Quarterly Drinking Water Quality Report

Potts Hill Delivery System 1 April 2025 to 30 June 2025

15 August 2025

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.

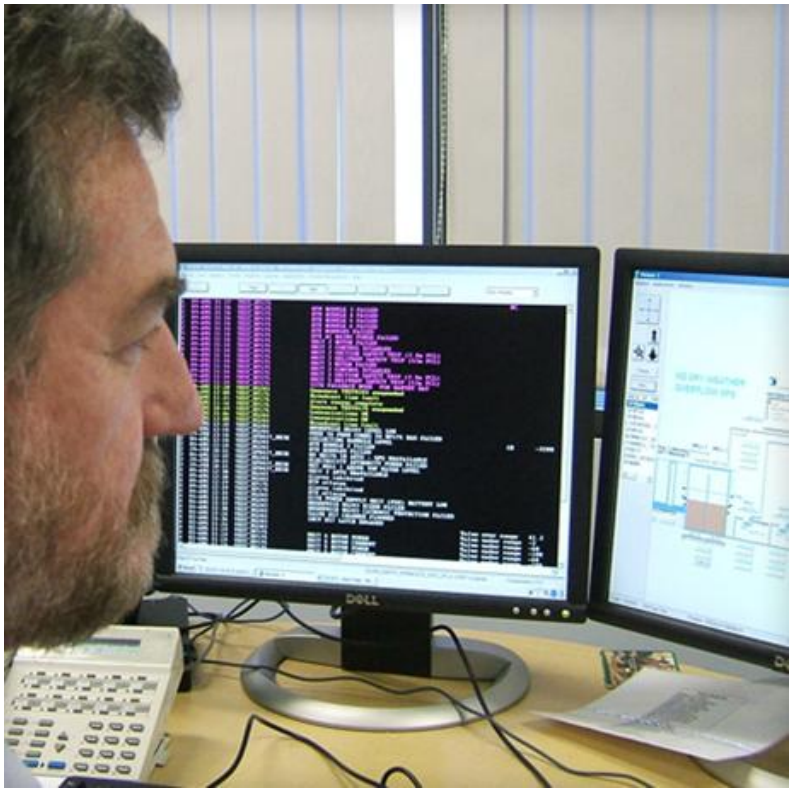
The *Australian Drinking Water Guidelines* Framework for Management of Drinking Water Quality uses a preventive risk management approach that encompasses all the steps in water production from the catchment to the customer.

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.

Sydney Water recently undertook a review of the requirements for reporting against guideline values in the Australian Drinking Water Guidelines (ADWG). As a result of this review we have modified the number of significant figures we use in reporting and reviewing analytical results. This is consistent with the ADWG requirements. Our reports will now include the same number of significant figures as the guideline value to ensure that we do not misrepresent the precision of our analysis against the guideline values and how they were derived.

Because of this review, a N-Nitrosodimethylamine (NDMA) result that was reported in Q2 2024-25 has changed. The reported result was 0.000114 mg/L, this has been updated to one significant figure (0.0001 mg/L). This value does not exceed the guideline value of 0.0001 mg/L. Data in the report has been updated to reflect this change.

Table 1 Water Quality Health Characteristics for the Potts Hill Delivery System

Characteristic	Unit of measure	ADWG health value	No. of samples 1 Jul 2024 to 30 Jun 2025	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	2376	0	At least 98% of test results <1	100%	Yes
fluoride[2]	mg/L	1.5	173	0	At least 95% of test results 0.90 to 1.50 mg/L	100%	Yes
free chlorine[4]	mg/L	5	2376	0	The 95th percentile value is less than the respective ADWG health value		Yes
monochloramine	mg/L	3	2376	0			Yes
antimony[1]	mg/L	0.003	8	0			Yes
cadmium[1]	mg/L	0.002	8	0			Yes
cyanide[1]	mg/L	0.08	2	0			Yes
copper	mg/L	2	28	0			Yes
lead	mg/L	0.01	28	0			Yes
nitrate as NO_3	mg/L	50	28	0			Yes
nitrite as NO_2	mg/L	3	28	0			Yes
nickel[1]	mg/L	0.02	8	0			Yes
sulfate[1]	mg/L	500	4	0			Yes
chromium[1,3]	mg/L	0.05 (as Cr(VI))	8	0			Yes
manganese	mg/L	0.5	120	0			Yes

Characteristic	Unit of measure	ADWG health value	No. of samples 1 Jul 2024 to 30 Jun 2025	No. of exceptions	Long-term performance (assessment over 12-month period)	% of test results complying with the guideline	Met long-term performance measure
n-nitrosodimethylamine[1]	mg/L	0.0001	2	0			Yes
cyanogen chloride[1]	mg/L	0.08	1	0			Yes
total trihalomethanes	mg/L	0.25	84	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 Potts Hill Delivery System

Characteristic	Unit of measure	ADWG aesthetic value	No. of samples 1 Jul 2024 to 30 Jun 2025	Average result	Long-term performance (assessment over 12-month period)	Met long-term performance measure
iron	mg/L	0.3	120	0.005	Average of test results less than respective ADWG aesthetic value	Yes
aluminium	mg/L	0.2	28	0.012		Yes
manganese	mg/L	0.1	120	0.0018		Yes
copper	mg/L	1	28	0.018		Yes
zinc	mg/L	3	28	0.002		Yes
ammonia as NH_3	mg/L	0.50	28	0.272		Yes
turbidity	NTU	5	2376	0.11		Yes
true colour[1]	HU	15	28	3		Yes
dissolved oxygen	% saturation	greater than 85%	28	109.8		Yes
total dissolved solids	mg/L	600	4	137.0		Yes
sulfate	mg/L	250	4	8.8		Yes
hardness (total)	mg/L	200	28	48.3		Yes
flavour	rating[2]	acceptable	1	3	Average rating of 1, 2 or 3	Yes
odour	rating[2]	acceptable	1	2		Yes
pH	pH units	between 6.5 - 8.5	2376	7.8	Average results between 6.5 - 8.5 pH units	Yes
temperature	degrees C	no set value	2390	19.6	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 (10^{th} – 90^{th} Percentile) or Average	Units
Physical Characteristics		
true colour	< 2 - 4	TCU or HU
turbidity	0.07 - 0.13	NTU
total dissolved solids	107 - 157	mg/L
pH	7.66 - 7.93	pH units
conductivity	18.4 - 22.0	mS/m
total hardness	36 - 63	mg $CaCO_3$ /L
calcium hardness	27 - 41	mg $CaCO_3$ /L
magnesium hardness	17 - 25	mg $CaCO_3$ /L
alkalinity	31.9 - 44.3	mg $CaCO_3$ /L
temperature	15.0 - 24.2	degrees C
dissolved oxygen	93.4 - 126.3	% saturation
Disinfectants		
free chlorine	0.04	mg/L
monochloramine	0.90	mg/L
Disinfection by-products		
trihalomethanes	0.090	mg/L
Inorganic chemicals		
aluminium	0.010 - 0.018	mg/L
ammonia (as NH_3)	0.09 - 0.40	mg/L
arsenic	< 0.0002	mg/L
cadmium	< 0.0001	mg/L
antimony	< 0.0003	mg/L
calcium	9.85 - 15.60	mg/L
chloride	27.4 - 51.2	mg/L
chromium	< 0.0002	mg/L
copper	0.007 - 0.032	mg/L
cyanide	< 0.005	mg/L
fluoride	1.01	mg/L
iron	< 0.005 - 0.008	mg/L
lead	< 0.0001 - 0.0004	mg/L
nickel	< 0.0002 - 0.0007	mg/L
magnesium	0.512 - 5.790	mg/L
manganese	< 0.0005 - 0.0032	mg/L
mercury	< 0.00001 - 0.00003	mg/L

Parameter	Range (10th – 90th Percentile) or Average	Units
nitrate (as NO_3)	0.04 - 0.32	mg/L
nitrite (as NO_2)	0.005 - 0.136	mg/L
phosphorous	0.003 - 0.004	mg/L
potassium	1.31 - 1.94	mg/L
reactive silica (as SiO_2)	3.9 - 4.5	mg/L
selenium	< 0.0002	mg/L
silver	< 0.0001	mg/L
sodium	11.0 - 14.4	mg/L

Parameter	Range (10th – 90th Percentile) or Average	Units
sulfate	7.2 - 9.6	mg/L
zinc	0.001 - 0.004	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 **Prospect Water Filtration Plant** and the **Sydney Desalination Plant at Kurnell**.

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 here for the **Prospect Water Filtration Plant** and the **Sydney Desalination Plant at Kurnell** (when operating and supplying treated water).

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

Quarter - 1 Apr 2025 to 30 Jun 2025							
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	0.06	0.09	0.12	100%
true colour[1]	HU	15	13	<2	3	4	100%
pH	pH units	between 6.5 - 8.5	13	7.6	7.8	8.1	100%
free chlorine[4]	mg/L	5	26	<0.04	<0.04	<0.04	100%
monochloramine	mg/L	3	26	1.66	1.74	1.82	100%
fluoride[2]	mg/L	1.5	13	0.95	1.01	1.05	100%
total trihalomethanes	mg/L	0.25	16	0.04	0.09	0.12	100%
n-nitrosodimethylamine	mg/L	0.0001	1	<0.0001	<0.0001	<0.0001	100%
perfluorooctane sulfonate (PFOS)	µg/L	NA[5]	3	<0.0001	0.0006	0.0009	100%
perfluorohexane sulfonate (PFHxS)	µg/L	NA[5]	3	0.0007	0.0008	0.0008	100%
sum of PFOS and PFHxS	µg/L	0.07	3	0.0008	0.0014	0.0017	100%
perfluorooctanoic acid (PFOA)	µg/L	0.56	3	<0.0001	0.0002	0.0004	100%
iron	mg/L	0.3	13	<0.005	<0.005	0.007	100%
aluminium	mg/L	0.2	13	0.009	0.013	0.019	100%

Quarter - 1 Apr 2025 to 30 Jun 2025							
manganese	mg/L	0.1	13	<0.001	0.003	0.009	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.

[5] Australian Drinking Water Guideline 2018 required that the sum of the concentrations of perfluorooctane sulfonate (PFOS) and perfluorohexane sulfonate (PFHxS) in drinking water should not exceed 70 nanograms per litre (ng/L), which is equivalent to 0.07 micrograms per litre (µg/L).

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 Prospect Water Filtration Plant – annual results

Annual – 1 Jul 2024 to 30 Jun 2025								
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	53	<1	<1	<1	100%	Yes
turbidity	NTU	5	53	0.06	0.10	0.14	100%	Yes
true colour[1]	HU	15	53	<2	<2	4	100%	Yes
pH	pH units	between 6.5 - 8.5	53	7.4	7.7	8.1	100%	Yes
free chlorine[3]	mg/L	5	106	<0.04	<0.04	0.06	100%	Yes
monochloramine	mg/L	3	106	1.60	1.75	1.92	100%	Yes
fluoride[2]	mg/L	1.5	53	0.93	1.01	1.08	100%	Yes
total trihalomethanes	mg/L	0.25	65	0.04	0.10	0.14	100%	Yes
n-nitrosodimethylamine	mg/L	0.0001	2	<0.0001	<0.0001	0.0001	100%	Yes
cyanogen chloride	mg/L	0.08	1	<0.004	<0.004	<0.004	100%	Yes
perfluorooctane sulfonate (PFOS)[5]	µg/L	NA[4]	9	<0.0001	0.0004	0.0009	100%	Yes
perfluorohexane sulfonate (PFHxS)[5]	µg/L	NA[4]	9	0.0006	0.0007	0.0008	100%	Yes
sum of PFOS and PFHxS[5]	µg/L	0.07	9	0.0006	0.0011	0.0017	100%	Yes
perfluorooctanoic acid (PFOA)[5]	µg/L	0.56	9	<0.0001	0.0003	0.0005	100%	Yes

Annual – 1 Jul 2024 to 30 Jun 2025								
iron	mg/L	0.3	53	<0.005	<0.005	0.010	100%	Yes
aluminium	mg/L	0.2	53	0.006	0.013	0.019	100%	Yes
manganese	mg/L	0.1	53	<0.001	0.002	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] Australian Drinking Guideline 2018 required that the sum of the concentrations of perfluorooctane sulfonate (PFOS) and perfluorohexane sulfonate (PFHxS) in drinking water should not exceed 70 nanograms per litre (ng/L), which is equivalent to 0.07 micrograms per litre (µg/L).

[5] Routine PFAS sampling started from 25 June 2024.

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 Prospect Water Filtration Plant

			Quarter – 1 Apr 2025 to 30 Jun 2025				Annual – 1 Jul 2024 to 30 Jun 2025			
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	13	<1	<1	1	53	<1	<1	12
Cryptosporidium	oocysts/10 L	NA	24	<1	<1	<1	97	<1	<1	6
Giardia	cysts/10 L	NA	24	<1	<1	<1	97	<1	<1	<1
turbidity	NTU	40	13	1.54	3.19	3.85	53	1.54	5.19	9.31
true colour[1]	HU	60	13	8	12	14	53	8	12	14
pH	pH units	between 6.3 - 7.9	13	7.0	7.3	7.5	53	6.5	7.3	7.6
iron	mg/L	3.500	13	0.117	0.268	0.351	53	0.117	0.363	0.553
aluminium	mg/L	2.600	13	0.072	0.133	0.237	53	0.072	0.235	0.547
manganese	mg/L	1.400	13	0.011	0.050	0.154	53	0.010	0.027	0.154

[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.

Table 7 Treated Water Quality Characteristics at Sydney Desalination Plant, Kurnell – quarterly results

			Quarter – 1 Apr 2025 to 30 Jun 2025					
Characteristics	**Unit of measure**	**ADWG value**	**No. of samples**	**Min**	**Ave**	**Max**	**% of test complying with the guideline**	**Meets long-term performance measure**
E. coli	orgs/100 mL	not detected in 100 mL	81	<1	<1	<1	100%	Yes
turbidity	NTU	5	3	0.05	0.05	0.06	100%	Yes
true colour[1]	HU	15	3	<2	<2	<2	100%	Yes
pH	pH units	between 6.5 - 8.5	10	7.4	7.7	7.9	100%	Yes
free chlorine	mg/L	5	20	<0.04	<0.04	<0.04	100%	Yes
monochloramine	mg/L	3	20	1.48	1.79	2.04	100%	Yes
fluoride[2]	mg/L	1.5	13	0.99	1.02	1.10	100%	Yes
total trihalomethanes	mg/L	0.25	6	<0.0005	<0.0005	0.0005	100%	Yes
n-nitrosodimethylamine	mg/L	0.0001	2	<0.000010	<0.000010	<0.000010	100%	Yes
iron	mg/L	0.3	6	<0.005	<0.005	<0.005	100%	Yes
total aluminium	mg/L	0.2	3	<0.005	<0.005	0.005	100%	Yes
manganese	mg/L	0.1	6	<0.0005	<0.0005	<0.0005	100%	Yes

[1] True colour is measured at 420 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.

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.; NA = not applicable, ; ND = not done.

Table 8 Treated Water Quality Characteristics at Sydney Desalination Plant, Kurnell – annual results

Annual – 1 Jul 2024 to 30 Jun 2025								
Characteristics	**Unit of measure**	**ADWG value**	**No. of samples**	**Min**	**Ave**	**Max**	**% of test complying with the guideline**	**Meets long-term performance measure**
E. coli	orgs/100 mL	not detected in 100 mL	358	<1	<1	<1	100%	Yes
turbidity	NTU	5	12	0.05	0.07	0.13	100%	Yes
true colour[1]	HU	15	12	<2	<2	<2	100%	Yes
pH	pH units	between 6.5 - 8.5	43	7.4	7.7	7.9	100%	Yes
free chlorine	mg/L	5	86	<0.04	<0.04	<0.04	100%	Yes
monochloramine	mg/L	3	86	1.46	1.79	2.14	100%	Yes
fluoride[2]	mg/L	1.5	55	0.91	1.00	1.10	100%	Yes
total trihalomethanes	mg/L	0.25	24	<0.0005	<0.0005	0.0012	100%	Yes
n-nitrosodimethylamine	mg/L	0.0001	8	<0.000010	<0.000010	<0.000010	100%	Yes
iron	mg/L	0.3	24	<0.005	<0.005	0.016	100%	Yes
aluminium	mg/L	0.2	12	<0.005	<0.005	0.008	100%	Yes
manganese	mg/L	0.1	24	<0.0005	<0.0005	0.0013	100%	Yes

[1] True colour is measured at 420 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.

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.

What else do we test for?

We monitor for all the characteristics found in tables 9-13. 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 9 Potts Hill 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	Yes
	chloral hydrate	0.1	0.001	2022-23, 1 sample per delivery system	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	Yes

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

mg/L = milligrams per litre.

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

Table 10 Treated water at Prospect Water Filtration Plant – other characteristics

Characteristic	Analyte name	ADWG health/aesthetic value (mg/L)	Detection limit (mg/L)	Monitoring frequency – Prospect 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	0.01	0.0001	NA[1]	Yes
	nickel	0.02	0.0002	NA[1]	Yes
	sulfate	500	0.10	quarterly	Yes
	total dissolved solids	600	calculation	quarterly	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. Last sampled in 2020-21, 1 sample for each WFP in each quarter. 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 11 Untreated (raw) water at Prospect Water Filtration Plant – other characteristics

Characteristic	Analyte name	ADWG health value (mg/L)	Detection limit (mg/L)	Monitoring frequency – Prospect 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	0.010	yearly	Yes
	beryllium	0.06	0.001	yearly	Yes
	uranium	0.017	0.001	yearly	Yes
	mercury	0.001	0.0001	quarterly	Yes
	molybdenum	0.05	0.001	yearly	Yes
	selenium	0.01	0.0010	quarterly	Yes
	silver	0.1	0.001	yearly	Yes
	tin	NA	0.001	yearly	NA
	fluoride	1.5	0.010	quarterly	Yes
	nitrate	50	0.002	quarterly	Yes
Organic chemicals	benzene	0.001	0.00010	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 12 Untreated (raw) water at Prospect Water Filtration Plant – pesticides and herbicides

Characteristic	Analyte name	ADWG health value (mg/L)	Detection limit (mg/L)	Monitoring frequency – Prospect Water Filtration Plant[1]	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

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 13 Untreated (raw) water at Prospect Water Filtration Plant – radionuclides

Characteristic	Analyte name	ADWG health value (Bq/L)	Detection limit (Bq/L)	Monitoring frequency – Prospect 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 Lake Burragorang at Warragamba Dam, Prospect Lake, and the Upper Canal** (which conveys water from Nepean and Avon Dams).

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 14 Lake Burragorang, 500 metres upstream of the dam wall, quarterly results

			Quarterly Results – 1 Apr 2025 to 30 Jun 2025				
Characteristics		Unit of measure	WaterNSW Reference levels[2]	No. of samples	Min	Ave	Max
Microbiological	*E. coli*	orgs/100 mL	NA	60	<1	1	5
	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	642	0.36	3.06	8.12
	true colour[1]	HU	NA	60	9	15	20
	chlorophyll - *a*	µg/L	2-10	41	0.9	2.6	4.8
	iron	mg/L	<1	60	<0.010	0.159	0.440
	aluminium	mg/L	<0.1	60	<0.010	0.094	0.260
	manganese	mg/L	0.5	60	<0.001	0.028	0.250

[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 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 15 Lake Burragorang, 500 metres upstream of the dam wall, annual results

		Annual Results – 1 Jul 2024 to 30 Jun 2025					
Characteristics		Unit of measure	WaterNSW Reference levels[2]	No. of samples	Min	Ave	Max
Microbiological	*E. coli*	orgs/100 mL	NA	260	<1	1	17
	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	4505	0.01	9.77	50.41
	true colour[1]	HU	NA	259	9	19	56
	chlorophyll - *a*	µg/L	2-10	174	0.5	3.5	23.8
	iron	mg/L	<1	260	<0.010	0.284	1.170
	aluminium	mg/L	<0.1	260	<0.010	0.223	1.210
	manganese	mg/L	0.5	260	<0.001	0.025	0.406

[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 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 16 Upper Canal, quarterly results

Characteristics		Unit of measure	WaterNSW Reference levels[2]	Quarterly Results – 1 Apr 2025 to 30 Jun 2025 No. of samples	Min	Ave	Max
Microbiological	*E. coli*	orgs/100 mL	NA	5	<1	43	100
	Cryptosporidium[3]	oocysts/10 L	NA	1	1	1	1
	Giardia[3]	cysts/10 L	NA	1	<1	<1	<1
Physical / chemical	turbidity	NTU	NA	5	0.94	2.43	5.55
	true colour[1]	HU	NA	5	10	16	25
	chlorophyll - *a*	µg/L	NA	4	0.4	1.1	2.3
	iron	mg/L	<1	4	0.410	0.583	0.950
	aluminium	mg/L	<0.1	4	0.050	0.145	0.300
	manganese	mg/L	NA	5	0.007	0.017	0.034

[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 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 17 Upper Canal, annual results

			Annual Results – 1 Jul 2024 to 30 Jun 2025				
Characteristics		Unit of measure	WaterNSW Reference levels[2]	No. of samples	Min	Ave	Max
Microbiological	*E. coli*	orgs/100 mL	NA	22	<1	39	260
	Cryptosporidium[3]	oocysts/10 L	NA	1	1	1	1
	Giardia[3]	cysts/10 L	NA	1	<1	<1	<1
Physical / chemical	turbidity	NTU	NA	22	0.30	1.80	5.55
	true colour[1]	HU	NA	22	10	14	25
	chlorophyll - *a*	µg/L	NA	21	0.2	0.7	2.3
	iron	mg/L	<1	21	0.280	0.473	1.060
	aluminium	mg/L	<0.1	21	0.050	0.133	0.300
	manganese	mg/L	NA	22	0.007	0.013	0.034

[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 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 18 Prospect Reservoir/Prospect Lake, quarterly results

		Quarterly Results – 1 Apr 2025 to 30 Jun 2025					
Characteristics		Unit of measure	WaterNSW Reference levels[2]	No. of samples	Min	Ave	Max
Microbiological	*E. coli*	orgs/100 mL	NA	3	<1	1	1
	Cryptosporidium[3]	oocysts/10 L	NA	1	<1	<1	<1
	Giardia[3]	cysts/10 L	NA	1	<1	<1	<1
Physical / chemical	turbidity	NTU	NA	179	1.81	3.07	6.58
	true colour[1]	HU	NA	3	6	7	7
	chlorophyll - *a*	µg/L	2-10	3	2.4	3.5	4.2
	iron	mg/L	<1	2	0.160	0.180	0.200
	aluminium	mg/L	<0.1	2	0.120	0.130	0.140
	manganese	mg/L	0.5	3	0.016	0.025	0.038

[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 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 19 Prospect Reservoir/Prospect Lake, annual results

		Annual Results – 1 Jul 2024 to 30 Jun 2025					
Characteristics		Unit of measure	WaterNSW Reference levels[2]	No. of samples	Min	Ave	Max
Microbiological	*E. coli*	orgs/100 mL	NA	13	<1	2	10
	Cryptosporidium[3]	oocysts/10 L	NA	6	<1	<1	<1
	Giardia[3]	cysts/10 L	NA	6	<1	<1	<1
Physical / chemical	turbidity	NTU	NA	811	0.78	2.71	19.10
	true colour[1]	HU	NA	13	6	7	11
	chlorophyll - *a*	µg/L	2-10	18	2.0	4.7	8.6
	iron	mg/L	<1	12	0.090	0.164	0.260
	aluminium	mg/L	<0.1	12	0.060	0.116	0.190
	manganese	mg/L	0.5	13	0.008	0.018	0.038

[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 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.

Advances in Sensors and Automation for Water Quality Monitoring

Water quality monitoring is important to ensure drinking water is safe. The monitoring of water quality is achieved by a combination of manual sampling / laboratory analysis activities, and the use of sensors and automated monitoring systems. These can be deployed in watercourses, lakes, water treatment plants and the distribution network. As sensors and automation technology improves additional avenues for real-time or near real-time monitoring become available.

This review explores advances in sensor technology and other automated monitoring approaches. The review will primarily focus on drinking water produced from surface water (i.e. reservoirs, dams, and rivers), and on the source water and distribution systems.

Human activities can contaminate source waters, leading to the need for sophisticated monitoring (Storey, et al. 2011). Significant advancement has occurred in the development and commercialisation of new types of sensors, the adoption of new techniques such as flow cytometry[1], and the implementation of artificial intelligence.

Online Monitoring and Advanced Sensors

Online real time monitoring offers significant benefits compared to traditional batch sampling. For instance, deploying high-frequency water quality monitors in the distribution system allows for the real-time analysis of critical parameters such as turbidity and chlorine level. The data from this monitoring allows greater understanding of system performance. (Storey, et al. 2011).

Online UV-Visible spectrophotometry[2] is an important real-time monitoring and quality control of drinking water. It can effectively measure parameters like UV_{254} absorbance, colour, Dissolved Organic Carbon, Total Organic Carbon, turbidity, and nitrates in a single unit. When combined with advanced data analysis, it enables proactive water management. Its precision in identifying organic pollutants is further enhanced by AI, which enables predictive insights by referring to libraries of results from previous testing. It can also be used in process control to support dynamic treatment adjustments, improving disinfection and safety. (Shi, et al. 2022).

There have been significant advances in the ability to detect heavy metals and pesticides. (Xiang, et al. 2020). Pesticide detection has benefited from technologies like surface-enhanced Raman scattering (SERS)[3], electrochemical sensors, and colorimetric methods, which offer high sensitivity. For heavy metals, innovations such as hydrophobic SERS substrates and nanostructured colorimetric sensors (e.g., gold nanoparticles) have improved field applicability and detection limits. For heavy metals, electrochemical sensors using materials like boron-doped diamonds enable sensitive, portable, and real-time

[1] For an introduction to flowcytometry refer to: INTRODUCTION TO FLOW CYTOMETRY

[2] For an introduction to UV-Visible Spectrometry refer to: https://edu.rsc.org/download?ac=12904

[3] For more information about surface enhanced Raman scattering (SERS) refer to: https://web.mit.edu/spectroscopy/doc/papers/2002/surfaceenhanced_jop02.pdf

detection of toxic metals like mercury and lead. These methods are increasingly used for in-field water quality assessments.

Early Warning Systems

Early warning systems are employed to monitor water sources, are capable of alerting authorities to changes in water quality and ideally before public exposure occurs. The coupling of ubiquitous sensor technologies (including pH, turbidity, conductivity, ultraviolet absorbance, and temperature) with artificial intelligence and machine learning can be used to provide early warning systems. (Reynaert, *et al. 2023*). Machine learning approaches have been used to develop decision support tools. (Ortiz-Lopez, et al. 2021).

One interesting type of early warning system is the biological early warning systems monitor the behaviour or physiology of organisms to infer changes to the local environment. (Vereycken, et al. 2023).

The phrase “canary in the coal mine” is a widely known example of a biological early warning system (Pollock, 2016). The response of canary (i.e. fainting) was used by miners for centuries to provide early warning of the presence of a toxic gas – mostly carbon monoxide. Avian lungs are sufficiently more sensitive than mammal lungs to toxic gases making the canary sufficiently useful as an early warning system.

In drinking water freshwater bivalves have been used for monitoring source water (often rivers) to drinking water treatment plants (Ferreira-Rodríguez, et al. 2023). This approach has been applied in several European countries. Other biological early warning systems have included the use of fish, water fleas, algae, and bacteria (Storey, et al. 2011).

The actions triggered by biological early warning systems, may include additional target chemical analysis, change to an alternate water source and ceasing to pump from the river for the duration of the water quality event (Vereycken, et al. 2023).

Advances in Microbial Monitoring

Traditional methods for assessing microbial contamination are based on culture-based techniques. These approaches focus on detecting indicator organisms like *Escherichia coli.* However, these methods are time consuming and provide retrospective results which are crucial in maintaining safe drinking water standards (Pluym, et al. 2024)

Flow cytometry (FCM) is a sophisticated analytical technique widely utilised for the qualitative and quantitative assessment of cellular populations based on their physical and chemical characteristics. Primarily, flow cytometry operates by passing individual cells or particles through a laser beam, where they scatter light and may emit fluorescence depending on the dyes employed during the analysis. This technique offers a powerful combination of speed and sensitivity, allowing researchers to analyse thousands of cells per second and can measure various parameters such as size, granularity, and the presence of specific biomolecules tagged with fluorescent markers. (Burnet, et al. 2025, Pluym, et al. 2024)

Microbial community profiling or the assessment of microbial community dynamics through advanced molecular techniques like DNA sequencing is noted as a way to enhance the understanding of microbial quality changes in drinking water systems. These methods reveal more about the diversity and dynamics of microbial populations than standard indicator tests can provide, and they play a role in identifying the critical microbial metrics that it would be valuable to monitor continuously. (Burnet, et al. 2025).

Conclusions

Many of the developments in relation to sensors and monitoring approaches offer significant promise, however significant challenges remain with relation to implementation. Storey and co-workers (2011) noted that both biological early warning systems and advanced sensor technologies are not easy to deploy and recommended that utilities

focus on other operational issues such as handling of large monitoring datasets. Burnet and co-workers (2025) conclude that while advancements in automated microbial water quality monitoring represent a critical step towards ensuring safe drinking water, inherent challenges such as data management, financial feasibility, and standardisation need to be overcome.

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