UrbanUtilities

DRINKING WATER SERVICE ANNUAL REPORT

2023-2024

TABLE OF CONTENTS

1 INTRODUCTION 3

1.1 Accessing this report 4

2 SUMMARY OF SCHEMES OPERATED 5

3 DWQMP IMPLEMENTATION 6

3.1 Pathway to zero water quality incident Roadmap 6

3.2 Risk Management 8

4 VERIFICATION MONITORING PROGRAM 9

5 INCIDENTS REPORTED TO THE REGULATOR 10

6 CUSTOMER SATISFACTION 13

6.1 Water quality complaints performance 2023-24 14

7 DWQMP REVIEW OUTCOMES 16

8 GLOSSARY 17

9 APPENDIX A – 2023/24 ANNUAL DRINKING WATER PERFORMANCE REPORT 20

1. INTRODUCTION

This is Urban Utilities' Drinking Water Quality Management Plan Report for the financial year 2023-24 (FY24).

Name	Central SEQ Distributor-Retailer Authority trading as Urban Utilities
Address	GPO Box 2765 Brisbane QLD 4001
Telephone	13 26 57 *(8am to 5pm weekdays)*
Website	www.urbanutilities.com.au
Local Government Areas	Councils of Brisbane, Ipswich, Lockyer Valley, Scenic Rim, and Somerset

This report serves as the Drinking Water Service Annual Report for the purpose of meeting the requirements of Section 142 of the *Water Supply (Safety and Reliability) Act 2008* ('Act'). It contains the following:

- Compliance with water quality criteria for drinking water,
- Actions Urban Utilities took to implement the Drinking Water Quality Management Plan (DWQMP),
- DWQMP review outcomes,
- Audit outcomes of the DWQMP in the financial year and a summary of its findings and any recommendations,
- Any non-compliances and incidents under Sections 102 and 102A of the Act,
- Details of the provider's compliance with 'water quality criteria' for drinking water, and
- Details of any complaints to the provider about the provider's drinking water service.

As per the Act this report must be submitted to the regulator within 120 business days from the end of the financial year and for completeness should be read in conjunction with Appendix A.

The report aligns with the requirements of the reporting template published by the Regulator and addresses the reporting requirements under Section 142(3) of the Act (Table 1).

Table 1: Sections of report that address reporting requirement under Section 142(3) of the Act

Section Ref #	Legislative Requirement Under Section 142(3) Of The Act	Content Guide	Heading of this report
-	Overview of operations (optional)	Contextual information of the water supply schemes that this annual report relates to	Part 2
142(3)(a)	the information required under the latest report requirement given to the provider;	Required contents for the report	Part 1
142(3)(b)	Actions taken to implement the DWQMP	Description of activities undertaken during the reporting period to implement the DWQMP: • Pathway to zero water quality incidents • Progress in implementing the risk management improvement program (RMIP)	Part 3
142(3)(f)	Compliance with water quality criteria for drinking water	Verification monitoring results summary for the reporting period Conformance to operational targets	Part 4 & Appendix A
142(3)(e)	Notifications to the Regulator under Sections 102 and 102A of the Act	Non-compliances with the water quality criteria and corrective and preventive actions undertaken Prescribed incidents or events reported to the Regulator and corrective and preventive actions undertaken	Part 5
142(3)(g)	Customer complaints related to drinking water service	Summary of water quality complaints	Part 6
142(3)(d)	Findings and recommendations of the DWQMP auditor	Not Applicable	
142(3)(c)	Outcome of the DWQMP review and how issues raised have been addressed	Update to Information Notice dated 12 June 2024 Condition 7.9 (a,b,c), supply of updated document registry and Reservoir Water Quality Strategy, and application of amendment to DWQMP.	Part 7

I.I ACCESSING THIS REPORT

This report is available on Urban Utilities website: urbanutilities.com.au/publications

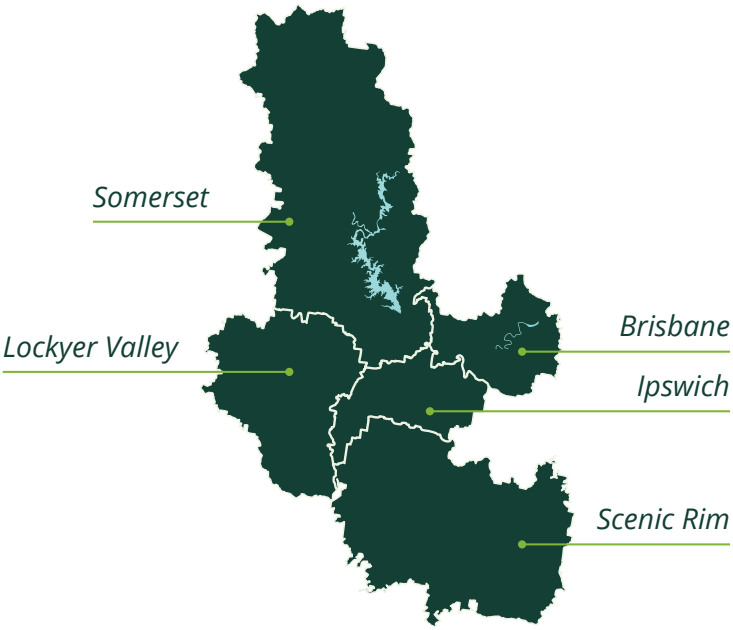
2. SUMMARY OF SCHEMES OPERATED

We provide drinking water services to 1.6 million people residing within a 14,384km^2 geographic area, which stretches from Cape Moreton in the east to the foot of the Toowoomba Range in the west, and from the Yabba State Forest in the north to the New South Wales border in the south.

We receive treated water from the bulk water supplier Seqwater. Our service area during the financial year 2023-24 had 5 supply Local Government Areas (LGAs), which are then broken down into 12 schemes. These LGAs include:

- Brisbane City Council (BCC),
- Ipswich City Council (ICC),
- Lockyer Valley Regional Council (LVRC),
- Scenic Rim Regional Council (SRRC) and
- Somerset Regional Council (SRC).

Additional information is available in the 2023-24 Drinking Water Quality Performance Report (Appendix A).



Urban Utilities Brighton Homes Arena Free Water Station

3. DWQMP IMPLEMENTATION

The DWQMP is central to how we provide customers with safe and clean drinking water.

We continuously improve and update our DWQMP and Risk Management Improvement Program (RMIP), with the most recent version submitted to the Regulator in early 2024 and approved on 12 June 2024.

Further progressing the work commenced last financial year, throughout 2023-24 implementation of the DWQMP has been enhanced by continuing to apply our Pathway to Zero Water Quality Incidents Roadmap and the approved Risk Management Improvement Program (RMIP).

3.1 PATHWAY TO ZERO WATER QUALITY INCIDENT ROADMAP

Delivery of safe and compliant drinking water from receipt of bulk water through to the customers tap is paramount to us and is a must have for our customers. An internal performance target has been set to support achieving the Pathway to Zero Water Quality Incidents by financial year 2029.

The Pathway to Zero Water Quality Incident Roadmap (Table 2) demonstrates our developed actions plan that enables the delivery of our core strategic vision of enhancing the liveability of our communities. The action plan's implementation commenced in FY22 and requires effective planning and execution to successfully deliver the ultimate goal of zero water quality incidents and events by FY29.

Additional information regarding the continuous improvements implemented in FY24 in line with the roadmap is available in the 2023/24 Drinking Water Quality Performance Report (Appendix A).

Table 2: Pathway to Zero Water Quality Incident Roadmap.

	FY24	FY25	FY26
Reservoir Integrity -Prevent Contamination	Partnered Specialist Reservoir Inspectors	Maintenance assurance balanced with operational risk	
	Implementation and continuous improvement of strategy (O&M, renewals, and business processes)	Develop Contamination Strategy Reservoir inspections driven by asset health and performance.	Implement Strategy and Continuous improvement
	Endorsed and implement Reservoir Maintenance Strategy	Remaining Improvement Opportunities and Future State (Automation and Optimisation)	
Disinfection Residual- Improve Performance	Disinfection Strategy Implementation/Continuous Improvement Disinfection byproducts strategy endorsed and implemented		
	Optimisation of interventions and risk appetite balancing water quality and supply	pH stabilisation of monochloramine supply (Seqwater)	
	Urban Utilities disinfection performance projects – Capital interventions / solutions (CDU, inlets / outlets, OT/IoT)		
Operational Monitoring -Improve Water Quality Management	ISO22000 framework development		ISO22000 Project
	Assess options for operating “at risk or challenging” reservoirs and networks differently (operation and configuration changes)	Optimise operations of reservoirs and networks	
	Improved data insights (technology) Improved protocol and process control		
	IoT Strategy Approval	Enhanced Operational Intelligence and continuous improvement	
Predictive Modelling	Off-grid scheme decay models Integrate operational modelling		Predictive modelling and operational technology (OT) verification
Improve Supplied Water	Collaboration with Seqwater to ensure ongoing alignment between Seqwater operational and capital activities with customer water quality outcomes		

3.2 RISK MANAGEMENT

We utilise the Risk Management Improvement Program (RMIP) to identify, track, and control water quality risks related to the DWQMP and the safe provision of drinking water. It is a key tool in ensuring the objectives of the DWQMP are tracked and implemented. Regular reviews of the RMIP are conducted to ensure it is communicated, implemented, and effective. Table 3 highlights improvements implemented in FY24 as part of the RMIP approved in the 2022 DWQMP. Risk management from FY25 will be managed in the RMIP embedded within our most recently approved DWQMP.

Table 3: RMIP actions undertaken.

Core theme	Actions Implemented
Disinfection	Improved management of Chemical Dosing Units (CDUs), Trihalomethanes (THMS) and chlorate by embedding operational protocols across operational teams.
	Collaboration with Seqwater, Unitywater, and Logan Water to work towards the delivery of the Regional Secondary Disinfection Optimisation Project (RSDOP).
	Established reservoir intervention plans in non-Grid connected schemes supporting optimisation of disinfection management practices.
	Collaboration with Seqwater to refine network configuration to improve water resilience and disinfection, as seen in the transition from free chlorine to chloramine disinfection, and upcoming connection of the Beaudesert scheme to the SEQ Water Grid via the South West Pipeline.
	Created summer plans to balance our water quality outcomes whilst balancing Seqwater requirements. We achieved a disinfection improvementin both FY23 and FY24.
	Implemented a multi-discipline decision tool for optimising decisions regarding service objectives, including disinfection performance. The Disinfection Management Strategy and associated protocols embedded operational interventions where possible.
Physical Integrity of Reservoirs	Continued development of Reservoir Water Quality Maintenance Strategy.
	Continued to assess and improve physical water quality control barriers through reservoir inspections at 88 reservoir sites, which led to subsequent actions undertaken to test and maintain water quality (e.g. reservoir cleaning).
	Commenced improvements in Urban Utilities hygiene practices framework.
Network Planning	Continued focus on Integrated Zone Planning process to further ensure water quality is a mandatory criterion in our planning process.
Cyber Security	Further rollout of surveillance equipment (CCTVs and lighting) to six reservoirs and rejuvenated equipment at seven reservoirs.
Documentation	Updating key reference documents to enhance the accuracy and reliability of the documentation

4. VERIFICATION MONITORING PROGRAM

The supply of safe drinking water is our greatest public health responsibility

A critical component of water quality management is verifying our product continues to meet the stringent standards articulated in the relevant legislation and regulations. We assure the quality of the drinking water supply through Drinking Water Quality Verification Monitoring Program (VMP). The VMP is a comprehensive sampling program designed to maximise visibility of drinking water quality as it travels through the 9,755 km of water mains that service our communities.

Our VMP is carried out by SAS Laboratory, an Urban Utilities business. SAS Laboratory ensure the accuracy and validity of all sampling and testing by maintaining its National Association of Testing Authorities (NATA) accreditation[1], In FY24, SAS Laboratory collected and tested over 12,200 samples from our network.

The VMP is routinely performed throughout the year and used to verify drinking water quality performance. Insights from the program inform the continuous improvement of our procedures and processes, and guides capital and operational investment decisions. The program alerts us to emergent changes or anomalies which may impact the drinking water, allowing us to proactively manage the quality of the product we supply to our customers. It also provides us confidence in managing drinking water quality and supports our commitment to maintain protection barriers and prevent contamination.

We provide an annual summary of water quality performance to customers, available on our website www.urbanutilities.com.au. The 2023-24 Drinking Water Quality Performance Report (Appendix A) meets the requirements for the water quality performance aspect of this document. Please note that the reported statistics do not include results derived from repeat samples, or from emergency or investigative samples undertaken in response to an elevated result.

The 2023-24 Drinking Water Quality Performance Report includes a summary of the verification monitoring results. Key points include:

- Achieved compliance with the *Public Health Regulation 2018*[2] E.coli parameter.
- Achieved compliance[3] with the *Australian Drinking Water Guidelines*[4] chemical-related parameters[5].
- 10 out of 12 schemes achieved compliance with the Australian Drinking Water Guidelines aesthetic-related parameters.

[1] SAS Laboratory NATA accreditation no. 11085

[2] Public Health Regulation 2018 Part 9 Division 2 Section 52 Quality Standard for Drinking Water (4)(b)

[3] Australian Drinking Water Guidelines 2011 (September 2022 Revision) Information Sheet 3.2

[4] Australian Drinking Water Guidelines 2011 (September 2022 Revision) Chapter 10 Table 10.6

[5] Public Health Regulation 2018 Part 9 Division 2 Section 52 Quality Standard for Drinking Water (5)

5. INCIDENTS REPORTED TO THE REGULATOR

In 2023-24, we took over 12,200 water quality samples and conducted over 139,100 water quality tests.

Of those, 10 tests did not meet the requirements of the ADWG (Figure 2). Two events[6] also occurred in the reporting period, one drinking water aesthetic event resulting from a network backflow notified via customer enquiries, and a second experienced due to extreme weather causing extensive power outages and customer water conservation communication across the Scenic Rim. Each incident and event were notified to the Regulator as required by the Act[7]. We remained 100% compliant with regulatory obligations for drinking water quality and continued to guarantee the ongoing provision of safe drinking water. Year on year performance is demonstrated in Figure 1, and a breakdown of incidents provided in Figure 2. Details of each incident and event, as well as the initial corrective actions, investigation outcomes, and further actions, is provided in Table 4.

[6] *Event is classified as anything that has happened or is likely to imminently happen the drinking water service which you cannot manage under your approved DWQMP and/or which may adversely impact public health.*

[7] *Water Supply (Safety and Reliability) Act 2008 Chapter 2 Part 4 Division 4 Subdivision 3 Section 102 and 102A Notice of noncompliance with water quality criteria and Notice of a prescribed incident.*

Figure 1: Notifications to the Regulator FY18 to FY24

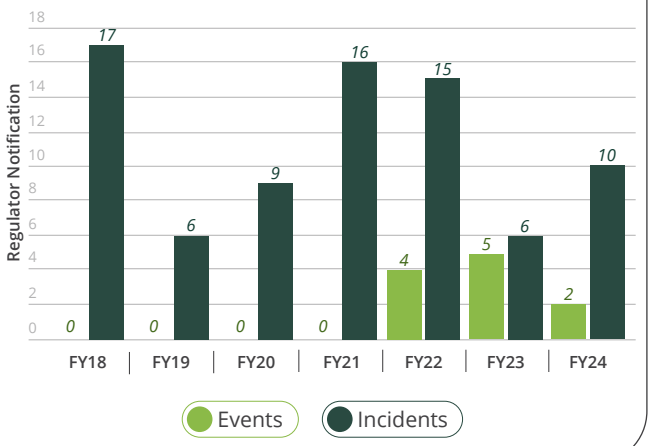


Figure 2: Our incident notification breakdown

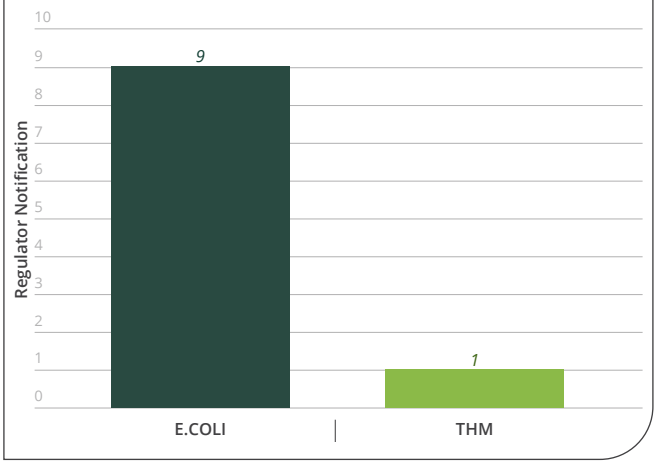


Table 4: Notifications to the Regulator – 1 July 2023 – 30 June 2024

Sample Date	Type	Location/ Supply Scheme	Description	Immediate corrective action	Investigation outcomes and further actions
28/09/2023	Incident – E. coli detection	Birnam Range / Beaudesert	The non-compliance was a detection of E. coli from a routine sample. 2 MPN E. coli organisms per 100 mL was detected.	The sample collected exhibited a concentration of 1.6 mg/L free chlorine. The isolation plan for the site was reviewed and the sample point re-tested.	Minor improvements to vermin proofing as recommended by site inspection are scheduled for completion.
10/10/2023	Incident – E. coli detection	Karawatha / SEQWSS	The non-compliance was a detection of E. coli from routine samples. 2 MPN E. coli organisms per 100 mL in the reservoir outlet, and 3 MPN E. coli organisms per 100mL in the network, was detected.	The reservoir was isolated, and the network flushed. Sample points across the network were re-tested.	Points of ingress were confirmed, and corrective work actioned. The reservoir was cleaned and disinfected before undertaking water quality assurance testing and return to service.
10/10/2023	Incident – E. coli detection	The Summit / SEQWSS	The non-compliance was a detection of E. coli from a routine sample. 3 MPN E. coli organisms per 100 mL was detected.	The water zone was flushed, and sample points were re-tested. The chlorine dosing unit was re-assessed. The reservoir was isolated and inspected.	A post event inspection had found foreign material above the top operating water level. A telemetry failure resulted in the level exceeding its top water level. Equipment suitability assessment and operator training have been undertaken. The reservoir has received corrective works and cleaning and disinfection completed before undertaking water quality assurance testing and return to service.
14/12/2023	Incident - THMs exceeding ADWG	Kerry / Beaudesert	The non-compliance was a detection of 260 µg/L THMs from a routine sample.	The impacted network was flushed. Sample points across the network were re-tested.	Transferred THMs of 200 ug/L from the upstream Water Treatment Plant (WTP) led to 260 ug/L total THMs at the end of the supply scheme. We have increased monitoring frequency in the supply zone to reduce the lag in data transfer times from the bulk water supplier. Secondary disinfection in Beaudesert has transitioned to chloramine, reducing the likelihood of future THM exceedances.
20/12/2023	Event - Notification of an operational situation which requires a response to ensure safety and continuity of supply	Bulimba / SEQWSS	Customer notifications of cloudy water and subsequent investigation identified a breach of network integrity.	Temporary isolation of affected properties from the network with provision of bottled water and identification of contaminant source. Qualitative analysis undertaken to identify potential health hazards. Network flushing performed.	A service water line leading to a make-up tank for an odour suppressant on our controlled site was found to be missing backflow prevention, and air gapping had failed. Rectification actions include the installation of a certified backflow prevention device, correction and maintenance of air gaps, and in-property flushing of customer connections during re-connection.
26/12/2023	Event - Notification of an operational situation which requires a response to ensure safety and continuity of supply	Scenic Rim	An extreme weather event caused power outages across multiple schemes within Scenic Rim, posing a risk to continuity of drinking water and sewerage services.	Supply disruption plans were enacted to manage water storage across the network. We worked closely with Seqwater and Energex to reinstate power to sites to ensure continuity of services.	Continued collaboration with Seqwater to hone supply disruption planning will continue. The Beaudesert scheme will be connected to the SEQWSS to reduce the risk of loss of supply.
28/12/2023	Incident – E. coli detection	Karawatha / SEQWSS	The non-compliance was a detection of E. coli from routine samples. 1 MPN E. coli organisms per 100 mL in the reservoir outlet was detected.	The sample collected exhibited a concentration of <0.1 mg/L total chlorine. The reservoir was isolated and the sample points re-tested.	Investigations had shown that ingress was potentially due to extensive and near horizontal rainfall. Previous E. coli detection identified that inlet and outlet sample points were incorrectly denoted in documentation. This has been corrected in this report to reflect the true location of E. coli detection.

Table 4: Notifications to the Regulator – 1 July 2023 – 30 June 2024

Sample Date	Type	Location/ Supply Scheme	Description	Immediate corrective action	Investigation outcomes and further actions
4/01/ 2024	Incident – E. coli detection	Manly / SEQWSS	The non-compliance was a detection of E. coli from routine samples. 1 MPN E. coli organisms per 100 mL was detected.	The sample collected exhibited a concentration of <0.1 mg/L total chlorine. Isolation of the servicing reservoir and strategic flushing was undertaken. Responsive re-sampling took place.	The reservoir experienced stormwater ingress after significant rainfall. The reservoir is now permanently isolated from supply.
4/01/ 2024	Incident – E. coli detection	Murphys Creek / Lowood	The non-compliance was a detection of E. coli from routine samples collected within the distribution network of Murphys Creek reservoir. 2 MPN E. coli organisms per 100 mL was detected.	The sample collected exhibited a concentration of <0.1 mg/L free chlorine. Isolation of the servicing reservoir and strategic flushing was undertaken. Responsive re-sampling took place.	The reservoir experienced stormwater ingress after significant rainfall. The reservoir is now permanently isolated from supply. Corrective and preventative actions include roof repair, signage installation, and platform improvement to limit roof access.
27/02/ 2024	Incident – E. coli detection	Withcott / Lowood	The non-compliance was a detection of E. coli from routine samples collected within the distribution network of Withcott reservoir. 1 MPN E. coli organisms per 100 mL was detected.	The sample collected exhibited a concentration of <0.1 mg/L free chlorine. The chlorine dosing unit was returned to operation. Responsive flushing and re-sampling took place.	The CDU for the zone was turned off due to elevated levels of THMs. The management protocol has been updated to consider a risk balance between disinfection and THMs.
28/03/ 2024	Incident – E. coli detection	Minden / Lowood	The non-compliance was a detection of E. coli from routine samples collected within the distribution network at Minden, downstream from Tarampa Reservoir. 3 MPN E. coli organisms per 100 mL was detected.	The sample collected exhibited a concentration of <0.1 mg/L free chlorine. Network flushing was performed until a residual of 0.5 mg/L was reached at the impacted sample point. Reservoir and distribution sample points were re-tested.	Detection of E. coli was likely due to sample contamination. Training and awareness of sampling staff has been provided. Processes were improved for samplers to raise maintenance requests to limit contamination.
24/04/ 2024	Incident – E. coli detection	Karana Downs / SEQWSS	The non-compliance was a detection of E. coli from routine samples collected from Karana Downs High Level Reservoir Outlet. 27 MPN E. coli organisms per 100 mL was detected.	The sample collected exhibited a concentration of <0.1mg/L total chlorine. Isolation of the servicing reservoir and strategic flushing was undertaken. Responsive re-sampling took place.	The reservoir experienced storm water ingress after significant rainfall. The reservoir is now permanently isolated from supply.

6. CUSTOMER SATISFACTION

We recognise the value of community engagement in building trust in our brand, and the delivery of service excellence.

We recognise that customers or members of the community may need to provide feedback if a service or product fails to meet their expectations or our standards. This feedback is captured, recorded, and monitored to help identify any trends and possible areas of improvement in the operation, maintenance, and management of our drinking water network. This commitment is a key component of our continued pursuit of innovative ways of working.

While various water quality enquiries are received throughout the year, a 'water quality complaint' is registered when a person contacts us and expresses dissatisfaction regarding the quality of our drinking water[8]. Complaint categories are shown in Table 5

[8] *ISO 10002:2018 Customer satisfaction – guidelines for complaints handling in organizations.*

Table 5: Water quality complaint categories

Water quality complaint category	Commentary
Health Concern	All calls received from customers who suspect their drinking water may be associated with a health concern they are experiencing are classified as complaints.
Dirty Water	Classified when discolouration and sediment is present in the water.
Cloudy Water	Water that is milky or cloudy and odourless is caused by fine air bub-bles. Milky water is usually caused by maintenance work on the water network, such as a service shutdown during pipe repair.
Taste/odour	Taste and odour complaints can vary widely based on the customer's perception. Taste and odour descriptors provided by customers commonly include chlorinous, metallic, and earthy.
Other	This classification captures complaints that do not fall within the standard categories.

6.1 WATER QUALITY COMPLAINTS PERFORMANCE 2023-24

In 2023-24, we received 1,150 water quality requests and 310 water quality complaints. The breakdown of water quality complaints performance is categorised by type (Figure 3) and region (Figure 4).

In this reporting period, an increased number of taste and odour related complaints were received from the Lowood and Esk scheme, coinciding with increased detection of 2-Methyl isoborneol (MIB) and Geosmin. This difference in water quality was experienced by customers due to source water changes and was operationally managed through collaboration with Seqwater and consultation with customers.

Despite these challenges, we have managed to achieve a decrease in the total number of water quality complaints from 367 to 310, meeting the overall water quality complaints standard of <6 water quality complaints per 1,000 properties for the reporting period.

Five customer notifications of cloudy or taste and odour of water in Bulimba were investigated and found to be caused by a lack of backflow prevention on a service connection to our neighbouring site. Though during this event there was no risk to public health, the aesthetic qualities of the water did not meet the community's expectation. This event highlights the importance of critical network integrity controls in the preservation of drinking water quality and provides a valuable lesson for the improvement of our network.

Table 6 shows our performance against the Customer Service Standards as published in the Residential and Business Customer Charters. Our Charters outline the commitments, responsibilities, and standards that our customers can expect from us in relation to the water we provide. The water quality complaints result for 2023-24 translates to 0.47 complaints per 1,000 properties connected, well under the Customer Service Standard of six water quality complaints per 1,000 properties, per year.

Table 6: Customer water quality complaints by region 1 July 2023 – 30 June 2024

Region	Health Concern	Dirty Water	Cloudy Water	Taste And Odour	Other	Total Com-plaints	Requests	Customer Property Count	Complaints/ 1,000 Properties
BCC Brisbane	33	94	14	29	2	172	833	535,977	0.32
ICC Ipswich	9	13	9	16	1	48	197	92,701	0.52
LVRC Lockyer Valley	6	2	-	30	1	39	55	12,172	3.20
SRC Somerset	5	-	-	28	-	33	39	6,327	5.22
SRRC Scenic Rim	1	4	2	10	1	18	26	8,704	2.07
Total	**54**	**113**	**25**	**113**	**5**	**310**	**1,150**	**655,881**	**0.47**

Figure 4: Water quality complaints by type

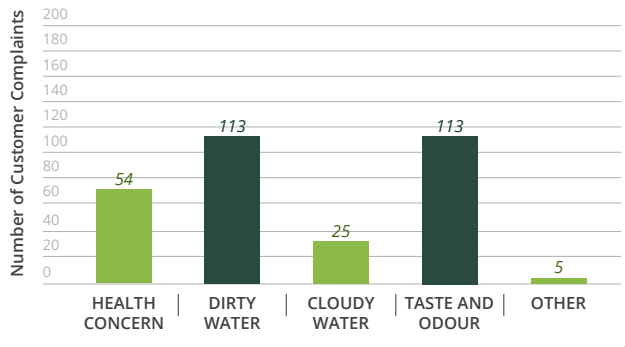
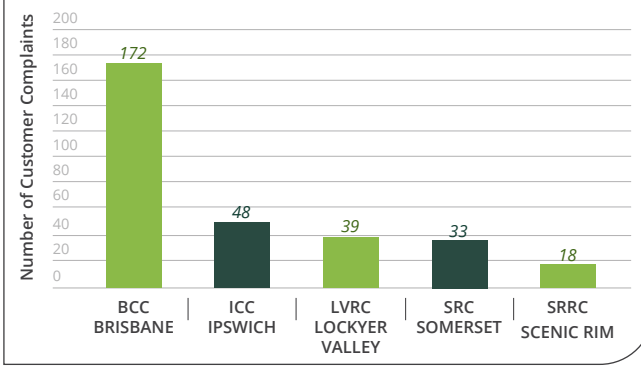


Figure 5: Water quality complaints by service area



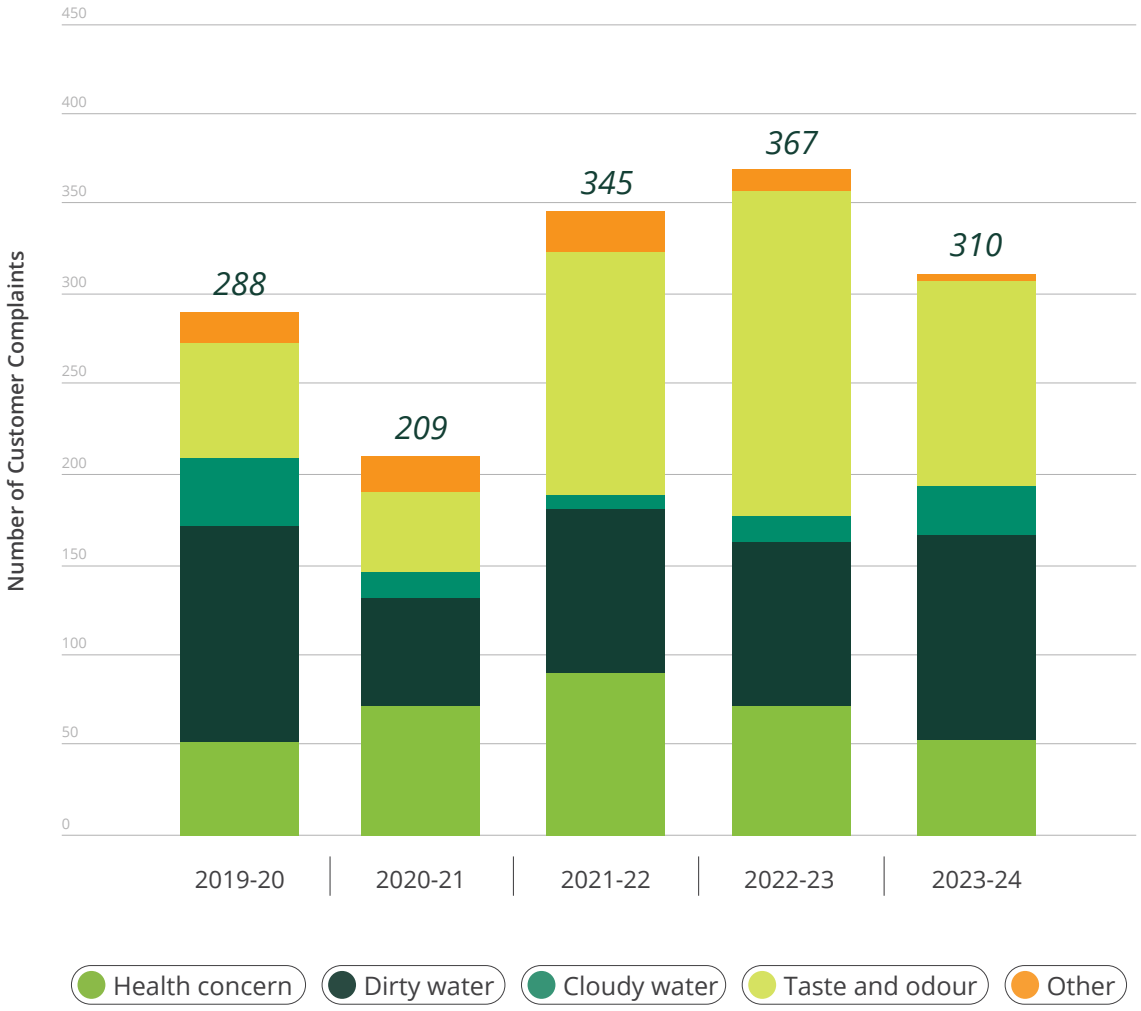
6.I WATER QUALITY COMPLAINTS PERFORMANCE 2022-23 (CONT'D)

Water Quality Officers investigated each complaint related to health concern from the drinking water supply by testing at the customer's tap and/or at selected points in the water distribution system close to the customer's property.

The data is reviewed and reported back to customer with findings.

We utilise a contacts-based trigger for managing emerging local issues. Emergency management protocols are activated when we receive greater than five requests for service of a similar nature relating to water quality in a local area.

Figure 6: Total water quality complaints by type-Financial year comparison



7. DWQMP REVIEW OUTCOMES

Biennial review of our DWQMP was completed and approved in June 2024. This review included rerating, consolidating, identifying risks, and realignment to our internal structure.

We listened to our customers in our Lowood and Esk schemes and recognised our current water quality risk needed to reflect our community's expectations for taste and odour. Historical taste and odour events like those at Eastern Heights in FY22 have led to significant improvements in assessing materials in contact with drinking water and associated capital works processes. The review of our community's expectation and development of these controls have led to a reduction of risk from materials in contact with drinking water, but highlighted the increase in risk associated with taste and odour events.

Our increased vigilance on disinfection performance, computational modelling capability, and data system improvements have improved the granularity of disinfection failure modes. Assessment of this has helped us restructure some of the disinfection risks to better define controls and improvement opportunities. Introduction of the Interim Queensland Health Guideline for chlorate, as well as our existing requirements to management disinfection by-products has also led to an increase in risk profile.

Two additional risks were identified through the challenges we faced in FY24. These risks are the inability to meet the requirements of our DWQMP due to protected industrial action, and the loss of drinking water supply due to extreme events that limit our ability to provide drinking water.

The endorsed DWQMP has been made available on our internal document management system, and the outcomes of the latest review communicated on our internal communication platforms.

8. GLOSSARY

<	Less than
>	Greater than
2-Methyl isoborneol	A compound produced from algae or bacteria in catchments contributing to taste and odour of water typically described as earthy, musty, swampy or me-tallic. May become noticeable at greater than 5ng/L.
Aluminium (Al)	A metallic element of some coagulants used for coagulation during drinking water treatment
Ammonia (NH3)	A highly soluble compound resulting from the decomposition of organic matter containing nitrogen. Ammonia will be detected in chloraminated water as it is a component of chloramine.
Australian Drinking Water Guidelines 2011 (ADWG)	The guidelines were developed by the National Health and Medical Research Council (NHMRC) and undergo rolling revision to ensure they represent the lat-est scientific evidence on good quality drinking water.
Bulk water	The treated water supplied from the Queensland Bulk Water Authority (Se-qwater) to distributor retailers, including Urban Utilities.
Chloramination / chloramine	The application of chlorine and ammonia to create monochloramine (NH2Cl), a stable disinfectant that is added to drinking water to inactivate bacteria or to oxidise undesirable compounds. Chloramines persist for a longer time than chlorine and as a result, are used in longer water distribution systems.
Chlorate	A compound resulting from the breakdown of sodium hypochlorite
Chlorine – Free	The residual formed with chlorine dosage once all the chlorine demand has been satisfied. This chlorine is free to inactivate microorganisms.
Chlorine – Total	Total chlorine is the sum of combined and free chlorine including chloramine.
CFU/mL	Colony Forming Units per 1 millilitre.
Colour (True)	Colour is mainly due to the presence of dissolved substances from organic mat-ter in water, such as decaying leaves and vegetation. True colour refers to the colour of water after particles of organic matter have been removed through filtration and is the measurement of the extent to which light is absorbed by the water.
Department of Regional Develop-ment, Manufacturing and Water	The Queensland Government department responsible for overseeing Queens-land's water industries to ensure these essential services are provided to Queenslanders in a safe, efficient and reliable way.
Dichloroacetic acid	Dichloroacetic acid is a disinfection by-product as a consequence of the reaction of chlorine with natural organic matter and bromide ions in the raw water sup-ply.
Disinfectant	An agent that inactivates microorganisms which cause disease. Urban Utilities uses either chlorine or chloramine.

Disinfection by-products (DBPs)	A group of by-products that may form under certain conditions when chlorine is used to disinfect drinking water.
Drinking water	Water that is suitable for human consumption.
Drinking Water Quality Management Plan (DWQMP)	Drinking Water Quality Management Plan as required by the *Water Supply (Safety and Reliability) Act 2008* (Qld). The purpose of a DWQMP is to protect public health by implementing a risk-management system to manage the quali-ty of drinking water.
Drinking Water Quality Management System (DWQMS)	Urban Utilities' DWQMS is used to ensure our drinking water supplies are man-aged effectively to provide high quality drinking water and to ensure the pro-tection of public health.
Escherichia coli (E. coli)	A bacterium when present in water indicates that the water may be contami-nated by faecal matter and therefore there is the potential to cause illness when people drink the water. E. coli can be killed by standard disinfection prac-tices.
Fluoride (F)	Fluoride is regarded as a useful constituent of drinking water, particularly for the prevention of tooth decay. Concentration is maintained within the recom-mended levels set by Queensland Health.
Geosmin	A compound produced from algae or bacteria in catchments contributing to taste and odour of water typically described as earthy, musty, swampy or me-tallic. May become noticeable at greater than 5ng/L.
Haloacetic acids	A group of disinfectant by products that are formed when disinfectants, such as chlorine or chloramine, are used to treat water and react with naturally occur-ring organic and inorganic matter present in source waters.
Iron (Fe)	An element which, when found in water, can cause a brownish discolouration. Limits on the amount of iron in water are usually due to taste and appearance factors rather than any detrimental health effects.
km	A kilometre, which is 1,000 metres
Manganese (Mn)	Manganese in a water supply may affect taste, cause staining of clothes, pro-duce deposits in pipes and contribute to turbidity.
Megalitre (ML)	One million litres or 1,000 kilolitres
Monochloroacetic acid	One of the groups of five haloacetic acids is formed when chlorine is used to treat drinking water.
mg/L	milligrams per litre
MPN/100mL	Most Probable Number per 100 millilitres
Naturally occurring	Present in the natural environment as minerals, elements, salts, and other sub-stances.
ng/L	Nanograms per litre
Network	A system of pipes, pumps and reservoirs used for distributing water.

Nephelometric Turbidity Unit (NTU)	A measure of turbidity which is the cloudiness or haziness of water caused by suspended matter that are generally invisible to the naked eye.
Nitrate (NO3)	The most stable form of combined nitrogen in water. Present in surface waters in small amounts generally not removed through treatment. Nitrate can be found in chloraminated water supplies as a result of chloramine breakdown.
pH	The pH value indicates if a substance is acidic, neutral, or alkaline. It is calculat-ed from the number of hydrogen ions present and is measured on a scale from 0 to 14. A pH greater than seven is alkaline, less than seven is acidic and seven is neutral.
Reservoir	A water tower or tank used for the storage of treated water within the water distribution system.
RMIP	Risk Management Improvement Program
SAS Lab	Scientific Analytical Services Laboratory, Urban Utilities internal laboratory.
Scheme	The drinking water system distributing drinking water to customers.
Seqwater	Queensland Bulk Water Supply Authority, trading as Seqwater. The bulk drink-ing water provider for Urban Utilities.
Shareholders	Brisbane and Ipswich City Councils, and the Lockyer Valley, Scenic Rim and Som-erset Regional Councils.
Stakeholder	All those who are either affected by or who can affect the activities of an organ-isation, namely customers, governments, regulators, the media, non-government organisations, local residents and employees.
The Regulator	See Department of Regional Development, Manufacturing and Water.
Total Dissolved Salts (TDS)	A measure of inorganic salts that are dissolved in water. Usually determined by converting electrical conductivity to TDS values.
Total Hardness	Total hardness is the sum of the concentrations of calcium and magnesium ions expressed as calcium carbonate (CaCO3) equivalent. Waters with a high mineral content (a total hardness in excess of 200 mg/L) are considered hard.
Total Trihalomethanes (tTHMs)	A group of disinfection by-products that generally form when chlorine is used to disinfect drinking water.
Trichloroacetic acid	One of the groups of haloacetic acids formed when chlorine or other disinfect-ants are used to treat drinking water.
Turbidity	Refers to the presence of suspended matter in water causing a cloudiness or haziness appearance. Turbidity is measured in Nephelometric Turbidity Units (NTU).
Verification Monitoring Program (VMP)	Water quality verification monitoring is used as the final check that the barriers and preventive measures used in protecting the public health from drinking water risks are performing effectively. Verification monitoring is used to verify the quality of drinking water supplied to Urban Utilities' customers as well as collecting data to complement future operational monitoring programs.
Water Treatment Plant (WTP)	A plant that improves water quality by removing impurities through filtration and disinfection.

9. APPENDIX A – 2023/24 ANNUAL DRINKING WATER PERFORMANCE REPORT

This report is available on our website: urbanutilities.com.au/publications

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