QUEENSLAND UrbanUtilities

2014/15 DRINKING WATER QUALITY MANAGEMENT PLAN REPORT

ENRICH QUALITY OF LIFE

TABLE OF CONTENTS

GLOSSARY OF TERMS

<	Less than
>	Greater than
ADWG	*Australian Drinking Water Guidelines* published by the National Health and Medical Research Council of Australia. The ADWG are updated by rolling revisions.
Bulk Water	The treated water supplied from the Queensland Bulk Water Authority (Seqwater) to distributor retailers including Queensland Urban Utilities.
CFU/100mL	Colony Forming Units per 100 millilitres
DEWS	Department of Energy and Water Supply, Queensland Government
Disinfectant	An agent that destroys or inhibits the activity of microorganisms that cause disease. QUU uses either chlorine or chloramine.
DWQMP	Drinking Water Quality Management Plan as required by the *Water Supply (Safety & Reliability) Act 2008*.
E. coli	Escherichia coli, a bacterium whose presence in water indicates that the water is possibly contaminated by faecal matter and therefore there is the potential to cause illness when people drink the water.
mg/L	milligrams per litre
MPN/100mL	Most Probable Number per 100 millilitres
Network	An arrangement or system of pipes, pumps and reservoirs used for distributing water
NTU	Nephelometric Turbidity Unit – a measure of turbidity which is the cloudiness or haziness of water caused by particles that are generally invisible to the naked eye. The measurement of turbidity is a key test of water quality.
QWSR	Queensland Water Supply Regulator which is the delegate of the Director-General of the Department of Energy and Water Supply.
SAS Lab	Scientific Analytical Services Laboratory, Queensland Urban Utilities
Scheme	The system distributing drinking water to customers.
SEQ	South East Queensland
Seqwater	Queensland Bulk Water Supply Authority trading as Seqwater.
Shareholders	Brisbane and Ipswich City Councils and the Lockyer Valley, Scenic Rim and Somerset Regional Councils
Stakeholder	All those who are either affected by or who can affect the activities of an organisation, namely customers, governments, regulators, the media, non-government organisations, local residents and employees
The Plan	The Drinking Water Quality Management Plan for Queensland Urban Utilities
The Regulator	Director-General of the Department of Energy and Water Supply (DEWS). The Queensland Water Supply Regulator (QWSR) is the delegate of the Regulator.
TTHMs	Total Trihalomethanes – a group of disinfection by-products that generally form when chlorine is used to disinfect drinking water.
WTPs	Water Treatment Plants

CHAPTER 1: ABOUT US

Who we are

On 1 July 2010, Queensland Urban Utilities was established as a statutory body under the provision of the *South East Queensland Water (Distribution and Retail Restructuring) Act 2009* and as a service provider under the *Water Supply (Safety and Reliability) Act 2008*.

Our shareholders are the councils of Brisbane, Ipswich, Lockyer Valley, Scenic Rim and Somerset, and we are governed by an independent Board.

What we do

As a distributor-retailer and provider of essential services, we are responsible for delivering drinking water, recycled water and sewerage services to over 1.4 million customers in South East Queensland.

Our strategic direction

Our purpose:
Enrich quality of life.

Our vision:
We will be recognised for our excellence in water and sewerage services that meet the evolving needs of our customers and enhance our communities.

Our strategic pillars:

- Customers
- Shareholders and Communities
- Operational Excellence
- People

Supplying high quality and safe drinking water under our *Drinking Water Quality Management Plan* is critical to helping us achieve our purpose and vision. This report aligns to our strategic direction:

Customers – We deliver a quality water supply that meets our customers' evolving needs and is pleasant and safe to drink.

Shareholders and Communities – We understand our shareholders' aspirations for drinking water quality so that we are accountable to them and their communities.

Operational Excellence – We innovate to drive operational excellence in the provision of drinking water at the lowest long-term cost.

People – We are safe, adaptable and capable and provide safe, high-quality drinking water that complies with regulatory requirements and the *Australian Drinking Water Guidelines*.

Enriching quality of life

When our customers turn on a tap in their homes, schools or workplaces, water comes out. When they flush the toilet, waste disappears. Water and sewerage service provision is an invisible but essential service that enriches the lives of our customers every day.

CHAPTER 1: ABOUT US

Our operating environment

Queensland Urban Utilities' relationship with other participants in the South East Queensland water industry can be seen in Figure 1.

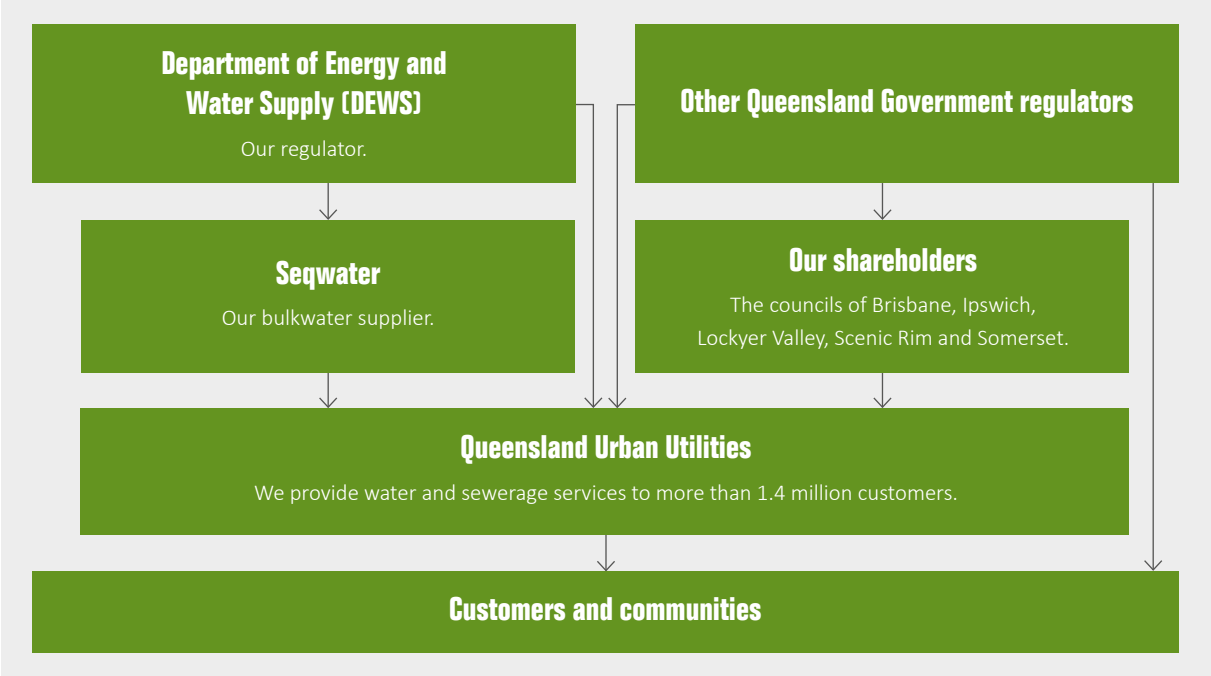

Figure 1: Our operating environment

About this report

Queensland Urban Utilities' *2014/15 Annual Drinking Water Quality Management Plan Report* showcases our operational performance with respect to drinking water quality, and shows how we have been implementing the actions detailed in our *Drinking Water Quality Management Plan* (DWQMP) as required under the *Water Supply (Safety and Reliability) Act 2008*.

This report also provides our customers with information about the quality of their drinking water.

This report informs the regulator on how we complied with our DWQMP and its approval conditions. It also allows us to meet the requirements of the *Water Supply (Safety and Reliability) Act 2008* and is prepared according to the Water Industry Regulatory Reform – Drinking Water Quality Management Plan Report fact sheet published by the Department of Energy and Water Supply (DEWS), accessible at www.dews.qld.gov.au

Interpreter service statement

We are committed to providing accessible services to our customers and stakeholders from culturally and linguistically diverse backgrounds. If you have difficulty in understanding this report, please contact the Translating and Interpreting Service on 13 14 50 (24 hours a day, seven days week) and they will arrange an interpreter to communicate the report to you effectively.

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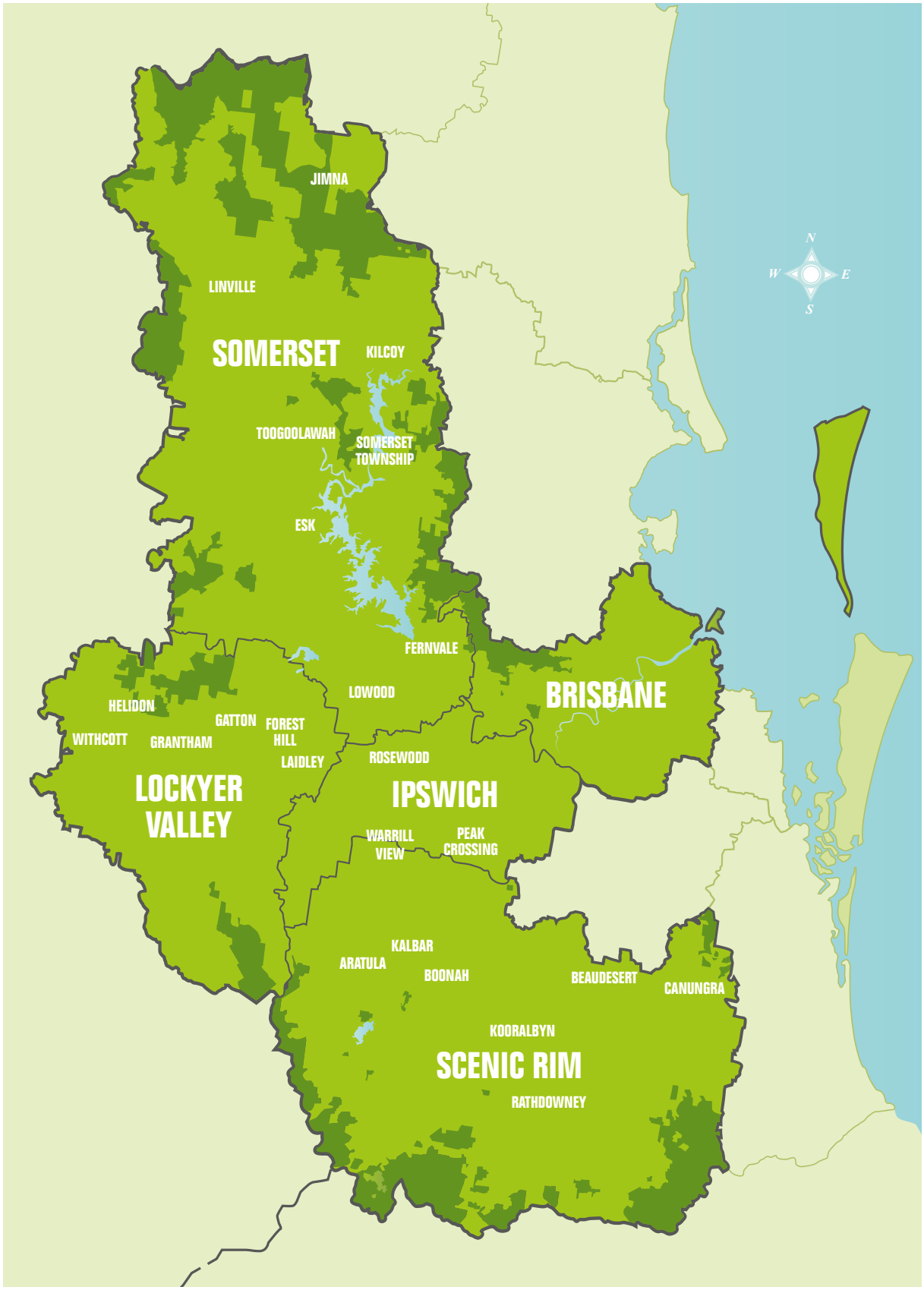
CHAPTER 1: ABOUT US

Figure 2 – Queensland Urban Utilities' water supply schemes



Our water supply network

We supply 82,700 megalitres of drinking water to 532,000 residential properties and 55,500 megalitres to 37,000 non-residential properties. We provide water services within the five local government regions of Brisbane City Council, Ipswich City Council, Lockyer Valley Regional Council, Somerset Regional Council and Scenic Rim Regional Council. Water is delivered to our customers via 12 separate networks, or water supply schemes, including:

1. Beaudesert,
2. Boonah – Kalbar also servicing Mt Alford and Aratula,
3. Canungra,
4. Esk – Toogoolawah,
5. Jimna,
6. Kilcoy,
7. Kooralbyn,
8. Linville,
9. Lowood – servicing the towns of Fernvale, Lowood, Forest Hill, Gatton, Grantham, Helidon, Laidley, Plainland, and Withcott,
10. Rathdowney,
11. Somerset Township,
12. South East Queensland (Brisbane and Ipswich) Water Supply System including Marburg, Rosewood, Walloon, Peak Crossing, Harrisville and Warrill View.

These schemes begin at the bulk supply points and reservoirs operated and owned by Seqwater and end at the customer's meter. The schemes include storage reservoirs, pipe networks, pumps and water meters. Figure 2 on page 10 shows our water supply network in each local government region.

Our largest water supply scheme, which is concentrated in Brisbane and Ipswich, makes up around 89% of the total water supply network. Schemes in the Lockyer Valley, Scenic Rim and Somerset make up the remaining 11%.

As per figure 1 on page 8, we buy treated bulk drinking water from Seqwater, and distribute this water to our customers in each of our five local government regions.

Brisbane and Ipswich

The South East Queensland Water Supply Scheme supplies drinking water to our customers in Brisbane and Ipswich, as well as those in Harrisville, Peak Crossing and Warrill View in the Scenic Rim.

The South East Queensland Water Supply Scheme is considered as a single scheme based on:

- shared bulk water sources and infrastructure,
- shared operation and management,
- the use of chloramination to disinfect the water,
- the addition of sodium fluoride to the water at Seqwater water treatment plants (WTPs).

Water supplied to Brisbane is provided mostly from the Mount Crosby and North Pine WTPs. When required, the Southern and Northern Regional Pipelines can supply water in both directions.

Water supplied to Ipswich is provided from the Mount Crosby WTP, and via the Southern Regional Water Pipeline.

Lockyer Valley

In the Lockyer Valley region, water treated at Seqwater's Lowood WTP is distributed to the nine towns of Fernvale, Lowood, Forest Hill, Gatton, Grantham, Helidon, Laidley, Plainland and Withcott.

Chlorine is used to disinfect the treated water.

Scenic Rim

In Scenic Rim, Seqwater operates WTPs at Beaudesert, Canungra, Kalbar, Kooralbyn and Rathdowney. Each WTP is connected to our network, which supplies water to our customers in these towns. Water from the Kalbar WTP is supplied to Aratula, Boonah and Mount Alford.

Chlorine is used to disinfect the treated water in these schemes.

Somerset

In Somerset, Seqwater operates WTPs at Esk, Jimna, Kilcoy, Linville and Somerset Township. Each WTP is connected to our network, which supplies water to our customers in these areas.

The townships of Fernvale and Lowood are supplied from the same Lowood WTP that supplies the Lockyer Valley.

The Esk WTP also supplies drinking water to Toogoolawah.

In 2013, floods contaminated the bore that supplies the Linville WTP. As a result, Seqwater continues to supply water by tanker from Kilcoy.

Chlorine is used to disinfect the treated water in the Somerset region.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CHAPTER 2: LEGISLATIVE REQUIREMENTS

The supply of safe and reliable drinking water in Queensland is regulated by various state legislation, including the *Water Supply (Safety and Reliability) Act 2008 (Qld)*, the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009*, and *Public Health Act 2005*.

Under the *Water Supply (Safety and Reliability) Act*, a drinking water service provider may only carry out a registered drinking water service in accordance with an approved *Drinking Water Quality Management Plan (DWQMP)*.

Under the *Public Health Act 2005*, the Queensland Department of Health has regulated the standards for drinking water quality related to *E.coli* and fluoride. These standards, together with the health guideline levels in the *Australian Drinking Water Guidelines (ADWG)*, have been incorporated under the *Water Supply (Safety and Reliability) Act 2008* as water quality criteria for drinking water in Queensland.

CHAPTER 3: DRINKING WATER QUALITY PERFORMANCE

Water quality performance summary

The table below summarises our drinking water quality performance between 1 July 2014 and 30 June 2015, measured against the legislative requirements detailed in Chapter 2.

Water Quality Performance			
Scheme	**E.coli**	**Health**	**Aesthetic**
Brisbane and Ipswich	☑	☑	☑
Boonah-Kalbar	☑	☑	☑
Canungra	☑	☑	☑
Beaudesert	☑	☑	☑
Kooralbyn	☑	☑	☑
Rathdowney	☑	☑	☑
Jimna	☑	☑	☑
Linville	☑	☑	☑
Kilcoy	☑	☑	☑
Somerset Township	☑	☑	☑
Esk-Toogoolawah	☑	☑	☑
Lowood	☑	☑	☑

For 2014/15, we met the prescribed health-related standards for all 12 of our drinking water schemes.

CHAPTER 3: DRINKING WATER QUALITY PERFORMANCE

Verification Monitoring Program

To verify that we deliver safe drinking water, our Scientific Analytical Services Laboratory collects and analyses water from 330 dedicated sample stations across our service area, analysing over 110,000 water quality parameters annually. Water quality data collected through this process is reviewed, analysed and scrutinised against prescribed requirements in the legislation and the *Australian Drinking Water Guidelines*.

For 2014/15, the Verification Monitoring Program complied with the monitoring program described in the *Drinking Water Quality Management Plan*.

As part of our commitment to continuous improvement, we have reviewed and revised our Verification Monitoring Program. The revised program includes improved coverage of sampling stations and more detailed monitoring of key parameters in our system. The new program was scheduled to commence on 1 July 2015.

Escherichia coli (*E.coli*)

We achieved excellent health performance in 2014/15, with 100% of schemes complying with the Escherichia coli (*E.coli*) requirement.

The standard for drinking water quality requires that no *E.coli* is detected in 98% of samples collected over 12 months. The minimum number of samples required is determined from the number of customers supplied in the area (See Schedule 3A, Public Health Regulations 2005).

Details are provided in *Appendix A: Compliance of Water Quality*, including the rolling 12-monthly assessment.

Chemical health-related assessment

All of our schemes have complied with the health-related chemical guideline values described in the *Australian Drinking Water Guidelines* (ADWG).

We take a risk management approach to drinking water quality, which allows us to identify the substances that may pose a risk to the health of our customers. The verification monitoring includes testing for these substances. The results were assessed against the health-based guidelines described in the ADWG using the 95th percentile (95th %-ile) calculation to assess compliance.

Details are provided in *Appendix A: Compliance of Water Quality*.

On the rare occasions *E.coli* was detected in a water sample, or a sample result exceeded a guideline value recommended in the ADWG, we responded quickly and carried out appropriate corrective measures.

We notified the Queensland Water Supply Regulator (QWSR) when *E.coli* was detected in any sample or a health-related substance exceeded the recommended ADWG guideline value. QWSR was closely involved in the response process.

Despite achieving 100% compliance for chemical health-related parameters, we are proactively monitoring some key characteristics more frequently and closely than is required under the current guidelines.

Aesthetic assessment

We understand that how our water looks, tastes, smells and feels can influence how our customers and stakeholders perceive their water quality. We have identified several substances that may affect the physical nature of the water, and we include these in our routine water quality monitoring program. The results are assessed against the aesthetic-based guideline value described in the ADWG.

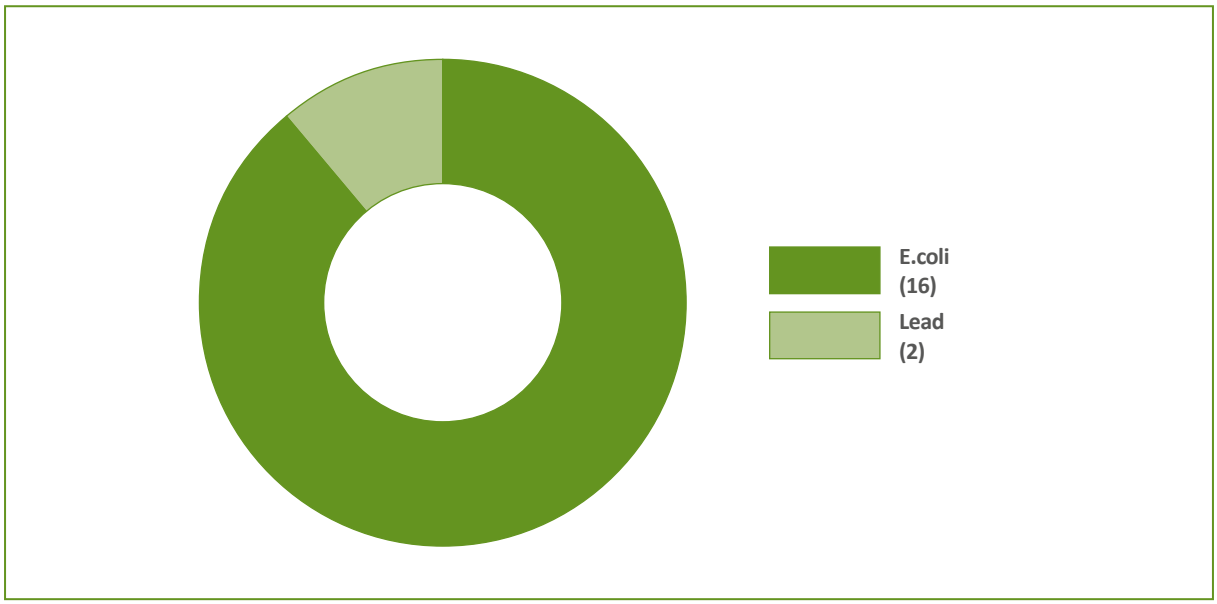
We are pleased to report that in 2014/15, all 12 schemes met the recommended aesthetic characteristics.

Details of how our water quality schemes performed against aesthetic assessment are provided in *Appendix B: Aesthetic Assessment*.

CHAPTER 4: NOTIFYING THE REGULATOR

During 2014/15, we notified the regulator 18 times as required under sections 102 or 102A of the *Water Supply (Safety and Reliability) Act 2008*.

Sixteen of these notifications involved the detection of *E.coli* in a water sample. We did not detect any *E.coli* in follow-up samples.



Two notifications involved samples that did not comply with chemical health-related guideline levels described in the ADWG. Lead was detected in two samples, both of which were attributed to corroding sampling taps, which have since been replaced.

Fourteen of the 18 notifications occurred in the South East Queensland Water Supply System servicing Brisbane and Ipswich.

Each time we notify the regulator, we immediately undertake further sampling, a detailed investigation and appropriate corrective measures. We use the outcomes of these investigations to make improvements in our network or our practices to ensure the safety and wellbeing of our customers and communities.


GENERAL CHEMICAL
Urban Utilities
BATCH NO:
Sample Description:
Sampled By:
Date/Time Sampled:
Sampling Instructions:

CHAPTER 5: MANAGING CHALLENGES TO IMPROVE DRINKING WATER QUALITY

Introduction

Our approved *Drinking Water Quality Management Plan* (DWQMP) protects public health by establishing a risk-management system for us to implement. The plan:

- identifies the hazards and hazardous events we consider may affect drinking water quality in our service area,
- assesses the risks posed by the hazards and hazardous events and describes how we intend to manage those risks,
- provides details of day-to-day operational processes to manage the registered services,
- describes the operational and verification monitoring programs under the plan,
- outlines reporting arrangements.

This section outlines how we are managing the water quality challenges identified during the risk management improvement program.

Current water quality challenges

We have prioritised three significant health-related water quality challenges, which are:

1. Ensuring disinfection residuals remain adequate across the distribution.
2. Managing water age in reservoirs to maintain sufficient disinfection residual and maintain customer service standards.
3. Managing the natural biology in water reservoirs during warmer months to ensure sufficient chloramine residual.

Risk Management Improvement Plan actions

1. Optimising the network to manage operational risks

Although it is a challenging and complex process, optimal operation of the water distribution network is necessary to maintain the desired quantity and quality of our drinking water.

Optimising disinfection residuals through smart re-zoning

During 2014/15, we assessed the chlorine residuals in the Mount Ommaney reservoir supply zone following contact from a critical customer, who requested that we increase the chlorine residual supplied to them. Because the disinfectant residual was adequate in the neighbouring zone and the critical customer was located near the zone boundary, we moved the boundary to enable water with sufficient residual to be supply to the customer.

Optimising re-chlorination dosing facilities

We reviewed the operation of the Roles Hill re-chlorination facility to optimise the chlorine dosing system in the Manly-Roles Hill-Lota water supply zone. The success of this approach was demonstrated with no *E.coli* detected in this supply zone during 2014/15. This re-chlorination operational protocol builds on the protocol developed for the Walloon re-chlorination facility during 2013/14. We will continue to deploy these protocols at other similar facilities in our system.

Managing reservoir storage levels

Since the droughts, our customers have been using water much more efficiently. While we encourage efficient water use, this also means that the water is stored for longer in our network. As the water ages, its quality can decline. As such, we aim to balance the quantity of water stored with predicted demand. The operational levels of each reservoir across our network are regularly reviewed and optimised with the changing weather.

CHAPTER 5: MANAGING CHALLENGES TO IMPROVE DRINKING WATER QUALITY

Investigating water age

To address the challenge of aging water, we use a hydraulic modelling capability to identify areas in which water has been stored for longer than is optimal. Through system optimisation and our master planning process, we examine these areas to develop appropriate solutions. For example, water age assessment was included in the development of a new Ipswich Water Network Master Plan during 2014/15.

2. Delivering water quality capital improvements

Our Capital Investment Program ensures drinking water quality improvements by:

- reducing frequency of burst water pipes,
- maintaining adequate system pressure and minimising pressure transients,
- maintaining adequate self-cleansing velocities through mains to prevent biofilm growth,
- maintaining quality water meters that incorporate backflow prevention technology,
- improving water reservoir integrity and asset security.

Installation of reservoir mixers

Warm weather triggers a physical process that causes water to separate into layers of different temperatures. This layering effect, if not managed, may cause deterioration of water quality and loss of disinfectant residual. During 2014/15, we identified 13 high-priority reservoirs in the Scenic Rim, Lockyer Valley and Somerset Regional Council areas. Mixers will be installed in these reservoirs in 2015/16. We also installed mixers at five reservoirs during routine rehabilitation work. This complements the mixers we installed in 15 reservoirs during 2013/14. In 2015/16, we are planning to identify more reservoirs that may require mixers.

Installation and enhancement of re-chlorination facilities

Although compliant with the ADWG, we have identified several areas throughout our network where the disinfectant residual can be improved. During 2014/15, we upgraded the re-chlorination facilities at the Albert Street Reservoir in Beaudesert and the Brookes Drive Reservoir in Kooralbyn to improve the management of this issue.

The chlorine residual in Bartley's Hill water supply zone is not optimal. While we build a new cross-river link to provide another source of supply to the zone that could also provide water quality benefits, we are closely monitoring the disinfectant residual in this zone. After the cross-river link is commissioned and the zone is re-configured, we propose to re-examine the chlorine residual in the zone to determine if re-chlorination is required.

Automatic flushing system

Water quality deteriorates in pipes with low turnover, which is why we manually flush our water pipes on a regular basis. During 2014/15, we installed a trial automatic flushing device to eliminate the need to send field crews to open hydrants; however, technical difficulties with the solar power supply caused delays. A larger solar panel is expected to be installed in 2015/16, which will allow the trial to recommence. If the trial shows promise during 2015/16, automatic flushing devices will be installed at appropriate locations across our network.

Ensuring safe drinking water during incidents

During 2013/14, chemical dosing lances were installed along with reservoir mixers. During 2014/15, we developed a mobile chlorine dosing system to allow us to dose extra chlorine via the chemical dosing lances during water quality incidents or when conditions indicate the system may need chlorine boosting.

Improving water reservoir security

Our Security Risk Assessments (SRA) tell us which counter measures are required to mitigate security threats and vulnerabilities at our critical infrastructure, such as water storage reservoirs. The SRAs are also routinely conducted to monitor the effectiveness of measures. During 2014/15, we implemented the following measures to support security at our reservoirs:

- expanded access control systems,
- installed and upgraded CCTV systems,
- installed fencing and lighting,
- undertook reservoir security inspections and random after-hours security patrols,
- developed and delivered a new Master Keying Program,
- standardised security systems to enable security monitoring through the 24/7 Operational Control Centre.

3. Monitoring and reporting systems

Revising drinking water quality monitoring program

During 2014/15, we prepared a new *Drinking Water Quality Monitoring Program* to monitor risks associated with operating a water supply network and to build an understanding of the water quality throughout the network. The program complies with Queensland legislation and uses recommendations contained within the *Australian Drinking Water Guidelines*. The program is designed to achieve a consistent approach to drinking water quality monitoring activities across all of our drinking water schemes and will incorporate seasonal variations to enhance data value. *The Drinking Water Quality Monitoring Program*, which was implemented in July 2015, will undergo regular review.

Developing water quality modelling capability

During 2014/15, we initiated a pilot on the Ipswich supply zone, linking water quality modelling with our existing hydraulic model. Due to technical difficulties experienced during validation of the water quality model, the outputs have been delayed until 2015/16.

When the model is fully integrated into our systems, we will be able to predict water quality issues across the whole network to formulate optimal solutions to improve water quality, in particular, to maintain adequate disinfection residual.

The timeline for this project is subject to the outcomes of the SEQ Regional Secondary Disinfection Optimisation Study.

Asset condition assessment

During 2014/15, we developed an asset condition assessment methodology, which incorporates water quality aspects to determine the integrity of assets with regard to water quality. This methodology was used to assess 18 reservoirs, and will be used to assess five more reservoirs in 2015/16.

CHAPTER 5: MANAGING CHALLENGES TO IMPROVE DRINKING WATER QUALITY

Monitoring performance of our systems

In 2014/15, we developed water quality operational objectives to determine chlorine residual targets and other conditions by which to assess the performance of the system.

We plan to implement the new targets in 2015/16 to aid operational optimisation and planning processes, subject to the outcomes of the SEQ Regional Secondary Disinfection Optimisation Study.

***Drinking Water Quality Management Plan* review**

We are required to regularly review our *Drinking Water Quality Management Plan* (DWQMP) to ensure it remains relevant to current operating conditions. The first of the regular reviews, which was scheduled for 16 January 2015, found that:

- Overall, the DWQMP framework is being implemented.
- The improvement actions identified in the approved DWQMP are being implemented, with promising results.
- The management of incidents has been effective, although the process has slightly changed, and, most importantly, we have complied with the water quality criteria.
- The DWQMP is not current in terms of the operating environment. This is largely due to re-structuring of Queensland Urban Utilities and changes to the bulk water supply arrangements.
- The DWQMP requires updating to reflect the re-structure, the collection of more water quality data, and general improvements to processes and procedures.

A revised layout should be adopted for ease of future reviews and updates.

Presently, we are revising the approved DWQMP to be submitted to QWSR in November 2015.

4. Operational risk management of critical areas with low disinfection residuals

Operational risk management of critical areas with low disinfection residuals was undertaken using two approaches:

1. A system-wide approach through collaboration with other South East Queensland Water Supply System operators, particularly on the SEQ Regional Secondary Disinfection Optimisation Study (see page 25);
2. A local action approach, as described earlier in Chapter 5.

5. Collaborating to optimise the South East Queensland Water Supply System

In 2014/15, we continued to collaborate with other South East Queensland Water Supply System operators to participate in the Secondary Disinfection Options Study to determine the best approach for whole-of-system disinfection. A joint working group was tasked to optimise secondary disinfection of the South East Queensland Water Supply System.

The Secondary Disinfection Optimisation Project aims to:

- optimise the existing secondary disinfection regime on a SEQ regional and sub-regional basis, lowering risks to public health and reducing costs,
- improve the understanding of what operational, maintenance and capital initiatives may be implemented to further improve the effectiveness and cost efficiency of secondary disinfection regionally in the future.

We have also been actively working with Seqwater and the other operators in the South East Queensland Water Supply System to develop a Partnership Water Quality Plan. This project aims to develop a catchment-to-tap based water quality best-practice approach to provide consistent risk management across the South East Queensland Water Supply System and to promote whole-of-system optimisation.

The Partnership Water Quality Plan project aims to:

- improve understanding and develop an agreed view on disinfection by-product risks under several disinfection practices,
- form a common view on public health performance.

6. Keeping abreast of emerging water quality issues

New water-related issues periodically emerge because they are either newly recognised or because their impact increases. To keep abreast of emerging issues at national and local levels, we actively participate in:

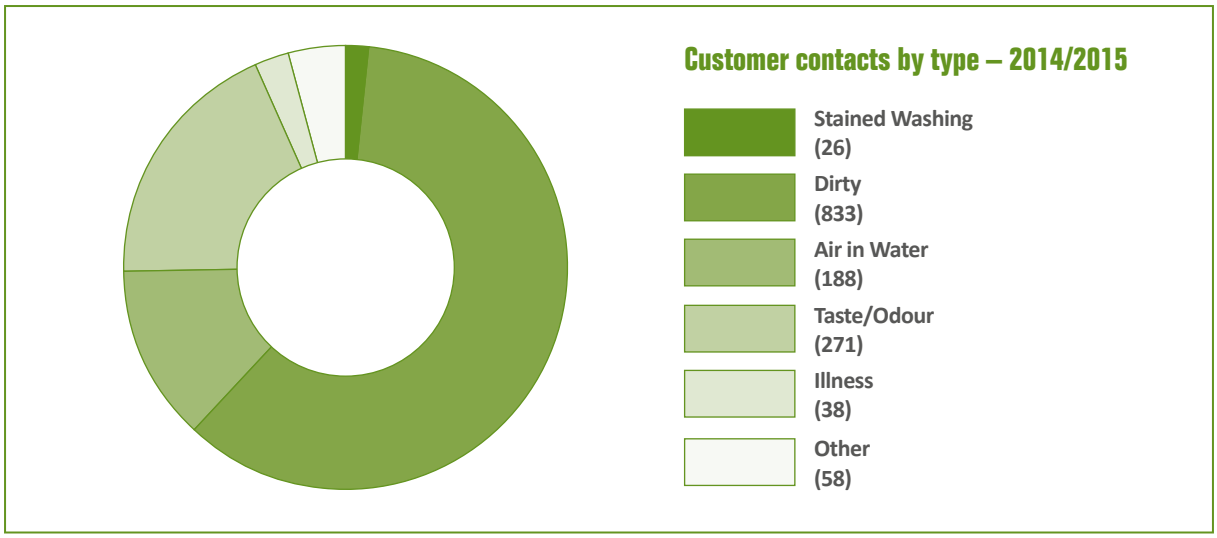
- Water Services Association of Australia (WSAA) – Water Quality and Health Network. The objective of the network is to identify, discuss and collaborate on water quality, health policy and research in accordance with the vision for urban water services. We are contributing to and participating in two national projects coordinated by WSAA:
  - Emerging Pathogens of Concern for the Water Industry,
  - Smart Control of Water Supply Systems to Improve Management of Drinking Water Quality.
- South-East Queensland Water Quality Forum.
- Research and Development initiatives.
- Innovation initiatives to improve operational excellence (for example through our trial of on-line water quality probes).

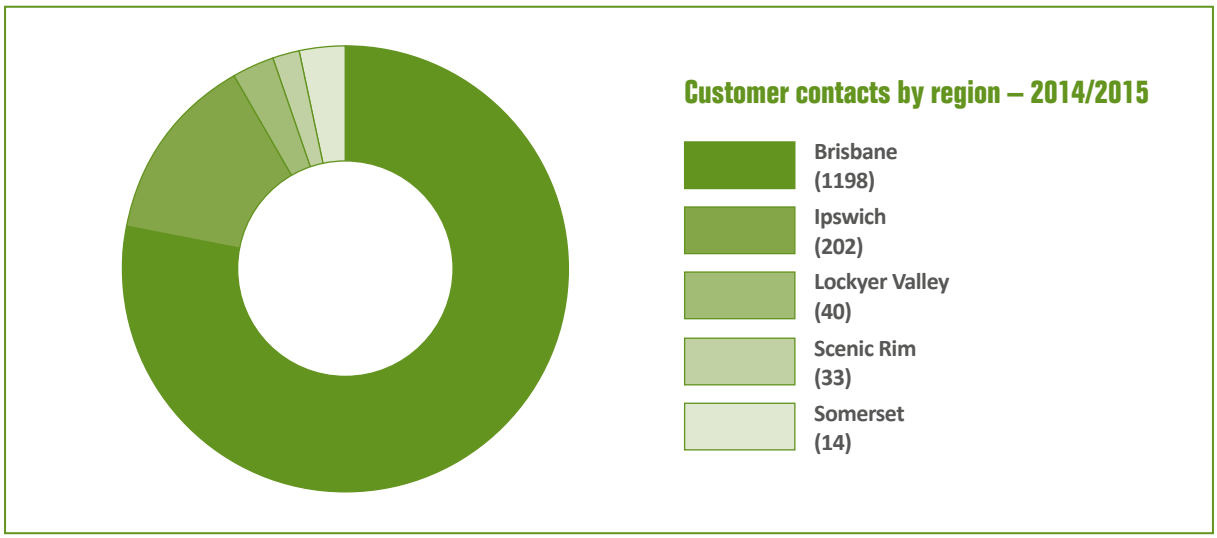
We continuously strive for improvement by monitoring and responding to our water quality challenges. We investigate:

- Operational management options for critical areas with low disinfection residual or where unacceptable levels of disinfection by-products are formed. This includes continual review of the operation and performance of chlorine re-dosing facilities, optimising operation of storage tanks and installing mixers in storage tanks.
- Water age and water quality modelling to deliver cost effective infrastructure for water quality improvements.

CHAPTER 6: MANAGING CUSTOMER CONTACTS ABOUT WATER QUALITY

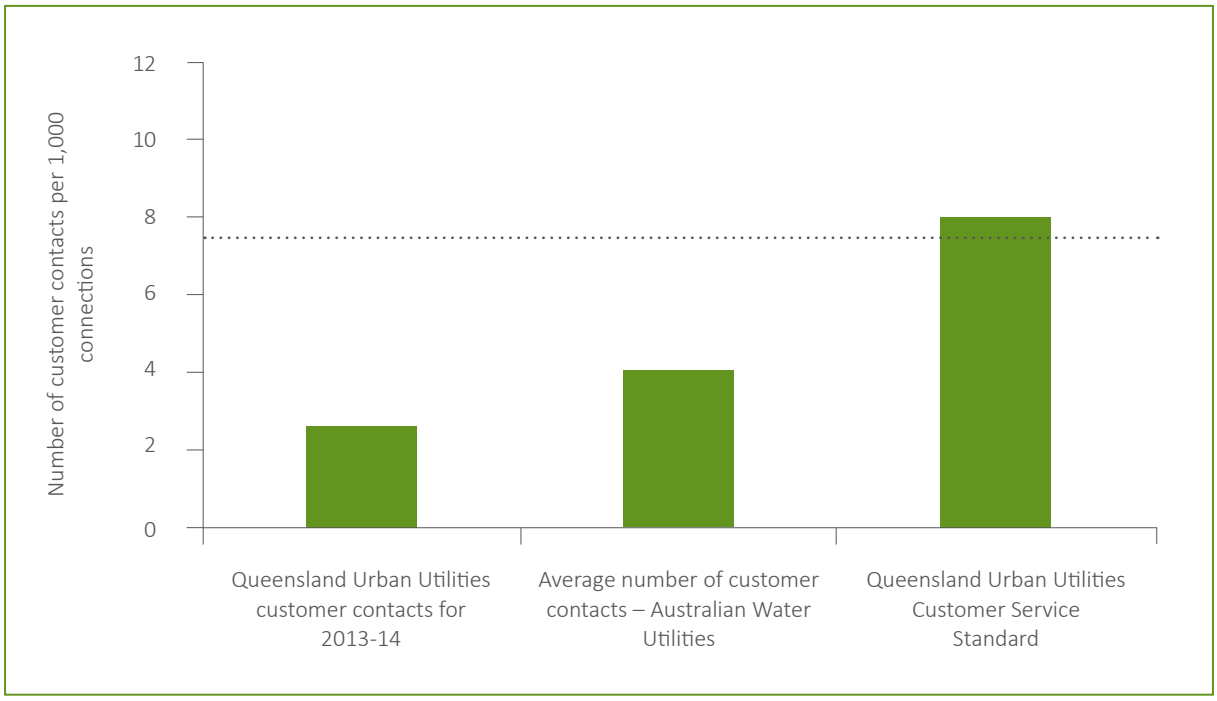
We record and monitor all water quality-related customer contacts (enquiries and complaints) to identify any trends and areas for improvement. In 2014/15, our customer Contact Centre received 1,414 water quality-related customer contacts. This is slightly lower than the 1,487 contacts received in 2013/14. The following charts show the breakdown of these contacts and their locations.





CHAPTER 6: MANAGING CUSTOMER CONTACTS ABOUT WATER QUALITY

The chart below shows that, in 2014/15, we performed well in the number of water quality customer contacts per 1,000 properties compared to the average across Australia[1] and our Customer Service Standard.



[1] The value for Australia is calculated across all utilities who reported their performance to the National Performance Report during 2012-2013. Data for 2013-2014 is not yet available.

We have a proactive process when customers raise water quality issues. We investigate the issue when:

- a cluster of customer contacts appears,
- a large number of customers are affected,
- there is a risk to public health.

Our website contains information to assist our customers with what to do if their drinking water smells, tastes or looks unusual. Our dedicated drinking water quality web page can be viewed at www.urbanutilities.com.au/drinkingwaterquality

For the safety and wellbeing of our customers and communities, we are committed to delivering drinking water that meets the water quality health criteria described in the *Australian Drinking Water Guidelines* and complies with the regulations of the *Public Health Act 2005*.

APPENDIX A: COMPLIANCE OF WATER QUALITY

E.coli

The following tables show how we comply with *E.coli* requirements.

Overall						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
Brisbane and Ipswich	1872	8527	14	98	99.9	☑
Boonah-Kalbar	96	114	1	98	99.2	☑
Canungra	12	91	1	98	99	☑
Beaudesert	60	201	1	98	99.5	☑
Kooralbyn	48	85	0	98	100	☑
Rathdowney	12	51	0	98	100	☑
Jimna	12	49	0	98	100.0	☑
Linville	12	50	0	98	100	☑
Kilcoy	48	50	0	98	100	☑
Somerset Township	12	50	1	98	98.2	☑
Esk-Toogoolawah	96	93	0	98	100	☑
Lowood	324	693	4	98	99.6	☑

Beaudesert *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	5	20	0	100	99.9	☑
August	5	16	0	100	99.2	☑
September	5	20	0	100	99	☑
October	5	16	0	100	99.5	☑
November	5	16	0	100	100	☑
December	5	20	0	100	100	☑
January	5	16	1	99.6	100.0	☑
February	5	16	0	99.6	100	☑
March	5	19	0	99.6	100	☑
April	5	15	0	99.6	98.2	☑
May	5	15	0	99.6	100	☑
June	5	12	0	99.5	99.6	☑

APPENDIX A: COMPLIANCE OF WATER QUALITY

Boonah-Kalbar *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	8	11	0	100	99.9	☑
August	8	9	0	100	99.2	☑
September	8	11	0	100	99	☑
October	8	9	0	100	99.5	☑
November	8	9	0	100	100	☑
December	8	12	0	100	100	☑
January	8	9	0	100	100.0	☑
February	8	9	0	100	100	☑
March	8	11	1	99.2	100	☑
April	8	8	0	99.2	98.2	☑
May	8	9	0	99.2	100	☑
June	8	7	0	99.2	99.6	☑

Canungra *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	1	9	0	100	99.9	☑
August	1	7	0	100	99.2	☑
September	1	9	0	100	99	☑
October	1	7	0	100	99.5	☑
November	1	7	0	100	100	☑
December	1	9	1	99	100	☑
January	1	7	0	99	100.0	☑
February	1	7	0	99	100	☑
March	1	9	0	99	100	☑
April	1	7	0	99	98.2	☑
May	1	7	0	99	100	☑
June	1	6	0	99	99.6	☑

Esk-Toogoolawah *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	8	8	0	99.1	99.9	☑
August	8	8	0	99.1	99.2	☑
September	8	10	0	99.1	99	☑
October	8	8	0	99.1	99.5	☑
November	8	8	0	99.1	100	☑
December	8	10	0	99.1	100	☑
January	8	8	0	99.1	100.0	☑
February	8	8	0	99.1	100	☑
March	8	8	0	100	100	☑
April	8	6	0	100	98.2	☑
May	8	5	0	100	100	☑
June	8	6	0	100	99.6	☑

Jimna *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	1	4	0	98.3	99.9	☑
August	1	4	0	98.2	99.2	☑
September	1	5	0	98.3	99	☑
October	1	4	0	98.2	99.5	☑
November	1	4	0	98.2	100	☑
December	1	5	0	98.3	100	☑
January	1	4	0	98.3	100.0	☑
February	1	3	0	98.2	100	☑
March	1	5	0	98.2	100	☑
April	1	4	0	98.2	98.2	☑
May	1	4	0	100	100	☑
June	1	3	0	100	99.6	☑

APPENDIX A: COMPLIANCE OF WATER QUALITY

Kilcoy *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	4	4	0	98.2	99.9	☑
August	4	4	0	98.2	99.2	☑
September	4	5	0	98.2	99	☑
October	4	4	0	98.2	99.5	☑
November	4	4	0	98.2	100	☑
December	4	5	0	98.2	100	☑
January	4	4	0	98.2	100.0	☑
February	4	4	0	98.2	100	☑
March	4	5	0	98.2	100	☑
April	4	4	0	98.2	98.2	☑
May	4	4	0	100	100	☑
June	4	3	0	100	99.6	☑

Kooralbyn *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	4	8	0	100	99.9	☑
August	4	6	0	100	99.2	☑
September	4	7	0	100	99	☑
October	4	7	0	100	99.5	☑
November	4	7	0	100	100	☑
December	4	8	0	100	100	☑
January	4	7	0	100	100.0	☑
February	4	7	0	100	100	☑
March	4	9	0	100	100	☑
April	4	7	0	100	98.2	☑
May	4	7	0	100	100	☑
June	4	5	0	100	99.6	☑

Linville *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	1	4	0	100	99.9	☑
August	1	4	0	100	99.2	☑
September	1	5	0	100	99	☑
October	1	4	0	100	99.5	☑
November	1	4	0	100	100	☑
December	1	5	0	100	100	☑
January	1	4	0	100	100.0	☑
February	1	4	0	100	100	☑
March	1	5	0	100	100	☑
April	1	4	0	100	98.2	☑
May	1	4	0	100	100	☑
June	1	3	0	100	99.6	☑

Lowood *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	27	68	0	99.8	99.9	☑
August	27	56	0	99.8	99.2	☑
September	27	58	0	99.8	99	☑
October	27	68	0	99.8	99.5	☑
November	27	56	0	99.7	100	☑
December	27	70	1	99.6	100	☑
January	27	56	1	99.8	100.0	☑
February	27	56	0	99.7	100	☑
March	27	58	2	99.6	100	☑
April	27	58	0	99.6	98.2	☑
May	27	50	0	99.6	100	☑
June	27	39	0	99.6	99.6	☑

APPENDIX A: COMPLIANCE OF WATER QUALITY

Rathdowney *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	1	5	0	100	99.9	☑
August	1	4	0	100	99.2	☑
September	1	5	0	100	99	☑
October	1	4	0	100	99.5	☑
November	1	4	0	100	100	☑
December	1	5	0	100	100	☑
January	1	4	0	100	100.0	☑
February	1	4	0	100	100	☑
March	1	5	0	100	100	☑
April	1	4	0	100	98.2	☑
May	1	4	0	100	100	☑
June	1	3	0	100	99.6	☑

South East Queensland Water Supply (Brisbane and Ipswich) *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	156	753	0	99.9	99.9	☑
August	156	738	0	99.9	99.2	☑
September	156	742	2	99.9	99	☑
October	156	784	0	99.9	99.5	☑
November	156	681	1	99.9	100	☑
December	156	816	1	99.9	100	☑
January	156	713	2	99.9	100.0	☑
February	156	675	2	99.9	100	☑
March	156	732	0	99.9	100	☑
April	156	710	1	99.9	98.2	☑
May	156	698	5	99.9	100	☑
June	156	485	0	99.9	99.6	☑

Somerset *E.Coli*						
Scheme	**Number of samples required**	**Actual number of samples**	**Number of samples *E.coli* detected**	**Required performance %**	**Actual performance %**	**Compliant**
July	1	4	0	100	99.9	☑
August	1	4	0	100	99.2	☑
September	1	5	0	100	99	☑
October	1	4	0	100	99.5	☑
November	1	4	0	100	100	☑
December	1	5	0	100	100	☑
January	1	4	0	100	100.0	☑
February	1	4	0	100	100	☑
March	1	5	1	98.3	100	☑
April	1	4	0	98.3	98.2	☑
May	1	4	0	98.2	100	☑
June	1	3	0	98.2	99.6	☑

APPENDIX A: COMPLIANCE OF WATER QUALITY

Health assessment

The following tables show how we met the health-related requirements assessed against the health-based guidelines described in the ADWG using the 95th percentile (95th %-ile) calculation to assess compliance.

Beaudesert Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	44	0	0.048	0.05	☑
Cadmium	mg/L	0.002	44	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	201	0	1.8	1.4	☑
Chlorine (Total)	mg/L	4.1	201	0	2.3	1.7	☑
Chromium	mg/L	0.05	44	0	<0.001	0	☑
Copper	mg/L	2	44	0	0.011	0.01	☑
Fluoride	mg/L	1.5	197	0	1	0.9	☑
Lead	mg/L	0.01	44	0	0.0019	0	☑
Manganese	mg/L	0.5	197	0	0.3	0.01	☑
Nickel	mg/L	0.02	44	0	0.0014	0	☑
Trihalomethanes (Total)	ug/L	250	44	0	220	199	☑

Boonah-Kalbar Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	22	0	0.03	0.03	☑
Cadmium	mg/L	0.002	22	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	114	0	2.1	1.3	☑
Chlorine (Total)	mg/L	4.1	114	0	2.3	1.5	☑
Chromium	mg/L	0.05	22	0	<0.001	0	☑
Copper	mg/L	2	22	0	0.0051	0	☑
Fluoride	mg/L	1.5	111	0	1	0.9	☑
Lead	mg/L	0.01	22	0	0.0013	0	☑
Manganese	mg/L	0.5	111	0	0.0078	0	☑
Nickel	mg/L	0.02	22	0	<0.001	0	☑
Trihalomethanes (Total)	ug/L	250	22	0	170	170	☑

Canungra Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	11	0	0.0082	0.01	☑
Cadmium	mg/L	0.002	11	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	91	0	2.2	1.7	☑
Chlorine (Total)	mg/L	4.1	91	0	2.3	1.85	☑
Chromium	mg/L	0.05	11	0	<0.001	0	☑
Copper	mg/L	2	11	0	0.0068	0.01	☑
Fluoride	mg/L	1.5	89	0	1	0.9	☑
Lead	mg/L	0.01	11	0	<0.001	0	☑
Manganese	mg/L	0.5	89	0	0.054	0.01	☑
Nickel	mg/L	0.02	11	0	<0.001	0	☑
Trihalomethanes (Total)	ug/L	250	11	0	110	105	☑

Esk-Toogoolawah Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	20	0	0.031	0.03	☑
Cadmium	mg/L	0.002	20	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	93	0	2.5	1.7	☑
Chlorine (Total)	mg/L	4.1	93	0	2.5	2	☑
Chromium	mg/L	0.05	20	0	<0.001	0	☑
Copper	mg/L	2	20	0	0.0051	0	☑
Dichloracetic Acid	mg/L	100	20	0	36	32	☑
Fluoride (as F)	mg/L	1.5	20	0	1	0.9	☑
Lead	mg/L	0.01	20	0	0.0012	0	☑
Manganese	mg/L	0.5	20	0	0.0048	0	☑
Monochloracetic Acid	ug/L	150	20	0	<10	5	☑
Nickel	mg/L	0.02	20	0	<0.001	0	☑
Nitrate (as N)	mg/L	50	20	0	0.28	0.24	☑
Nitrite (as N)	mg/L	3	20	0	<0.1	0	☑
Trichloroacetic Acid	mg/L	100	20	0	24	24	☑
Trihalomethanes (Total)	mg/L	250	20	0	170	160	☑
[1]Chlorate	mg/L	0.82[2]	18	0	0.42	0.25	☑

[1] We are proactively monitoring these substance as health regulators are proposing to introduce these into the ADWG

[2] Proposed Guideline Value

APPENDIX A: COMPLIANCE OF WATER QUALITY

Jimna Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	11	0	0.024	0.02	☑
Cadmium	mg/L	0.002	11	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	49	0	2.6	2.06	☑
Chlorine (Total)	mg/L	4.1	49	0	2.9	2.16	☑
Chromium	mg/L	0.05	11	0	<0.001	0	☑
Copper	mg/L	2	11	0	0.018	0.01	☑
Dichloracetic Acid	mg/L	100	11	0	54	42	☑
Fluoride (as F)	mg/L	1.5	11	0	0.6	0.4	☑
Lead	mg/L	0.01	11	0	0.0028	0	☑
Manganese	mg/L	0.5	11	0	0.038	0.03	☑
Monochloracetic Acid	ug/L	150	11	0	<10	5	☑
Nickel	mg/L	0.02	11	0	<0.001	0	☑
Nitrate (as N)	mg/L	50	11	0	0.11	0.08	☑
Nitrite (as N)	mg/L	3	11	0	<0.1	0	☑
Trichloroacetic Acid	mg/L	100	11	0	53	47	☑
Trihalomethanes (Total)	mg/L	250	11	0	170	155	☑
[1]Chlorate	mg/L	0.82[2]	10	0	0.62	0.54	☑

[1] We are proactively monitoring these substance as health regulators are proposing to introduce these into the ADWG

[2] Proposed Guideline Value

Kilcoy Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	11	0	0.021	0.02	☑
Cadmium	mg/L	0.002	11	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	50	0	2.3	1.9	☑
Chlorine (Total)	mg/L	4.1	50	0	2.4	2.2	☑
Chromium	mg/L	0.05	11	0	<0.001	0	☑
Copper	mg/L	2	11	0	0.0041	0	☑
Dichloracetic Acid	mg/L	100	11	0	52	38	☑
Fluoride (as F)	mg/L	1.5	11	0	0.9	0.9	☑
Lead	mg/L	0.01	11	0	<0.001	0	☑
Manganese	mg/L	0.5	11	0	0.0014	0	☑
Monochloracetic Acid	ug/L	150	11	0	<10	5	☑
Nickel	mg/L	0.02	11	0	<0.001	0	☑
Nitrate (as N)	mg/L	50	11	0	0.17	0.15	☑
Nitrite (as N)	mg/L	3	11	0	<0.1	0	☑
Trichloroacetic Acid	mg/L	100	11	0	66	50	☑
Trihalomethanes (Total)	mg/L	250	11	0	140	125	☑
[1]Chlorate	mg/L	0.82[2]	10	0	<0.01	0.01	☑

[1] We are proactively monitoring these substance as health regulators are proposing to introduce these into the ADWG

[2] Proposed Guideline Value

Kooralbyn Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	22	0	0.032	0.03	☑
Cadmium	mg/L	0.002	22	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	91	0	2	0.6	☑
Chlorine (Total)	mg/L	4.1	91	0	2.1	0.8	☑
Chromium	mg/L	0.05	22	0	<0.001	0	☑
Copper	mg/L	2	22	0	0.013	0	☑
Fluoride	mg/L	1.5	84	0	1	0.8	☑
Lead	mg/L	0.01	22	0	0.0014	0	☑
Manganese	mg/L	0.5	84	0	0.0046	0	☑
Nickel	mg/L	0.02	22	0	<0.001	0	☑
Trihalomethanes (Total)	ug/L	250	45	0	190	110	☑

APPENDIX A: COMPLIANCE OF WATER QUALITY

Linville Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	11	0	0.016	0.02	☑
Cadmium	mg/L	0.002	11	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	50	0	1.5	1.2	☑
Chlorine (Total)	mg/L	4.1	50	0	1.6	1.5	☑
Chromium	mg/L	0.05	11	0	<0.001	0	☑
Copper	mg/L	2	11	0	0.0047	0	☑
Dichloracetic Acid	mg/L	100	11	0	50	42	☑
Fluoride (as F)	mg/L	1.5	11	0	0.87	0.87	☑
Lead	mg/L	0.01	11	0	<0.001	0	☑
Manganese	mg/L	0.5	11	0	0.03	0.02	☑
Monochloracetic Acid	ug/L	150	11	0	<10	5	☑
Nickel	mg/L	0.02	11	0	<0.001	0	☑
Nitrate (as N)	mg/L	50	11	0	0.16	0.14	☑
Nitrite (as N)	mg/L	3	11	0	<0.1	0	☑
Trichloroacetic Acid	mg/L	100	11	0	74	59	☑
Trihalomethanes (Total)	mg/L	250	11	0	170	155	☑
[1]Chlorate	mg/L	0.82[2]	10	0	0.2	0.17	☑

[1] We are proactively monitoring these substance as health regulators are proposing to introduce these into the ADWG

[2] Proposed Guideline Value

Lowood Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	26	0	0.032	0.03	☑
Cadmium	mg/L	0.002	26	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	693	0	3.9	1.7	☑
Chlorine (Total)	mg/L	4.1	693	0	3.9	2	☑
Chromium	mg/L	0.05	26	0	<0.001	0	☑
Copper	mg/L	2	26	0	0.064	0.04	☑
Dichloracetic Acid	mg/L	100	11	0	44	36	☑
Fluoride (as F)	mg/L	1.5	172	0	1.1	0.9	☑
Lead	mg/L	0.01	26	0	0.0041	0	☑
Manganese	mg/L	0.5	55	0	0.039	0.02	☑
Monochloracetic Acid	ug/L	150	11	0	<10	5	☑
Nickel	mg/L	0.02	26	0	0.0016	0	☑
Nitrate (as N)	mg/L	50	22	0	0.24	0.22	☑
Nitrite (as N)	mg/L	3	22	0	<0.1	0	☑
Trichloroacetic Acid	mg/L	100	11	0	29	27	☑
Trihalomethanes (Total)	mg/L	250	17	0	190	182	☑
[1]Chlorate	mg/L	0.82[2]	15	0	0.24	0.19	☑

[1] We are proactively monitoring these substance as health regulators are proposing to introduce these into the ADWG

[2] Proposed Guideline Value

APPENDIX A: COMPLIANCE OF WATER QUALITY

Rathdowney Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	11	0	0.048	0.05	☑
Cadmium	mg/L	0.002	11	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	51	0	1.6	1.3	☑
Chlorine (Total)	mg/L	4.1	51	0	1.6	1.4	☑
Chromium	mg/L	0.05	11	0	<0.001	0	☑
Copper	mg/L	2	11	0	0.021	0.02	☑
Fluoride	mg/L	1.5	50	0	0.7	0.6	☑
Lead	mg/L	0.01	11	0	0.0018	0	☑
Manganese	mg/L	0.5	50	0	0.01	0.01	☑
Nickel	mg/L	0.02	11	0	<0.001	0	☑
Trihalomethanes (Total)	ug/L	250	11	0	220	210	☑

South East Queensland Water Supply (Brisbane and Ipswich) Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	492	0	0.043	0.03	☑
Cadmium	mg/L	0.002	492	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	8528	0	94	0.05	☑
Chlorine (Total)	mg/L	4.1	9888	0	3.4	2.3	☑
Chromium	mg/L	0.05	492	0	<0.001	0	☑
Copper	mg/L	2	492	0	0.24	0.04	☑
Dichloracetic Acid	mg/L	100	53	0	29	20	☑
Fluoride (as F)	mg/L	1.5	718	0	1.2	0.9	☑
Lead	mg/L	0.01	492	0	0.025	0	☑
Manganese	mg/L	0.5	996	0	0.42	0.01	☑
Monochloracetic Acid	ug/L	150	53	0	<10	5	☑
Nickel	mg/L	0.02	492	0	0.0032	0	☑
Nitrate (as N)	mg/L	50	1366	0	1.1	0.74	☑
Nitrite (as N)	mg/L	3	1366	0	0.45	0.22	☑
Trichloroacetic Acid	mg/L	100	53	0	20	15	☑
Trihalomethanes (Total)	mg/L	250	172	0	180	130	☑
[1]Chlorate	mg/L	0.82[2]	46	0	0.34	0.24	☑

[1] We are proactively monitoring these substance as health regulators are proposing to introduce these into the ADWG

[2] Proposed Guideline Value

Somerset Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	11	0	0.021	0.02	☑
Cadmium	mg/L	0.002	11	0	<0.001	0	☑
Chlorine (Free)	mg/L	5	50	0	2.4	1.4	☑
Chlorine (Total)	mg/L	4.1	50	0	2.5	1.7	☑
Chromium	mg/L	0.05	11	0	<0.001	0	☑
Copper	mg/L	2	11	0	0.002	0	☑
Dichloracetic Acid	mg/L	100	11	0	54	52	☑
Fluoride (as F)	mg/L	1.5	11	0	0.074	0.07	☑
Lead	mg/L	0.01	11	0	<0.001	0	☑
Manganese	mg/L	0.5	11	0	0.087	0.06	☑
Monochloracetic Acid	ug/L	150	11	0	<10	5	☑
Nickel	mg/L	0.02	11	0	<0.001	0	☑
Nitrate (as N)	mg/L	50	11	0	0.17	0.15	☑
Nitrite (as N)	mg/L	3	11	0	<0.1	0	☑
Trichloroacetic Acid	mg/L	100	11	0	37	32	☑
Trihalomethanes (Total)	mg/L	250	11	0	160	160	☑
[1]Chlorate	mg/L	0.82[2]	10	0	0.54	0.42	☑

[1] We are proactively monitoring these substance as health regulators are proposing to introduce these into the ADWG

[2] Proposed Guideline Value

APPENDIX B: AESTHETIC ASSESSMENT

The table summarises the aesthetic quality of our drinking water assessed against the aesthetic based guideline value described in the ADWG using the average results over 12 months.

Parameter	Units	ADWG Aesthetic Guideline Value	Beaudesert	Boonah-Kalbar	Canungra	Esk-Toogoolawah	Jimna	Kilcoy	Kooralbyn	Linville	Lowood	Rathdowney	SEQ Water Supply (Brisbane and Ipswich)	Somerset Township
2-Methylisoborneol	ng/L	-	ND	ND	ND	<2	<2	<2	ND	<2	3.7	ND	2.1	2.8
Aluminium	mg/L	0.2	0.012	0.029	0.022	0.069	0.019	0.024	0.014	0.024	0.029	0.012	0.045	0.02
Ammonia (Free, as N)	mg/L	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.1	ND
Ammonia (Total, as N)	mg/L	0.5	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Chloride	mg/L	250	90	59	28	57	49	37	75	38	60	71	63	39
Colour (True)	PCU	15	0.6	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5
Conductivity	uS/cm	-	527	437	221	401	446	316	428	324	406	384	424	278
Geosmin	ng/L	-	ND	ND	ND	<2	<2	2.05	ND	2.2	<2	ND	<2	<2
Iron	mg/L	0.3	0.035	0.017	0.031	0.008	0.005	0.014	0.014	0.036	0.018	0.022	0.026	0.055
pH	pH Unit	6.5 - 8.5	7.9	7.5	7.9	7.7	7.5	7.6	8.3	7.9	7.9	7.8	7.7	7.9
Silica	mg/L	80	ND	ND	ND	9	11	6	ND	8	11	ND	10	7
Sodium	mg/L	180	ND	ND	ND	37	66	32	ND	33	33	ND	37	28
Sulfate (as SO4)	mg/L	250	ND	ND	ND	24	76	37	ND	37	31	ND	28	30
Temperature	Deg C	-	23	24	22	24.0	22	24	23	24.0	24	23	24	25
Total Dissolved Solids	mg/L	600	337	280	142	256	286	202	274	208	260	245	271	177
Total Hardness	mg/L	200	162	107	75	113	72	81	139	84	121	103	110	68
Turbidity	NTU	5	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.2
Zinc	mg/L	3	0.006	0.004	0.004	0.003	0.006	0.002	0.01	0.004	0.012	0.013	0.005	0.006
Meets ADWG guidelines			☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

ND = Not Determined

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