

Water Quality Summary - March 2023 (amended 19.07.2023 to include Mn results)

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		99.95%	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		0.97	1.00	Yes
Chlorine	mg/L	5.0	1	0.93	1.71	Yes
Copper	mg/L	2.0	95th percentile of test results less than	0.006	0.015	Yes
Lead	mg/L	0.01	respective ADWG health guideline value	0.001	0.001	Yes
Manganese	mg/L	0.5		0.005	0.011	Yes
Trihalomethanes	mg/L	0.25		0.102	0.178	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	0.004	0.004	Yes
PFOA	ug/L	0.56	respective ADWG health guideline value	<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		0.029	0.025	Yes
Aluminium	mg/L	0.2		0.048	0.042	Yes
Copper	mg/L	1.0	Average of test results less than	0.006	0.006	Yes
Zinc	mg/L	3.0	respective ADWG aesthetic guideline	0.004	0.003	Yes
Manganese	mg/L	0.1	value	0.005	0.004	Yes
Turbidity	NTU	5.0		0.3	0.3	Yes
Colour-True	HU	15.0		5	5	Yes
рН	pH units	6.5-9.2	Average of test results between 6.5-9.2 pH units	7.65	7.60	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 Drinking Water Guidelines 2011 (ADWG).	related analytes. Additional information is available in Section 10.3.2 and Information Sheet 3.3 of the Australian				
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 h	nealth 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 performanc 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 performanc standard
Fluoride	mg/L	1.5		1.00	1.10	Yes
Chlorine	mg/L	5.0		1.40	2.19	Yes
Copper	mg/L	2.0	95th percentile of test results less than	0.005	0.028	Yes
Lead	mg/L	0.01	respective ADWG health guideline value	0.000	0.001	Yes
Manganese	mg/L	0.5		0.006	0.010	Yes
Trihalomethanes Anna Bay and Nelson Bay Zone - PFOS	mg/L	0.25		0.019	0.096	Yes
Allila Bay and Nelson Bay Zone - FFOS	5, FF1123 & FF0A					
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 performand standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than	<0.004	<0.004	Yes
PFOA	ug/L	0.56	respective ADWG health guideline value	<0.002	<0.002	Yes
Anna Bay and Nelson Bay Zone - key a	esthetic analytes					
Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performanc standard
Iron	mg/L	0.3		0.069	0.036	Yes
Aluminium	mg/L	0.2		0.049	0.045	Yes
Copper	mg/L	1.0	Average of test results less than	0.005	0.009	Yes
Zinc Manganese	mg/L	3.0	respective ADWG aesthetic guideline value	0.003	0.004	Yes Yes
Turbidity	NTU	5.0		0.8	0.004	Yes
Colour-True	HU	15.0		5	5	Yes
рН	pH units	6.5-9.2	Average of test results between 6.5-9.2 pH units	7.51	7.49	Yes
Chichester Zone - key health analytes					% of E. coli	
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)		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		0.89	1.00	Yes
Chlorine	mg/L	5.0		0.92	1.48	Yes
Copper	mg/L	2.0	95th percentile of test results less than respective ADWG health guideline value	0.005	0.008	Yes
Lead Manganese	mg/L	0.01	respective ADVVO nearth guideline Value	0.000	0.000	Yes
Manganese Trihalomethanes	mg/L mg/L	0.5		0.003	0.005	Yes Yes
Chichester Zone - PFOS, PFHxS & PFO		0.20	!	2.3.0		
					Maximum	
Analyte	Units of measure	ADWG health guideline value	Performance standard (assessment over previous 12 months)	Average for Month	detection over the last 12 months	Met performanc standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than	<0.004	<0.004	Yes
			respective ADWG health guideline value	<0.002	<0.002	Yes
PFOA	ug/L	0.56			<0.002	165
		0.56			Q0.002	l es
PFOA Chichester Zone - key aesthetic analyte Analyte		0.56 ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performanc standard
Chichester Zone - key aesthetic analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Month	12 month average result	Met performanc standard
Chichester Zone - key aesthetic analyte Analyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Month 0.025	12 month average result	Met performand standard Yes
Chichester Zone - key aesthetic analyte Analyte Iron Aluminium	Units of measure mg/L mg/L	ADWG aesthetic guideline value 0.3 0.2	over previous 12 months)	0.025 0.049	12 month average result 0.020 0.037	Met performand standard Yes Yes
Chichester Zone - key aesthetic analyte Analyte Iron Aluminium Copper	Units of measure	ADWG aesthetic guideline value	over previous 12 months) Average of test results less than respective ADWG aesthetic guideline	Month 0.025	12 month average result	Met performand standard Yes
Chichester Zone - key aesthetic analyte Iron Aluminium Copper Zinc Manganese	Units of measure mg/L mg/L mg/L mg/L mg/L mg/L	ADWG aesthetic guideline value 0.3 0.2 1.0	over previous 12 months) Average of test results less than	0.025 0.049 0.005	12 month average result 0.020 0.037 0.004	Met performanc standard Yes Yes Yes
Chichester Zone - key aesthetic analyte Iron Aluminium Copper Zinc Manganese Turbidity	Units of measure mg/L mg/L mg/L mg/L mg/L ng/L ng/L NTU	ADWG aesthetic guideline value 0.3 0.2 1.0 3.0 0.1 5.0	over previous 12 months) Average of test results less than respective ADWG aesthetic guideline	Month 0.025 0.049 0.005 0.002 0.003 0.3	12 month average result 0.020 0.037 0.004 0.002 0.002 0.002	Met performand standard Yes Yes Yes Yes Yes Yes Yes Yes Yes
Chichester Zone - key aesthetic analyte Iron Aluminium Copper Zinc Manganese	Units of measure mg/L mg/L mg/L mg/L mg/L mg/L	ADWG aesthetic guideline value 0.3 0.2 1.0 3.0 0.1	over previous 12 months) Average of test results less than respective ADWG aesthetic guideline	0.025 0.049 0.005 0.002 0.002	12 month average result 0.020 0.037 0.004 0.002 0.002	Met performanc standard Yes Yes Yes Yes Yes Yes Yes

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 performand standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		99.90%	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 performand standard
Fluoride	mg/L	1.5		0.96	1.00	Yes
Chlorine	mg/L	5.0		0.84	1.45	Yes
Copper	mg/L	2.0	95th percentile of test results less than	0.006	0.015	Yes
ead	mg/L	0.01	respective ADWG health guideline value	0.001	0.001	Yes
Manganese	mg/L	0.5		0.006	0.012	Yes
rihalomethanes	mg/L	0.25		0.135	0.208	Yes
Brahamstown Zone - PFOS, PFHxS & PFO		, ,,,,,,				
nalyte	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 performa standard
PFOS + PFHxS	ug/L	0.07		0.004	0.004	Voc
		0.07	100% of test results less than respective ADWG health guideline value	0.004	0.004	Yes
FOA	ug/L	0.56		<0.002	<0.002	Yes
Grahamstown Zone - key aesthetic analyte	es					
unalyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performa standard
ron	mg/L	0.3		0.025	0.023	Yes
Juminium	mg/L	0.2		0.054	0.049	Yes
opper	mg/L	1.0		0.004	0.004	Yes
inc	mg/L	3.0	Average of test results less than respective ADWG aesthetic guideline	0.005	0.003	Yes
langanese	mg/L	0.1	value	0.005	0.005	
·	NTU					Yes
urbidity Colour-True	HU	5.0		0.3	0.3	Yes
H	pH units	15.0 6.5-9.2	Average of test results between 6.5-9.2 pH units	7.62	7.56	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 performan standard
E. coli	MPN/100mL	Should not be detected in 100mL	At least 98% of test results <1		100.00%	Yes
unalyte	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 performan standard
Chlorine	mg/L	5.0	95th percentile of test results less than respective ADWG health guideline value	0.88	1.26	Yes
Gresford Zone - PFOS, PFHxS & PFOA						
nalyte	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 performate standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than	<0.004	<0.004	Yes
PFOA	ug/L	0.56	respective ADWG health guideline value	<0.002	<0.002	Yes
Gresford Zone - key aesthetic analytes	· · · · · · · · · · · · · · · · · · ·					
nalyte	Units of measure	ADWG aesthetic guideline value	Performance standard (assessment over previous 12 months)	Average for Month	12 month average result	Met performat standard
urbidity	NTU	5.0	Average of test results less than respective ADWG aesthetic guideline value	0.1	0.2	Yes
					1	

Lemon Tree Passage Zone - key heal	th 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 performanc 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 performanc standard
Fluoride	mg/L	1.5		0.99	1.00	Yes
Chlorine	mg/L	5.0	1	1.10	2.02	Yes
Copper	mg/L	2.0	95th percentile of test results less than	0.005	0.010	Yes
Lead	mg/L	0.01	respective ADWG health guideline value	0.000	0.001	Yes
Manganese	mg/L	0.5		0.004	0.010	Yes
Trihalomethanes	mg/L	0.25		0.106	0.139	Yes
Lemon Tree Passage Zone - PFOS, P	'FHxS & 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 performand standard
PFOS + PFHxS	ug/L	0.07	100% of test results less than	<0.004	<0.004	Yes
PFOA	ug/L	0.56	respective ADWG health guideline value	<0.002	<0.002	Yes
Lemon Tree Passage Zone - key aest	hetic analytes					
Analyse	Units of measure	ADWG aesthetic	Performance standard (assessment	Average for	12 month average	Met performanc
Analyte		guideline value	over previous 12 months)	Month	result	standard
Iron	mg/L	guideline value	over previous 12 months)	Month 0.025		
iron			over previous 12 months)		result	standard
	mg/L	0.3		0.025	result 0.038	standard Yes
Iron Aluminium	mg/L mg/L	0.3 0.2	Average of test results less than respective ADWG aesthetic guideline	0.025 0.041	0.038 0.037	standard Yes Yes
Iron Aluminium Copper	mg/L mg/L mg/L	0.3 0.2 1.0	Average of test results less than	0.025 0.041 0.005	0.038 0.037 0.005	standard Yes Yes Yes Yes
Iron Aluminium Copper Zinc Manganese	mg/L mg/L mg/L mg/L	0.3 0.2 1.0 3.0	Average of test results less than respective ADWG aesthetic guideline	0.025 0.041 0.005 0.003	0.038 0.037 0.005 0.004	Yes Yes Yes Yes Yes
iron Aluminium Copper Zinc	mg/L mg/L mg/L mg/L mg/L	0.3 0.2 1.0 3.0 0.1	Average of test results less than respective ADWG aesthetic guideline	0.025 0.041 0.005 0.003 0.004	0.038 0.037 0.005 0.004	Yes Yes Yes Yes Yes Yes Yes

PFOS, PFHxS and PFOA Results for Clear Water Tanks - March 2023

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 CWTs of the water treatment plants monitored during the month are summarised below.

Analyte	Units of measure	ADWG health guideline value	Grahamstown CWT
PFOS + PFHxS	ug/L	0.07	0.004
PFOA	ug/L	0.56	<0.002

PFOS, PFHxS and PFOA Results for Raw Waters - March 2023

Raw water monitoring points are representative of water received at the water treatment plants, prior to any treatment occurring. Maximum raw water results of the water treatment plants monitored during the month are summarised below.

Analyte	Units of measure	ADWG health guideline value	Grahamstown Raw - East Main ^	Grahamstown Raw - West Main	Gresford (Paterson River) WTP *	Lemon Tree Passage WTP - Raw Water
PFOS + PFHxS	ug/L	0.07	<0.004	0.005	<0.004	<0.004
PFOA	ug/L	0.56	<0.002	<0.002	<0.002	<0.002

[^] 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