QUEENSLAND UrbanUtilities

2013/14

DRINKING WATER QUALITY MANAGEMENT PLAN REPORT

ENRICH QUALITY OF LIFE

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CHIEF EXECUTIVE OFFICER'S FOREWORD

Introducing the report

I am pleased to present our *2013/14 Drinking Water Quality Management Plan Report* which outlines how we have been supplying high quality drinking water to our 1.4 million customers. In this publication, we also detail the bacteriological, chemical and physical characteristics of our drinking water supply. This information is valuable for industries which require quality water for production purposes. However, even if you don't have a technical interest in the information, I encourage you to read the report to get a greater understanding of the extensive treatment and testing processes behind delivering drinking water. You'll also learn about how we are proactively managing the water supply so that our customers can be confident of the quality and safety of the water they consume. For more information about the objectives of this report, see page 9.

Delivering a safe, quality water supply

This year, as we have done for every one of our four years of operations, Queensland Urban Utilities has complied with the regulatory requirements and met the Australian Drinking Water Guidelines. Compared with other Australian water utilities, we also performed very well in relation to the number of water quality related customer contacts (see page 26). This enables us to be confident that our water is effectively and safely managed.

We have adopted a structured and systematic approach to managing drinking water quality. We are innovating and collaborating with stakeholders and regulators to ensure we have the appropriate leadership and direction to enhance our drinking water quality performance (see pages 15).

To verify that we are delivering safe drinking water, our SAS (Scientific Analytical Services) Laboratory regularly collects and analyses water from 330 dedicated sample points across our geographic area analysing over 110,000 drinking water quality parameters annually. Water quality data collected through this process is reviewed, trended and scrutinised against requirements in the legislation and in the Australian Drinking Water Guidelines.

Proactively managing incidents

In 2013/14, we supplied 136,000ML of water to customers with 100% compliance to the health requirements of the Australian Drinking Water Guidelines.

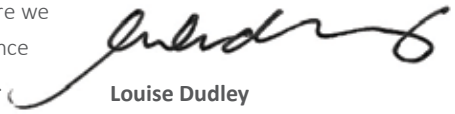
To do this, we safely and effectively operate and maintain 9,028km of water mains, 125 reservoirs, 40 water pump stations and 110 water boosters.

However, as with all infrastructure, sometimes things can go wrong. When they do, we have a dedicated response team of men and women who work on a 24 hour roster. They attend emergency call-outs across our 14,384km^2 geographic area day and night and in all types of weather to ensure that when things do go wrong, they are put right as quickly as possible.

We are proactively and collaboratively working with peers and stakeholders to manage any issues before they can impact customers. In the few instances when incidents do affect customers, we respond quickly to rectify the situation.

Committed to continuous improvement

We value your feedback so please contact us if you have any questions or queries about this report or your water and sewerage service. Feedback enables us to continuously improve our services. This is a key component of our transformation into a modern, innovative and customer-focused organisation.



Louise Dudley
Chief Executive Officer

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 primarily 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' *2013/2014 Drinking Water Quality Management Plan Report* showcases our 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 assists the Regulator to determine whether we have complied with the 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 factsheet published by the Department of Energy and Water Supply, Queensland, accessible at www.dews.qld.gov.au

This report also provides our customers with information about the quality of their drinking water. It is publicly available on our website www.urbanutilities.com.au and at our head office reception.

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 13 14 50 to arrange an interpreter to communicate the report to you effectively.

当您需要口译员时，请致电 13 14 50。
اتصل على الرقم 13 14 50 عندما تكون بحاجة إلى مترجم فوري.
Khi bạn cần thông ngôn, xin gọi số 13 14 50
통역사가 필요하시면 13 14 50 으로 연락하십시오
Cuando necesite un intérprete llame al 13 14 50

Additional copies and feedback

If you would like an additional copy of this report, or wish to provide feedback, please contact us via:

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www.urbanutilities.com.au

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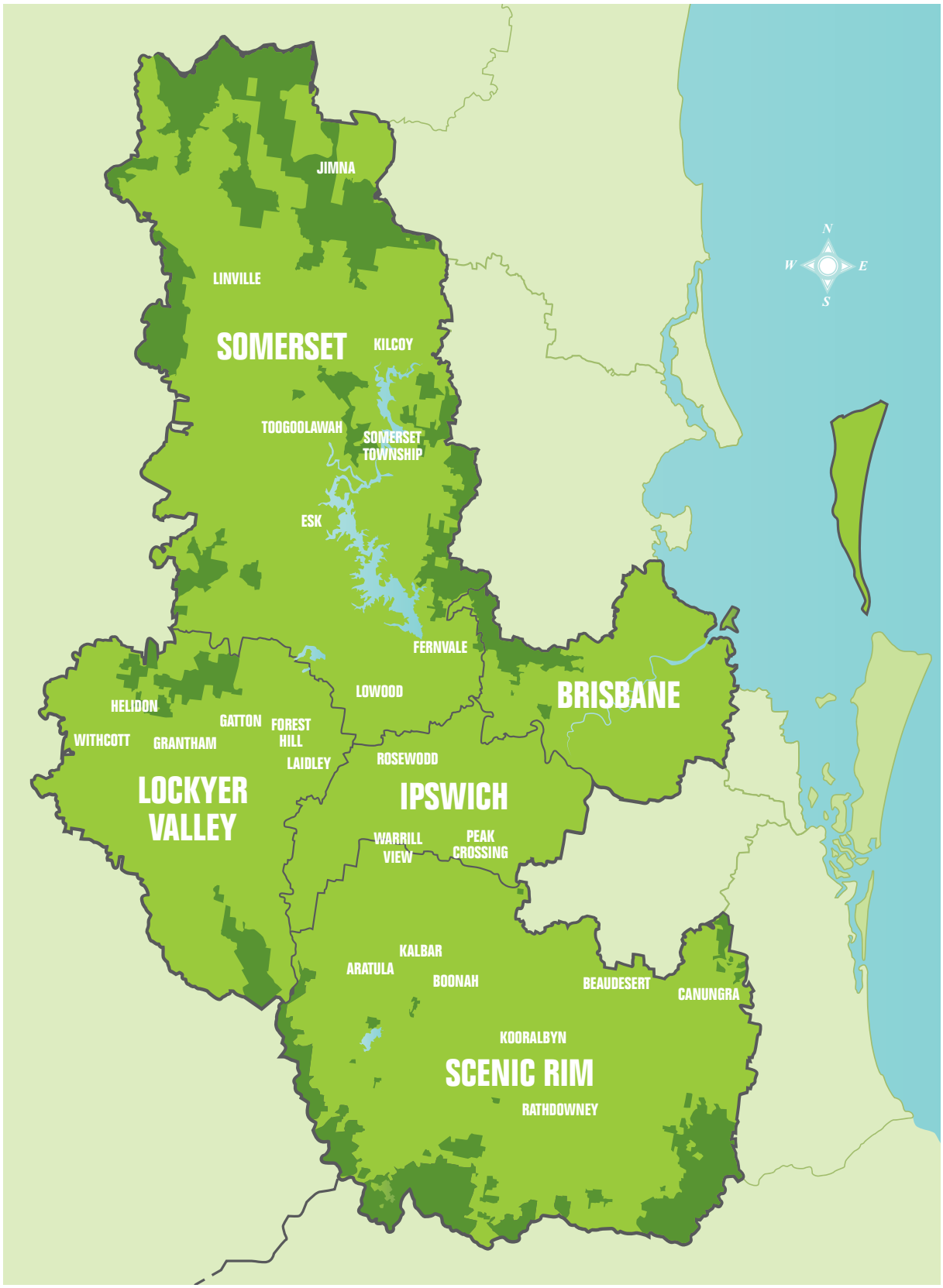
CHAPTER 1: ABOUT US

Figure 2 – Queensland Urban Utilities' water supply schemes



Our Water Supply Network

We supply 136,000 megalitres of drinking water each year through approximately 530,000 connections to 1.4 million customers. 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. The drinking water services are delivered through 12 drinking water schemes compromising:

- Beaudesert
- Boonah – Kalbar servicing Mt Alford and Aratula
- Canungra
- Esk – Toogoolawah
- Jimna
- Kilcoy
- Kooralbyn
- Linville
- Lowood servicing the towns of Fernvale, Lowood, Forest Hill, Gatton, Grantham, Helidon, Laidley, Plainland, and Withcott
- Rathdowney
- South East Queensland Water Supply servicing Brisbane, Ipswich, Marburg, Rosewood, Walloon, Peak Crossing, Harrisville and Warrill View.
- Somerset Township

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

Our water supply network is predominantly concentrated in Brisbane, extending west through to Ipswich and the Lockyer Valley. Brisbane and Ipswich make up around 89% of the total water supply network, with Lockyer Valley, Scenic Rim and Somerset comprising the remaining 11%.

As per figure 1 on page 8, we buy bulk drinking water from Seqwater which treats the source water before supplying it to us. We then distribute this water to our customers in each local government region.

Brisbane and Ipswich

The South East Queensland Water Supply Scheme supplies drinking water to most of our customers and includes the distribution network to Brisbane and Ipswich.

Harrisville, Peak Crossing and Warrill View in the Scenic Rim are also supplied via this network. The South East Queensland Water Supply Scheme is treated as a single scheme based on:

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

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

Water supply to Ipswich is provided from the Mt Crosby Water Treatment Plant and via the Southern Regional Water Pipeline.

Lockyer Valley

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

Chlorination is used to disinfect the treated water.

Scenic Rim

In the Scenic Rim region, drinking water is supplied from the five standalone Seqwater WTPs at Beaudesert, Canungra, Kalbar, Kooralbyn, and Rathdowney. Chlorination is used to disinfect the treated water in these schemes.

Water from the Kalbar WTP is supplied to Aratula, Boonah and Mt Alford.

Somerset

In the Somerset region, drinking water is supplied from five standalone Seqwater WTPs at Esk, Jimna, Kilcoy, Linville and Somerset Township.

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

The Esk WTP also supplies drinking water to Toogoolawah.

In 2013, floods contaminated the bore that supplies Linville WTP. Water is presently supplied by tanker from Kilcoy.

Chlorination is used to disinfect all the treated water in Somerset.

CHAPTER 2: LEGISLATIVE REQUIREMENTS

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

Under the *Water Supply (Safety and Reliability) Act 2008*, 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*.

The following sections provide a summary of our drinking water quality management performance between 1 July 2013 and 30 June 2014.

CHAPTER 3: DRINKING WATER QUALITY PERFORMANCE

Water quality performance summary

The table below summarises our drinking water quality performance measured against the legislative requirements detailed on page 13.

Water Quality Performance			
Scheme	**E.coli**	**Health**	**Aesthetic**
Beaudesert	☑	☑	☒
Boonah-Kalbar	☑	☑	☑
Canungra	☑	☑	☑
Esk-Toogoolawah	☑	☑	☑
Jimna	☑	☑	☑
Kilcoy	☑	☑	☑
Kooralbyn	☑	☑	☑
Linville	☑	☑	☑
Lowood	☑	☑	☑
Rathdowney	☑	☑	☑
SEQ Water Supply (Brisbane & Ipswich)	☑	☑	☑
Somerset	☑	☑	☑

For 2013/2014, we met the prescribed health related standards for all 12 of our drinking water schemes.

Verification Monitoring Program

To verify that we deliver safe drinking water, our SAS Laboratory collects and analyses water from 330 dedicated sample points analysing over 110,000 water quality parameters annually. Water quality data collected through this process is reviewed, trended and scrutinised against requirements in the relevant legislation and in the Australian Drinking Water Guidelines.

For 2013/2014, the Verification Monitoring Program complied with our Drinking Water Quality Management Plan.

As part of our commitment to continuous improvement, we are currently reviewing our Verification Monitoring Program to be submitted to the Regulator in 2015. The revised program will include improved coverage of sampling stations and more detailed monitoring of key parameters in our system.

CHAPTER 3: DRINKING WATER QUALITY PERFORMANCE

Escherichia coli (E.coli)

We achieved excellent health performance in 2013/2014 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: Health assessment compliance*, including the rolling 12-monthly assessment.

Chemical health assessment

We have also complied with the health related chemical guideline values described in the Australian Drinking Water Guidelines.

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

However, on the rare occasions that we detected *E.coli* in a water sample, or a sample result exceeded the chemical guideline value, 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.

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

Details are provided in *Appendix A: Health assessment compliance*.

Aesthetic assessment

We understand that the appearance, taste, odour, and feel of drinking water can influence how our customers and stakeholders perceive their water quality. As such, we have identified several substances that may affect the physical nature of the water and we included these in our routine water quality monitoring program. The results were assessed against the aesthetic based guideline value described in the ADWG.

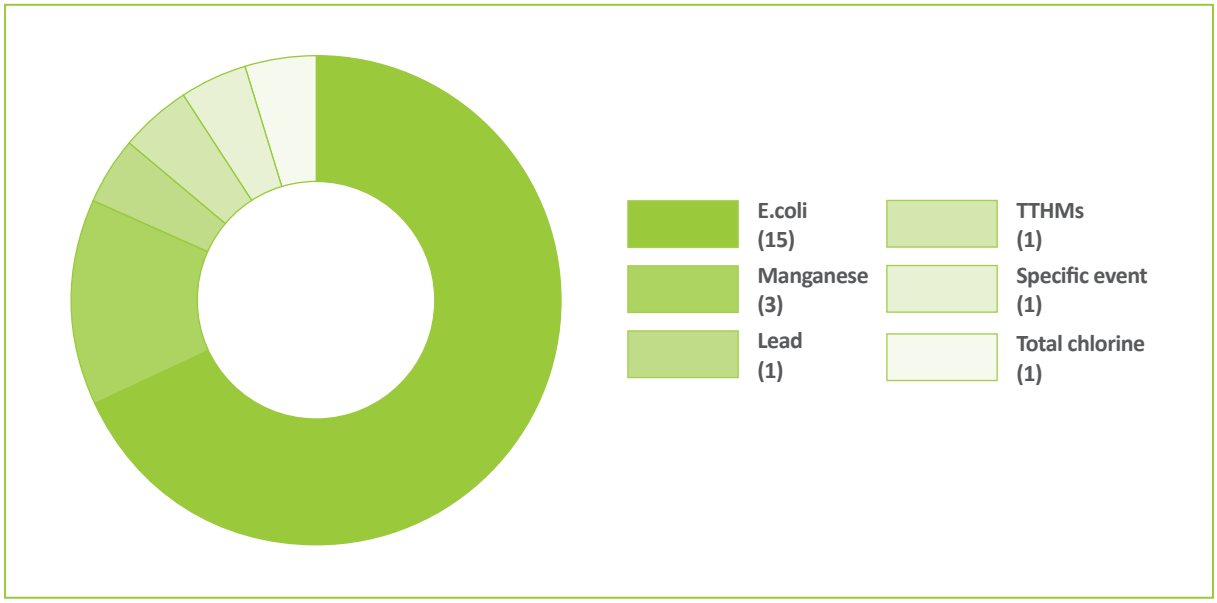
We are pleased to report that in 2013/14, 11 of our 12 schemes met all the recommended characteristics. As a result of the characteristics of the source water from the Logan River, our Beaudesert drinking water scheme experienced hardness of water slightly above the recommended guideline value. Hardness is not a health concern, however, this elevated level may cause scale build up on kettles.

To overcome the challenge of the variable quality of source water, we are investigating the options to ensure our water is aesthetically pleasing and continues to meet the requirements of the ADWG.

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

CHAPTER 4: NOTIFYING THE REGULATOR

During 2013/2014, we notified the Regulator on 22 instances as required under sections 102 or 102A of the *Water Supply (Safety and Reliability) Act 2008*. The below chart shows the breakdown of these notifications by cause.



Fifteen of these notifications involved the detection of *E.coli* in a water sample. Only one of these detections was repeated in a follow-up sample.

Six notifications involved samples which did not comply with chemical health related guideline levels described in the ADWG.

One notification involved the breaching of a reservoir's vermin proofing.

Fourteen of the 22 notifications occurred in the South East Queensland Water Supply System servicing Brisbane and Ipswich. We collected the majority of our samples in Brisbane and Ipswich as these areas serve our largest customer populations.

To ensure the safety and wellbeing of our customers and communities and to comply with legislation, for each notification, we collected follow up samples, undertook a desktop investigation and carried out appropriate corrective measures including advising stakeholders and affected customers.


LOCKYER VALLEY
REGIONAL COUNCIL
SOMERSET REGIONAL COUNCIL

CHAPTER 5: MANAGING CHALLENGES TO IMPROVE DRINKING WATER QUALITY

Our approved Drinking Water Quality Management Plan (DWQMP) protects public health by implementing a risk management system. The Plan:

- identifies the hazards and hazardous events that we consider may affect drinking water quality in our service area,
- assesses the risks posed by the hazard 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, and
- 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.

1. Ensuring disinfection levels remain adequate in areas in the distribution network identified as being deficient.
2. Managing water age in reservoirs to maintain sufficient disinfection levels.
3. Managing the natural biology in reservoirs during the warm months to ensure sufficient chloramine levels.

Optimising the network to manage operational risks

Maintaining optimal operation of the distribution network is complex and challenging, however, it is required to maintain both quantity and quality of our drinking water.

Optimising re-chlorination dosing facilities

We reviewed the operation of the Walloon re-chlorination facility to develop an operational plan to prevent *E.coli* incidents in the Walloon-Rosewood-Marburg water supply zone. The success of the plan is demonstrated with no *E.coli* detected in this supply zone during 2013/2014. This plan is now being implemented at other similar facilities in our system.

Managing Reservoir Storage Levels

Since the millennium drought, our customers have been using water much more efficiently. While we encourage water use efficiency, this means that water is stored for longer in our network. As water ages, the water quality can deteriorate. 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.

Investigating water age

To address the challenge of water quality deteriorating as the water ages in the network, we are using our hydraulic modelling capability to identify areas in which drinking water has excess age. Through the system optimisation process, we are examining those areas with excessive water age to develop appropriate solutions. For example, water age assessment is included in the development of the new Ipswich Water Network Master Plan.

CHAPTER 5: MANAGING CHALLENGES TO IMPROVE DRINKING WATER QUALITY

Delivering water quality capital improvements

Installation of reservoir mixers

Warm weather causes a physical process to occur that causes the water to separate into layers of different temperatures. This layering effect, if not managed, may cause deterioration of water quality and loss of chlorine residual. During 2013/2104, we installed mixers in 15 high priority reservoirs to maintain mixed water conditions. In 2014/2015, we are planning to install mixers in a further 13 reservoirs.

Installation and enhancement of re-chlorination facilities

Although compliant with the ADWG, we have identified several areas throughout our network where the chlorine residual can be improved. During 2013/14, we upgraded the re-chlorination facilities at Bennett Road in The Gap and at Walker Drive and Boomerang Drive Reservoirs in Kooralbyn to improve the management of this issue. New facilities were also installed at Roles Hill in Wynnum and Hay Street in Mitchelton.

We have identified that the chlorine residual in Bartley's Hill water supply zone is not optimal and have investigated disinfection at the reservoir. Subsequently, we determined that building a cross-river link to provide another source of supply to the zone could also provide water quality benefits. This link is expected to be completed by June 2017.

Automatic flushing system

If not mitigated, water quality will deteriorate in water pipes with low turnover. To mitigate this, we have traditionally taken an approach where the system is manually flushed. We innovated to find a safer, more efficient solution – an automatic flushing device which is able to achieve the desired water quality by releasing small volumes of water at regular intervals.

During 2013/2014, we designed and built a trial automatic flushing device. This will be installed in October 2014 and trialled. If the pilot trial shows benefits, these devices will be installed at appropriate locations across our network.

Ensuring safe drinking water during incidents

During 2013/2014, chemical dosing lances were installed with existing reservoir mixers. In 2014/15, we are developing a mobile chlorine dosing system to allow us to dose extra chlorine into deficient areas of the system.

Monitoring and reporting systems

Relocating and installing sampling stations

In 2013/14, we installed 74 new water sampling stations to:

- re-locate existing stations to better locations or
- improve the coverage of current water quality monitoring.

As this program is now complete, we will implement a revised drinking water quality verification monitoring program in 2015.

Developing water quality modelling capability

During 2013/2014, we investigated water quality modelling to link with our existing hydraulic modelling capacity. In 2014/15, we will pilot the chosen model on the Ipswich supply zone. Importantly, this will assist us to review the disinfection performance of the critical Ripley-Yamanto-Flinders View water supply zone.

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.

Monitoring the performance of our systems

During 2013/2014, we examined water quality operational objectives to develop chlorine residual targets and other conditions by which to assess the performance of the system.

We plan to implement the new targets during 2015 to aid operational optimisation and planning processes.

Drinking Water Quality Management Plan review

We are required to review our Drinking Water Quality Management Plan by January 2015 to ensure that it remains relevant to the current operating conditions. This review is currently underway.

Collaborating to optimise the South East Queensland Water Supply System

In 2013/14, we collaborated with other South East Queensland water supply operators to participate in the secondary disinfection options study. An outcome of the study was to establish a joint working group tasked to optimise secondary disinfection in the South East Queensland Water Supply Scheme.

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.

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.

Keeping abreast of emerging water quality issues

New water related issues periodically emerge either because they are recognised or resulting impacts increase. To keep abreast of emerging issues at national and local levels, we actively participate in:

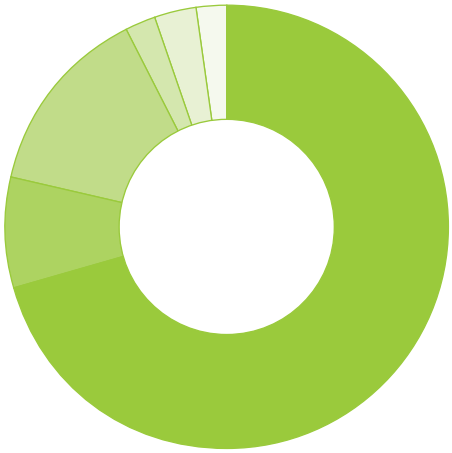
- Water Services Association of Australia – Water Quality and Health network. The objective of the network is to identify, discuss and collaborate on water quality, health policy and research in accordance with the vision for urban water services.
- South East Queensland Water Quality Forum.
- Research and Development initiatives.
- Innovation to improve operational excellence (for example through our trial of on-line chlorine 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 residuals 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.

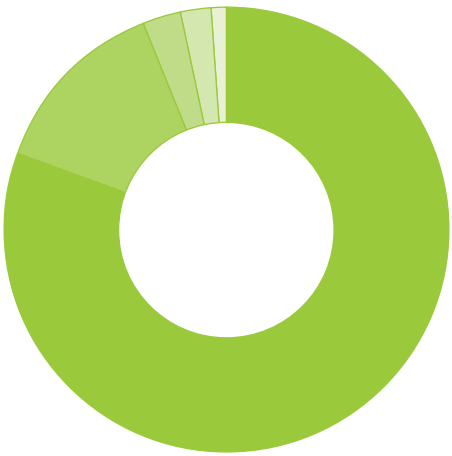
CHAPTER 6: MANAGING WATER QUALITY FOR OUR CUSTOMERS

We record and monitor all water quality related customer contacts (enquiries and complaints) to identify any trends and areas for improvement. In 2013/2014, our customer Contact Centre received 1,487 water quality related customer contacts. The following charts show the breakdown of these contacts and their locations. The majority of customer contacts related to dirty water.



Customer contacts by type – 2013/2014

- Dirty (1053)
- Air in water (120)
- Taste/odour (206)
- Illness (32)
- Other (46)
- Stained washing (30)

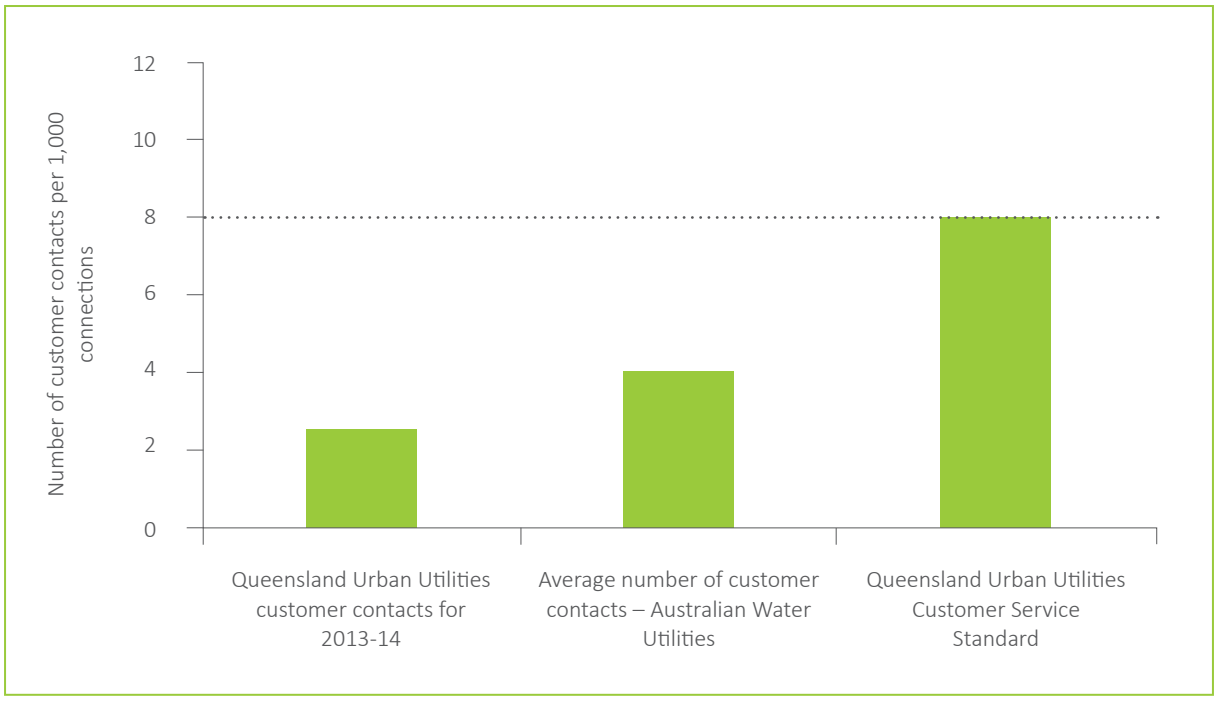


Customer contacts by region – 2013/2014

- Brisbane (1198)
- Ipswich (202)
- Lockyer Valley (40)
- Scenic Rim (33)
- Somerset (14)

CHAPTER 6: MANAGING WATER QUALITY FOR OUR CUSTOMERS

The below chart shows that in 2013/14 we performed well when comparing the number of water quality customer contacts we received per 1,000 properties to the average across Australia[1] and our published 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 response 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 supply smells, tastes or looks unusual. Our dedicated drinking water quality webpage 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 which 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: HEALTH ASSESSMENT COMPLIANCE

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**
Beaudesert	60	200	0	98	100	☑
Boonah-Kalbar	96	118	0	98	100	☑
Canungra	12	89	0	98	100	☑
Esk-Toogoolawah	96	105	1	98	99.6	☑
Jimna	12	53	1	98	99.6	☑
Kilcoy	48	52	1	98	99.6	☑
Kooralbyn	48	90	0	98	100	☑
Linville	12	53	0	98	100	☑
Lowood	324	729	2	98	99.7	☑
Rathdowney	12	52	0	98	100	☑
SEQ Water Supply (Brisbane and Ipswich)	1,896	9,005	11	98	99.9	☑
Somerset Township	12	53	0	98	100	☑
All Schemes	**2,628**	**10,599**[1]	**16**	**98**	**99.9**	☑

Beaudesert E.coli					
Month	**Number of samples required**	**Actual number of tests**	**Number of samples E.coli detected**	**Rolling compliance 12-monthly**	**Compliant**
July	5	16	0	100	☑
August	5	14	0	100	☑
September	5	14	0	100	☑
October	5	16	0	100	☑
November	5	20	0	100	☑
December	5	20	0	100	☑
January	5	16	0	100	☑
February	5	16	0	100	☑
March	5	16	0	100	☑
April	5	16	0	100	☑
May	5	20	0	100	☑
June	5	16	0	100	☑

[1] The number of samples required is calculated on the population of schemes, however we collect more samples to ensure adequate coverage of all water supply zones within each scheme.

APPENDIX A: HEALTH ASSESSMENT COMPLIANCE

Boonah-Kalbar E.coli					
Month	**Number of samples required**	**Actual number of tests**	**Results detected**	**Rolling compliance 12-monthly**	**Compliant**
July	8	12	0	100	☑
August	8	9	0	100	☑
September	8	9	0	100	☑
October	8	9	0	100	☑
November	8	11	0	100	☑
December	8	11	0	100	☑
January	8	9	0	100	☑
February	8	9	0	100	☑
March	8	9	0	100	☑
April	8	9	0	100	☑
May	8	12	0	100	☑
June	8	9	0	100	☑

Canungra E.coli					
Month	**Number of samples required**	**Actual number of tests**	**Number of samples E.coli detected**	**Rolling compliance 12-monthly**	**Compliant**
July	1	8	0	100	☑
August	1	6	0	100	☑
September	1	6	0	100	☑
October	1	7	0	100	☑
November	1	9	0	100	☑
December	1	9	0	100	☑
January	1	7	0	100	☑
February	1	7	0	100	☑
March	1	7	0	100	☑
April	1	7	0	100	☑
May	1	9	0	100	☑
June	1	7	0	100	☑

Esk-Toogoolawah E.coli					
Month	**Number of samples required**	**Actual number of samples**	**Number of samples E.coli detected**	**Rolling compliance 12-monthly**	**Compliant**
July	8	10	0	100	☑
August	8	8	0	100	☑
September	8	10	0	100	☑
October	8	8	0	100	☑
November	8	8	0	100	☑
December	8	8	0	100	☑
January	8	10	0	100	☑
February	8	8	1	99.1	☑
March	8	8	0	99.1	☑
April	8	10	0	99.1	☑
May	8	7	0	99.1	☑
June	8	10	0	99.1	☑

Jimna E.coli					
Month	**Number of samples required**	**Actual number of tests**	**Number of samples E.coli detected**	**Rolling compliance 12-monthly**	**Compliant**
July	1	5	0	100	☑
August	1	4	0	100	☑
September	1	5	0	100	☑
October	1	4	0	100	☑
November	1	4	0	100	☑
December	1	4	0	100	☑
January	1	5	0	100	☑
February	1	4	0	100	☑
March	1	4	0	100	☑
April	1	5	1	98.2	☑
May	1	4	0	98.2	☑
June	1	5	0	98.2	☑

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Kilcoy E.coli					
Month	**Number of samples required**	**Actual number of samples**	**Number of samples E.coli detected**	**Rolling compliance 12-monthly**	**Compliant**
July	4	5	0	100	☑
August	4	4	0	100	☑
September	4	5	0	100	☑
October	4	4	0	100	☑
November	4	4	0	100	☑
December	4	4	0	100	☑
January	4	5	0	100	☑
February	4	4	0	100	☑
March	4	4	0	100	☑
April	4	5	1	98.2	☑
May	4	4	0	98.2	☑
June	4	4	0	98.2	☑

Kooralbyn E.coli					
Month	**Number of samples required**	**Actual number of tests**	**Number of samples E.coli detected**	**Rolling compliance 12-monthly**	**Compliant**
July	4	8	0	100	☑
August	4	7	0	100	☑
September	4	7	0	100	☑
October	4	7	0	100	☑
November	4	9	0	100	☑
December	4	9	0	100	☑
January	4	7	0	100	☑
February	4	7	0	100	☑
March	4	7	0	100	☑
April	4	7	0	100	☑
May	4	8	0	100	☑
June	4	7	0	100	☑

Linville E.coli					
Month	**Number of samples required**	**Actual number of samples**	**Number of samples E.coli detected**	**Rolling compliance 12-monthly**	**Compliant**
July	1	5	0	100	☑
August	1	4	0	100	☑
September	1	5	0	100	☑
October	1	4	0	100	☑
November	1	4	0	100	☑
December	1	4	0	100	☑
January	1	5	0	100	☑
February	1	4	0	100	☑
March	1	4	0	100	☑
April	1	5	0	100	☑
May	1	4	0	100	☑
June	1	5	0	100	☑

Lowood E.coli					
Month	**Number of samples required**	**Actual number of tests**	**Number of samples E.coli detected**	**Rolling compliance 12-monthly**	**Compliant**
July	27	58	0	99.9	☑
August	27	68	0	99.9	☑
September	27	58	0	99.9	☑
October	27	68	0	99.9	☑
November	27	55	0	99.9	☑
December	27	56	1	99.9	☑
January	27	70	0	99.9	☑
February	27	56	1	99.9	☑
March	27	68	0	99.9	☑
April	27	58	0	99.9	☑
May	27	56	0	99.9	☑
June	27	58	0	99.9	☑

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Rathdowney E.coli					
Month	**Number of samples required**	**Actual number of tests**	**Number of samples E.coli detected**	**Rolling compliance 12-monthly**	**Compliant**
July	1	5	0	100	☑
August	1	4	0	100	☑
September	1	4	0	100	☑
October	1	4	0	100	☑
November	1	5	0	100	☑
December	1	5	0	100	☑
January	1	4	0	100	☑
February	1	4	0	100	☑
March	1	4	0	100	☑
April	1	4	0	100	☑
May	1	5	0	100	☑
June	1	4	0	100	☑

South East Queensland Water Supply (Brisbane and Ipswich) E.coli					
Month	**Number of samples required**	**Actual number of tests**	**Number of samples E.coli detected**	**Rolling compliance 12-monthly**	**Compliant**
July	156	810	0	99.92	☑
August	156	770	0	99.92	☑
September	156	737	1	99.91	☑
October	156	811	0	99.91	☑
November	156	726	1	99.91	☑
December	156	793	3	99.89	☑
January	156	751	1	99.88	☑
February	156	686	1	99.88	☑
March	156	721	3	99.86	☑
April	156	759	1	99.86	☑
May	156	731	0	99.89	☑
June	156	710	0	99.89	☑

Somerset Township E.coli					
Month	**Number of samples required**	**Actual number of tests**	**Number of samples E.coli detected**	**Rolling compliance 12-monthly**	**Compliant**
July	1	5	0	100	☑
August	1	4	0	100	☑
September	1	5	0	100	☑
October	1	4	0	100	☑
November	1	4	0	100	☑
December	1	4	0	100	☑
January	1	5	0	100	☑
February	1	4	0	100	☑
March	1	4	0	100	☑
April	1	5	0	100	☑
May	1	4	0	100	☑
June	1	5	0	100	☑

APPENDIX A: HEALTH ASSESSMENT COMPLIANCE

Chemical health assessment

The following tables show how we met the chemical health requirements assessed against the health based guidelines described in 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	48	0	0.074	0.060	☑
Cadmium	mg/L	0.002	48	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	200	0	2.4	1.6	☑
Chlorine (Total)	mg/L	4.1	200	0	2.7	1.9	☑
Chromium	mg/L	0.05	48	0	0.001	<0.001	☑
Copper	mg/L	2	48	0	0.022	0.020	☑
Fluoride (as F)	mg/L	1.5	184	0	0.9	0.8	☑
Lead	mg/L	0.01	48	0	0.010	0.010	☑
Manganese	mg/L	0.5	184	1	0.650	0.020	☑
Nickel	mg/L	0.02	48	0	0.008	<0.001	☑
Trihalomethanes (Total)	ug/L	250	48	0	250	210	☑

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	24	0	0.034	0.030	☑
Cadmium	mg/L	0.002	24	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	118	0	1.7	1.4	☑
Chlorine (Total)	mg/L	4.1	118	0	2.2	1.7	☑
Chromium	mg/L	0.05	24	0	<0.001	<0.001	☑
Copper	mg/L	2	24	0	0.053	0.040	☑
Fluoride (as F)	mg/L	1.5	106	0	0.9	0.9	☑
Lead	mg/L	0.01	24	0	0.002	<0.001	☑
Manganese	mg/L	0.5	106	0	0.045	0.010	☑
Nickel	mg/L	0.02	24	0	<0.001	<0.001	☑
Trihalomethanes (Total)	ug/L	250	24	0	150	146	☑

Canungra Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	12	0	0.010	0.010	☑
Cadmium	mg/L	0.002	12	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	89	0	1.8	1.7	☑
Chlorine (Total)	mg/L	4.1	89	0	2.0	1.8	☑
Chromium	mg/L	0.05	12	0	<0.001	<0.001	☑
Copper	mg/L	2	12	0	0.011	0.010	☑
Fluoride (as F)	mg/L	1.5	83	0	0.9	0.9	☑
Lead	mg/L	0.01	12	0	0.001	<0.001	☑
Manganese	mg/L	0.5	83	0	0.130	0.080	☑
Nickel	mg/L	0.02	12	0	<0.001	<0.001	☑
Trihalomethanes (Total)	ug/L	250	12	0	75	70	☑

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	12	0	0.029	0.030	☑
Cadmium	mg/L	0.002	12	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	89	0	3.0	2.0	☑
Chlorine (Total)	mg/L	4.1	89	0	3.3	2.2	☑
Chromium	mg/L	0.05	12	0	<0.001	<0.001	☑
Copper	mg/L	2	12	0	0.012	0.010	☑
Dichloroacetic Acid	ug/L	100	20	0	60	47	☑
Fluoride (as F)	mg/L	1.5	83	0	1.0	0.9	☑
Lead	mg/L	0.01	12	0	0.002	<0.001	☑
Manganese	mg/L	0.5	83	0	0.003	<0.001	☑
Monochloroacetic Acid	ug/L	150	20	0	34	10	☑
Nickel	mg/L	0.02	12	0	<0.001	<0.001	☑
Nitrate (as N)	ug/L	50	20	0	0.2	0.2	☑
Nitrite (as N)	ug/L	3	20	0	<0.1	<0.1	☑
Trichloroacetic Acid	ug/L	100	20	0	55	39	☑
Trihalomethanes (Total)	ug/L	250	12	0	250	193	☑
[1]Chlorate	mg/L	0.8[2]	18	2	1.2	1.0	N/A
[1]Haloacetic Acides (Total)	ug/L	No value	14	0	140	127	N/A

[1] We are proactively monitoring these substances as health regulators are proposing to introduce these into the ADWG.
[2] Proposed guideline value

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Jimna Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	10	0	0.019	0.020	☑
Cadmium	mg/L	0.002	10	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	53	0	2.4	1.7	☑
Chlorine (Total)	mg/L	4.1	53	0	2.4	1.9	☑
Chromium	mg/L	0.05	10	0	<0.001	<0.001	☑
Copper	mg/L	2	10	0	0.015	0.010	☑
Dichloroacetic Acid	ug/L	100	10	0	29	27	☑
Fluoride (as F)	mg/L	1.5	10	0	0.2	0.2	☑
Lead	mg/L	0.01	10	0	0.003	<0.001	☑
Manganese	mg/L	0.5	10	0	0.007	0.010	☑
Monochloroacetic Acid	ug/L	150	10	0	<10	<10	☑
Nickel	mg/L	0.02	10	0	<0.001	<0.001	☑
Nitrate (as N)	ug/L	50	10	0	<0.1	0.04	☑
Nitrite (as N)	ug/L	3	10	0	<0.1	<0.1	☑
Trichloroacetic Acid	ug/L	100	10	0	21	19	☑
Trihalomethanes (Total)	ug/L	250	10	0	110	106	☑
Chlorate	mg/L	0.8	9	0	0.4	0.4	N/A
Haloacetic Acides (Total)	ug/L	No value	7	0	<60	<60	N/A

Kilcoy Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	10	0	0.027	0.030	☑
Cadmium	mg/L	0.002	10	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	53	0	2.6	2.1	☑
Chlorine (Total)	mg/L	4.1	53	0	3.3	2.4	☑
Chromium	mg/L	0.05	10	0	<0.001	<0.001	☑
Copper	mg/L	2	10	0	0.012	0.010	☑
Dichloroacetic Acid	ug/L	100	10	0	23	23	☑
Fluoride (as F)	mg/L	1.5	10	0	0.9	0.9	☑
Lead	mg/L	0.01	10	0	0.002	<0.001	☑
Manganese	mg/L	0.5	10	0	0.015	0.010	☑
Monochloroacetic Acid	ug/L	150	10	0	<10	<10	☑
Nickel	mg/L	0.02	10	0	<0.001	<0.001	☑
Nitrate (as N)	ug/L	50	10	0	0.3	0.2	☑
Nitrite (as N)	ug/L	3	10	0	<0.1	<0.1	☑
Trichloroacetic Acid	ug/L	100	10	0	15	13	☑
Trihalomethanes (Total)	ug/L	250	10	0	86	83	☑
Chlorate	mg/L	0.8	9	0	0.04	0.03	N/A
Haloacetic Acides (Total)	ug/L	No value	7	0	<60	<60	N/A

Kooralbyn Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	24	0	0.040	0.040	☑
Cadmium	mg/L	0.002	24	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	90	0	1.9	1.6	☑
Chlorine (Total)	mg/L	4.1	90	0	2.2	1.8	☑
Chromium	mg/L	0.05	24	0	<0.001	<0.001	☑
Copper	mg/L	2	24	0	0.034	0.010	☑
Fluoride (as F)	mg/L	1.5	85	0	0.9	0.9	☑
Lead	mg/L	0.01	24	0	0.007	<0.001	☑
Manganese	mg/L	0.5	85	0	0.022	<0.001	☑
Nickel	mg/L	0.02	24	0	<0.001	<0.001	☑
Trihalomethanes (Total)	ug/L	250	24	1	260	250	☑

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Linville Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	10	0	0.022	0.020	☑
Cadmium	mg/L	0.002	10	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	53	0	4.1	2.0	☑
Chlorine (Total)	mg/L	4.1	53	0	5.6	2.3	☑
Chromium	mg/L	0.05	10	0	<0.001	<0.001	☑
Copper	mg/L	2	10	0	0.016	0.020	☑
Dichloroacetic Acid	ug/L	100	10	0	26	26	☑
Fluoride (as F)	mg/L	1.5	10	0	1.0	0.9	☑
Lead	mg/L	0.01	10	0	0.0012	<0.001	☑
Manganese	mg/L	0.5	10	0	0.0024	<0.001	☑
Monochloroacetic Acid	ug/L	150	10	0	<10	<10	☑
Nickel	mg/L	0.02	10	0	<0.001	<0.001	☑
Nitrate (as N)	ug/L	50	10	0	<0.1	0.14	☑
Nitrite (as N)	ug/L	3	10	0	<0.1	<0.1	☑
Trichloroacetic Acid	ug/L	100	10	0	22	19	☑
Trihalomethanes (Total)	ug/L	250	10	0	140	136	☑
Chlorate	mg/L	0.8	9	0	0.44	0.34	N/A
Haloacetic Acides (Total)	ug/L	No value	7	0	<60	<60	N/A

Lowood Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	27	0	0.036	0.030	☑
Cadmium	mg/L	0.002	27	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	729	0	2.8	1.5	☑
Chlorine (Total)	mg/L	4.1	729	0	3.1	1.8	☑
Chromium	mg/L	0.05	27	0	<0.001	<0.001	☑
Copper	mg/L	2	27	0	0.150	0.080	☑
Dichloroacetic Acid	ug/L	100	10	0	46	45	☑
Fluoride (as F)	mg/L	1.5	173	0	0.9	0.8	☑
Lead	mg/L	0.01	27	0	0.004	<0.001	☑
Manganese	mg/L	0.5	50	0	0.026	0.020	☑
Monochloroacetic Acid	ug/L	150	10	0	<10	<10	☑
Nickel	mg/L	0.02	27	0	<0.001	<0.001	☑
Nitrate (as N)	ug/L	50	20	0	0.3	0.3	☑
Nitrite (as N)	ug/L	3	20	0	<0.1	<0.1	☑
Trichloroacetic Acid	ug/L	100	10	0	38	38	☑
Trihalomethanes (Total)	ug/L	250	17	0	220	212	☑
Chlorate	mg/L	0.8	9	0	0.5	0.5	N/A
Haloacetic Acides (Total)	ug/L	No value	7	0	110	107	N/A

Rathdowney Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	12	0	0.07	0.06	☑
Cadmium	mg/L	0.002	12	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	52	0	1.8	1.6	☑
Chlorine (Total)	mg/L	4.1	52	0	2.1	1.7	☑
Chromium	mg/L	0.05	12	0	<0.001	<0.001	☑
Copper	mg/L	2	12	0	0.022	0.020	☑
Fluoride (as F)	mg/L	1.5	47	0	0.5	0.2	☑
Lead	mg/L	0.01	12	0	0.002	<0.001	☑
Manganese	mg/L	0.5	48	0	0.003	<0.001	☑
Nickel	mg/L	0.02	12	0	<0.001	<0.001	☑
Trihalomethanes (Total)	ug/L	250	12	0	220	215	☑

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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	556	0	0.040	0.030	☑
Cadmium	mg/L	0.002	556	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	9013	1	20.0	0.1	☑
Chlorine (Total)	mg/L	4.1	10,476	1	5.1	2.5	☑
Chromium	mg/L	0.05	556	0	<0.001	<0.001	☑
Copper	mg/L	2	556	0	0.220	0.030	☑
Dichloroacetic Acid	ug/L	100	58	0	28	21	☑
Fluoride (as F)	mg/L	1.5	733	0	1.0	0.9	☑
Lead	mg/L	0.01	556	1	0.029	<0.001	☑
Manganese	mg/L	0.5	1043	2	0.770	0.010	☑
Monochloroacetic Acid	ug/L	150	58	0	11	<10	☑
N-Nitrosodimethylamine	ng/L	100	7	0	<5	<5	☑
Nickel	mg/L	0.02	556	0	0.002	<0.001	☑
Nitrate (as N)	ug/L	50	1464	0	1.7	0.9	☑
Nitrite (as N)	ug/L	3	1464	0	0.4	0.2	☑
Trichloroacetic Acid	ug/L	100	58	0	21	16	☑
Trihalomethanes (Total)	ug/L	250	202	0	170	150	☑
Chlorate	mg/L	0.8	54	0	0.4	0.2	N/A
Haloacetic Acides (Total)	ug/L	No value	38	0	82	<60	N/A

Somerset Township Health Assessment							
Parameter	**Units**	**ADWG Health Guideline**	**Number of tests**	**Exceedance count**	**Maximum result**	**95th %-ile**	**Meets ADWG**
Barium	mg/L	0.7	10	0	0.02	0.02	☑
Cadmium	mg/L	0.002	10	0	<0.001	<0.001	☑
Chlorine (Free)	mg/L	5	53	0	2.1	1.8	☑
Chlorine (Total)	mg/L	4.1	53	0	2.2	2.1	☑
Chromium	mg/L	0.05	10	0	<0.001	<0.001	☑
Copper	mg/L	2	10	0	0.009	0.010	☑
Dichloroacetic Acid	ug/L	100	10	0	62	56	☑
Fluoride (as F)	mg/L	1.5	10	0	0.2	0.2	☑
Lead	mg/L	0.01	10	0	<0.001	<0.001	☑
Manganese	mg/L	0.5	10	0	0.020	0.010	☑
Monochloroacetic Acid	ug/L	150	10	0	<10	<10	☑
Nickel	mg/L	0.02	10	0	<0.001	<0.001	☑
Nitrate (as N)	ug/L	50	10	0	0.2	0.2	☑
Nitrite (as N)	ug/L	3	10	0	<0.1	<0.1	☑
Trichloroacetic Acid	ug/L	100	10	0	47	44	☑
Trihalomethanes (Total)	ug/L	250	10	0	210	183	☑
Chlorate	mg/L	0.8	9	0	0.5	0.4	N/A
Haloacetic Acides (Total)	ug/L	No value	7	0	130	124	N/A


DEEP SEA LEAGU

APPENDIX B: AESTHETIC ASSESSMENT

The table below 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	4	3	ND	3	4	ND	4	6
Aluminium	mg/L	0.2	0.024	0.034	0.020	0.086	0.019	0.026	0.010	0.022	0.020	0.011	0.040	0.021
Ammonia (Free, as N)	mg/L	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LoR	ND
Ammonia (Total, as N)	mg/L	0.5	0.004	<0.004	0.005	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.004	0.1	<0.004
Chloride	mg/L	250	112	58	30	52	43	48	92	48	62	102	64	32
Colour (True)	PCU	15	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	<0.5	1.5	1
Conductivity	uS/cm	-	684	450	263	382	425	397	570	392	443	558	449	257
Geosmin	ng/L	-	ND	ND	ND	2	3	<2	ND	<2	3	ND	3	2.8
Iron	mg/L	0.3	0.126	0.022	0.049	0.010	0.005	0.049	0.010	0.021	0.022	0.025	0.026	0.034
pH	pH Unit	6.5-8.5	8.1	7.5	7.9	7.6	7.4	7.5	8.3	7.8	7.8	7.9	7.7	7.8
Silica	mg/L	80	ND	ND	ND	14	14	20	ND	18	15	ND	12	11
Sodium	mg/L	180	ND	ND	ND	37	63	44	ND	42	32	ND	37	26
Sulfate (as SO4)	mg/L	250	ND	ND	ND	28	65	38	ND	36	35	ND	32	31
Temperature	deg C	-	23	24	22	25	22	24	24	24	24	23	25	25
Total Dissolved Solids	mg/L	600	438	288	169	245	271	253	360	251	283	357	288	163
Total Hardness	mg/L	200	219	105	86	105	67	101	200	100	127	143	121	62
Turbidity	NTU	5	0.9	0.2	0.5	0.2	0.1	<LoR	0.2	0.2	0.3	0.2	0.3	0.2
Zinc	mg/L	3	0.022	0.009	0.027	0.004	0.010	0.004	0.010	0.009	0.011	0.008	0.011	0.007
Meets ADWG			☒*	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

ND = Not determined
* see page 17

GLOSSARY OF TERMS

<	Less than
>	Greater than
ADWG	Australian Drinking Water Guidelines published by the National Health and Medical Research Council of Australia and updated by rolling revisions.
Bulk Water	The treated water supplied from the Queensland Water Supply Regulator (Seqwater) to distributor-retailors including Queensland Urban Utilities.
CFU/100mL	Colony forming units per 100 millilitres
DEWS	Queensland Government Department of Energy and Water Supply
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 of pipes for distributing water
NTU	Nephelometric Turbidity, a measure of turbidity which is the cloudiness or haziness of water caused by particles in the water that are generally invisible to the naked eye. The measurement of turbidity is a key test of water quality.
Plan	The Drinking Water Quality Management Plan for Queensland Urban Utilities
QWSR	Queensland Water Supply Regulator which is the delegate of the Director-General of the Department of Energy and Water Supply.
Regulator	Is the Director-General of the Department of Energy and Water Supply (DEWS). The Queensland Water Supply Regulator (QWSR) is the delegate of the Regulator.
SAS Labs	Queensland Urban Utilities' Scientific Analytical Service Laboratories
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, the media, non-government organisations, local residents and employees.
TTHMs	Total Trihalomethanes – a group of disinfection by-products that form when chlorine is used to disinfect drinking water.
WTP	Water Treatment Plant

QUEENSLAND UrbanUtilities

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