Unitywater

Drinking Water Service Annual Report

2023 to 2024

Acknowledgment of Country

Unitywater acknowledges the Traditional Owners of the lands on which we operate - the Jinibara, Kabi Kabi and Turrbal people. We recognise their significant contributions to the conservation of our environment and their deep connection to the land and waters.

We pay our respects to their Elders, past and present, and acknowledge the important role all Aboriginal and Torres Straight Islander peoples continue to play within our communities.

Artwork: Gilimbaa Creative Agency

Our Cultural Spring motif symbolises a water hole, traditionally a gathering place where knowledge is shared. The depth of colour illustrates the connection between land and water and our commitment to reconciliation, bringing our people together and fostering a deeper understanding and respect for Aboriginal and Torres Strait Islander cultures.

Contents

Welcome

At Unitywater, we're committed to contributing to healthy and thriving communities.

We exist for our customers and our number one priority is to provide 24/7 safe water services to Moreton Bay, Noosa, and the Sunshine Coast.

We see ourselves as the custodians of essential water services and take that responsibility seriously.

This annual report provides assurance that you can continue to have confidence in the clean, safe water at the turn of your tap, and that we are meeting our requirements set by our regulator.

Unitywater has again achieved full compliance to the requirements set by the Public Health Regulation 2018 and published in the Australian Drinking Water Guidelines 2011.

We carried out 138,262 water quality tests from 9,034 samples taken throughout 6395.2km of our water network in the 2023-24 reporting period.

These all require considered planning, innovation and thinking that centres around valuing every drop. We aim to protect and preserve this precious resource for our entire community, today and into the future.

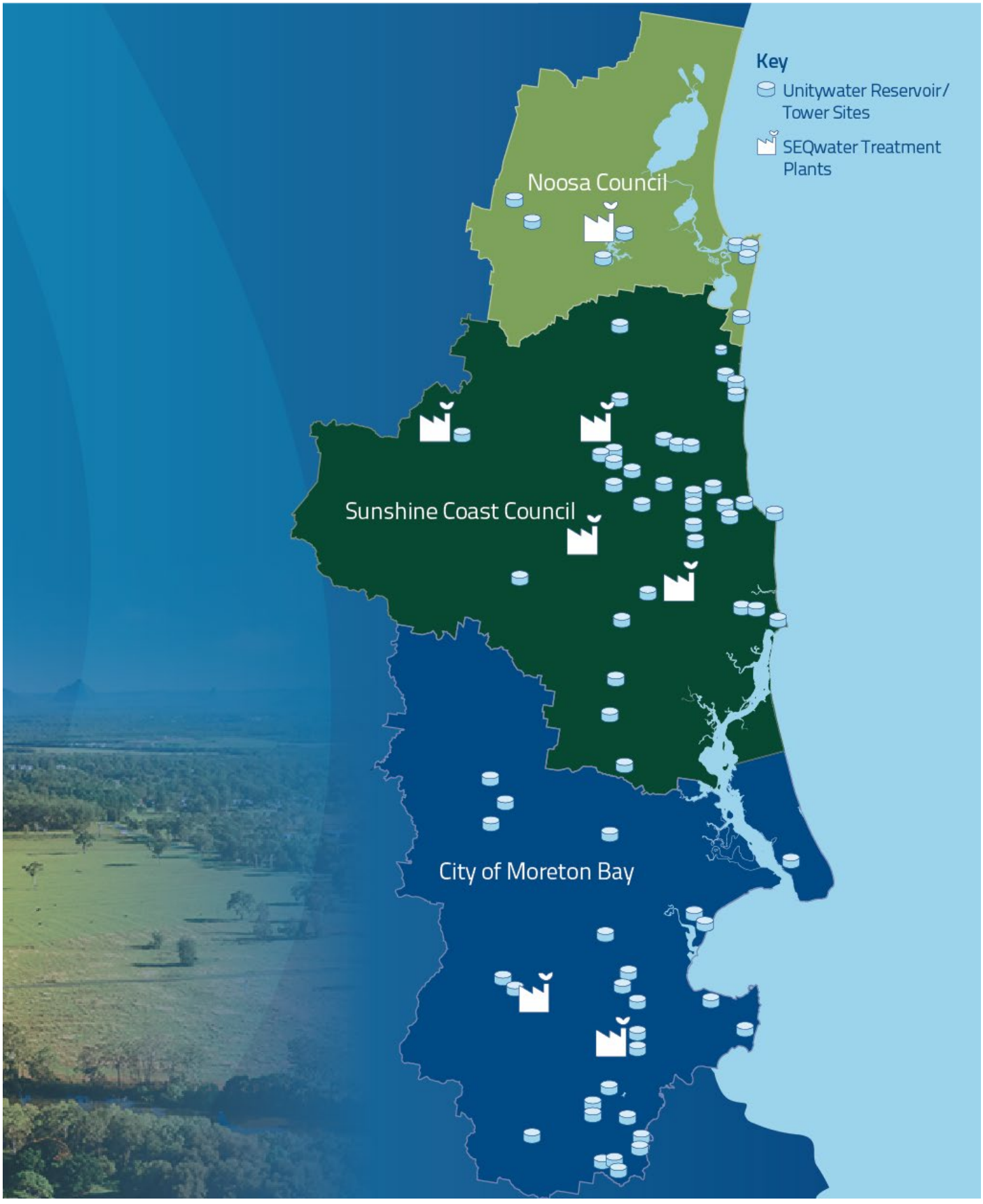
This report aligns with the *Water Supply (Safety and Reliability) Act 2008* requirements under Section 142(3) and is published on our website at unitywater.com/about-us/our-business/water-quality. For further details on alignment, please see Appendix A or if you wish to access a printed copy, please call or email Unitywater to arrange delivery or collection.

Service Provider Details	
Name	Northern SEQ Distributor Retailer trading as Unitywater
Service Provider ID	524
Registered Business Address	6-10 Maud St, Maroochydore, QLD, 4558
Postal Address	PO Box 953, Caboolture, QLD, 4510
Telephone	1300 086 489
Website	www.unitywater.com
Email	Customer.service@unitywater.com
Local Government Areas	City of Moreton Bay Sunshine Coast Council Noosa Council

Glossary of terms

<	Less than
>	Greater than
ADWG	Australian Drinking Water Guidelines (2011). Published by the National Health and Medical Research Council of Australia
CCPP	Calcium Carbonate Precipitation Potential
DRDMW	Department of Regional Development, Manufacturing and Water (the regulator)
DWMS	Drinking Water Management System
DWQMP	Drinking Water Quality Management Plan
E. coli	*Escherichia coli*, a bacterium which may indicate the presence of faecal contamination and therefore potential health risk
LIMS	Laboratory Information Management System
mg/L	Milligrams per litre
ML	Megalitres
NPI	Northern Pipeline Interconnector
RMIP	Risk Management Improvement Plan
SEQ	South East Queensland
Seqwater	Bulk Water Supply Authority who provides bulk drinking water to Unitywater
the Act	*Water Supply (Safety & Reliability) Act 2008*
VMP	Verification Monitoring Program
WQ	Water Quality
WTP	Water Treatment Plant

Our supply area



Where we sit on the grid

The South East Queensland water grid connects the water supplies from Noosa and the Sunshine Coast, through greater Brisbane and down to the Gold Coast.

This arrangement allows Seqwater to move treated 'bulk' drinking water from one area to another, reducing the risk of any single source being used up (i.e. during drought conditions).
For more detail on the bulk water supply network, go to: [seqwater.com.au/seq-water-grid.](seqwater.com.au/seq-water-grid)

Water supply sources

Unitywater purchases bulk treated water from Seqwater. Seqwater is responsible for management of 'raw water' (the lakes, dams and desalination plant), the water treatment plants (WTP) and the delivery of treated 'bulk' water to the bulk supply points. Please direct any queries on water sources or treatment to Seqwater (http://www.seqwater.com.au/contacts).

Treated drinking water enters the Unitywater network either directly from a WTP or via a major pipeline called the Northern Pipeline Interconnector (NPI). The NPI, owned and operated by Seqwater, was built by the Queensland Government to provide long-term water supply and security in South East Queensland. The NPI can flow in either a northerly or southerly direction, allowing water to be transferred between the Noosa, Sunshine Coast, Moreton Bay and Brisbane Council areas.

The NPI flow direction is dependent on source water availability and regional demand, and coordinated between Seqwater and the Distribution Retail Entities (Unitywater, Urban Utilities, Logan City Council, Redland City Council, and City of Gold Coast).

For water quality reporting, Unitywater's supply network is divided into the four regions described below, including the Dayboro and Kenilworth communities which are not connected to the South East Queensland Water Grid.

Dayboro

This includes the Dayboro township and surrounds that receive reticulated water.

General operation:

This area is supplied from the Dayboro WTP

- The Dayboro WTP treats water extracted from bores located in the North Pine River and supplies the Dayboro region.
- Water can be brought in via water tankers in times of drought or if the WTP is offline.

Kenilworth

This includes the Kenilworth township and surrounds that receive reticulated water.

General operation:

This area is supplied from the Kenilworth WTP

- The Kenilworth WTP treats water extracted from bores located in the Mary River and supplies the Kenilworth region.
- Water can be brought in via water tankers in times of drought or when the WTP is offline.

North

This includes all areas within the Sunshine Coast and Noosa Councils that receive reticulated water, i.e. Caloundra, Maleny, Maroochy North, Maroochy South, Noosa and Railway Towns (excludes Kenilworth).

General operation:

This area is normally supplied from the Noosa, Image Flat, Landers Shute and Ewen Maddock WTPs with supplementary supply via the NPI:

- The Noosa WTP treats raw water from Lake Macdonald and the Mary River to supply the Noosa area (includes Tewantin, Cooran, Pomona and Cooroy). Water from Noosa WTP can also supplement the NPI.
- The Image Flat WTP treats raw water from Cooloolabin Dam, Wappa Dam and Poona Dam to supply the Maroochy North area.
- The Landers Shute WTP treats raw water from Baroon Pocket Dam and supplies the Maroochy South, Maleny, Caloundra and Railway Towns areas. Water from Landers Shute WTP also supplements the NPI.
- The Ewen Maddock WTP treats raw water from Ewen Maddock Dam and supplies the Caloundra area.

South

This includes all areas within the City of Moreton Bay that receive reticulated water, i.e. Bribie Island, Caboolture, Pine Rivers North, Pine Rivers South, Redcliffe and Woodford (excludes Dayboro).

General operation:

This area is normally supplied from the North Pine WTP and via the NPI.

- North Pine WTP treats water from North Pine Dam and supplies the Bribie Island, Caboolture, Pine Rivers North, Pine Rivers South, Redcliffe & Woodford region via the NPI.
- The NPI can additionally be supplied with water treated from both Landers Shute WTP and Mt Crosby WTPs depending on water source availability.

About your water supply

Enter your postcode on our website to find out more about the water supply and quality in your area and to view water quality results: unitywater.com/about-us/our-business/water-quality

Water quality summary

In 2023-2024, Unitywater collected **9,034** water samples and performed **138,262** water quality tests and all water quality results met the requirements of the *Public Health Regulations 2018*, Australian Drinking Water Guidelines 2011, and the Queensland Health Chlorate Position Statement[1].

The details of this testing are provided in the summary tables below and Appendix B of this report. The reported statistics do not include results derived from repeat samples, operational samples, or from emergency or investigative samples undertaken in response to an elevated result.

Drinking water quality performance snapshot

There are three categories used to assess water quality performance and these include microbiological performance, chemical (health) performance and chemical (aesthetic) performance. Further explanation of these categories are provided below:

- **Microbiological** performance meets the *Public Health Regulations* if more than 98% of samples from the supply region over a 12-month period returned a nil result for *E. coli.*
- **Chemical (Health)** performance meets the requirements if the 95th percentile (a statistical calculation) for each chemical over a 12-month period is below the Australian Drinking Water Guidelines health value for that chemical.
- **Chemical (Aesthetic)** parameters, generally related to appearance, taste and odour, meet the performance requirement if the average result for each chemical over a 12-month period is below the Australian Drinking Water Guidelines aesthetic value for that chemical.

The table below briefly summarises drinking water performance across the three categories, by each supply region.

Table 1. Drinking water performance summary

Supply region	Microbiological performance	Chemical (health) performance	Chemical (aesthetic) performance
Dayboro	✔	✔	✔
Kenilworth	✔	✔	✔
North	✔	✔	✔
South	✔	✔	✔

[1] Queensland Health developed an interim health guideline value for chlorate to assist the Water Supply Regulator in the regulation of drinking water safety and to assist Drinking Water Service Providers assess and manage associated risks. Detection of chlorate above 0.8mg/L must be reported to the regulator as an event.

Microbial performance in detail

In 2023- 24, Unitywater met the requirements set by the *Public Health Regulations 2018* for drinking water with **99.91%** of all samples free of *E. coli*. The table below summarises the microbiological performance for Unitywater's four regions.

Table 2. Microbiological performance

Supply region	Minimum number of *E. coli* samples required based on population	Number of *E. coli* samples tested	Number of positive *E. coli* results	Required performance (PHR)	Actual performance	Met PHR?
Dayboro	52	207	0	98%	100%	✓
Kenilworth	12	207	1	98%	99.52%	✓
North	1360	3831	1	98%	99.97%	✓
South	1584	3213	5	98%	99.84%	✓
Overall	3008	7458	7	98%	99.91%	✓

PHR = *Public Health Regulation 2018*

Verification Monitoring Program (VMP)

Ensuring our drinking water meets strict legislative and regulatory standards is essential. Our Drinking Water Quality Verification Monitoring Program (VMP) plays a vital role in this process. The VMP not only verifies water quality but also guides continuous improvement. By detecting changes or issues promptly, it allows us to manage water quality proactively, maintaining our commitment to preventing contamination and ensuring safe drinking water is delivered to our customers 24/7.

In 2023-24, Unitywater's Verification Monitoring Program (VMP) demonstrated **100%** compliance with the *Public Health Regulations 2018* microbiological (*E.coli*), chemical health, and chemical aesthetic performance requirements.

We are also proud to exceed compliance requirements with the minimum number of *E.coli* tests required under the *Public Health Regulation 2018* based on geographical spread of the population. We test above and beyond these minimum requirements (refer to Table 2) as a proactive risk-based approach to managing public health for our community.

Incidents reported to the regulator

Under the *Water Supply (Safety & Reliability) Act 2008*, Unitywater is required to report water quality incidents including *E. coli* detections and failures of Chemical (Health) related values specified in the Australian Drinking Water Guidelines. Incident details are provided to the water supply regulator, including a summary of corrective and preventative actions. There were eight notifications made to the regulator in the 2023-24 financial year.

Table 3. Drinking water quality incidents reported to the Water Supply Regulator 2023-24

Date	Scheme	Description	Immediate Corrective Actions	Investigation Outcomes and/or Preventative Actions
6/11/2023	Pine Rivers South	Non-compliance with ADWG Health - *E. coli* result of 5 MPN/100mL at Ira Buckby 60ML Reservoir sample point (PS34RE).	Resampling was immediately undertaken which returned nil detect of *E. coli* in all follow up samples. Contractors were engaged to inspect the reservoir internally and externally.	Minor sealing works and cleaning of the reservoir were completed. Routine inspection frequency was increased from six monthly to three monthly for this reservoir.
12/12/2023	Pine Rivers North	Non-compliance with ADWG Health - *E. coli* result of 1 MPN/100mL at Mango Hill – Neptune Court sample point (PN03DL).	Resampling was immediately undertaken which returned nil detect of *E. coli* in all follow up samples. Flushing of the network was undertaken in the surrounding area.	Investigation into the feeding reservoir found no issues or signs of ingress. In this instance, no root cause or cross correlation of two variables could be identified to affirm the non-compliance. Close monitoring of the scheme continued.
9/1/2024	Pine Rivers North	Non-compliance with ADWG Health - *E. coli* result of 3 MPN/100mL at Mango Hill – Neptune Court sample point (PN03DL).	Resampling was immediately undertaken which returned nil detect of *E. coli* in all follow up samples. Flushing of the network was completed in the surrounding area.	Investigation into the feeding reservoir found no issues or signs of ingress. The sample tap was relocated a few metres away to mitigate the risk of overhanging tree branches that may interfere with sample integrity.
22/1/2024	Pine Rivers South	Non-compliance with ADWG Health - THM result of 257 ug/L at Warner	Immediate resampling of the site and surrounding sample points was conducted,	Continued monitoring of THMs, water age, and disinfection were undertaken

		– Brisbane Rd sample point (PS23DL).	results were within ADWG limits. Operational changes were made to the feeding reservoir to reduce water age.	at the feeding reservoir to minimise THM formation potential in the downstream network. Seqwater were operating in line with their Disinfection By-Products (DBP) Management Plan when the non-compliance occurred.
5/3/2024	Kenilworth	Non-compliance with ADWG Health - *E. coli* result of 1 MPN/100mL at Kenilworth – Maleny Kenilworth Rd sample point (KW02DS).	Resampling was immediately undertaken which returned nil detect of *E. coli* in all follow up samples. Seqwater were contacted and confirmed the Kenilworth water treatment plant was offline on 5th March for a few hours in the morning; however, provided assurance that treatment and disinfection barriers were not compromised.	Investigation into the feeding reservoir found no issues or signs of ingress. In this instance, no root cause or cross correlation of two variables could be identified to affirm the non-compliance. Close monitoring of the scheme continued.
19/3/2024	Railway Towns	Non-compliance with ADWG Health - *E. coli* result of 1 MPN/100mL at Landsborough Reservoir sample point (RT16RE).	Resampling was immediately undertaken which returned nil detect of *E. coli* in all follow up samples. Reactive chlorine tablet dosing occurred two days after the detection.	Investigation into the reservoir condition found minor ingress points, sealing works to rectify these issues were completed.
26/3/2024	Redcliffe	Non-compliance with ADWG Health - *E. coli* result of 10 MPN/100mL at Margate Tower Reservoir sample point (RE13RE).	Resampling was immediately undertaken which returned nil detect of *E. coli* in all follow up samples. A reactive external inspection of the reservoir was undertake, which found telecommunications previously utilising the site had removed their equipment, leaving ingress points.	The reservoir was isolated, cleaned, and re-sampled. Results were within ADWG limits before returning the reservoir to service.
28/5/2024	Pine South	Non-compliance with ADWG Health - *E. coli* result of 1 MPN/100mL at Albany Creek – HL Reservoir sample point (PS01RE).	Resampling was immediately undertaken which returned nil detect of *E. coli* in all follow up samples. A reactive external inspection of the reservoir was undertaken, which found minor ingress points.	Minor sealing works and cleaning of the reservoir were completed. Routine inspection frequency was increased from annually to six monthly.

Customer enquiries related to water quality

Feedback and reports from our customers play an important part in alerting us to potential issues within the drinking water network.

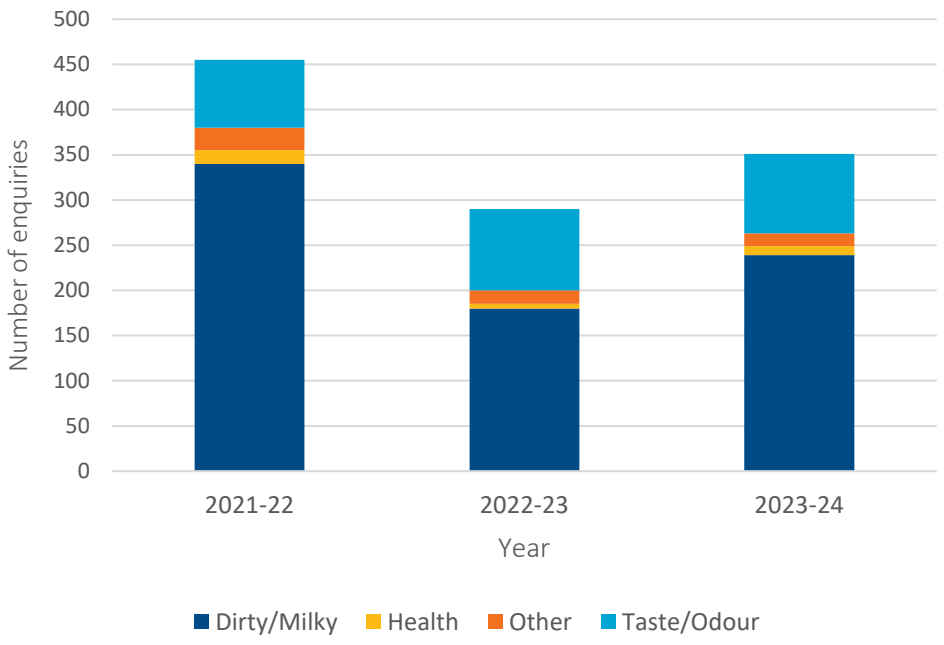
We track and investigate all water quality enquiries through our Contact Centre and Network Operations Control Room. Tracking water quality enquiries allows us to continually improve our services to our customers.

In total, 351 water quality customer enquiries were received for the financial year 2023-24 which is a slight increase from the previous financial year that saw 286 enquiries. Our water quality enquiries are categorised into one of four categories:

- health
- dirty/milky
- taste and odour
- other.

To improve our efficiencies in the field when responding to water quality customer enquiries, a water quality enquiries cluster tool has been developed. This assists our Network Operations and Control Room teams in identifying a water quality event through multiple enquiries in the same area. Appendix C contains more details on each of these water quality events which occurred in 2023-24.

Figure 1. Customer enquiries – financial year comparison



Customer enquiry summary

Table 4 provides a breakdown of the water quality customer enquiries received through the 2023-24 financial year.

Table 4. Breakdown of water quality customer enquiries

Water supply region	Health	Dirty/ Milky	Taste/ Odour	Other	Total	Connected population (estimated)	Per 1000 customers
North	5	102	42	6	155	492,944	0.31
South	5	137	46	8	196	570,074	0.43
Dayboro	0	0	0	0	0	2,635	0
Kenilworth	0	0	0	0	0	620	0
Total	**10**	**239**	**88**	**14**	**351**	**1,066,273**	**0.33**

Health customer enquiries:

Only 2.8% of our water quality customer enquiries were related to health and illness. In each case, an investigation was carried out including crew attendance where required. Investigations did not identify any health concerns related to water quality in Unitywater's network.

Dirty/Milky customer enquiries:

68.1% of our water quality customer enquiries were categorised as dirty/milky. This category is used when a customer is experiencing discoloured water that is brown, milky or cloudy in appearance. Discolouration is usually related to the accumulation of fine sediment or air bubbles in water pipes and can have different causes including planned or unplanned works in Unitywater's network, or issues with internal plumbing. In most cases, a crew attended to conduct flushing in the affected area to remove the discoloured water.

Taste and odour customer enquiries:

25.1% of our water quality customer enquiries were categorised as taste and odour. This category is used when a customer is experiencing an unusual taste or odour that is different to their usual drinking water. Most taste and odour enquiries received during the 2023-2024 financial year were related to either chlorine or earthy taste. Changes in taste and odour can be caused by changes in bulk water characteristics, planned and unplanned works, or issues with internal plumbing. Depending on the nature of the enquiry, the response may include a site investigation, network flushing and chlorine sampling.

Other customer enquiries:

4% of our water quality enquiries were categorised as other. This category is used to capture enquiries which are related to water quality but may not fit into the above categories. These are investigated by the Network Operations team as per Unitywater procedures.

Managing safe drinking water

Unitywater's Drinking Water Management System (DWMS) is how we deliver on our commitment to providing safe and reliable drinking water. This is described in our approved Drinking Water Quality Management Plan (DWQMP) as required under the *Water Supply (Safety and Reliability) Act 2008*.

Unitywater continues to use our internal Safe Water Steering Group to provide strategic oversight and direction in meeting our commitment to the delivery of safe drinking water to our customers.

New team members are educated on the DWMS during mandatory induction training including the processes and procedures that support the business to deliver safe drinking water.

Implementing the DWQMP involves multiple activities under our DWMS, some of which have been described in previous sections of this report. Other key implementation activities are detailed in the sections below.

ISO 22000 Certification

Our DWMS is independently certified to ISO 22000:2018 Food Safety Management Systems. By maintaining this certification, we are providing assurance to our customers, consumers, and community that our drinking water is a food-grade product.

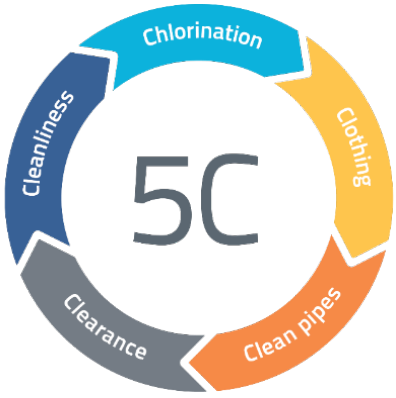
In March 2024, Unitywater successfully underwent a surveillance audit for our ISO 220000:2018 accreditation. The audit outcomes found that Unitywater continues to fulfill the criteria required by this standard and that our DWMS continues to provide safe and reliable drinking water to all of our customer

Operational Prerequisite Programs (OPRPs)

Unitywater takes a Hazard Analysis Critical Control Point (HACCP) approach to managing and controlling water quality hazards in the drinking water supply. These control measures are documented under ISO 22000 as Operational Prerequisite Programs (OPRPs) and are essential for controlling specific hazards in the supply, storage, and delivery of drinking water. The Safe Water Steering Group continuously reviews, approves, and implements our four OPRPs across key risk areas in the business to ensure we are covering all bases when it comes to food safety.

Water Hygiene Program (5Cs)

Unitywater's commitment to food safety prevails through our internal Water Hygiene Program, also knowns as the 5Cs, which sets hygienic standards to mitigate the risk of contaminants entering the drinking water supply during routine field activities. In 2024, Unitywater underwent an internal audit of the 5Cs program to assure safe drinking water continues to be supplied to our community and instil its importance through the business.



DWQMP updates

There was no update to our DWQMP for the 2023-24 financial year. We continue to meet the requirements for review, submission, and approval of Unitywater's DWQMP as stipulated by the Water Supply Regulator. No DWQMP audit was conducted or required during the 2023-24 financial year. The next regulatory audit is scheduled to be completed in April 2025.

Risk Management Improvement Program (RMIP)

Under our DWQMP, the RMIP outlines actions to be undertaken to proactively manage risks across our drinking water network. These actions are key in providing assurance that Unitywater can continuously deliver safe drinking water to our customers. Due to their importance, the Safe Water Steering Group tracks the actions through quarterly meetings, to ensure all objectives and actions of the DWQMP are implemented and completed. Unitywater are happy to report that all 29 RMIP actions have been completed.

Improving our drinking water service

We're continually challenging ourselves to improve and innovate the way we manage drinking water.

The following are some of the initiatives, projects, plans and activities we have progressed in pursuit of keeping our communities healthy through improved delivery of safe drinking water;

- Mains Cleaning Program
- Reservoir Maintenance & Renewal Program
- Online Water Quality Monitoring Trials
- Sample Tap Installation & Renewal Program
- Network water age & disinfection modelling
- Regional Secondary Disinfection Optimisation Project (RSDOP)
- Growth planning to support & service new communities in the region

Appendix A

Section reference	Legislative Requirement under Section 142(3) of the Act	Content guide	Section of this report
-	Overview of operations (optional)	Contextual information of the water supply schemes that this annual report relates to.	Our Supply Area
142(3) b	Actions taken to implement the DWQMP	Description of activities undertaken during the reporting period to implement the DWQMP: • Progress in implementing the risk management improvement program (RMIP) • Revisions made to the operational monitoring program • Amendments made to the DWQMP	Managing Safe Drinking Water
142(3) f	Compliance with water quality criteria for drinking water	• Verification monitoring results summary for the reporting period • Commentary on water quality results, the Australian Drinking Water Guidelines and *E. coli* results	Water Quality Summary & Appendix B
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	Incidents Reported to the Regulator
142(3) g	Customer complaints related to water quality	• Summary of water quality complaints • Summary of events and corrective action	Customer Enquiries Related to Water Quality
142(3) d	Findings and recommendations of the DWQMP audit	• Regulatory audit summary of findings • Outcomes of the DWQMP review	DWQMP Updates
142(3) c	Outcome of the DWQMP review and how issues raised have been addressed	• Amendment of the DWQMP	

Appendix B

Chemical performance in detail

Dayboro

Chemical performance (health)

Parameter	Units	Number of samples	Min result	Max result	Average result	95th percentile	ADWG guideline	Met ADWG
Arsenic	mg/L	3	<0.001	<0.001	<0.001	<0.001	0.01	✓
Bromate	mg/L	16	<0.005	<0.005	<0.005	<0.005	0.02	✓
Chlorate	mg/L	52	0.03	0.28	0.1	0.2	0.8*	NR
Chlorine Free	mg/L	207	<0.1	1.7	0.84	1.4	5	✓
Chlorine Total	mg/L	207	<0.1	2	0.95	1.5	5	✓
Copper	mg/L	17	<0.001	0.009	0.004	0.009	2	✓
Dichloroacetic Acid (HAA)	µg/L	4	<1	5	2.25	4.85	100	✓
Fluoride	mg/L	14	0.67	0.96	0.86	0.93	1.5	✓
Lead	mg/L	17	<0.001	0.002	<0.001	0.002	0.01	✓
Manganese	mg/L	36	<0.001	0.004	<0.001	0.002	0.5	✓
Monochloramine	mg/L	24	<0.09	<0.09	<0.09	<0.09	3	✓
Monochloroacetic Acid (HAA)	µg/L	4	<1	<1	<1	<1	150	✓
Nickel	mg/L	17	<0.001	0.001	<0.001	<0.001	0.02	✓
Nitrate	mg/L	24	0.16	2.09	0.51	1.56	50	✓
Nitrite	mg/L	24	<0.01	<0.01	<0.01	<0.01	3	✓
Trihalomethanes (THMs)	µg/L	52	9	136	55	124	250	✓
Trichloroacetic Acid (HAAs)	µg/L	4	<1	17	6	15.2	100	✓

*QLD Health Interim Chlorate Guideline Value

Chemical performance (aesthetic)

Parameter	Units	Number of samples	Min result	Max result	Average result	95th percentile	ADWG guideline	Met ADWG
Alkalinity Total	mg/L as CaCO3	28	65.9	94.2	79.6	90.5	N/A	N/A
Aluminium	mg/L	36	<0.01	0.06	0.02	0.03	0.2	✓
Calcium	mg/L	29	10	26	14.1	21.8	N/A	N/A
Chloride	mg/L	14	22	57	37.7	51.8	250	✓
Colour Apparent	PCU	36	<1	3.1	1.6	3	15	✓
Colour True	PCU	36	<1	1.4	<1	1.2	15	✓
Conductivity	µS/cm	207	216	486	297	352	1000	✓
Copper	mg/L	17	<0.001	0.009	0.004	0.009	1	✓
Iron	mg/L	36	<0.01	0.02	0.006	0.02	0.3	✓
Magnesium	mg/L	28	4	12	8.8	11	N/A	N/A
Manganese	mg/L	36	<0.001	0.004	0.0003	0.002	0.1	✓
pH	pH Units	207	6.9	7.9	7.3	7.6	6.5-9.2	✓
Potassium	mg/L	14	1.2	2.5	1.54	2.18	N/A	N/A
Silica	mg/L	3	12	16	14.3	15.9	80	✓
Sodium	mg/L	14	25	37	31	35.7	180	✓
Sulphate	mg/L	14	6	22	8.5	15.5	250	✓
Temperature	°C	207	16	30.7	22.9	28.4	N/A	N/A
Total Hardness	mg/L as CaCO3	28	51	114	71.5	99.2	200	✓
Turbidity	NTU	207	0.13	0.74	0.28	0.45	5	✓
Zinc	mg/L	17	<0.005	0.01	0.002	0.009	3	✓

Kenilworth

Chemical performance (health)

Parameter	Units	Number of samples	Min result	Max result	Average result	95th percentile	ADWG guideline	Met ADWG
Arsenic	mg/L	3	<0.001	<0.001	<0.001	<0.001	0.01	✓
Bromate	mg/L	4	<0.005	<0.005	<0.005	<0.005	0.02	✓
Chlorate	mg/L	36	0.06	0.16	0.11	0.15	0.8*	NR
Chlorine Free	mg/L	207	0.4	2.2	1.2	1.7	5	✓
Chlorine Total	mg/L	207	0.4	2.3	1.3	1.8	5	✓
Copper	mg/L	20	<0.001	0.007	0.002	0.005	2	✓
Dichloroacetic Acid (HAA)	µg/L	4	<1	2	1	2	100	✓
Fluoride	mg/L	14	<0.10	0.3	0.22	0.29	1.5	✓
Lead	mg/L	20	<0.001	0.002	0.0002	0.002	0.01	✓
Manganese	mg/L	36	<0.001	0.001	<0.001	<0.001	0.5	✓
Monochloramine	mg/L	12	<0.01	2	0.16	0.9	3	✓
Monochloroacetic Acid (HAA)	µg/L	4	<1	1	0.25	0.85	150	✓
Nickel	mg/L	20	<0.001	<0.001	<0.001	<0.001	0.02	✓
Nitrate	mg/L	12	0.16	1.4	0.57	1.39	50	✓
Nitrite	mg/L	12	<0.01	<0.01	<0.01	<0.01	3	✓
Trihalomethanes (THMs)	µg/L	36	<8	70	30	59	250	✓
Trichloroacetic Acid (HAAs)	µg/L	4	<1	<1	<1	<1	100	✓

*QLD Health Interim Chlorate Guideline Value

Chemical performance (aesthetic)

Parameter	Units	Number of samples	Min result	Max result	Average result	95th percentile	ADWG guideline	Met ADWG
Alkalinity Total	mg/L as CaCO3	71	78.2	110	101	107	N/A	N/A
Aluminium	mg/L	36	<0.01	0.01	<0.01	<0.01	0.2	✓
Calcium	mg/L	72	10	22	18	21	N/A	N/A
Chloride	mg/L	6	30	50	42.8	49.7	250	✓
Colour Apparent	PCU	36	<1	1.8	<1	1.1	15	✓
Colour True	PCU	36	<1	<1	<1	<1	15	✓
Conductivity	µS/cm	207	274	392	343	381	1000	✓
Copper	mg/L	20	<0.001	0.007	0.002	0.005	1	✓
Iron	mg/L	36	<0.01	0.04	<0.01	<0.01	0.3	✓
Magnesium	mg/L	71	5	12	9.5	12	N/A	N/A
Manganese	mg/L	36	<0.001	0.001	<0.001	<0.001	0.1	✓
pH	pH Units	207	6.9	7.6	7.3	7.5	6.5-9.2	✓
Potassium	mg/L	6	<1	1.3	1.02	1.3	N/A	N/A
Silica	mg/L	3	20	22	21	21.9	80	✓
Sodium	mg/L	6	35	40	37.3	39.8	180	✓
Sulphate	mg/L	6	7	15	12	15	250	✓
Temperature	°C	207	19.4	29	23.1	26.5	N/A	N/A
Total Hardness	mg/L as CaCO3	71	47	106	84.5	101.5	200	✓
Turbidity	NTU	207	<0.05	0.49	0.13	0.31	5	✓
Zinc	mg/L	20	<0.005	0.006	<0.005	0.006	3	✓

Northern Grid

Chemical performance (health)

Parameter	Units	Number of samples	Min result	Max result	Average result	95th percentile	ADWG guideline	Met ADWG
Arsenic	mg/L	91	<0.001	<0.001	<0.001	<0.001	0.01	✓
Bromate	mg/L	64	<0.005	0.02	<0.005	0.01	0.02	✓
Chlorate	mg/L	548	<0.01	0.44	0.08	0.31	0.8*	NR
Chlorine Free	mg/L	4,750	<0.10	2.9	0.8	1.5	5	✓
Chlorine Total	mg/L	4,750	<0.10	3.1	1	1.8	5	✓
Copper	mg/L	545	<0.001	0.02	0.001	0.006	2	✓
Dichloroacetic Acid (HAA)	µg/L	20	<1	33	9.9	24.4	100	✓
Fluoride	mg/L	135	0.1	1.02	0.82	0.97	1.5	✓
Lead	mg/L	543	<0.001	0.003	<0.001	0.001	0.01	✓
Manganese	mg/L	1,156	<0.001	0.06	0.001	0.004	0.5	✓
Monochloramine	mg/L	202	<0.09	0.16	<0.09	<0.09	3	✓
Monochloroacetic Acid (HAA)	µg/L	20	<1	6	0.9	5	150	✓
Nickel	mg/L	543	<0.001	0.008	<0.001	0.001	0.02	✓
Nitrate	mg/L	202	0.13	1.53	0.53	0.94	50	✓
Nitrite	mg/L	202	<0.01	<0.01	<0.01	<0.01	3	✓
Trihalomethanes (THMs)	µg/L	806	12	184	75	146	250	✓
Trichloroacetic Acid (HAAs)	µg/L	20	<1	41	8.4	19.1	100	✓

*QLD Health Interim Chlorate Guideline Value

Chemical performance (aesthetic)

Parameter	Units	Number of samples	Min result	Max result	Average result	95th percentile	ADWG guideline	Met ADWG
Alkalinity Total	mg/L as CaCO3	699	24.6	67.3	38.7	52.9	N/A	N/A
Aluminium	mg/L	1,156	<0.01	0.09	0.01	0.03	0.2	✓
Calcium	mg/L	702	9	30	17.4	25	N/A	N/A
Chloride	mg/L	135	14	59	24.6	44	250	✓
Colour Apparent	PCU	1,156	<1	80	0.7	2.2	15	✓
Colour True	PCU	1,156	<1	1.8	<1	<1	15	✓
Conductivity	µS/cm	4,750	81	390	215	318	1000	✓
Copper	mg/L	545	<0.001	0.02	0.002	0.006	1	✓
Iron	mg/L	1,156	<0.01	0.14	0.003	0.02	0.3	✓
Magnesium	mg/L	699	<1	11	4.4	8	N/A	N/A
Manganese	mg/L	1,156	<0.001	0.06	0.001	0.004	0.1	✓
pH	pH Units	4,750	6.6	9.5	7.6	8.1	6.5-9.2	✓
Potassium	mg/L	135	<1	2.1	1.4	1.7	N/A	N/A
Silica	mg/L	91	2	11	6.1	10	80	✓
Sodium	mg/L	135	7	37	17.6	32	180	✓
Sulphate	mg/L	135	14	68	26.2	46	250	✓
Temperature	°C	4,750	15.3	33.9	23.1	27.9	N/A	N/A
Total Hardness	mg/L as CaCO3	699	37	107	61	82	200	✓
Turbidity	NTU	4,750	0.06	5.6	0.1	0.3	5	✓
Zinc	mg/L	543	<0.005	0.5	0.003	0.01	3	✓

Southern Grid

Chemical performance (health)

Parameter	Units	Number of samples	Min result	Max result	Average result	95th percentile	ADWG guideline	Met ADWG
Arsenic	mg/L	78	<0.001	0.001	<0.001	<0.001	0.01	✓
Bromate	mg/L	120	<0.005	0.02	<0.005	0.01	0.02	✓
Chlorate	mg/L	579	0.02	0.52	0.15	0.32	0.8*	NR
Chlorine Free	mg/L	3,870	<0.1	3.8	0.2	1.2	5	✓
Chlorine Total	mg/L	3,870	<0.1	4	1.3	3.3	5	✓
Copper	mg/L	372	<0.01	0.25	0.002	0.005	2	✓
Dichloroacetic Acid (HAA)	µg/L	20	7	43	16.9	35.4	100	✓
Fluoride	mg/L	145	<0.1	1.03	0.67	0.97	1.5	✓
Lead	mg/L	372	<0.01	<0.01	<0.01	<0.01	0.01	✓
Manganese	mg/L	950	<0.001	0.04	0.003	0.008	0.5	✓
Monochloramine	mg/L	1,345	<0.09	2.8	0.7	2.3	3	✓
Monochloroacetic Acid (HAA)	µg/L	20	<1	6	1.6	4.1	150	✓
Nickel	mg/L	372	<0.001	0.003	<0.001	0.001	0.02	✓
Nitrate	mg/L	1,336	<0.01	5.2	1.46	3	50	✓
Nitrite	mg/L	1,336	<0.01	1.4	0.2	0.8	3	✓
Trihalomethanes (THMs)	µg/L	595	20	216	86	159	250	✓
Trichloroacetic Acid (HAAs)	µg/L	20	4	37	13.3	30.3	100	✓

*QLD Health Interim Chlorate Guideline Value

Chemical performance (aesthetic)

Parameter	Units	Number of samples	Min result	Max result	Average result	95th percentile	ADWG guideline	Met ADWG
Alkalinity Total	mg/L as CaCO3	203	33.3	95.4	58.3	93.7	N/A	N/A
Aluminium	mg/L	950	<0.01	0.48	0.02	0.05	0.2	✓
Calcium	mg/L	208	7	42	19.4	34	N/A	N/A
Chloride	mg/L	121	16	77	44.4	74	250	✓
Colour Apparent	PCU	950	<1	42	1.8	3.5	15	✓
Colour True	PCU	950	<1	2	<1	1.4	15	✓
Conductivity	µS/cm	3,870	109	711	327	564	1000	✓
Copper	mg/L	372	<0.001	0.25	0.002	0.005	1	✓
Iron	mg/L	950	<0.01	0.59	0.009	0.03	0.3	✓
Magnesium	mg/L	199	3	19	7.2	13	N/A	N/A
Manganese	mg/L	950	<0.001	0.04	0.003	0.008	0.1	✓
pH	pH Units	3,870	6.8	8.8	7.7	8	6.5-9.2	✓
Potassium	mg/L	121	1.4	5	2.3	3.3	N/A	N/A
Silica	mg/L	78	8	10	8.8	9	80	✓
Sodium	mg/L	121	16	68	32.2	44	180	✓
Sulphate	mg/L	122	14	65	32.5	47.9	250	✓
Temperature	°C	3,870	9.2	32.6	23.6	28.7	N/A	N/A
Total Hardness	mg/L as CaCO3	199	39	183	78.4	139	200	✓
Turbidity	NTU	3,870	0.06	16	0.2	0.4	5	✓
Zinc	mg/L	372	<0.005	0.29	0.002	0.008	3	✓

Appendix C

Details of water quality events that occurred in the 2023-24 financial year.

Event date	Trigger description	Dirty /Milky	Taste/ Odour	Health	Other	Investigation commentary	Corrective action undertaken
2/1/2024	Health, Taste or Odour: 2 in 10 hours, single DMA	0	2	0	0	Related to a temporary change in supply to the distribution zone from Landers Shute WTP to North Pine WTP.	Seqwater advised that there had been no recent changes in raw water quality or treatment processes that would be expected to impact taste/odour.
2/1/2024	Health, Taste or Odour: 2 in 10 hours, single DMA	0	2	0	0	Related to a temporary change in supply to the distribution zone from Landers Shute WTP to North Pine WTP.	Seqwater advised that there had been no recent changes in raw water quality or treatment processes that would be expected to impact taste/odour.
4/1/2024	Health, Taste or Odour: 2 in 10 hours, single DMA	0	2	0	0	Related to a temporary change in supply to the distribution zone from Landers Shute WTP to North Pine WTP. Additionally, on 4/1/24 Seqwater advised of an increase in taste/odour compounds in treated water supplied from North Pine WTP.	Seqwater advised that PAC dosing had been increased at North Pine WTP to improve taste/odour.
5/1/2024	Health, Taste or Odour: 3 in 24 hours, single DMA	0	3	0	0	Related to a temporary change in supply to the distribution zone from Landers Shute WTP to North Pine WTP. Additionally, on 4/1/24 Seqwater advised of an increase in taste/odour compounds in treated water supplied from North Pine WTP.	Seqwater advised that PAC dosing had been increased at North Pine WTP to improve taste/odour.
5/2/2024	Health, Taste or Odour: 2 in 10 hours, single DMA	0	2	0	0	Related to an increase in chlorine taste/odour due to operationalisation of upstream chlorine dosing.	Additional monitoring was undertaken to verify that chlorine levels were being maintained within the expected range in the distribution area.
27/2/2024	Health, Taste or Odour: 2 in 10 hours, single DMA	0	2	0	0	Related to a temporary change in disinfection mode associated with network rezoning to facilitate planned PRV inspection; PTW 84912.	A field crew was dispatched to check chlorine levels at a hydrant in DMA18R.

13/3/2024	Any WQ Enquiry: 6 in 24 hours, WQ Report	8	0	0	0	Related to a planned shutdown for hydrant replacement on 12/3/24; PTW 86410.	Reactive flushing was undertaken to restore water quality.
13/3/2024	Any WQ Enquiry: 4 in 24 hours, single DMA	7	0	0	0	Related to a planned shutdown for hydrant replacement on 12/3/24; PTW 86410.	Reactive flushing was undertaken to restore water quality.
17/5/2024	Any WQ Enquiry: 3 in 12 hours, single DMA	3	0	0	0	Related to shutdown of 500mm trunk water main on 17/05/24 for planned valve replacement; PTW 83926.	Crews were dispatched to conduct targeted flushing. Customers advised that the issue resolved upon flushing internal taps.