymel Ryan from the Woorabinda Aboriginal Shire Council to digitize the water infrastructure test, Austek
59	Establish raw water *E. coli* monitoring monthly and review the risk in the raw water. Once a minimum of 12 months of data has been collected review the adequacy of the current barriers for protozoa and if further treatment such as a UV is needed	*E. coli* monitoring to commence	Included in DWQMP - complete
60	Develop a procedure to undertaken in-house *E. coli* testing and provide training to the operators on the new procedure.	In progress	Complete
61	Review the water quality complaints process to ensure water quality complaints are recorded.	To start	Complete
62	Upgrade to SCADA to send alarms to Operators.	In progress	Partially completed by Austek, due to plant state we're missing a few monitoring probes to be fully complete.