



## Water Quality Summary - December 2019

Hunter Water provides safe and reliable drinking water to over half a million customers in the Lower Hunter. The drinking water we supply is routinely tested throughout our water supply systems.

### Whole of Hunter Water Distribution System

Drinking water results for the distribution system are based on samples representative of water supplied to customer's taps. Distribution system results for microbiological and key physical/chemical parameters are summarised below.

#### Whole of Hunter Water Distribution System - key health analytes

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		% of E. coli results < 1 over the last 12 months	Met performance standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		99.94%	Yes
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12 months	Met performance standard
Fluoride	mg/L	1.5	95th percentile of test results less than respective ADWG aesthetic guideline value	0.87	1.02	Yes
Chlorine	mg/L	5.0		0.70	1.24	Yes
Copper	mg/L	2.0		0.011	0.036	Yes
Lead	mg/L	0.01		0.001	0.001	Yes
Manganese	mg/L	0.5		0.009	0.016	Yes
Trihalomethanes	mg/L	0.25		0.091	0.138	Yes

#### Whole of Hunter Water Distribution System - PFOS, PFHxS & PFOA

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	Maximum detection over the last 12 months	Met performance standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	0.008	Yes
PFOA	ug/L	0.56		<0.002	<0.002	Yes

#### Whole of Hunter Water Distribution System - key aesthetic analytes

Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performance standard
Iron	mg/L	0.3	Average of test results less than respective ADWG aesthetic guideline value	0.035	0.033	Yes
Aluminium	mg/L	0.2		0.056	0.048	Yes
Copper	mg/L	1.0		0.011	0.010	Yes
Zinc	mg/L	3.0		0.005	0.004	Yes
Turbidity	NTU	5.0		0.3	0.3	Yes
Colour-True	HU	15.0		5	5	Yes
pH	pH units	6.5-9.2	Average of test results between 6.5-9.2 pH units	7.56	7.57	Yes

Brief explanation of key parameters:

[Key Physical, Chemical and Microbiological Parameters](#)

A 95th percentile is a statistical method to evaluate the long-term performance standard for Health-related analytes. Additional information is available in Section 10.3.2 and Information Sheet 3.3 of the Australian Drinking Water Guidelines 2011 (ADWG).

For more detail please refer:

[Australian Drinking Water Guidelines 2011](#)

Map showing water quality zones:

[Water Quality Zones at Hunter Water](#)

## Water Quality Zones

### Anna Bay and Nelson Bay Zone - key health analytes

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		% of E. coli results < 1 over the last 12 months	Met performance standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		100.00%	Yes

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12 months	Met performance standard
Fluoride	mg/L	1.5	95th percentile of test results less than respective ADWG aesthetic guideline value	0.90	1.03	Yes
Chlorine	mg/L	5.0		0.75	1.21	Yes
Copper	mg/L	2.0		0.014	0.016	Yes
Lead	mg/L	0.01		0.003	0.002	Yes
Manganese	mg/L	0.5		0.008	0.019	Yes
Trihalomethanes	mg/L	0.25		0.069	0.088	Yes

### Anna Bay and Nelson Bay Zone - PFOS, PFHxS & PFOA

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	Maximum detection over the last 12 months	Met performance standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	<0.004	Yes
PFOA	ug/L	0.56		<0.002	<0.002	Yes

### Anna Bay and Nelson Bay Zone - key aesthetic analytes

Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performance standard
Iron	mg/L	0.3	Average of test results less than respective ADWG aesthetic guideline value	0.063	0.044	Yes
Aluminium	mg/L	0.2		0.060	0.048	Yes
Copper	mg/L	1.0		0.014	0.008	Yes
Zinc	mg/L	3.0		0.009	0.004	Yes
Turbidity	NTU	5.0		0.6	0.3	Yes
Colour-True	HU	15.0		5	5	Yes
pH	pH units	6.5-9.2	Average of test results between 6.5-9.2 pH units	7.43	7.48	Yes

### Chichester Zone - key health analytes

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		% of E. coli results < 1 over the last 12 months	Met performance standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		99.79%	Yes

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12 months	Met performance standard
Fluoride	mg/L	1.5	95th percentile of test results less than respective ADWG aesthetic guideline value	0.63	0.97	Yes
Chlorine	mg/L	5.0		0.60	1.22	Yes
Copper	mg/L	2.0		0.021	0.015	Yes
Lead	mg/L	0.01		0.000	0.001	Yes
Manganese	mg/L	0.5		0.008	0.012	Yes
Trihalomethanes	mg/L	0.25		0.112	0.158	Yes

### Chichester Zone - PFOS, PFHxS & PFOA

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	Maximum detection over the last 12 months	Met performance standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	0.006	Yes
PFOA	ug/L	0.56		<0.002	<0.002	Yes

### Chichester Zone - key aesthetic analytes

Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performance standard
Iron	mg/L	0.3	Average of test results less than respective ADWG aesthetic guideline value	0.028	0.026	Yes
Aluminium	mg/L	0.2		0.069	0.056	Yes
Copper	mg/L	1.0		0.021	0.007	Yes
Zinc	mg/L	3.0		0.004	0.003	Yes
Turbidity	NTU	5.0		0.3	0.3	Yes
Colour-True	HU	15.0		5	5	Yes
pH	pH units	6.5-9.2	Average of test results between 6.5-9.2 pH units	7.68	7.66	Yes

Grahamstown Zone - key health analytes						
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		% of E. coli results < 1 over the last 12 months	Met performance standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		100.00%	Yes
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12 months	Met performance standard
Fluoride	mg/L	1.5	95th percentile of test results less than respective ADWG aesthetic guideline value	0.97	1.03	Yes
Chlorine	mg/L	5.0		0.71	1.23	Yes
Copper	mg/L	2.0		0.008	0.042	Yes
Lead	mg/L	0.01		0.001	0.002	Yes
Manganese	mg/L	0.5		0.010	0.017	Yes
Trihalomethanes	mg/L	0.25		0.094	0.130	Yes
Grahamstown Zone - PFOS, PFHxS & PFOA						
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	Maximum detection over the last 12 months	Met performance standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	0.008	Yes
PFOA	ug/L	0.56		<0.002	<0.002	Yes
Grahamstown Zone - key aesthetic analytes						
Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performance standard
Iron	mg/L	0.3	Average of test results less than respective ADWG aesthetic guideline value	0.034	0.035	Yes
Aluminium	mg/L	0.2		0.044	0.048	Yes
Copper	mg/L	1.0		0.008	0.012	Yes
Zinc	mg/L	3.0		0.004	0.005	Yes
Turbidity	NTU	5.0		0.3	0.3	Yes
Colour-True	HU	15.0		5	5	Yes
pH	pH units	6.5-9.2	Average of test results between 6.5-9.2 pH units	7.50	7.52	Yes
Gresford Zone - key health analytes						
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		% of E. coli results < 1 over the last 12 months	Met performance standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		100.00%	Yes
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12 months	Met performance standard
Chlorine	mg/L	5.0	95th percentile of test results less than respective ADWG aesthetic guideline value	0.56	1.32	Yes
Gresford Zone - PFOS, PFHxS & PFOA						
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month #	Maximum detection over the last 12 months	Met performance standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	<0.004	Yes
PFOA	ug/L	0.56		<0.002	<0.002	Yes
Gresford Zone - key aesthetic analytes						
Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performance standard
Turbidity	NTU	5.0	Average of test results less than respective ADWG aesthetic guideline value	0.1	0.1	Yes
pH	pH units	6.5-9.2	Average of test results between 6.5-9.2 pH units	8.06	8.00	Yes

### Lemon Tree Passage Zone - key health analytes

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		% of E. coli results < 1 over the last 12 months	Met performance standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		100.00%	Yes

  

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	95th Percentile over the last 12 months	Met performance standard
Fluoride	mg/L	1.5	95th percentile of test results less than respective ADWG aesthetic guideline value	0.93	1.04	Yes
Chlorine	mg/L	5.0		0.86	1.40	Yes
Copper	mg/L	2.0		0.004	0.011	Yes
Lead	mg/L	0.01		0.000	0.001	Yes
Manganese	mg/L	0.5		0.005	0.010	Yes
Trihalomethanes	mg/L	0.25		0.082	0.106	Yes

### Lemon Tree Passage Zone - PFOS, PFHxS & PFOA

Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	Maximum detection over the last 12 months	Met performance standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than respective ADWG health guideline value	<0.004	0.008	Yes
PFOA	ug/L	0.56		<0.002	<0.002	Yes

### Lemon Tree Passage Zone - key aesthetic analytes

Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performance standard
Iron	mg/L	0.3	Average of test results less than respective ADWG aesthetic guideline value	0.033	0.029	Yes
Aluminium	mg/L	0.2		0.044	0.041	Yes
Copper	mg/L	1.0		0.004	0.005	Yes
Zinc	mg/L	3.0		0.006	0.004	Yes
Turbidity	NTU	5.0		0.3	0.2	Yes
Colour-True	HU	15.0		5	5	Yes
pH	pH units	6.5-9.2	Average of test results between 6.5-9.2 pH units	7.58	7.53	Yes

### PFOS, PFHxS and PFOA Results for Clear Water Tanks - December 2019

Clear water tanks (CWTs) are the final point at each water treatment plant before water enters the distribution system for delivery to customers. Maximum drinking water results in the CWT for each water treatment plant are summarised below.

Analyte	Units of measure	ADWG health guideline value	Anna Bay CWT	Dungog CWT	Grahamstown CWT	Gresford CWT	Lemon Tree Passage CWT	Nelson Bay CWT
PFOS + PFHxS	ug/L	0.07	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
PFOA	ug/L	0.56	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

### PFOS, PFHxS and PFOA Results for Raw Waters - December 2019

Raw water monitoring points are representative of water received at the water treatment plants, prior to any treatment occurring. Maximum raw water results for each water treatment plant are summarised below.

Analyte	Units of measure	ADWG health guideline value	Anna Bay WTP - Raw Water	Dungog TW Raw	Grahamstown Raw - East Main ^	Grahamstown Raw - West Main ^	Gresford (Allyn River) WTP *	Gresford (Paterson River) WTP *	Lemon Tree Passage WTP	Nelson Bay WTP - Raw Water
PFOS + PFHxS	ug/L	0.07	<0.004	<0.004	0.007	<0.004	<0.004	<0.004	<0.004	<0.004
PFOA	ug/L	0.56	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

#### Notes

^ Water sourced from the Tomago Borefield -when operational -is delivered to Grahamstown WTP via the East Main. When the Tomago Borefield is not being used as part of the drinking water supply mix for the Lower Hunter, the East and West monitoring points are both representative of water sourced from Grahamstown Dam.

\* Gresford WTP can be supplied from either the Allyn or Paterson Rivers. The plant was supplied from the Paterson River for the month.

# One sample is collected per month in the Gresford Zone