Quarterly Drinking Water Quality Report

Macarthur Delivery System 1 July 2026 to 30 September 2026

11 November 2026

Your water quality

Drinking water management

We supply you with high quality, safe drinking water – managed under our drinking water quality management system. Our water is among the world's best!

WaterNSW manages Sydney's catchments to provide the best quality water for us to treat. We treat your water by first filtering it, then disinfecting it. This is part of what's called the 'multiple-barrier' approach. We continuously monitor these steps to ensure our systems are working as expected.

During this quarter, our monitoring confirmed that the drinking water we delivered to you was safe and of high quality.

Testing for water quality

Our aim is to provide you with high quality, safe drinking water treated to meet the *Australian Drinking Water Guidelines*. Our Drinking Water Quality Management System applies the frameworks to manage drinking water quality and testing water quality is one part of this system.

We test your water for up to 70 different characteristics including:

- taste
- colour
- odour
- micro-organisms
- chemical content.

This report summarises a selection of health characteristics and key aesthetic (look, taste, and smell) characteristics.

We take water samples from the catchments, at the inlet and outlet of water filtration plants, from the reservoirs and from about 790 customers' front garden taps.

Our laboratories use internationally accredited methods for all our testing.

The tables in this report present water quality data from the analysis of water samples we collect at various stages of the water supply chain, from raw water sources, through treatment, to the water supplied to your tap.



Our Drinking Water Quality Management System

We use a number of steps to ensure your tap water is high quality and safe to drink. Daily performance results can be found on our website.

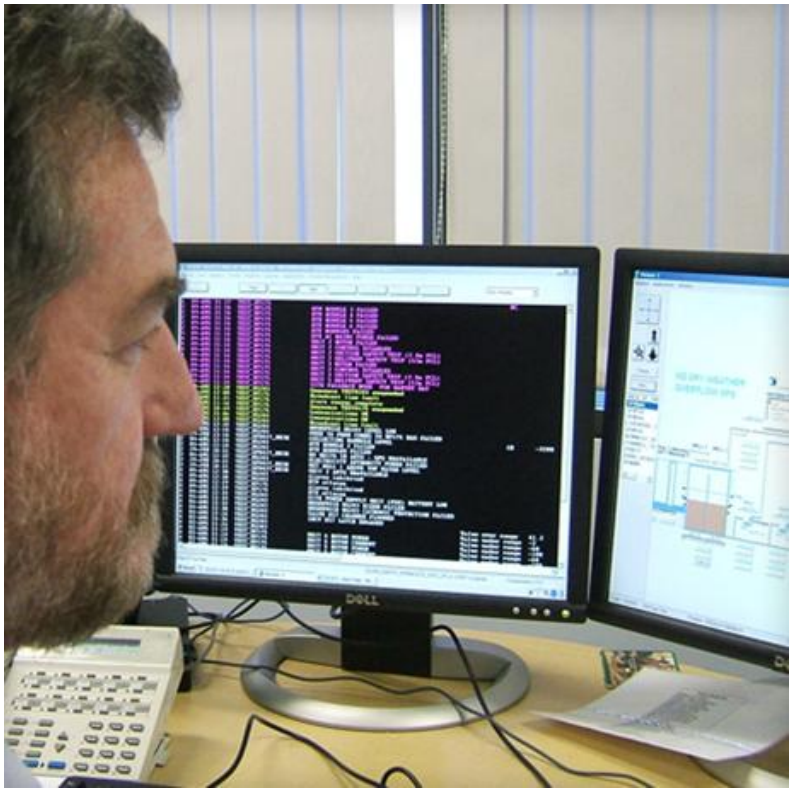
The *Australian Drinking Water Guidelines* Framework for Management of Drinking Water Quality uses a preventive risk management approach that encompasses all the steps in water production from the catchment to the customer.

Sydney Water works collaboratively with WaterNSW to ensure that the best possible water quality is supplied to our customers. Sydney Water and WaterNSW apply a multi-barrier approach to ensure the water supply is safe. Some of the steps or 'barriers' we use to manage water quality are:

- Protecting water catchments (e.g. lakes, rivers and reservoirs)
- Selecting the best available source of water
- Filtering the water at water filtration plants
- Adding chlorine at our water filtration plants and in the network to ensure your water is free of harmful pathogens
- Adding fluoride to support dental health.

We monitor these different steps constantly at critical control points to ensure that your drinking water remains safe and of high quality. You can see current results for these points on our Daily Drinking Water Quality report.

We monitor water quality to verify that these barriers are working. The results in the remainder of this report are considered 'verification results.'



Water quality test results

At your tap

Most health guideline values for chemicals are based on a lifetime of exposure. The *Australian Drinking Water Guidelines* recognise that occasionally there may be health or aesthetic related test results that fall outside the guideline values and that these results are not necessarily an immediate threat to health. For most characteristics the guidelines do not require 100% of results to fall within the guideline values.

Sydney Water has several areas it delivers water to. We call these Delivery Systems. Our compliance to the guidelines is measured for each Delivery System and is calculated over a 12-month period using the following long-term performance measures:

- For the indicator bacterium *Escherichia coli (E. coli)*, at least 98% of scheduled samples must contain no *E. coli*. In addition to continuous online monitoring of filter performance, this verifies that our filtration and disinfection processes were effective in removing bacteria from the water initially and that the system used to deliver water to your tap remains clean.
- For health-related chemical characteristics, the upper bound of the 95% confidence interval for the 95th percentile must be less than the guideline value.
- For aesthetic characteristics, the upper bound of the 95% confidence interval for the mean must be less than the guideline value.

The following tables show data for the customer supply systems that we use to measure Sydney Water's performance against the long-term health and aesthetic guideline values.

More data including typical ranges over a longer period can be found in the *Safe Drinking Water* and *Water Analysis* pages on the Sydney Water website.

The data we present here isn't exhaustive but shows the characteristics of water which we regularly test for which the *Australian Drinking Water Guidelines* has set a health and/or aesthetic guideline value.



Table 1 Water Quality Health Characteristics for the Macarthur Delivery System

Characteristic	Unit of measure	ADWG health value	No. of samples 1 Oct 2025 to 30 Sept 2026	No. of exceptions	Long-term performance (assessment over 12-month period)	% of test results complying with the guideline	Met long-term performance measure
E. coli	orgs/100 mL	not detected in 100 mL sample	663	0	At least 98% of test results <1	100%	Yes
fluoride[2]	mg/L	1.5	171	0	At least 95% of test results 0.90 to 1.50 mg/L	100%	Yes
free chlorine[4]	mg/L	5	663	0	The 95th percentile value is less than the respective ADWG health value		Yes
monochloramine	mg/L	3	663	0			Yes
antimony	mg/L	0.003	36	0			Yes
cadmium	mg/L	0.002	36	0			Yes
cyanide[1]	mg/L	0.08	2	0			Yes
copper	mg/L	2	40	0			Yes
lead	mg/L	0.005	40	0			Yes
nitrate as NO_3	mg/L	50	40	0			Yes
nitrite as NO_2	mg/L	3	40	0			Yes
nickel	mg/L	0.02	36	0			Yes
sulfate[1]	mg/L	500	8	0			Yes
chromium[3]	mg/L	0.05 (as Cr(VI))	36	0			Yes
manganese	mg/L	0.1	120	0			Yes
n-nitrosodimethylamine[1]	mg/L	0.0001	8	0			Yes

Characteristic	Unit of measure	ADWG health value	No. of samples 1 Oct 2025 to 30 Sept 2026	No. of exceptions	Long-term performance (assessment over 12-month period)	% of test results complying with the guideline	Met long-term performance measure
carbon tetrachloride[1]	mg/L	0.0003	2	0			Yes
perfluorooctanoic acid (PFOA)[1,5]	µg/L	0.2	7	0			Yes
perfluorooctane sulfonate (PFOS)[1,5]	µg/L	0.008	7	0			Yes
perfluorohexane sulfonate (PFHxS)[1,5]	µg/L	0.03	7	0			Yes
perfluorobutane sulfonate (PFBS)[1,5]	µg/L	1	7	0			Yes
total trihalomethanes	mg/L	0.25	60	0	The 95th percentile statistic calculated for combined customer supply system and WFP less than 0.25 mg/L		Yes

[1] Insufficient number of samples collected to calculate 95th percentile. The maximum reading will be used for assessment of long-term performance of each of these health-related chemical parameters against the ADWG values.

[2] The long-term fluoride performance for each delivery system in this table is based on both treated water from Water Filtration Plant (WFP) and customer tap data. We target a value of 1.0 mg/L. The ADWG specifies a guideline value for fluoride of <1.5 mg/L. The NSW Code of Practice for Fluoridation of Public Water Supplies sets a target that each year >95% of all routine fluoride samples (both treated water from WFPs and customer taps) fall within the concentration range of 0.90 to 1.50 mg/L.

[3] The ADWG sets a guideline value for hexavalent chromium (Cr(VI)) however Sydney Water measures total chromium which includes hexavalent chromium.

[4] 5 mg/L is the ADWG health value for total chlorine, there is no maximum health value for free chlorine.

[5] From 1 July 2026 samples were collected for compliance at WFP. Detailed information on PFAS data can be found on the Sydney Water website PFAS monitoring results

Abbreviations: ADWG = Australian Drinking Water Guidelines; E. coli = Escherichia coli; mg/L = milligrams per litre; µg/L = micrograms per litre; orgs/100 mL = organisms per 100 millilitres.

Table 2 Water Quality Aesthetic Characteristics for the Macarthur Delivery System

Characteristic	Unit of measure	ADWG aesthetic value	No. of samples 1 Oct 2025 to 30 Sept 2026	Average result	Long-term performance (assessment over 12-month period)	Met long-term performance measure
iron	mg/L	0.3	120	0.010	Average of test results less than respective ADWG aesthetic value	Yes
aluminium	mg/L	0.2	28	0.030		Yes
manganese	mg/L	0.05	120	<0.0005		Yes
copper	mg/L	1	40	0.005		Yes
zinc	mg/L	3	28	0.006		Yes
ammonia as NH_3	mg/L	0.50	28	0.107		Yes
turbidity	NTU	5	663	0.09		Yes
true colour[1]	HU	15	28	<2		Yes
dissolved oxygen	% saturation	greater than 85%	28	103.8		Yes
total dissolved solids	mg/L	600	8	112.0		Yes
sulfate	mg/L	250	8	2.4		Yes
hardness (total)	mg/L	200	28	40.3		Yes
chloride	mg/L	250	2	24.5		Yes
sodium	mg/L	180	2	9.5		Yes
flavour	rating[2]	acceptable	1	2	Average rating of 1, 2 or 3	Yes
odour	rating[2]	acceptable	1	3		Yes
pH	pH units	between 6.5 - 8.5	663	7.6	Average results between 6.5 - 8.5 pH units	Yes

Characteristic	Unit of measure	ADWG aesthetic value	No. of samples 1 Oct 2025 to 30 Sept 2026	Average result	Long-term performance (assessment over 12-month period)	Met long-term performance measure
temperature	degrees C	no set value	679	20.2	NA	NA

[1] True colour is measured at 400 nm wavelength.

[2] Rated by a panel on a scale from 1 to 5. Ratings of 1, 2 and 3 are generally acceptable to most people while ratings of 4 and 5 are generally not acceptable.

Abbreviations: ADWG = Australian Drinking Water Guidelines; HU = Hazen Units; mg/L = milligrams per litre; NTU = nephelometric turbidity units; NA = not applicable.

We also test for a range of other water characteristics at your tap over the course of the year. In Table 3 we've summarised the typical values for a range of characteristics for your area, noting that these values are intended to provide an approximate guide, and that all compliance-related values are provided in Table 1 and Table 2.

Table 3 Typical values for your area

Parameter	Range (10th – 90th Percentile) or Average	Units
Physical Characteristics		
true colour	<2	TCU or HU
turbidity	0.05 - 0.12	NTU
total dissolved solids	90 - 147	mg/L
pH	7.44 - 7.68	pH units
conductivity	13.9 - 18.1	mS/m
total hardness	33 - 46	mg $CaCO_3$ /L
calcium hardness	29 - 38	mg $CaCO_3$ /L
magnesium hardness	4.9 - 7.9	mg $CaCO_3$ /L
alkalinity	18.8 - 23.8	mg $CaCO_3$ /L
temperature	15.5 - 24.9	degrees C
dissolved oxygen	92.2 - 112.2	% saturation
Disinfectants		
free chlorine	0.36	mg/L
monochloramine	0.58	mg/L
Disinfection by-products		
trihalomethanes	0.070	mg/L
Inorganic chemicals		
aluminium	0.020 - 0.046	mg/L
ammonia (as NH_3)	<0.001 - 0.380	mg/L
arsenic	<0.0002	mg/L
cadmium	<0.0001	mg/L
antimony	<0.0003	mg/L
calcium	10.60 - 16.00	mg/L
chloride	22.0 - 34.4	mg/L
chromium	<0.0002	mg/L
copper	0.0023 - 0.0106	mg/L
cyanide	<0.005	mg/L
fluoride	1.02	mg/L
iron	<0.005 - 0.017	mg/L
lead	<0.0001 - 0.0003	mg/L
nickel	<0.0002	mg/L
magnesium	1.33 - 1.95	mg/L
manganese	<0.0005 - 0.0007	mg/L
mercury	<0.00001	mg/L

Parameter	Range (10th – 90th Percentile) or Average	Units
nitrate (as NO_3)	0.09 - 0.22	mg/L
nitrite (as NO_2)	<0.001 - 0.131	mg/L
phosphorus	<0.002 - 0.003	mg/L
potassium	0.491 - 0.723	mg/L
reactive silica (as SiO_2)	1.4 - 2.2	mg/L
selenium	<0.0002	mg/L
silver	<0.0001	mg/L

Parameter	Range (10th – 90th Percentile) or Average	Units
sodium	7.60 - 9.87	mg/L
sulfate	2.10 - 2.60	mg/L
zinc	0.002 - 0.009	mg/L
Organic compounds		
chlorinated, polynuclear aromatic, aromatic hydrocarbons	not detected	
chlorophenols	not detected	
pesticides	not detected	

At the treatment plant

The water at your tap is treated at our **Macarthur Water Filtration Plant**.

We monitor the quality of the untreated (raw) water entering our filtration plants to understand how much treatment is needed and to verify the quality of treated water leaving the plant for a range of water quality characteristics.

Results for key water quality characteristics which we test are presented in Table 4 and Table 5 for the **Macarthur Water Filtration Plant**.

Table 4 Treated water quality characteristics at Macarthur Water Filtration Plant – quarterly results

Quarter – 1 July 2026 to 30 Sept 2026							
Characteristics	**Unit of measure**	**ADWG value**	**No. of samples**	**Min**	**Ave**	**Max**	**% of tests meeting with the guideline[3]**
E. coli	orgs/100 mL	not detected in 100 mL	12	<1	<1	<1	100%
turbidity	NTU	5	24	<0.05	0.06	0.11	100%
true colour[1]	HU	15	12	<2	<2	<2	100%
pH	pH units	between 6.5 - 8.5	24	7.3	7.5	7.7	100%
free chlorine[4]	mg/L	5	24	1.28	1.45	1.62	100%
monochloramine	mg/L	3	24	0.04	0.07	0.10	100%
fluoride[2]	mg/L	1.5	12	0.95	1.02	1.10	100%
total trihalomethanes	mg/L	0.25	3	0.04	0.04	0.05	100%
n-nitrosodimethylamine	mg/L	0.0001	1	<0.000001	<0.000001	<0.000001	100%
iron	mg/L	0.3	12	0.005	0.007	0.010	100%
aluminium	mg/L	0.2	12	0.018	0.023	0.030	100%
manganese	mg/L	0.05	12	<0.001	<0.001	<0.001	100%

[1] True colour is measured at 400 nm wavelength.

[2] The ADWG specifies a guideline value for fluoride of <1.5 mg/L. The NSW Code of Practice for Fluoridation of Public Water Supplies sets a target that each year >95% of all routine fluoride samples (both treated water from WFPs and customer taps) fall within the concentration range of 0.90 to 1.50 mg/L. The data in this table is the WFP data only.

[3] Water quality compliance is based on annual results and different criteria are applied to health-related targets and aesthetic targets as noted in Tables 1 and 2.

[4] 5 mg/L is the ADWG health value for total chlorine, there is no maximum health value for free chlorine.

Abbreviations: ADWG = Australian Drinking Water Guidelines; Ave = average value; E. coli = Escherichia coli; HU = Hazen Units; Max = maximum value; mg/L = milligrams per litre; Min = minimum value; NTU = nephelometric turbidity units; orgs/100 mL = organisms per 100 millilitres.

Table 5 Treated water quality characteristics at Macarthur Water Filtration Plant – annual results

Annual – 1 Oct 2025 to 30 Sept 2026								
Characteristics	**Unit of measure**	**ADWG value**	**No. of samples**	**Min**	**Ave**	**Max**	**% of tests meeting the guideline**	**Meets long-term performance measure**
E. coli	orgs/100 mL	not detected in 100 mL	51	<1	<1	<1	100%	Yes
turbidity	NTU	5	102	<0.05	0.08	0.19	100%	Yes
true colour[1]	HU	15	51	<2	<2	2	100%	Yes
pH	pH units	between 6.5 - 8.5	102	7.2	7.5	7.7	100%	Yes
free chlorine[3]	mg/L	5	102	<0.04	0.93	1.66	100%	Yes
monochloramine	mg/L	3	102	0.04	0.74	2.04	100%	Yes
fluoride[2]	mg/L	1.5	51	0.92	1.02	1.15	100%	Yes
total trihalomethanes	mg/L	0.25	12	0.04	0.06	0.09	100%	Yes
n-nitrosodimethylamine	mg/L	0.0001	4	<0.000001	<0.000001	0.000001	100%	Yes
iron	mg/L	0.3	51	<0.005	0.006	0.024	100%	Yes
aluminium	mg/L	0.2	51	0.013	0.033	0.075	100%	Yes
manganese	mg/L	0.05	51	<0.001	<0.001	0.009	100%	Yes

[1] True colour is measured at 400 nm wavelength.

[2] The ADWG specifies a guideline value for fluoride of <1.5 mg/L. The NSW Code of Practice for Fluoridation of Public Water Supplies sets a target that each year >95% of all routine fluoride samples (both treated water from WFPs and customer taps) fall within the concentration range of 0.90 to 1.50 mg/L. The data in this table is the WFP data only.

[3] 5 mg/L is the ADWG health value for total chlorine, there is no maximum health value for free chlorine.

[4] Combined results from Macarthur WFP outlets.

Abbreviations: ADWG = Australian Drinking Water Guidelines; Ave = average value; E. coli = Escherichia coli; HU = Hazen Units; Max = maximum value; mg/L = milligrams per litre; Min = minimum value; NTU = nephelometric turbidity units; orgs/100 mL = organisms per 100 millilitres.

Table 6 Untreated (raw) water quality characteristics at Macarthur Water Filtration Plant

			Quarter - 1 July 2026 to 30 Sept 2026				Annual - 1 Oct 2025 to 30 Sept 2026			
Characteristics	**Unit of measure**	**Raw Water Supply Agreement[2]**	**No. of samples**	**Min**	**Ave**	**Max**	**No. of samples**	**Min**	**Ave**	**Max**
E. coli	orgs/100 mL	NA	12	<1	4	14	51	<1	10	110
Cryptosporidium	oocysts/10 L	NA	12	<1	<1	<1	49	<1	<1	<1
Giardia	cysts/10 L	NA	12	<1	<1	<1	49	<1	<1	<1
turbidity	NTU	40	12	0.60	0.75	1.01	51	0.60	1.27	2.62
true colour[1]	HU	60	12	10	13	16	51	10	17	29
pH	pH units	between 6.3 - 7.9	12	7.1	7.4	7.8	51	6.5	7.1	7.8
iron	mg/L	3.500	12	0.358	0.475	0.616	51	0.358	0.619	1.800
aluminium	mg/L	2.600	12	0.051	0.067	0.083	51	0.051	0.113	0.242
manganese	mg/L	1.400	12	0.010	0.020	0.039	51	0.010	0.032	0.108

[1] True colour is measured at 400 nm wavelength.

[2] The Raw Water Supply Agreement is an agreement between WaterNSW and Sydney Water about the water quality required for the routine operation of the water filtration plants. Water quality may vary outside these ranges during disturbances of the raw water for example after heavy rain in the catchments.

Abbreviations: Ave = average value; E. coli = Escherichia coli; HU = Hazen units; Max = maximum value; mg/L = milligrams per litre; Min = minimum value; NA = not applicable; NTU = nephelometric turbidity units; orgs/100 mL = organisms per 100 millilitres.

What else do we test for?

We monitor for all the characteristics found in tables 7-10. If detected, results are below the *Australian Drinking Water Guidelines* value, wherever a guideline value exists.

A range of potential chemical contaminants (metals, organic chemicals and radionuclides) are monitored in the raw water at the inlet to each water filtration plant. A few are also monitored in the treated water, at the plant outlet and at the customer tap. Risk assessments for these chemicals take into consideration the physical and chemical properties of the various compounds and usage within the catchment areas.

For most of these chemicals, intensive monitoring was initially carried out to establish if they were likely to be present in the supply. This historical data was used along with risk assessments to determine the range of potential contaminants and the frequency of analysis for the current monitoring program. Some chemicals are measured every five years, to verify they are still not present in the water.

Monitoring for additional chemicals may be done from time to time for investigative or other operational purposes, but results are not shown here for one or more of the following reasons:

- because of the infrequency of monitoring
- the lack of direct influence on drinking water quality
- no guideline values exist to compare test results to in order to assess risk.

The following tables only show the ADWG health value, the analytical limit of detection, and the frequency of analysis for each chemical. Results are not shown because analysis is infrequent, and most of these chemicals are only rarely detected and at very low levels.

Table 7 Macarthur Delivery System – other characteristics

Characteristic	Analyte name	ADWG health/aesthetic value (mg/L)	Detection limit (mg/L)	Monitoring frequency	Most recent result complies with ADWG value
Inorganic chemicals	cyanogen chloride	0.08	0.004	2024-25, 2 samples per delivery system annually[1]	Yes
	chloral hydrate	0.1	0.001	2022-23, 1 sample per delivery system annually[1]	Yes
	hydrogen sulfide	0.05	0.002	2023-24, 2 samples per delivery system monthly[1]	Yes
	chloride	250	0.10	2026-27, 2 samples per delivery system quarterly[2]	Yes
	sodium	180	0.05	2026-27, 2 samples per delivery system quarterly[2]	Yes
Organic chemicals	benzo-(a)-pyrene (PAHs)	0.00001	0.00001	2026-27, 2 samples per delivery system annually[2]	Yes
	di(2-ethylhexly) phthalate (DEHP)	0.01	0.01	2022-23, 1 sample per delivery system annually[1]	Yes
	toluene	0.8	0.0003	2023-24, 1 sample per delivery system annually[1]	Yes
	acrylamide	0.0002	0.0002	2025-26, 2 samples per delivery system quarterly[1]	Yes
	xylene	0.6	0.0004	2022-23, 1 sample per delivery system annually[1]	Yes
	acrylamide	0.0002	0.0002	2023-24, 1 sample per delivery system annually[1]	Yes

Characteristic	Analyte name	ADWG health/aesthetic value (mg/L)	Detection limit (mg/L)	Monitoring frequency	Most recent result complies with ADWG value
	carbon tetrachloride	0.003	0.0003	2026-27, 2 samples per delivery system quarterly[2]	Yes
Chloroacetic acids	chloroacetic acid	0.15	0.001	2023-24, 1 sample per delivery system annually[1]	Yes
	dichloroacetic acid	0.1	0.001		Yes
	trichloroacetic acid	0.1	0.001		Yes
Chlorophenols	2-chlorophenol	0.3	0.0001	2023-24, 1 sample per delivery system annually[1]	Yes
	2,4-dichlorophenol	0.2	0.0001		Yes
	2,4,6-trichlorophenol	0.02	0.0001		Yes

mg/L = milligrams per litre; ADWG = Australian Drinking Water Guidelines

[1] Monitored on a 5-year rotational basis.

[2] Monitored on a 5-year rotational basis. Last sampled in 2021-22 from WFP, in 2026-27 sampling from customer supply system.

Table 8 Untreated (raw) water at Macarthur Water Filtration Plant – other characteristics

Characteristic	Analyte name	ADWG health value (mg/L)	Detection limit (mg/L)	Monitoring frequency – Macarthur Water Filtration Plant	Most recent result complies with ADWG value
Inorganic chemicals	cadmium	0.002	0.0001	quarterly	Yes
	arsenic	0.01	0.001	quarterly	Yes
	barium	2	0.001	yearly	Yes
	boron	4	0.02	yearly	Yes
	iodide	0.5	0.01	yearly	Yes
	beryllium	0.06	0.001	yearly	Yes
	uranium	0.02	0.001	yearly	Yes
	mercury	0.001	0.0001	quarterly	Yes
	molybdenum	0.05	0.001	yearly	Yes
	selenium	0.004	0.001	quarterly	Yes
	silver	0.1	0.001	yearly	Yes
	tin	NA	0.001	yearly	NA
	fluoride	1.5	0.01	quarterly	Yes
	nitrate	50	0.002	quarterly	Yes
	total silica	210	0.1	quarterly	Yes
	hydrogen sulfide	0.05	0.002	quarterly	Yes
Organic chemicals	benzene	0.001	0.0001	quarterly[1]	Yes
	vinyl chloride	0.0003	0.0003	quarterly[1]	Yes

NA = not applicable, mg/L = milligrams per litre; ADWG = Australian Drinking Water Guidelines.

[1] Event trigger for organics if wet weather intrusion impacts on raw water supply.

Table 9 Untreated (raw) water at Macarthur Water Filtration Plant – pesticides and herbicides

Characteristic	Analyte name	ADWG health value (mg/L)	Detection limit (mg/L)	[1]Monitoring frequency – Macarthur Water Filtration Plant	Most recent result complies with ADWG value
Pesticides/ Herbicides	atrazine	0.02	0.000005	quarterly	Yes
	chlorfenvinphos	0.002	0.00002	quarterly	Yes
	flupropanate	0.009	0.002	quarterly	Yes
	MCPA (2-methyl-4-clorophenoxyacetic acid)	0.04	0.00001	quarterly	Yes
	picloram	0.3	0.00005	quarterly	Yes
	simazine	0.02	0.000005	quarterly	Yes
	chlorpyrifos	0.01	0.000005	quarterly	Yes
	2,4-D	0.03	0.00001	quarterly	Yes
	diuron	0.02	0.000005	quarterly	Yes
	glyphosate	1	0.001	quarterly	Yes
	hexazinone	0.4	0.000005	quarterly	Yes
	triclopyr	0.02	0.00001	quarterly	Yes

mg/L = milligrams per litre; ADWG = Australian Drinking Water Guidelines.

[1] Event trigger for pesticides if wet weather intrusion impacts on raw water supply.

Table 10 Untreated (raw) water at Macarthur Water Filtration Plant – radionuclides

Characteristic	Analyte name	ADWG health value (Bq/L)	Detection limit (Bq/L)	Monitoring frequency – Macarthur Water Filtration Plant	Most recent result complies with ADWG value
Radiological	gross alpha	NA[1]	0.05	every 3 years	Yes
	gross beta	NA[1]	0.10	every 3 years	Yes
	total radionuclides	0.5	0.02	every 3 years	Yes

NA = not applicable. ADWG = Australian Drinking Water Guidelines.

[1] The sum of gross alpha and gross beta (total radionuclides) should not exceed 0.5 Bq/L (becquerels per litre). If the screening test for gross alpha or gross beta activity was to trigger further analysis of radionuclides, the specific radionuclides would be identified and assessed in consultation with NSW Health. These would likely be radium-226 (limit of detection is 0.01 Bq/L) and radium-228 (limit of detection is 0.08 Bq/L) as this is recommended in the ADWG.

Water in the catchments

We report some information about water quality in WaterNSW's catchments. **Water in your area is sourced from Broughton Pass weir**.

Information about untreated (raw) water in these catchments is provided below.

For more information about quantities of water in the catchment areas, please visit the WaterNSW website.

Table 11 Broughton Pass weir, quarterly results

Quarterly – 1 July 2026 to 30 Sept 2026							
Characteristics		Unit of measure	WaterNSW Reference levels[2]	No. of samples	Min	Ave	Max
Microbiological	*E. coli*	orgs/100 mL	NA	3	1	5	9
	Cryptosporidium[3]	oocysts/10 L	NA	0	NA	NA	NA
	Giardia[3]	cysts/10 L	NA	0	NA	NA	NA
Physical / chemical	turbidity	NTU	NA	3	0.89	1.25	1.65
	true colour[1]	HU	NA	3	13	13	14
	chlorophyll - *a*	µg/L	2-10	0	NA	NA	NA
	iron	mg/L	<1	3	0.340	0.407	0.440
	aluminium	mg/L	<0.1	3	0.050	0.070	0.100
	manganese	mg/L	0.5	3	0.013	0.014	0.015

[1] True colour is measured at 400 nm wavelength.

[2] Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC, 2000). These guidelines list water quality levels consistent with acceptable medium to long-term environmental water quality. Water quality may vary outside these ranges during disturbances of the raw water for example after heavy rain events in the catchments. During these occurrences, Sydney Water can treat the raw water and continued to provide safe drinking water that met all long-term health and aesthetic guidelines under the Australian Drinking Water Guidelines.

[3] Cryptosporidium & Giardia are monitored at irregular frequencies and in response to events.

Abbreviations: Ave = average value; E. coli = Escherichia coli; HU = Hazen units; Max = maximum value; mg/L = milligrams per litre; µg/L = micrograms per litre; Min = minimum value; NTU = nephelometric turbidity units; orgs/100 mL = organisms per 100 millilitres; cysts/10 L = Giardia cysts per 10 litres; oocysts/10 L = Cryptosporidium oocysts per 10 litres; NA = not applicable.

Table 12 Broughton Pass weir, annual results

Annual – 1 Oct 2025 to 30 Sept 2026							
Characteristics		Unit of measure	WaterNSW Reference levels[2]	No. of samples	Min	Ave	Max
Microbiological	*E. coli*	orgs/100 mL	NA	12	1	15	88
	Cryptosporidium[3]	oocysts/10 L	NA	0	NA	NA	NA
	Giardia[3]	cysts/10 L	NA	0	NA	NA	NA
Physical / chemical	turbidity	NTU	NA	12	0.33	1.17	1.85
	true colour[1]	HU	NA	12	13	17	24
	chlorophyll - *a*	µg/L	2-10	0	NA	NA	NA
	iron	mg/L	<1	12	0.260	0.488	0.780
	aluminium	mg/L	<0.1	12	0.050	0.088	0.160
	manganese	mg/L	0.5	12	0.012	0.020	0.041

[1] True colour is measured at 400 nm wavelength.

[2] Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC, 2000). These guidelines list water quality levels consistent with acceptable medium to long-term environmental water quality. Water quality may vary outside these ranges during disturbances of the raw water for example after heavy rain events in the catchments. During these occurrences, Sydney Water can treat the raw water and continue to provide safe drinking water that met all long-term health and aesthetic guidelines under the Australian Drinking Water Guidelines.

[3] Cryptosporidium & Giardia are monitored at irregular frequencies and in response to events.

Abbreviations: Ave = average value; E. coli = Escherichia coli; HU = Hazen units; Max = maximum value; mg/L = milligrams per litre; µg/L = micrograms per litre; Min = minimum value; NTU = nephelometric turbidity units; orgs/100 mL = organisms per 100 millilitres; cysts/10 L = Giardia cysts per 10 litres; oocysts/10 L = Cryptosporidium oocysts per 10 litres; NA = not applicable.

Review of drinking water literature

Every quarter, we review a topic from the latest water quality research from around the world.

Sydney Water Instantaneous Filtration Technology (SWIFT)

Increasingly frequent extreme weather events across Sydney, including droughts, bushfires and floods, have created greater variability in raw water quality, challenging the resilience of Water Filtration Plants (WFPs). To address this challenge, Water Process & Integration team in Water Supply & Production has developed the **Sydney Water Instantaneous Filtration Technology (SWIFT)**, a pioneering real time optimisation platform that transforms the way WFP operations teams optimise the coagulation and filtration processes.

Traditionally, coagulant dosing relied on manual jar testing, operator expertise and reactive adjustments, limiting the ability to respond quickly to rapidly changing water conditions. SWIFT ingests live, minute by minute operational data from plant SCADA (Supervisory Control and Data Acquisition) and applies advanced predictive algorithms to calculate optimal chemical dosing in real time. Within minutes, the system provides operators with precise, actionable insights in plant SCADA that enhance decision making and strengthen process control.

By integrating the SWIFT model directly into existing SCADA systems, Sydney Water has significantly reduced the need for manual intervention. Coagulant dosing is now dynamically optimised based on continuously updated raw water conditions, improving treatment efficiency and operational reliability. The solution leverages existing plant instrumentation and routine water quality testing, eliminating the need for major new infrastructure while unlocking powerful automation capabilities.

SWIFT represents a major advance in digital water operations. Delivering improved water quality, more stable plant performance, and a scalable, data driven platform that supports operator decision making and demonstrates Sydney Water's commitment to innovation, efficiency, and safe, reliable drinking water for the community. SWIFT does not replace the operator's decision-making; rather, it provides predicted data and insights to inform the decision.

Reference

Curtis, M., Mohiuddin, A., Wang, Y., Liberatore, D. (2026), *Teaching an Old Dog New Tricks: Integrating Advanced Process Models in Day-to-Day Operational Technology Systems*, AWA 2026.



Contact us

If you have any questions or concerns about the information in this report, contact us on our website. For issues about water quality, call 13 20 90, available 24/7.

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