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# Message from the CEO

Dear Customers,

Thank you for taking the time to read our Annual Drinking Water Quality Report. Each year Unitywater publishes this report to provide information about the quality of the drinking water we supply. Once again, I'm pleased to confirm that during 2015–2016 financial year the water supplied to our customers remained of a very high standard and met all regulatory requirements.

Unitywater meets the requirements set by the Queensland Public Health Regulation for drinking water, with 99.95% of all samples free of *E. coli*, an indicator of possible contamination. Meeting this requirement demonstrates that you can continue to have confidence in the water supplied by Unitywater to your home, school and work place. To maintain that confidence Unitywater sampled and completed approximately 99,000 water tests over the course of the year. Of those only three did not meet an individual guideline. Each of these were investigated promptly and successfully met the guideline when retested.

The Board and executive are proud of the work our staff have accomplished in 2015–2016 to improve water quality management for our customers. The key projects undertaken included, an automated tool to process and map customer enquiries, upgrades to disinfection systems throughout the water supply network, the introduction of innovative technology to clean our mains and achieving internationally recognised ISO 22000 accreditation (Food Safety Management Standard). Unitywater became the first distributor-retailer in south east Queensland to achieve certification for its Drinking Water Management System. ISO 22000 certification provides additional assurance to our customers, the business and regulators that we manage water quality to the highest standard. You can find information about these projects within the report.

In this report are further details on the physical and chemical quality of the water we supply.

If you have any questions, or feedback on the content of this report, please do not hesitate to call our customer contact centre on 1300 0 UNITY.



George Theo  
Chief Executive Officer  
Unitywater

# Key statistics

1<sup>st</sup>

DISTRIBUTOR-RETAILER IN SOUTH EAST QUEENSLAND  
TO ACHIEVE ISO 22000 CERTIFICATION

5

WATER QUALITY REPORTING SCHEMES

111

WATER RESERVOIRS IN SERVICE

217

DRINKING WATER SAMPLE TAPS

99,000

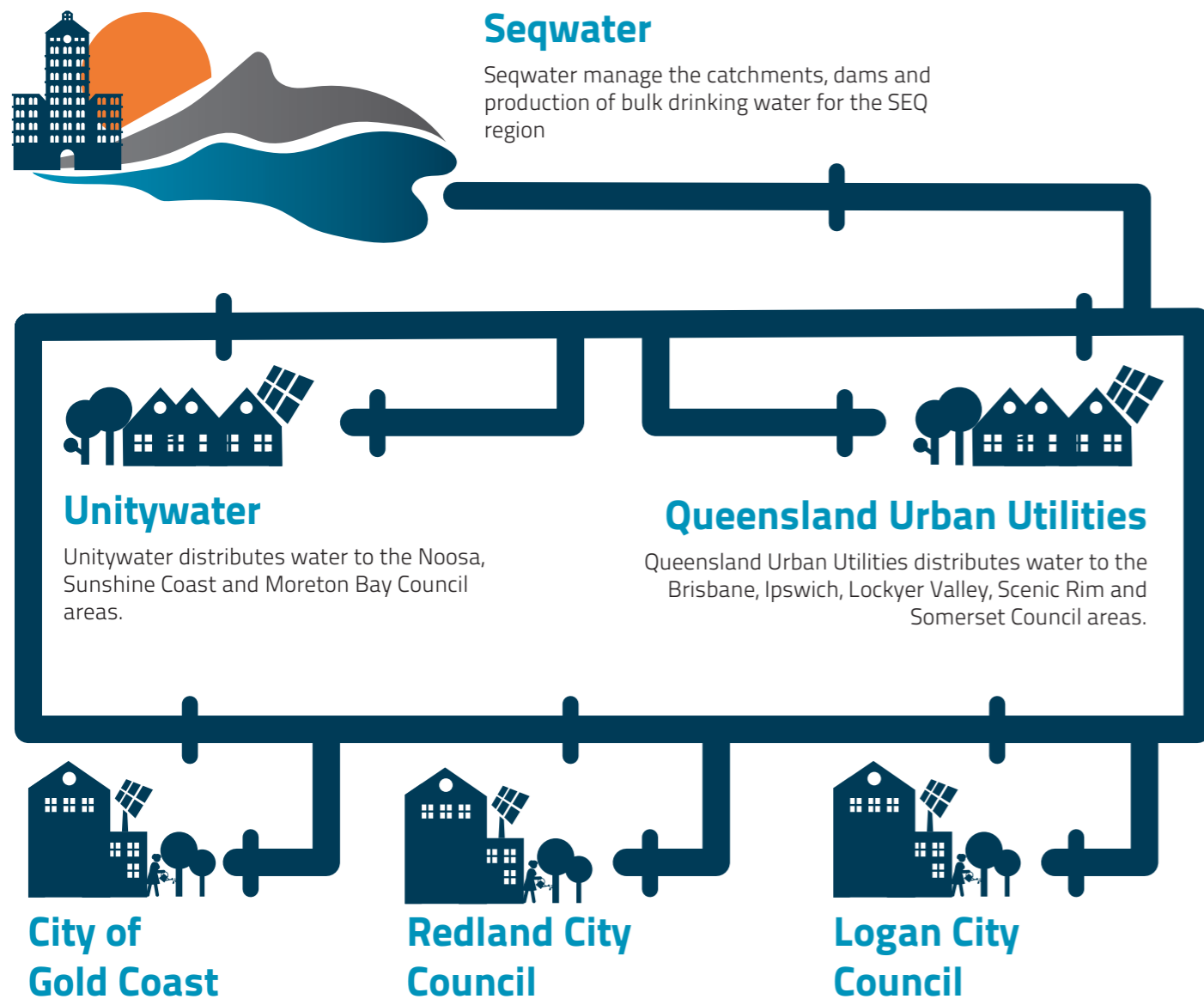
APPROXIMATE NUMBER OF TESTS PER YEAR



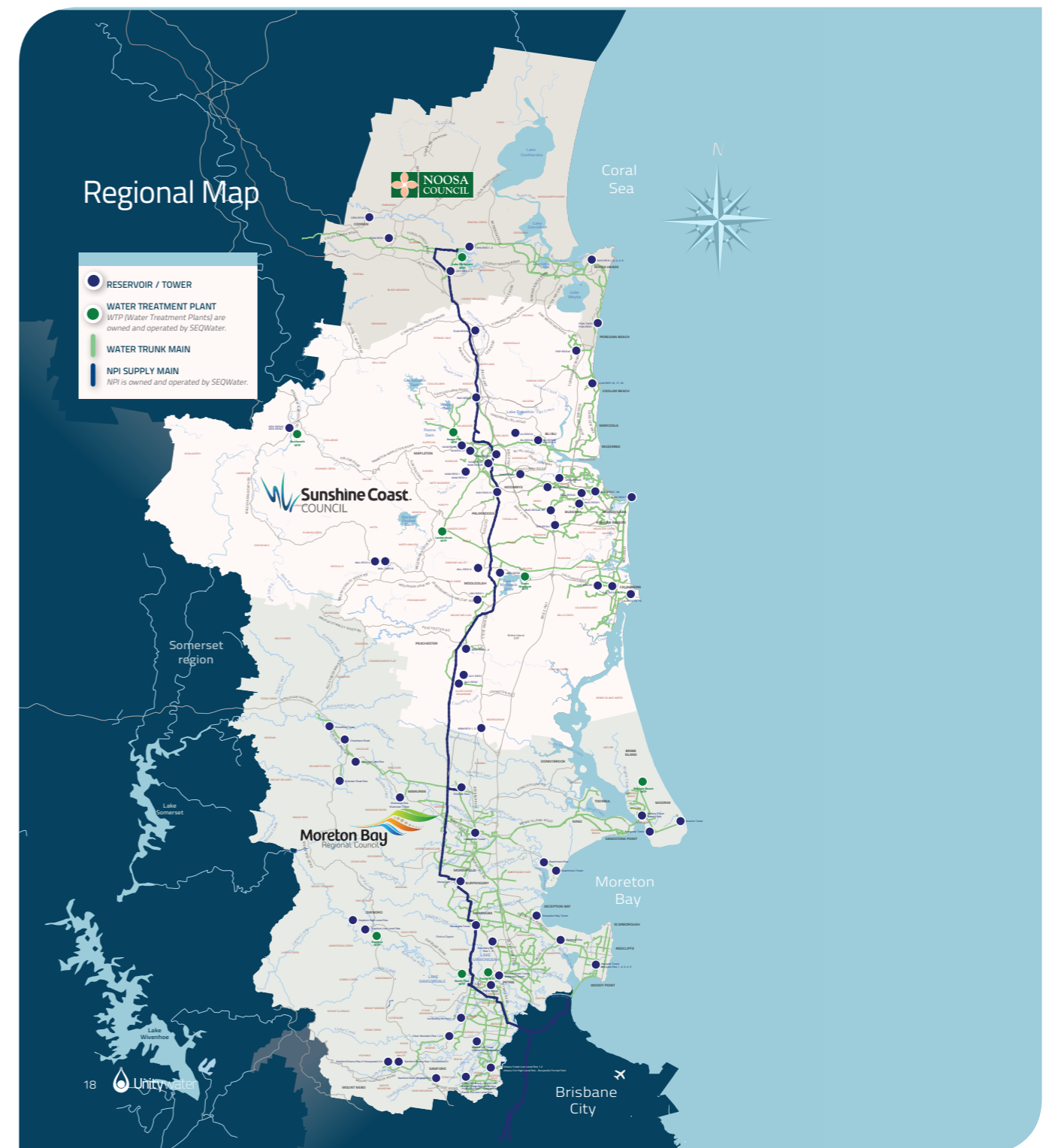
# Where we sit in the grid

The south-east Queensland water grid connects the water supplies from the Sunshine Coast, through greater Brisbane and down to the Gold Coast. This arrangement allows Seqwater to move treated 'bulk' drinking water from one area to another, reducing the risk of any single source being used up (i.e. during drought conditions).

More detail on the bulk water supply network can be found here:  
<http://www.seqwater.com.au/water-supply/supply-network>



# Our supply area



# Water supply sources

Unitywater purchases bulk (treated) water from Seqwater. Seqwater are responsible for the water catchment (the raw water source), the water treatment plants and the bulk water distribution up to the bulk supply points. Please direct any queries around bulk water supply arrangements to Seqwater (<http://www.seqwater.com.au/contacts>).

The purchased water enters the Unitywater network either directly from a water treatment plant or via the major pipeline (Northern Pipeline Interconnector- NPI). The NPI was built by the Queensland government to provide long term water supply and security. The NPI allows water to be transferred between the Sunshine Coast, Moreton Bay and Brisbane Council. The NPI is owned and operated by Seqwater in either a northerly or southerly flow direction, with additional options available. Configuration is dependent on source water availability and regional demand and negotiated between Seqwater and the Distribution Retail Entities.

For water quality reporting Unitywater supply network is divided into 5 regions:

1. Dayboro
2. Kenilworth
3. North
4. Pine Rivers North
5. South

## Dayboro

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

General operation:

- a. Dayboro Water Treatment Plant.
  - i. The Dayboro WTP treats water extracted from bores located in the North Pine River and supplies the Dayboro Scheme. Dayboro is not connected to the South East Queensland water grid. Water can be imported via water tankers if necessary.

## Kenilworth

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

General operation:

- b. This area is normally supplied from the Kenilworth Water Treatment Plant.
  - i. The Kenilworth WTP treats water extracted from bores located in the Mary River and supplies the Kenilworth Scheme.

Kenilworth is not connected to the South East Queensland water grid. Water can be imported via water tankers if necessary.

## North

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

General operation:

- c. This area is normally supplied from the Lake Macdonald, Image Flat and Landers Shute Water Treatment Plant (WTP) with supplementary supply via the NPI-2.
  - i. The Lake Macdonald WTP treats raw water from Lake Macdonald and the Mary River to supply the Noosa Scheme (includes Pomona and Cooroy).
  - ii. The Image Flat WTP treats raw water from Cooloolabin Dam, Wappa Dam and Poona Dam to supply the Maroochy North Scheme. Bli Bli and Cooloolabin zones are supplemented by the Nambour NPI-2 connection.
  - iii. The Landers Shute WTP Treats raw water from Baroon Pocket Dam and supplies the Maroochy South, Maleny, Caloundra and Railway Towns Scheme.

## Pine Rivers North

This includes all areas within the Pine Rivers North Scheme that receives reticulated water. There are works in progress for Seqwater to directly feed the Boundary Road Reservoirs from the NPI which are due for commissioning June 2017. This work is being undertaken due to the decommissioning of the Petrie WTP. This will result in Petrie being included in the South Region.

General operation:

- d. This area is normally supplied from the Petrie Water Treatment Plant.
  - i. The Petrie WTP treats water extracted from Lake Kurwongbah and the North Pine River and supplies the Pine Rivers North Scheme .

## South

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

General operation:

- e. North Pine WTP treats water from North Pine Dam and supplies the Redcliffe and Pine Rivers South Scheme via the NPI.
- f. The Woodford, Caboolture and Bribie Water Supply Region are supplied primarily by Landers Shute WTP via the NPI.

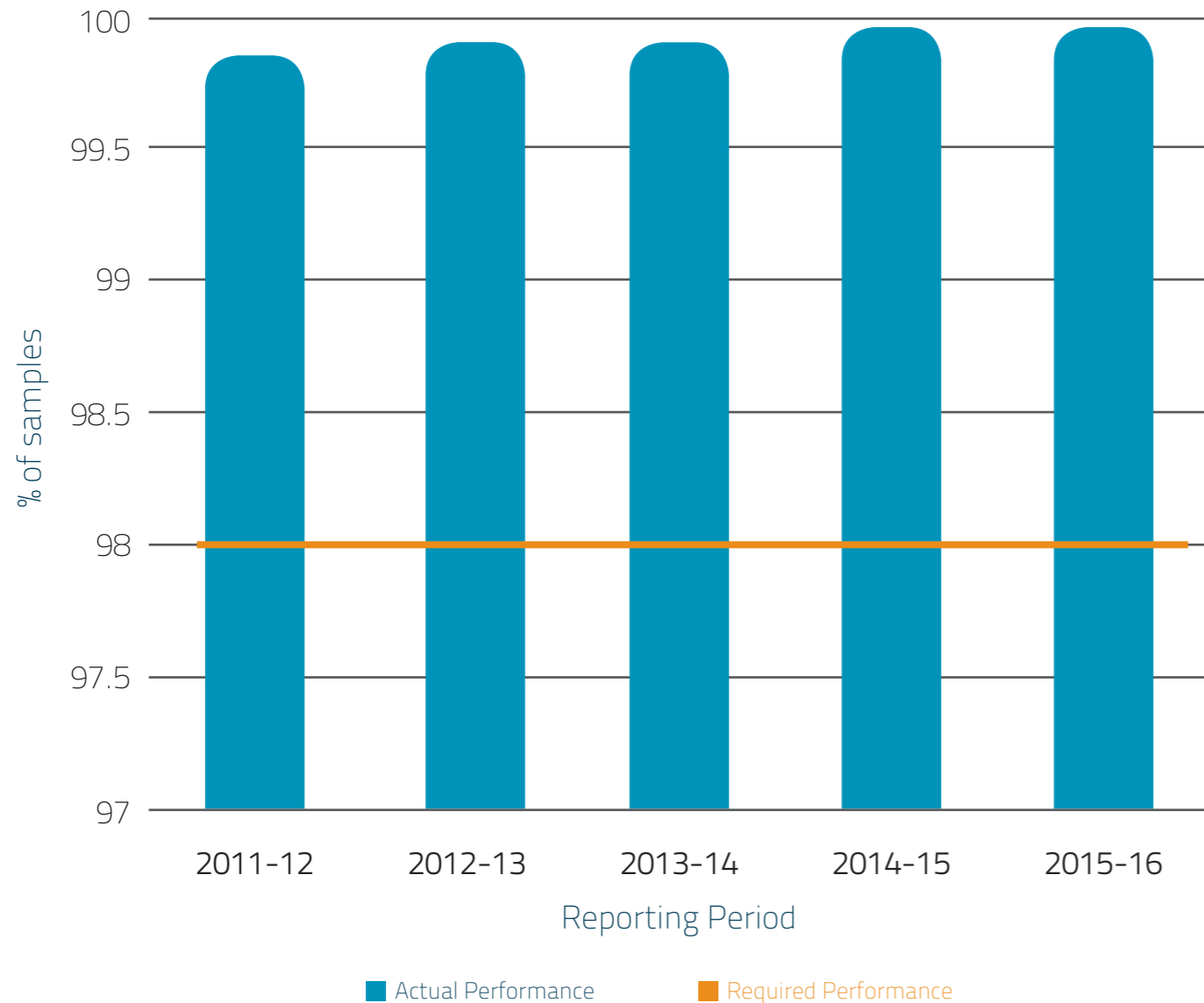
# Water quality summary

The Public Health Regulation 2005 requires that all water service providers in Queensland meet the regulated drinking water quality standard; which is that more than 98% of all samples tested must return a negative result for *E. coli* (*E. coli* is used as an indicator for faecal contamination).

In 2015-2016, 99.95% of Unitywater's samples were negative for *E. coli*. The graph below shows our performance over the past five years:

## Public Health Regulation 2005

Samples in which *E. coli* was not detected

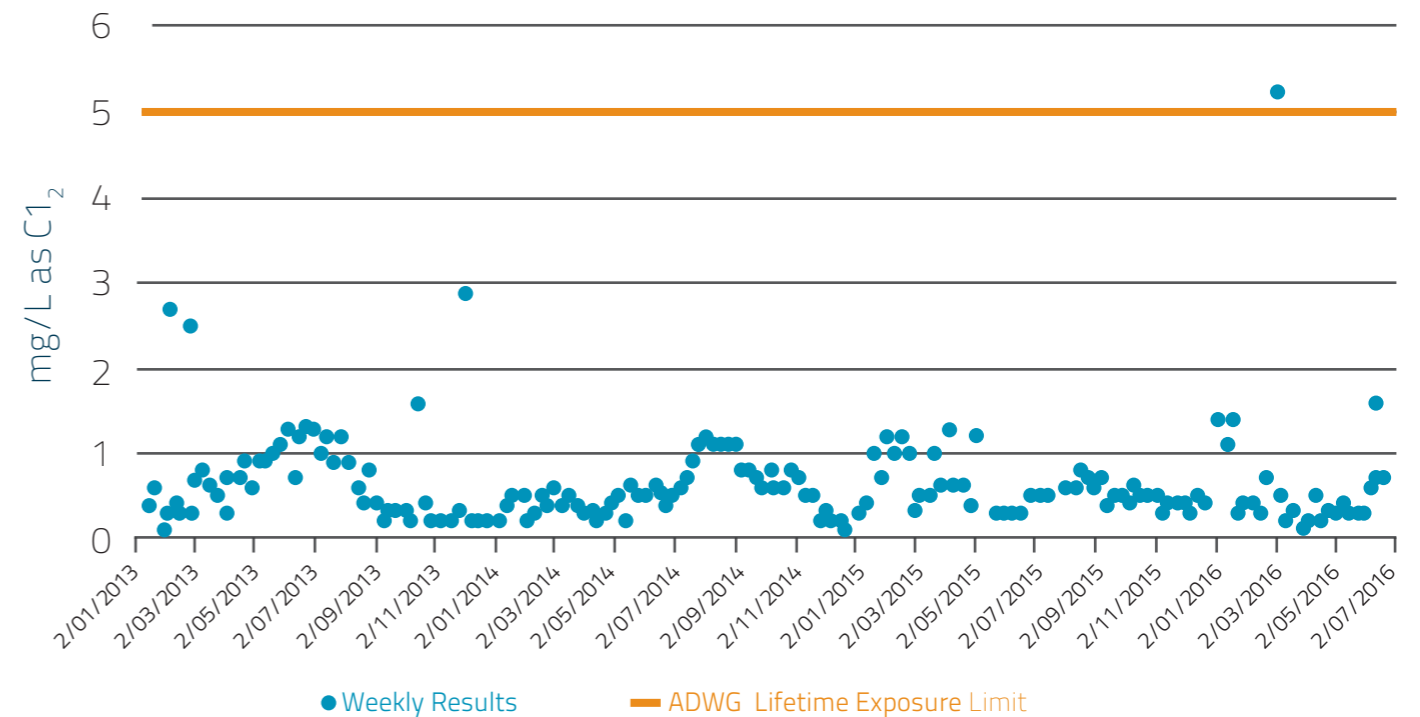


Unitywater, like other water service providers in Australia, is obligated to provide customers with water that meets the health related limits as specified in the Australian Drinking Water Guidelines 2011. In 2015-2016, there was one instance where the ADWG long-term health limit for chlorine (5mg/L) was not met at a reservoir in Albany Creek. Routine laboratory sampling identified the elevated result (5.3mg/L). Further testing throughout the network confirmed there were no other elevated levels. This was an isolated event and was resolved quickly. This site has now been upgraded with an online unit that staff can monitor and respond to 24/7.

It should be noted that the ADWG limit is based on long-term exposure at the guideline level; meaning that it is considered safe to consume water with 5.0mg/L chlorine for a lifetime. Given that drinking water usually contains chlorine at levels well below the guideline limit (refer to the graph below), a short term exceedence is not considered to represent a health impact by health authorities. If you would like to seek further assurance on this please contact Queensland Health on 13 HEALTH (13 43 25 84).

## Albany Creek High Levels

total chlorine results





# Your suburb and its water supply region

Suburb	Region	Suburb	Region
ALBANY CREEK	South	COOROY	North
ALEXANDRA HEADLAND	North	COTTON TREE	North
ARANA HILLS	South	CURRIMUNDI	North
AROONA	North	D'AGUILAR	South
BANKSIA BEACH	South	DAKABIN	Pine Rivers North
BATTERY HILL	North	DAYBORO	Dayboro
BEACHMERE	South	DECEPTION BAY	South
BEERBURRUM	North	DICKY BEACH	North
BEERWAH	North	DIDDILLIBAH	North
BELLARA	South	DONNYBROOK	South
BELLMERE	South	EATONS HILL	South
BIRTINYA	North	ELIMBAH	South
BLI BLI	North	EUMUNDI	North
BONGAREE	South	EVERTON HILLS	South
BRAY PARK	South	EVERTON PARK	South
BRENDALE	South	FERNY HILLS	South
BRIBIE ISLAND	South	FOREST GLEN	North
BUDDINA	North	GLASSHOUSE MOUNTAINS	North
BUDERIM	North	GOLDEN BEACH	North
BUNYA	South	GRIFFIN	Pine Rivers North
BURPENGARY	South	HARBOUR HILL	North
BURPENGARY EAST	South	HIGHWORTH	North
CABOOLTURE	South	JOYNER	South
CABOOLTURE SOUTH	South	KALLANGUR	Pine Rivers North
CALOUNDRA	North	KEIL MOUNTAIN	North
CALOUNDRA WEST	North	KENILWORTH	Kenilworth
CASHMERE	South	KINGS BEACH	North
CLEAR MOUNTAIN	South	KIPPA-RING	South
CLONTARF	South	KULANGOOR	North
COES CREEK	North	KULUIN	North
COOLUM BEACH	North	KUNDA PARK	North
COORAN	North	LANDSBOROUGH	North

Suburb	Region	Suburb	Region
LAWNTON	Pine Rivers North	PEREGIAN SPRINGS	North
LITTLE MOUNTAIN	North	PETRIE	Pine Rivers North
MALENY	North	POINT CARTWRIGHT	North
MARCOOLA	North	POMONA	North
MARCUS BEACH	North	REDCLIFFE	South
MARGATE	South	ROSEMOUNT	North
MAROOCHYDORE	North	ROTHWELL	South
MERIDIAN PLAINS	North	SAMFORD	South
MINYAMA	North	SANDSTONE POINT	South
MOFFAT BEACH	North	SCARBOROUGH	South
MOOLOOLABA	North	SIPPY DOWNS	North
MOOLOOLAH VALLEY	North	SOLANDER	South
MORAYFIELD	South	STRATHPINE	South
MOUNT COOLUM	North	SUNRISE BEACH	North
MOUNTAIN CREEK	North	SUNSHINE BEACH	North
MUDJIMBA	North	TANAWHA	North
MURRUMBA DOWNS	Pine Rivers North	TEWANTIN	North
NAMBOUR	North	TOORBUL	South
NARANGBA	South	TOWEN MOUNTAIN	North
NEWPORT	South	TWIN WATERS	North
NINGI	South	UPPER CABOOLTURE	South
NOOSA HEADS	North	WAMURAN	South
NOOSAVILLE	North	WARANA	North
NORTH ARM	North	WARNER	South
NORTH LAKES	Pine Rivers North	WOODFORD	South
PACIFIC PARADISE	North	WOODY POINT	South
PALMWOODS	North	WOOMBYE	North
PARKLANDS	North	WOORIM	South
PARREARRA	North	WURTULLA	North
PELICAN WATERS	North	YANDINA	North
PEREGIAN BEACH	North	YAROOMBRA	North

# Drinking water quality performance

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

**Microbiological performance** is said to have met the performance requirement if more than 98% of samples from the supply region returned a nil result for *E. coli*.

**Chemical (Health) performance** is said to have met the performance requirement if the 95th percentile (a statistical calculation) for each chemical is below the Australian Drinking Water Guidelines health value for that chemical.

**Chemical (Aesthetic) performance** is said to have met the performance requirement if the average result for each chemical is below the Australian Drinking Water Guidelines aesthetic value for that chemical.

Supply Region	Microbiological Performance	Chemical (Health) Performance	Chemical (Aesthetic) Performance
Dayboro	✓	✓	✓
Kenilworth	✓	✓	✓
North	✓	✓	✓
Pine Rivers North	✓	✓	✓
South	✓	✓	✓

✓ means that performance requirement was met

# Microbiological performance in detail

Supply Region	Number of Samples	Number of Positive <i>E. coli</i> Results (12 Mth)	Required <i>E. coli</i> Performance (12 Mth)	Actual <i>E. coli</i> Performance (12 Mth)	Met PHR
Dayboro	146	0	98%	100%	✓
Kenilworth	147	0	98%	100%	✓
North	1926	2	98%	99.90%	✓
Pine Rivers North	418	0	98%	100%	✓
South	1635	0	98%	100%	✓
All	4272	2	98%	99.95%	✓

PHR = Public Health Regulation 2005

There were two low level detections of *E. coli* in 2015-2016. *E. coli* is an organism used as a potential indicator of water contamination, but can also be found in the natural environment. In all cases we investigated the circumstances around these detections and did not identify any source of contamination. Investigative water quality sampling undertaken at the time did not return any additional *E. coli* results, which would suggest that these events were transient in nature and do not represent any systemic issues with the water supply.



# Chemical performance in detail

## Dayboro - Chemical (health) performance

Parameter	Units	Number Of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Guideline	Met ADWG
Arsenic	mg/L	1	<0.001	<0.001	<0.001	<0.001	0.01	✓
Bromate	mg/L	4	<0.005	<0.005	<0.005	<0.005	0.02	✓
Chlorate	mg/L	20	<0.01	0.31	0.11	0.26	a	✓
Chlorine Free	mg/L	150	<0.1	1.9	0.94	1.26	5	✓
Chlorine Total	mg/L	150	<0.1	2	0.97	1.26	5	✓
Copper	mg/L	24	<0.01	0.03	<0.01	0.02	2	✓
Fluoride	mg/L	26	0.86	0.95	0.90	0.95	1.5	✓
Haloacetic Acids	ug/L	2	<60	<60	<60	<60	a	✓
Lead	mg/L	24	<0.01	<0.01	<0.01	<0.01	0.01	✓
Manganese	mg/L	46	<0.01	<0.01	<0.01	<0.01	0.5	✓
Nickel	mg/L	24	<0.01	<0.01	<0.01	<0.01	0.02	✓
Nitrate NO <sub>3</sub> <sup>-</sup> (calc)	mg/L	42	0.07	0.65	0.19	0.37	50	✓
Nitrite as NO <sub>2</sub> <sup>-</sup>	mg/L	42	<0.02	<0.02	<0.02	<0.02	3	✓
Trihalomethanes	ug/L	22	18	82	42	63	250	✓

a - No guideline limit

## Dayboro - Chemical (aesthetic) performance

Parameter	Units	Number Of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Guideline	Met ADWG
Alkalinity Total	mg/L as CaCO <sub>3</sub>	10	43	104	85.20	103.10	a	✓
Aluminium	mg/L	46	<0.02	0.03	<0.02	0.02	0.2	✓
Calcium	mg/L	10	11	16	13.3	16.00	a	✓
Chloride	mg/L	3	32	38	35.67	37.90	250	✓
Colour Apparent	PCU	46	<1	5.8	<1	2.35	15	✓
Colour True	PCU	46	<1	1.4	<1	<1	15	✓
Conductivity	uS/cm	149	245	342	299	337	b	✓
Copper	mg/L	24	<0.01	0.03	<0.01	0.02	1	✓
Iron	mg/L	46	<0.01	0.15	0.02	0.05	0.3	✓
Magnesium	mg/L	10	7	11	8.60	10.55	a	✓
Manganese	mg/L	46	<0.01	<0.01	<0.01	<0.01	0.1	✓
pH	pH Units	149	7.2	8.3	7.6	8.0	6.5-9.2	✓
Potassium	mg/L	3	1.6	1.7	1.67	1.70	a	✓
Silica	mg/L	2	14	14	14.00	14.00	80	✓
Sodium	mg/L	4	29	33	31	32.9	180	✓
Sulphate	mg/L	1	7.9	7.9	7.9	7.9	250	✓
Temperature	°C	149	16.9	29.3	23.7	28.1	a	✓
Total Hardness	mg/L as CaCO <sub>3</sub>	10	59	83	68.70	81.65	200	✓
Turbidity	NTU	152	0.05	1.6	0.19	0.43	5	✓
Zinc	mg/L	24	<0.01	0.03	<0.01	0.02	3	✓

a - No guideline limit

b - ADWG guideline limit is for 600mg/L as total dissolved solids. This is approximately equal to a conductivity of 1000µS/cm.

## Kenilworth - Chemical (health) performance

Parameter	Units	Number Of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Guideline	Met ADWG
Arsenic	mg/L	1	<0.001	<0.001	<0.001	<0.001	0.01	✓
Bromate	mg/L	4	<0.005	0.007	<0.005	0.006	0.02	✓
Chlorate	mg/L	20	0.06	0.27	0.15	0.27	a	✓
Chlorine Free	mg/L	145	0.3	2.2	1.18	1.90	5	✓
Chlorine Total	mg/L	145	0.5	2.2	1.22	2.00	5	✓
Copper	mg/L	24	<0.01	<0.01	<0.01	<0.01	2	✓
Fluoride	mg/L	24	0.16	0.91	0.50	0.89	1.5	✓
Haloacetic Acids	ug/L	2	<60	<60	<60	<60	a	✓
Lead	mg/L	24	<0.01	<0.01	<0.01	<0.01	0.01	✓
Manganese	mg/L	34	<0.01	<0.01	<0.01	<0.01	0.5	✓
Nickel	mg/L	24	<0.01	<0.01	<0.01	<0.01	0.02	✓
Nitrate NO <sub>3</sub> <sup>-</sup> (calc)	mg/L	31	0.13	1.27	0.40	1.14	50	✓
Nitrite as NO <sub>2</sub> <sup>-</sup>	mg/L	31	<0.02	<0.02	<0.02	<0.02	3	✓
Trihalomethanes	ug/L	21	16	82	43	82	250	✓

a - No guideline limit

## Kenilworth - Chemical (aesthetic) performance

Parameter	Units	Number Of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Guideline	Met ADWG
Alkalinity Total	mg/L as CaCO <sub>3</sub>	19	37	161	80.15	158.30	a	✓
Aluminium	mg/L	34	<0.02	0.03	<0.02	<0.02	0.2	✓
Calcium	mg/L	12	14	18	16.75	18.00	a	✓
Chloride	mg/L	3	14	37	29.00	36.90	250	✓
Colour Apparent	PCU	34	<1	<1	<1	<1	15	✓
Colour True	PCU	34	<1	1.4	<1	<1	15	✓
Conductivity	uS/cm	144	166	436	330	432	b	✓
Copper	mg/L	24	<0.01	<0.01	<0.01	<0.01	1	✓
Iron	mg/L	34	<0.01	<0.01	<0.01	<0.01	0.3	✓
Magnesium	mg/L	12	4	10	7.08	10.00	a	✓
Manganese	mg/L	34	<0.01	<0.01	<0.01	<0.01	0.1	✓
pH	pH Units	144	7.1	7.8	7.5	7.8	6.5-9.2	✓
Potassium	mg/L	3	<1	1	<	1.00	a	✓
Silica	mg/L	2	8	9	8.50	8.95	80	✓
Sodium	mg/L	4	11	53	32.5	53	180	✓
Sulphate	mg/L	1	20	20	20.0	20.0	250	✓
Temperature	°C	141	17.8	31.3	23.7	29.1	a	✓
Total Hardness	mg/L as CaCO <sub>3</sub>	12	51	86	70.83	85.45	200	✓
Turbidity	NTU	147	<0.05	0.4	0.10	0.23	5	✓
Zinc	mg/L	24	<0.01	<0.01	<0.01	<0.01	3	✓

a - No guideline limit

b - ADWG guideline limit is for 600mg/L as total dissolved solids. This is approximately equal to a conductivity of 1000µS/cm.

## North - Chemical (health) performance

Parameter	Units	Number Of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Guideline	Met ADWG
Arsenic	mg/L	7	<0.001	<0.001	<0.001	<0.001	0.01	✓
Bromate	mg/L	30	<0.005	0.01	<0.005	<0.005	0.02	✓
Chlorate	mg/L	199	<0.01	0.6	0.05	0.27	a	✓
Chlorine Free	mg/L	3,350	<0.1	2.5	0.90	1.60	5	✓
Chlorine Total	mg/L	3,350	<0.1	2.6	0.99	1.70	5	✓
Copper	mg/L	400	<0.01	0.01	<0.01	<0.01	2	✓
Fluoride	mg/L	393	0.18	0.97	0.84	0.90	1.5	✓
Haloacetic Acids	ug/L	20	<60	<60	<60	<60	a	✓
Lead	mg/L	400	<0.01	0.01	<0.01	<0.01	0.01	✓
Manganese	mg/L	1,268	<0.01	0.04	<0.01	<0.01	0.5	✓
Nickel	mg/L	400	<0.01	<0.01	<0.01	<0.01	0.02	✓
Nitrate NO <sub>3</sub> <sup>-</sup> (calc)	mg/L	1,159	0.06	1.47	0.60	1.32	50	✓
Nitrite as NO <sub>2</sub> <sup>-</sup>	mg/L	1,159	<0.02	0.04	<0.02	<0.02	3	✓
Trihalomethanes	ug/L	215	5	140	53	98	250	✓

a - No guideline limit

## North - Chemical (aesthetic) performance

Parameter	Units	Number Of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Guideline	Met ADWG
Alkalinity Total	mg/L as CaCO <sub>3</sub>	105	30	55	39.24	49.84	a	✓
Aluminium	mg/L	1,268	<0.02	0.07	<0.02	0.02	0.2	✓
Calcium	mg/L	74	10	26	16.23	24.00	a	✓
Chloride	mg/L	21	12	49	23.19	42.00	250	✓
Colour Apparent	PCU	1,268	<1	11	<1	1.90	15	✓
Colour True	PCU	1,268	<1	1.3	<1	<1	15	✓
Conductivity	uS/cm	3,253	138	341	205	280	b	✓
Copper	mg/L	400	<0.01	0.01	<0.01	<0.01	1	✓
Iron	mg/L	1,268	<0.01	0.45	0.01	0.04	0.3	✓
Magnesium	mg/L	74	2	10	5.24	8.00	a	✓
Manganese	mg/L	1,268	<0.01	0.04	<0.01	<0.01	0.1	✓
pH	pH Units	3,253	6.6	9.2	7.6	8.2	6.5-9.2	✓
Potassium	mg/L	21	1	2	1.40	1.90	a	✓
Silica	mg/L	20	4	11	8.15	10.05	80	✓
Sodium	mg/L	30	8	35	17.1	30.1	180	✓
Sulphate	mg/L	7	19	44	28.6	41.9	250	✓
Temperature	°C	3,238	15.1	29.5	23.1	27.4	a	✓
Total Hardness	mg/L as CaCO <sub>3</sub>	74	42	81	62.00	72.35	200	✓
Turbidity	NTU	3,262	<0.05	14	0.19	0.42	5	✓
Zinc	mg/L	400	<0.01	0.03	<0.01	<0.01	3	✓

a - No guideline limit

b - ADWG guideline limit is for 600mg/L as total dissolved solids. This is approximately equal to a conductivity of 1000µS/cm.

## Pine Rivers North - Chemical (health) performance

Parameter	Units	Number Of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Guideline	Met ADWG
Arsenic	mg/L	2	<0.001	<0.001	<0.001	<0.001	0.01	✓
Bromate	mg/L	9	<0.005	<0.005	<0.005	<0.005	0.02	✓
Chlorate	mg/L	40	0.03	0.52	0.22	0.44	a	✓
Chlorine Free	mg/L	454	<0.1	2.8	1.40	2.00	5	✓
Chlorine Total	mg/L	454	<0.1	3.2	1.71	2.4	5	✓
Copper	mg/L	37	<0.01	<0.01	<0.01	<0.01	2	✓
Fluoride	mg/L	61	0.39	0.99	0.90	0.97	1.5	✓
Haloacetic Acids	ug/L	4	<60	<60	<60	<60	a	✓
Lead	mg/L	27	<0.01	<0.01	<0.01	<0.01	0.01	✓
Manganese	mg/L	180	<0.01	0.03	<0.01	<0.01	0.5	✓
Nickel	mg/L	37	<0.01	<0.01	<0.01	<0.01	0.02	✓
Nitrate NO <sub>3</sub> <sup>-</sup> (calc)	mg/L	166	0.21	0.76	0.54	0.70	50	✓
Nitrite as NO <sub>2</sub> <sup>-</sup>	mg/L	177	<0.02	0.17	<0.02	0.07	3	✓
Trihalomethanes	ug/L	44	35	150	75	110	250	✓

a - No guideline limit

## Pine Rivers North - Chemical (aesthetic) performance

Parameter	Units	Number Of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Guideline	Met ADWG
Alkalinity Total	mg/L as CaCO <sub>3</sub>	28	31	45	40.36	44.00	a	✓
Aluminium	mg/L	180	<0.02	0.07	<0.02	0.03	0.2	✓
Calcium	mg/L	32	6	18	13.75	16.0	a	✓
Chloride	mg/L	6	20	30	24.50	29.75	250	✓
Colour Apparent	PCU	180	<1	2.9	<1	1.20	15	✓
Colour True	PCU	180	<1	1.2	<1	<1	15	✓
Conductivity	uS/cm	452	207	274	246	266	b	✓
Copper	mg/L	37	<0.01	<0.01	<0.01	<0.01	1	✓
Iron	mg/L	180	<0.01	0.09	<0.01	<0.01	0.3	✓
Magnesium	mg/L	22	5	7	5.68	6.00	a	✓
Manganese	mg/L	180	<0.01	0.03	<0.01	<0.01	0.1	✓
pH	pH Units	452	6.9	9.2	7.4	8.0	6.5-9.2	✓
Potassium	mg/L	6	1.8	2	1.90	2.00	a	✓
Silica	mg/L	4	3	4	3.75	4.00	80	✓
Sodium	mg/L	9	23	28	24.3	28	180	✓
Sulphate	mg/L	2	36	36	36.0	36.0	250	✓
Temperature	°C	452	16.5	29.7	24.2	28.5	a	✓
Total Hardness	mg/L as CaCO <sub>3</sub>	22	38	63	55.73	61.95	200	✓
Turbidity	NTU	460	<0.05	11	0.15	0.26	5	✓
Zinc	mg/L	57	<0.01	0.13	<0.01	0.01	3	✓

a - No guideline limit

b - ADWG guideline limit is for 600mg/L as total dissolved solids. This is approximately equal to a conductivity of 1000µS/cm.

## South - Chemical (health) performance

Parameter	Units	Number Of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Guideline	Met ADWG
Arsenic	mg/L	6	<0.001	0.001	<0.001	<0.001	0.01	✓
Bromate	mg/L	30	<0.005	0.007	<0.005	<0.005	0.02	✓
Chlorate	mg/L	220	<0.01	0.76	0.20	0.56	a	✓
Chlorine Free	mg/L	2,653	<0.1	4.5	0.40	1.5	5	✓
Chlorine Total	mg/L	2,653	<0.1	5.3	1.14	3.00	5	✓
Copper	mg/L	311	<0.01	0.02	<0.01	<0.01	2	✓
Fluoride	mg/L	344	0.73	0.95	0.87	0.92	1.5	✓
Haloacetic Acids	ug/L	22	<60	<60	<60	<60	a	✓
Lead	mg/L	311	<0.01	<0.01	<0.01	<0.01	0.01	✓
Manganese	mg/L	916	<0.01	0.05	<0.01	<0.01	0.5	✓
Monochloramine NH <sub>2</sub> Cl	mg/L	1,878	<0.02	2.4	0.48	1.71	3	✓
Nickel	mg/L	311	<0.01	<0.01	<0.01	<0.01	0.02	✓
Nitrate NO <sub>3</sub> <sup>-</sup> (calc)	mg/L	1,699	0.04	3.87	1.46	2.83	50	✓
Nitrite as NO <sub>2</sub> <sup>-</sup>	mg/L	2,112	<0.02	1.86	0.16	0.69	3	✓
Trihalomethanes	ug/L	232	5	150	55	110	250	✓

a - No guideline limit

## South - Chemical (aesthetic) performance

Parameter	Units	Number Of Samples	Min Result	Max Result	Average Result	95th Percentile	ADWG Guideline	Met ADWG
Alkalinity Total	mg/L as CaCO <sub>3</sub>	86	36	62	42.96	48.00	a	✓
Aluminium	mg/L	916	<0.02	0.13	0.03	0.04	0.2	✓
Calcium	mg/L	74	11	21	14.34	19.00	a	✓
Chloride	mg/L	21	14	28	21.67	27.00	250	✓
Colour Apparent	PCU	917	<1	12	1.05	2.12	15	✓
Colour True	PCU	917	<1	1.8	<1	1.20	15	✓
Conductivity	uS/cm	2,556	156	395	226	258	b	✓
Copper	mg/L	311	<0.01	0.02	<0.01	<0.01	1	✓
Iron	mg/L	916	<0.01	0.02	0.01	0.03	0.3	✓
Magnesium	mg/L	74	3	8	4.84	6.00	a	✓
Manganese	mg/L	916	<0.01	0.05	<0.01	<0.01	0.1	✓
pH	pH Units	2,556	7.2	9.3	7.7	8.2	6.5-9.2	✓
Potassium	mg/L	21	1.3	2.1	1.80	2.10	a	✓
Silica	mg/L	22	4	9	6.36	9.00	80	✓
Sodium	mg/L	30	11	24	18.3	23.6	180	✓
Sulphate	mg/L	7	19	25	22.1	24.7	250	✓
Temperature	°C	2,543	14.8	31.8	23.7	28.5	a	✓
Total Hardness	mg/L as CaCO <sub>3</sub>	74	42	75	55.81	63.00	200	✓
Turbidity	NTU	2,571	<0.05	4.5	0.14	0.26	5	✓
Zinc	mg/L	331	<0.01	0.02	<0.01	0.01	3	✓

a - No guideline limit

b - ADWG guideline limit is for 600mg/L as total dissolved solids. This is approximately equal to a conductivity of 1000µS/cm.

# Unitywater drinking water project snapshot 2015–2016

## International Certification

Unitywater has become the first distributor–retailer in south east Queensland to achieve international food safety certification ISO 22000: 2005. Independent auditors assessed our Drinking Water Management System in February. They assessed our operational practices, work procedures, process/document control, and much more. ISO 22000 certification is best practise water quality management and provides assurance to our customers, the business and regulators.

## Smarter tools to analyse customer enquiries

Unitywater has developed software to recognise patterns in customer enquiries received by our contact centre. The software will help us quickly identify and pinpoint potential water quality issues. This innovation will save time, improve responsiveness and most importantly improve customer service.

## Improving the condition of our water assets

To maintain the quality of the water supply, we occasionally need to clean our water mains. Drinking water carries tiny amounts of natural sediment, which over years settle as deposits in water pipes. 54 km of water mains in Caboolture central were cleaned using an innovative method called Ice Pigging (forces an ice slurry through the main). The cleaning was very effective and sediment was removed improving the water quality in this area.

Ozone (disinfectant) technology was also trialled in 2015–2016 as an alternative technology to chlorine for commissioning and disinfecting water mains. Unitywater is constantly looking for efficiencies offered by innovative technologies. In 2016–2017 we will trial an alternative mains cleaning technology that unlike the other technologies uses no extra water!

## Improving our disinfection facilities

Disinfection (i.e. chlorination) is an essential requirement to supply safe drinking water and is recommended by the World Health Organisation. This project will improve water quality performance by installing new analysers, reservoir mixers and dosing units. When the project is finalised all secondary disinfection facilities will be visible on the online monitoring platform shared by Seqwater and Unitywater. This will allow us to share information at key locations (i.e. water treatment plants, secondary disinfection facilities, strategic network locations) and greatly assist our people to manage the network and continue to meet customer standards.







# Unitywater

ABN: 89 791 717 472

Head Office

Ground Floor, 33 King Street, Caboolture, QLD

PO Box 953, Caboolture QLD 4510

T: 1300 0 UNITY (1300 086 489)

F: (07) 5431 8288

[www.unitywater.com](http://www.unitywater.com)

Unitywater has certification to

OH&S ISO 4801

Environmental ISO 14001

Quality Systems ISO 9001

Food Safety Management ISO 22000



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MANAGEMENT SYSTEMS CERTIFIED TO  
AS/NZS ISO 22000:2006  
SCSC Number: 160200016-0000016

