

# Annual drinking water quality report

1 July 2022 to 30 June 2023

The City of Gold Coast (the City) is responsible for the provision of high quality drinking water to our customers. The City operates under an approved Drinking Water Quality Management Plan (DWQMP) which is a requirement under the *Water Supply (Safety & Reliability) Act 2008*.

The City's DWQMP articulates how water quality is managed and hazards are controlled.



## Monitoring drinking water quality

The City monitors water quality at 111 sites across the Gold Coast. Water samples are collected by National Association of Testing Authorities (NATA) accredited scientific officers from service reservoirs as well as selected sample taps located throughout the region. Samples are analysed by our expert Scientific Services personnel in the City's NATA accredited laboratory.

All water quality results are carefully scrutinised by water quality scientists to identify changes or trends in water quality.

## What do we test for?

Drinking water on the Gold Coast is tested for approximately 36 different physical, chemical, and biological parameters whilst in the distribution system. The bulk water supplier, Seqwater, also conducts rigorous water quality testing on all treated water. This report summarises a selection of the key health and aesthetic water quality parameters.

## Drinking water quality must meet the Australian Drinking Water Guidelines

The *Australian Drinking Water Guidelines* (ADWG) are set by the National Health and Medical Research Council. As a condition of the approved DWQMP the City must ensure that its water quality results are compliant with those set out in the ADWG (2011).

The City works closely with the bulk supply entity, Seqwater, as well as Queensland Health, to ensure that public health is always protected.

## Water quality results 1 July 2022 – 30 June 2023

		Microbiological	Physical/chemical					
		<i>E. coli</i>	Fluoride	Chlorine	THMs	Turbidity	True colour	Iron
Health (H) or Aesthetic (A)		H	H	H	H	A	A	A
Water Supply District	ADWG compliance	At least 98% of results contain no <i>E. coli</i>	% of samples below 1.5 mg/L	% of samples below 5.0 mg/L	% of samples below 0.25 mg/L	% of samples below 5 NTU	% of samples below 15 HU	% of samples below 0.3 mg/L
Burleigh	✓	100%	100%	100%	100%	100%	100%	100%
Coolangatta	✓	100%	100%	100%	100%	100%	100%	100%
Coomera/Pimpama	✓	100%	100%	100%	100%	100%	100%	100%
Currumbin Waters	✓	100%	100%	100%	100%	99.5%	100%	100%
Elanora	✓	100%	100%	100%	100%	100%	100%	100%
Gaven/Coomera	✓	100%	100%	100%	100%	100%	100%	100%
Gilston	✓	100%	100%	100%	100%	100%	100%	100%
Helensvale	✓	100%	100%	100%	100%	100%	100%	100%
Molendinar	✓	100%	100%	100%	100%	100%	100%	100%
Mudgeeraba	✓	100%	100%	100%	100%	100%	100%	100%
Nerang	✓	100%	100%	100%	100%	99.3%	100%	100%
Nerang South	✓	100%	100%	100%	100%	100%	100%	100%
Reedy Creek	✓	100%	100%	100%	100%	100%	100%	100%
Robina	✓	100%	100%	100%	100%	100%	100%	100%
Southport West	✓	100%	100%	100%	100%	100%	100%	100%
Stapylton	✓	100%	100%	100%	100%	100%	100%	100%
Worongary	✓	100%	100%	100%	100%	100%	100%	100%



### ***E. coli***

*Escherichia coli* (*E. coli*) is used as the primary indicator of faecal contamination of drinking water supplies, due to its prevalence in the gut of warm-blooded animals. The presence of *E. coli* in a sample may be indicative of pathogen contamination. *E. coli* is measured as the most probable number of organisms per 100 mL of sample (MPN/100mL).

### **Fluoride**

Fluoride is added to the water supply by Seqwater during the water treatment process to assist with dental health. The recommended levels are between 0.7 – 0.8 mg/L. The ADWG (2011) health guideline value for fluoride is 1.5 mg/L.

### **Chlorine**

Chlorine is added to the water supply by Seqwater as part of the water treatment process. Chlorine is used to disinfect the water and kill any bacteria that may cause disease. It is important to ensure that residual chlorine concentration is sufficient at all our customers' taps. The ADWG (2011) health guideline value for chlorine is 5.0 mg/L.

### **THMs**

Trihalomethanes (THMs) are disinfection by-products that form when chlorine used for disinfection reacts with naturally occurring organic matter in the treated water. The ADWG (2011) health guideline value for THMs is 0.25 mg/L.

### **Turbidity**

Turbidity is a measure of the light scattering properties of water due to the presence of fine particles. Low turbidity is important, as at higher levels particles can shield microorganisms from disinfection. Ideally drinking water should have a turbidity of less than 1 NTU (Nephelometric Turbidity Units). The ADWG (2011) has set an aesthetic guideline value for turbidity of 5 NTU. No health value has been set.

### **True Colour**

Drinking water should be colourless. The ADWG (2011) has set an aesthetic guideline value of 15 HU (Hazen Units) for true colour. No health value has been set.

### **Iron**

Iron in drinking water supplies can be responsible for unpleasant water taste and/or staining. The ADWG (2011) has set an aesthetic guideline value of 0.3 mg/L. No health value has been set.

## Drinking water distribution system water quality

Parameter	Units	Number of tests	Ave	Median	Minimum	Maximum	95%ile	Compliance with ADWG	ADWG Health (H) or Aesthetic Value (A)
Aluminium	mg/L	279	0.018	0.015	< 0.006	0.150	0.032	Y	0.2 (A)
Ammonia	mg/L	76	< 0.006	< 0.006	< 0.006	0.054	< 0.006	Y	0.5 (A)
Arsenic	mg/L	76	< 0.001	< 0.001	< 0.001	0.002	< 0.001	Y	0.01 (H)
Asbestos		20	0	0	0	0	0	N/A	No guideline
Boron	mg/L	96	0.044	0.015	< 0.001	0.470	0.208	Y	4 (H)
Cadmium	mg/L	76	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	Y	0.002 (H)
Calcium	mg/L	128	16	16	11	25	20	N/A	No guideline
Chlorine Free	mg/L	2195	1.04	1.10	0.05	2.20	1.50	Y	5 (H)
Chlorine Total	mg/L	2195	1.16	1.20	0.07	2.50	1.60	Y	6 (H)
Chromium	mg/L	76	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	Y	0.05 (H)
Copper	mg/L	76	0.001	0.001	< 0.001	0.006	0.004	Y	2 (H)
Fluoride	mg/L	332	0.7	0.8	< 0.1	1.0	0.8	Y	1.5 (H)
Iron	mg/L	76	< 0.02	< 0.02	< 0.02	0.06	0.02	Y	0.3 (A)
Lead	mg/L	76	< 0.001	< 0.001	< 0.001	0.002	< 0.001	Y	0.01 (H)
Magnesium	mg/L	128	1.8	1.8	0.9	2.5	2.4	N/A	No guideline
Manganese	mg/L	2195	< 0.001	< 0.001	< 0.001	0.068	0.002	Y	0.5 (H)
Mercury	mg/L	315	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	Y	0.001 (H)
Nickel	mg/L	76	< 0.001	< 0.001	< 0.001	0.001	< 0.001	Y	0.02 (H)
Nitrate as (NO <sub>3</sub> <sup>-</sup> )	mg/L	76	0.25	0.09	0.02	0.98	0.85	Y	50 (H)
Nitrite Nitrogen	mg/L	76	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	Y	3 (H)
Silica	mg/L	13	10	10	8	11	11	Y	80 (A)
Sodium	mg/L	76	14	15	10	17	16	Y	180 (A)
Zinc	mg/L	76	0.003	0.002	< 0.001	0.022	0.012	Y	3 (A)
<b>Physical</b>									
Alkalinity	mg/L (CaCO <sub>3</sub> /L)	91	40	40	22	58	46	N/A	No guideline
Conductivity	mS/cm	539	0.174	0.174	0.142	0.259	0.189	N/A	No guideline
Hardness	mg/L	128	47	46	34	71	58	Y	200 (A)
pH		2195	7.4	7.4	7.0	8.5	7.8	Y	6.5-8.5 (A)
Temperature	°C	2195	22.0	22.0	15.7	31.0	27.1	N/A	No guideline
Total Dissolved Solids	mg/L	84	105	100	< 15	180	140	Y	600 (A)
True Colour	HU	2195	< 2	< 2	< 2	4	2	Y	15 (A)
Turbidity	NTU	2195	0.15	0.11	< 0.10	5.60	0.41	Y	5 (A)
<b>Organics</b>									
Bis (2-Ethylhexyl) Phthalate	mg/L	20	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	Y	0.01 (H)
<b>Disinfection By-Products</b>									
Chlorate	mg/L	76	0.066	0.058	0.030	0.219	0.133	Y	No guideline
Total Trihalomethanes	mg/L	412	0.062	0.059	0.005	0.180	0.110	Y	0.25 (H)
<b>Microbiological</b>									
<i>E. coli</i>	MPN/100mL	2195	< 1	< 1	< 1	< 1	< 1	Y	< 1 (H)
Plate Count	CFU/mL	2195	< 1	< 1	< 1	920	< 1	N/A	No guideline
Total Coliforms	MPN/100mL	2195	< 1	< 1	< 1	2	< 1	N/A	No guideline

**ADWG** = National Health and Medical Research Council Australian Drinking Water Guidelines 2011

**NTU** = Nephelometric Turbidity Units

**mg/L** = Milligrams per Litre (or Parts per Million)

**mS/cm** = Millisiemens per Centimetre

**MPN** = Most Probable Number

**CFU** = Colony Forming Units

**HU** = Hazen Units

**°C** = Degrees Celsius

**Median** = the number in the middle of a set of numbers; that is half the numbers have a value greater than or equal to the median, and half have a value less than or equal to the median.

**95%ile** = statistical calculation used for calculating compliance with the ADWG health value. In the context of this factsheet, it estimates the value for which 95% of all the water that passes through the distribution system in this 12 month period falls below.

Results determined from samples collected between 1 July 2022 and 30 June 2023.