Quarterly Drinking Water Quality Report

North Richmond Delivery System 1 April 2026 to 30 June 2026

11 August 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 720 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.

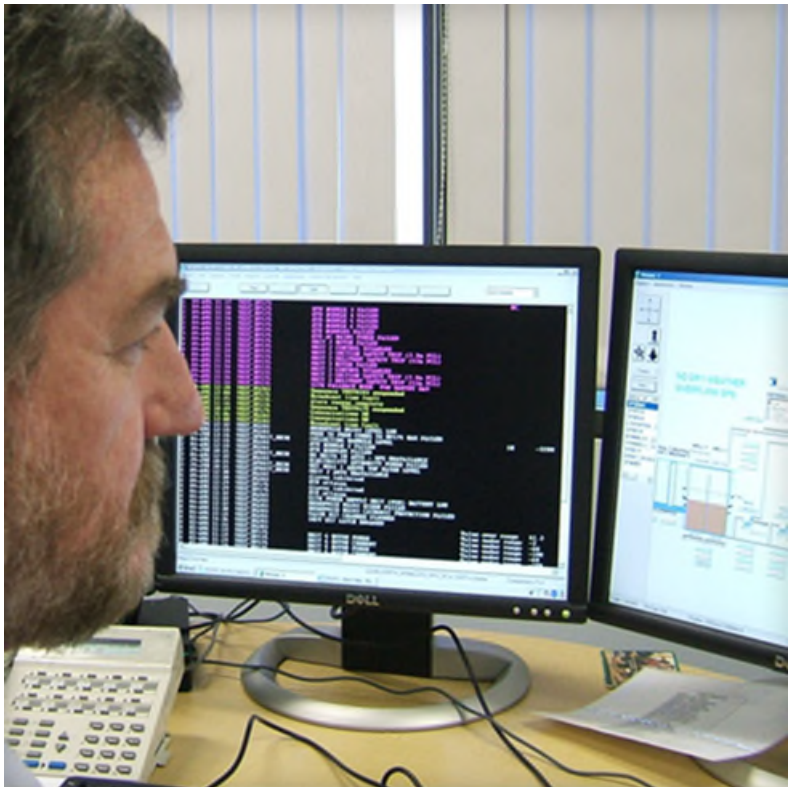
The *Australian Drinking Water Guidelines* Framework for Management of Drinking Water Quality uses a preventive risk management approach that encompasses all the steps in water production from the catchment to the customer.

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.

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.

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.



Table 1 Water Quality Health Characteristics for the North Richmond Delivery System

Characteristic	Unit of measure	ADWG health value	No. of samples 1 Jul 2025 to 30 Jun 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	192	0	At least 98% of test results <1	100%	Yes
fluoride[2]	mg/L	1.5	164	0	At least 95% of test results 0.90 to 1.50 mg/L	100%	Yes
free chlorine[4]	mg/L	5	192	0	The 95th percentile value is less than the respective ADWG health value		Yes
monochloramine	mg/L	3	192	0			Yes
antimony[1]	mg/L	0.003	36	0			Yes
cadmium[1]	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[1]	mg/L	0.02	36	0			Yes
sulfate[1]	mg/L	500	8	0			Yes
chromium[1,3]	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 Jul 2025 to 30 Jun 2026	No. of exceptions	Long-term performance (assessment over 12-month period)	% of test results complying with the guideline	Met long-term performance measure
acrylamide[1]	mg/L	0.0002	8	0			Yes
total trihalomethanes	mg/L	0.25	36	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 parameter 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.

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

Table 2 Water Quality Aesthetic Characteristics for the North Richmond Delivery System

Characteristic	Unit of measure	ADWG aesthetic value	No. of samples 1 Jul 2025 to 30 Jun 2026	Average result	Long-term performance measure (assessment over 12-month period)	Met long-term performance measure
iron	mg/L	0.3	120	0.014	Average of test results less than respective ADWG aesthetic value	Yes
aluminium	mg/L	0.2	28	0.007		Yes
manganese	mg/L	0.05	120	<0.0005		Yes
copper	mg/L	1	40	0.021		Yes
zinc	mg/L	3	28	0.012		Yes
ammonia as NH_3	mg/L	0.50	28	<0.001		Yes
turbidity	NTU	5	192	0.10		Yes
true colour[1]	HU	15	28	<2		Yes
dissolved oxygen	% saturation	greater than 85%	28	90.8		Yes
total dissolved solids	mg/L	600	8	133.0		Yes
sulfate	mg/L	250	8	9.9		Yes
hardness (total)	mg/L	200	28	35.9		Yes
flavour	rating[2]	acceptable	1	3	Average rating of 1, 2 or 3	Yes
odour	rating[2]	acceptable	1	3		Yes
pH	pH units	between 6.5 - 8.5	192	7.7	Average results between 6.5 - 8.5 pH units	Yes
temperature	degrees C	no set value	208	20.8	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. NA = not applicable.

Abbreviations: ADWG = Australian Drinking Water Guidelines; HU = Hazen Units; mg/L = milligrams per litre; NTU = nephelometric turbidity units.

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	0.06 - 0.13	NTU
total dissolved solids	109.0 -151.0	mg/L
pH	7.29 - 8.28	pH units
conductivity	19.2 - 26.9	mS/m
total hardness	24 - 48	mg $CaCO_3$/L
calcium hardness	8.9 - 20.0	mg $CaCO_3$/L
magnesium hardness	12 - 22	mg $CaCO_3$/L
alkalinity	24.4 - 36.1	mg $CaCO_3$/L
temperature	14.5 - 26.1	degrees C
dissolved oxygen	72.0 - 114.4	% saturation
Disinfectants		
free chlorine	0.84	mg/L
monochloramine	0.07	mg/L
Disinfection by-products		
trihalomethanes	0.060	mg/L
Inorganic chemicals		
aluminium	<0.005 - 0.013	mg/L
ammonia (as NH_3)	<0.001	mg/L
arsenic	<0.0002	mg/L
cadmium	<0.0001	mg/L
antimony	<0.0003	mg/L
calcium	4.93 - 9.26	mg/L
chloride	24.2 - 49.1	mg/L
chromium	<0.0002 - 0.0017	mg/L
copper	0.0024 - 0.0293	mg/L
cyanide	<0.005	mg/L
fluoride	0.99	mg/L
iron	<0.005 - 0.030	mg/L
lead	0.0001 - 0.0005	mg/L
nickel	<0.0002 - 0.0007	mg/L
magnesium	2.77 - 5.90	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)	0.12 - 0.38	mg/L
nitrite (as NO_2)	<0.001	mg/L
phosphorus	0.002 - 0.006	mg/L
potassium	1.71 - 2.92	mg/L
reactive silica (as SiO_2)	2.4 - 3.8	mg/L
selenium	<0.0002 - 0.0005	mg/L
silver	<0.0001	mg/L

Parameter	Range (10th – 90th Percentile) or Average	Units
sodium	23.4 - 29.8	mg/L
sulfate	6.90 - 13.00	mg/L
zinc	0.004 - 0.015	mg/L
Organic compounds		
chlorinated, polynuclear aromatic, aromatic hydrocarbons	not detected	
chlorophenols	not detected	
pesticides	not detected	

At the treatment plant

The water from your tap is treated at our **North Richmond 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 **North Richmond Water Filtration Plant**.

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

Quarter – 1 Apr 2026 to 30 Jun 2026							
Characteristics	**Unit of measure**	**ADWG value**	**No. of samples**	**Min**	**Ave**	**Max**	**% of tests meeting the guideline[3]**
E. coli	orgs/100 mL	not detected in 100 mL	13	<1	<1	<1	100%
turbidity	NTU	5	13	<0.05	<0.05	0.10	100%
true colour[1]	HU	15	13	<2	<2	<2	100%
pH	pH units	between 6.5 - 8.5	13	7.2	7.4	7.7	100%
free chlorine[4]	mg/L	5	13	1.12	1.18	1.30	100%
monochloramine	mg/L	3	13	<0.04	0.05	0.10	100%
fluoride[2]	mg/L	1.5	13	0.92	0.97	1.02	100%
total trihalomethanes	mg/L	0.25	3	0.03	0.04	0.04	100%
n-nitrosodimethylamine	mg/L	0.0001	1	0.000002	0.000002	0.000002	100%
perfluorooctanoic acid (PFOA)	µg/L	0.2	13	0.0004	0.0011	0.0024	100%
perfluorooctane sulfonate (PFOS)	µg/L	0.008	13	0.0004	0.0010	0.0017	100%
perfluorohexane sulfonate (PFHxS)	µg/L	0.03	13	0.0011	0.0023	0.0034	100%
perfluorobutane sulfonate (PFBS)	µg/L	1	13	<0.0005	0.0012	0.0022	100%
iron	mg/L	0.3	13	<0.005	<0.005	<0.005	100%

Quarter – 1 Apr 2026 to 30 Jun 2026							
aluminium	mg/L	0.2	13	<0.005	<0.005	0.009	100%
manganese	mg/L	0.05	13	<0.001	<0.001	0.002	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 North Richmond Water Filtration Plant – annual results

Annual – 1 Jul 2025 to 30 Jun 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	52	<1	<1	<1	100%	Yes
turbidity	NTU	5	52	<0.05	0.08	0.14	100%	Yes
true colour[1]	HU	15	52	<2	<2	<2	100%	Yes
pH	pH units	between 6.5 - 8.5	52	7.0	7.3	7.7	100%	Yes
free chlorine	mg/L	5[3]	52	0.84	1.12	1.32	100%	Yes
monochloramine	mg/L	3	52	<0.04	0.07	0.12	100%	Yes
fluoride	mg/L	1.5[2]	50	0.92	0.98	1.07	100%	Yes
total trihalomethanes	mg/L	0.25	12	0.03	0.06	0.08	100%	Yes
n-nitrosodimethylamine	mg/L	0.0001	4	<0.000001	<0.000001	0.000002	100%	Yes
perfluorooctanoic acid (PFOA)	µg/L	0.2	52	<0.0001	0.0011	0.0025	100%	Yes
perfluorooctane sulfonate (PFOS)	µg/L	0.008	52	0.0004	0.0017	0.0051	100%	Yes
perfluorohexane sulfonate (PFHxS)	µg/L	0.03	52	0.0011	0.0027	0.0072	100%	Yes
perfluorobutane sulfonate (PFBS)	µg/L	1	52	<0.0005	0.0011	0.0039	100%	Yes
iron	mg/L	0.3	52	<0.005	<0.005	0.006	100%	Yes

Annual – 1 Jul 2025 to 30 Jun 2026								
aluminium	mg/L	0.2	52	<0.005	<0.005	0.036	100%	Yes
manganese	mg/L	0.05	52	<0.001	<0.001	0.002	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.

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.*

More detailed information on PFAS data can be found on the Sydney Water website PFAS monitoring results

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

		Quarter - 1 Apr 2026 to 30 Jun 2026				Annual - 1 Jul 2025 to 30 Jun 2026			
Characteristics	**Unit of measure**	**No. of samples**	**Min**	**Ave**	**Max**	**No. of samples**	**Min**	**Ave**	**Max**
E. coli	orgs/100 mL	13	13	44	140	52	<1	99	1600
Cryptosporidium	oocysts/10 L	13	<1	<1	<1	50	<1	<1	4
Giardia	cysts/10 L	13	<1	<1	2	50	<1	1	10
turbidity	NTU	13	1.85	5.04	29.30	52	1.61	4.98	29.30
true colour[1]	HU	13	6	8	10	52	6	13	80
pH	pH units	13	7.1	7.3	7.5	52	6.5	7.3	7.5
iron	mg/L	13	0.274	0.515	2.200	52	0.274	0.660	8.680
aluminium	mg/L	13	0.049	0.107	0.516	52	0.049	0.149	0.574
manganese	mg/L	13	0.021	0.038	0.081	52	0.021	0.050	0.130
perfluorooctanoic acid (PFOA)	µg/L	13	<0.001	0.001	0.003	51	<0.001	0.001	0.003
perfluorooctane sulfonate (PFOS)	µg/L	13	0.002	0.003	0.006	51	<0.001	0.002	0.006
perfluorohexane sulfonate (PFHxS)	µg/L	13	0.001	0.004	0.006	51	<0.001	0.003	0.007
perfluorobutane sulfonate (PFBS)	µg/L	13	<0.001	0.002	0.003	51	<0.001	0.001	0.003

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

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 7-11. 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 North Richmond Delivery System – other characteristics

Characteristic	Analyte name	ADWG health/aesthetic value (mg/L)	Detection limit (mg/L)	Monitoring frequency[1]	Most recent result complies with ADWG value
Inorganic chemicals	cyanogen chloride	0.08	0.004	2024-25, 2 samples per delivery system annually	Yes
	chloral hydrate	0.1	0.001	2022-23, 1 sample per delivery system annually	Yes
	hydrogen sulfide	0.05	0.002	2023-24, 2 samples per delivery system per month	Yes
Organic chemicals	benzo-(a)-pyrene (PAHs)	0.00001	0.00001	2021-22, 2 samples per delivery system annually	Yes

Characteristic	Analyte name	ADWG health/aesthetic value (mg/L)	Detection limit (mg/L)	Monitoring frequency[1]	Most recent result complies with ADWG value
	di(2-ethylhexly) phthalate (DEHP)	0.01	0.01	2022-23, 1 sample per delivery system annually	Yes
	toluene	0.8	0.0003	2023-24, 1 sample per delivery system annually	Yes
	acrylamide	0.0002	0.0002	2025-26, 2 samples per delivery system quarterly	Yes
	xylene	0.6	0.0004	2022-23, 1 sample per delivery system annually	Yes
Chloroacetic acids	chloroacetic acid	0.15	0.001	2023-24, 1 sample per delivery system annually	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	Yes
	2,4-dichlorophenol	0.2	0.0001		Yes
	2,4,6-trichlorophenol	0.02	0.0001		Yes

mg/L = milligrams per litre.

[1] Monitored on a five-yearly rotational basis – year indicates most recent test performed.

Table 8 Treated water at North Richmond Water Filtration Plant – other characteristics

Characteristic	Analyte name	ADWG health/aesthetic value (mg/L)	Detection limit (mg/L)	Monitoring frequency – North Richmond Water Filtration Plant	Most recent result complies with ADWG value
Inorganic chemicals	antimony	0.003	0.0003	NA[1]	Yes
	cadmium	0.002	0.0001	NA[1]	Yes
	copper	2	0.0005	NA[1]	Yes
	chromium (as Cr(VI))	0.05	0.0002	NA[1]	Yes
	cyanide	0.08	0.005	NA[1]	Yes
	lead	0.005	0.0001	NA[1]	Yes
	nickel	0.02	0.0002	NA[1]	Yes
	sulfate	500	0.10	NA[1]	Yes
	total dissolved solids	600	calculation	NA[1]	Yes
	chloride	250	0.10	5-yearly[3]	Yes
	sodium	180	0.05	5-yearly[3]	Yes
Organic chemicals	acrylamide	0.0002	0.0002	5-yearly[2]	Yes
	carbon tetrachloride	0.003	0.0003	5-yearly[3]	Yes

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

[1] Monitored monthly/quarterly in the customer supply systems rather than in the treated water from the WFP.

[2] Monitored on a 5-year rotational basis. In 2025-26 sampling quarterly from customer supply system.

[3] Monitored on a 5-year rotational basis. Last sampled in 2021-22, 1 sample for each WFP in each quarter.

Table 9 Untreated (raw) water at North Richmond Water Filtration Plant – other characteristics

Characteristic	Analyte name	ADWG health/aesthetic value (mg/L)	Detection limit (mg/L)	Monitoring frequency – North Richmond Water Filtration Plant	Most recent result complies with ADWG value
Inorganic chemicals	arsenic	0.01	0.0002	quarterly	Yes
	barium	2	0.0005	quarterly	Yes
	boron	4	0.001	quarterly	Yes
	iodide	0.5	0.005	yearly	Yes
	beryllium	0.06	0.0005	yearly	Yes
	uranium	0.02	0.0001	yearly	Yes
	mercury	0.001	0.00001	quarterly	Yes
	molybdenum	0.05	0.0001	quarterly	Yes
	selenium	0.004	0.0002	quarterly	Yes
	silver	0.1	0.0001	yearly	Yes
Organic chemicals	benzene	0.001	0.0003	5-yearly[2]	Yes
	1,2-dichlorobenzene	1.5	0.0003	5-yearly[3]	Yes
	1,3-dichlorobenzene	0.02	0.0003	5-yearly[3]	Yes
	1,4-dichlorobenzene	0.04	0.0005	5-yearly[3]	Yes
	1,2-dichloroethane	0.003	0.0003	5-yearly[4]	Yes
	1,1-dichloroethene	0.03	0.0003	5-yearly[1]	Yes
	1,2-dichloroethene	0.06	0.0003	5-yearly[1]	Yes
	dichloromethane (methylene chloride)	0.004	0.0003	5-yearly[1]	Yes
	ethylbenzene	0.3	0.0003	5-yearly[2]	Yes

Characteristic	Analyte name	ADWG health/aesthetic value (mg/L)	Detection limit (mg/L)	Monitoring frequency – North Richmond Water Filtration Plant	Most recent result complies with ADWG value
	ethylenediamine tetraacetic acid (EDTA)	0.25	0.02	5-yearly[2]	Yes
	hexachlorobutadiene	0.0007	0.0003	5-yearly[4]	Yes
	nitrilotriacetic acid (NTA)	0.2	0.02	5-yearly[2]	Yes
	styrene (vinylbenzene)	0.003	0.0004	5-yearly[2]	Yes
	tributyltin oxide	0.001	0.000002	5-yearly[2]	Yes
	trichlorobenzenes (total)	0.03	0.0003	5-yearly[1]	Yes
	vinyl chloride	0.0003	0.0003	5-yearly[3]	Yes

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

[1] Monitored on a 5-year rotational basis, sampled in 2024-25.

[2] Monitored on a 5-year rotational basis, last sampled in 2023-24.

[3] Monitored on a 5-year rotational basis, last sampled in 2022-23.

[4] Monitored on a 5-year rotational basis, last sampled in 2020-21, to be monitored in 2025-26.

Table 10 Untreated (raw) water at North Richmond Water Filtration Plant – pesticides and herbicides

Characteristic	Analyte name	ADWG health value (mg/L)	Detection limit (mg/L)	[1]Monitoring frequency – North Richmond Water Filtration Plant	Most recent result complies with ADWG value
Pesticides / Herbicides	aldrin	0.0003	0.00001	monthly	Yes
	atrazine	0.02	0.000025	monthly	Yes
	chlordane	0.002	0.00001	monthly	Yes
	2,4-D	0.03	0.0001	monthly	Yes
	diazinon	0.004	0.000025	monthly	Yes
	dicamba	0.1	0.0001	monthly	Yes
	dieldrin	0.0003	0.00001	monthly	Yes
	dimethoate	0.007	0.000025	monthly	Yes
	diquat	0.007	0.0001	monthly	Yes
	endosulfan	0.02	0.00001	monthly	Yes
	glyphosate	1	0.0005	monthly	Yes
	heptachlor	0.0003	0.00001	monthly	Yes
	lindane	0.01	0.00001	monthly	Yes
	metsulfuron-methyl	0.04	0.0001	monthly	Yes
	molinate	0.004	0.000025	monthly	Yes
	paraquat	0.02	0.0005	monthly	Yes
	2,4,5-T	0.1	0.0001	monthly	Yes
	triclopyr	0.02	0.0001	monthly	Yes

NA = not applicable; 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 11 Untreated (raw) water at North Richmond Water Filtration Plant – radionuclides

Characteristic	Analyte name	ADWG health value (Bq/L)	Detection limit (Bq/L)	Monitoring frequency – North Richmond Water Filtration Plant	Most recent result complies with ADWG value
Radiological	gross alpha	NA[1]	0.02	5-yearly[2]	Yes
	gross beta	NA[1]	0.07	5-yearly[2]	Yes
	total radionuclides	0.5	0.02	5-yearly[2]	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.

[2] Monitored on a 5-year rotational basis. Last sampled in 2022-23.

Water in the catchments

We report some information about water quality in WaterNSW's catchments. **Water in your area is sourced from the Hawkesbury River.**

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

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

Table 12 Hawkesbury River (Jetty at rear of North Richmond Water Filtration Plant), quarterly results

			Quarterly Results – 1 Apr 2026 to 30 Jun 2026				
Characteristics		Unit of measure	Reference levels[2]	No. of samples	Min	Ave	Max
Microbiological	*E. coli*	orgs/100 mL	NA	13	12	42	140
	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	13	4.30	7.11	27.00
	true colour[1]	HU	NA	13	6	8	11
	chlorophyll - *a*	µg/L	2-10	13	2.0	4.5	10.8
	iron	mg/L	<1	13	0.250	0.391	0.885
	aluminium	mg/L	<0.1	13	0.037	0.086	0.304
	manganese	mg/L	0.5	13	0.022	0.034	0.055

[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; 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 13 Hawkesbury River (Jetty at rear of North Richmond WFP), annual results

		Annual Results – 1 Jul 2025 to 30 Jun 2026					
Characteristics		Unit of measure	Reference levels[2]	No. of samples	Min	Ave	Max
Microbiological	*E. coli*	orgs/100 mL	NA	51	0	98	2000
	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	51	2.00	8.80	78.00
	true colour[1]	HU	NA	51	1	12	40
	chlorophyll - *a*	µg/L	2-10	51	0.1	5.2	13.5
	iron	mg/L	<1	50	0.208	0.497	3.110
	aluminium	mg/L	<0.1	50	0.009	0.135	0.785
	manganese	mg/L	0.5	50	0.021	0.048	0.130

[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; 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.

Microbial Source Tracking (MST)

Traditionally, water contamination has been monitored through the detection of faecal indicator bacteria, usually *Escherichia coli* and Enterococci. These are limited in that they cannot be used to identify the source of the faecal contamination. As they are found ubiquitously across a wide range of warm-blooded hosts, they may indicate the presence of pathogens, however they don't indicate if potential pathogens can cause illness in humans.

Microbial source tracking (MST) has emerged in the last 20 years and has been widely applied for faecal source identification. MST encompasses a suite of tools capable of linking certain enteric microbes to a particular host and usually relies on detecting **host-associated genetic markers** using molecular methods rather than traditional culture methods.

MST markers have been identified for a range of animals; some examples are provided in table 14.

Table 14. Common MST markers by source

Source	Common MST markers
Human sewage	HF183, PMMoV, crAssphage, F+RNA phage group II and III
Cattle and ruminants	CowM2, Rum2Bac
Pigs	Pig-1-Bac, Pig-2-BAC, PF163
Chicken	LA35, Chicken paroviruses
Dogs	DG3, BacCan-UCD

Over the past decade, sewage-specific markers have become central tools for identifying leaking sewer infrastructure, wastewater treatment plant impacts, stormwater contamination, septic system failures, and combined sewer overflows. MST are increasingly incorporated into recreational water monitoring programs and sanitary surveys.

There has also been increasing integration between MST and quantitative microbial risk assessment by allowing investigators to estimate:

- Likelihood of pathogen presence
- Exposure risks
- Relative risks from human versus animal contamination
- Health impacts of remediation actions.

This has enhanced the use of MST for regulatory decision-making and catchment management. Identification of the source of contamination can also allow prioritisation of remediation or management of public health risk. Allowing human-source contamination to be prioritised because it generally presents greater public health risk than agricultural or wildlife contamination.

Sydney Water has developed MST capabilities within their testing laboratories and is engaged in ongoing research on the use of various MST markers to quantify the impact of wastewater and urban pollution on urbanised estuarine environments. The outcomes of this work will assist in identifying the parts of the wastewater which have the highest impact on water quality.

Further reading

Paruch, L.; Paruch, A.M. An Overview of Microbial Source Tracking Using Host-Specific Genetic Markers to Identify Origins of Faecal Contamination in Different Water Environments. Water 2022, 14, 1809. https://doi.org/10.3390/ w14111809.

Demeter, K *et al*., have genetic targets for faecal pollution diagnostics and source tracking revolutionised water quality analysis. FEMS Microbiology Reviews 2023 47:1-36.

Ahmed, W *et al* Microbial Source tracking if untreated wastewater and animal scats in urbanized estuarine waters. Science of the Total environment 2023 877:162764.



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.

sydneywater.com.au

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