

Drinking Water Monitoring Annual Report



2024

Executive Summary

In 2024, Eurobodalla Shire Council performed routine drinking water sampling and testing to monitor the quality of drinking water. The results were submitted to the NSW Drinking Water Database.

Compliance is determined against the Australian Drinking Water Guidelines (2011) guideline values for *E. coli*, physical and chemical characteristics of drinking water.

The *EB01* supply system achieved compliance of 100% for physical, 100% for chemical, and 100 % for microbiological samples.

The *EB02* supply system achieved compliance of 100% for physical, 100% for chemical, and 99.17% for microbiological samples.

Water Quality

EB01 (Northern Supply System)

Summary

23 sites within the Northern Supply System were monitored monthly for Physical, Chemical and Microbiological parameters, and analysed at the NSW Health Forensic and Analytical Science Service (FASS) Laboratory.

No non-compliant results were observed from laboratory analysis of the Northern Supply System in 2024.

Table 1. EB01 Water Quality Compliance

Sample Type	Sample Count	Number of Characteristics	Number of Non-Compliant Samples	Compliance (%)
Physical	12	5	0	100
Chemical	12	19	0	100
Microbiological	276		0	100

Routine Drinking Water Monitoring Characteristics

Chronic health-related chemical characteristics are inorganic chemicals that might be present in water and can pose a risk to health with prolonged exposure. The Guideline values for these materials are usually set to be protective over a lifetime of exposure. Single results above Guideline values are unlikely to pose a risk to health; compliance is based on analysing long term trends. No non-compliant samples were recorded for chronic health-related chemical characteristics.

Acute health-related chemical characteristics are inorganic chemicals that can pose a health risk based on a small number of exposures. High concentrations of copper can cause vomiting. High concentrations of nitrite or nitrate can be risky for bottle-fed babies. The Guideline values for these characteristics have been set to protect people from short-term exposure. No non-compliant samples were recorded for acute health-related chemical characteristics.

Table 2. EB01 Chronic health-related Chemical Water Quality Data

Characteristic	Unit	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
Antimony	mg/L	0.003	0.0001	0.0001	12	100
Arsenic	mg/L	0.01	0.0005	0.0005	12	100
Barium	mg/L	2.00	0.014	0.027	12	100
Boron	mg/L	4.00	0.014	0.012	12	100
Cadmium	mg/L	0.002	0.0001	0.0005	12	100
Chromium	mg/L	0.05	0.0005	0.0005	12	100
Fluoride	mg/L	1.50	0.95	1.03	12	100
Iodine	mg/L	0.50	0.011	0.02	12	100
Lead	mg/L	0.01	0.0005	0.001	12	100
Manganese	mg/L	0.50	0.0007	0.0024	12	100
Mercury	mg/L	0.001	0.0004	0.0004	12	100
Molybdenum	mg/L	0.05	0.0001	0.0001	12	100
Nickel	mg/L	0.02	0.0003	0.0005	12	100
pH	-	6.5-8.5	7.84	7.5-8.1	12	100
Selenium	mg/L	0.01	0.0035	0.0035	12	100
Silver	mg/L	0.10	0.0001	0.0002	12	100
Uranium	mg/L	0.02	0.0001	0.00005	12	100

Table 3a. EB01 Acute health-related Chemical Water Quality Data

Characteristic	Unit	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
Copper	mg/L	2.00	0.025	0.096	12	100
Nitrate	mg/L	50.00	0.50	0.50	12	100
Nitrite	mg/L	3.00	0.05	0.05	12	100

Physical and aesthetic chemical characteristics change the way that water appears; its taste, smell, look and feel. These characteristics do not have health guideline values but do affect how people feel about their drinking water. No non-compliant samples were reported in 2024.

Table 4b. EB01 Physical and Selected Aesthetic Chemical Water Quality Data

Characteristic	Unit	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
Iron	mg/L	0.30	0.0071	0.02	12	100
Sodium	mg/L	180.00	17.92	21.00	12	100
Total dissolved solids	mg/L	10000.00	121.92	150.00	12	100
Total hardness	mg/L	200.00	92.88	108.10	12	100
True Colour	Hazen Units (HU)	15.00	1.25	4.00	12	100
Turbidity	NTU	5.00	0.50	4.40	12	100

Escherichia coli, a bacteria found in the gut of many backboned animals, is an indicator that there has been recent contamination with faeces in a drinking water supply. Chlorine is used widely to kill disease-causing organisms in drinking water. A reasonable residual concentration in the supply provides ongoing protection all the way to customer taps, and gives some indication that filtration is working well, and the distribution system has not been compromised. No non-compliant bacteriological samples for were reported in the Northern Supply system.

Table 5. EB01 Microbiological Water Quality Data

Characteristic	Unit	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
E. coli	mpn/100 mL	0.00	0.00	0.00	276	100
Free Chlorine	mg/L	0.2-5.0	0.6338	1.30	276	99.64
Total Chlorine	mg/L	5.0	0.77	1.41	276	100

Other Monitoring

Per- and Poly-fluorinated alkyl substances (PFAS) testing

PFAS are a class of chemicals that have been developed for fire-fighting, stain and water resistance and other uses. They can pose a risk to health with prolonged exposure. The Guideline values for these materials are set to be protective over a lifetime of exposure. The National Health and Medical Research Council (NHMRC) has drafted an update of the PFAS Fact Sheet within the Australian Drinking Water Guidelines that includes revised and newly established health-based guideline values. In 2024, Council conducted an initial screening for PFAS in treated water. No PFAS related chemicals were detected in the Northern supply.

Table 4. EB01 PFAS Testing Result

Characteristic	Unit	Guideline Value	Mean	Maximum	Meeting Guideline Value (%)
Sum of perfluorooctane sulfonate (PFOS) and perfluorohexane sulfonate (PFHxS)	ug/L	0.07	0.00005	<0.0001	100
Perfluorooctanoic acid (PFOA)	ug/L	0.56	0.00005	<0.0001	100

EB02 (Southern Supply System)

Summary

Ten sites within the Southern Supply System were monitored monthly for Physical, Chemical and Microbiological parameters, and analysed at the NSW Health Forensic and Analytical Science Service (FASS) Laboratory.

One microbiological non-compliance (E.coli = 1MPN/100mL) was observed from site EB02 031 (Dalmeny) on the 24 January 2024, however the sample container was cracked in transit which resulted in contamination of the sample. Follow-up analysis returned 0 MPN/100mL for E.coli.

No non-compliant results were observed from physical or chemical laboratory analysis of the Northern Supply System in 2024.

Table 5. EB02 Water Quality Compliance

Sample Type	Sample Count	Number of Characteristics	Number of Non-Compliant Samples	Compliance (%)
Physical	12	5	0	100
Chemical	12	19	0	100
Microbiological	120		1	99.17

Routine Drinking Water Monitoring Characteristics

Chronic health-related chemical characteristics are inorganic chemicals that might be present in water and can pose a risk to health with prolonged exposure. The Guideline values for these materials are usually set to be protective over a lifetime of exposure. Single results above Guideline values are unlikely to pose a risk to health; compliance is based on analysing long term trends. No non-compliant samples were recorded for chronic health-related chemical characteristics.

Table 6. EB02 Chronic health-related Chemical Water Quality Data

Characteristic	Unit	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
Antimony	mg/L	0.0030	0.0001	0.00005	12	100
Arsenic	mg/L	0.0100	0.0006	0.001	12	100
Barium	mg/L	2.0000	0.0174	0.0304	12	100
Boron	mg/L	4.0000	0.0145	0.02	12	100
Cadmium	mg/L	0.0020	0.0001	0.0004	12	100
Chromium	mg/L	0.0500	0.0005	0.001	12	100
Fluoride	mg/L	1.5000	0.9183	0.99	12	100
Iodine	mg/L	0.5000	0.0100	0.01	12	100
Lead	mg/L	0.0100	0.0004	0.0015	12	100
Manganese	mg/L	0.5000	0.0003	0.0006	12	100
Mercury	mg/L	0.0010	0.0004	0.0004	12	100
Molybdenum	mg/L	0.0500	0.0001	0.0002	12	100
Nickel	mg/L	0.0200	0.0002	0.0002	12	100
pH	-	6.5-8.5	8.0917	8.3	12	100

Selenium	mg/L	0.0100	0.0035	0.0035	12	100
Silver	mg/L	0.1000	0.0001	0.0001	12	100
Uranium	mg/L	0.0200	0.0001	0.00005	12	100

Acute health-related chemical characteristics are inorganic chemicals that can pose a health risk based on a small number of exposures. High concentrations of copper can cause vomiting. High concentrations of nitrite or nitrate can be risky for bottle-fed babies. The Guideline values for these characteristics have been set to protect people from short-term exposure. No non-compliant samples were recorded for acute health-related chemical characteristics.

Table 6a. EB02 Acute health-related Chemical Water Quality Data

Characteristic	Units	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
Copper	mg/L	2.0000	0.0049	0.011	12	100
Nitrate	mg/L	50.0000	0.5833	1	12	100
Nitrite	mg/L	3.0000	0.0500	0.05	12	100

Physical and aesthetic chemical characteristics change the way that water appears; its taste, smell, look and feel. These characteristics do not have health guideline values but do affect how people feel about their drinking water. No non-compliant samples were reported in 2024.

Table 6b. EB02 Physical and Selected Aesthetic Chemical Water Quality Data

Characteristic	Units	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
Iron	mg/L	0.3000	0.0067	0.02	12	100
Sodium	mg/L	180.0000	20.9167	42	12	100
Total dissolved solids	mg/L	-	131.5000	167	12	100
Total hardness	mg/L	200.0000	92.3917	104.4	12	100
True Colour	Hazen Units (HU)	15.0000	0.7083	1	12	100
Turbidity	NTU	5.0000	0.1000	0.2	12	100

Escherichia coli, a bacteria found in the gut of many backboned animals, is an indicator that there has been recent contamination with faeces in a drinking water supply. Chlorine is used widely to kill disease-causing organisms in drinking water. A reasonable residual concentration in the supply provides ongoing protection all the way to customer taps, and gives some indication that filtration is working well, and the distribution system has not been compromised.

One microbiological non-compliance (E.coli = 1MPN/100mL) was observed from site EB02 031 (Dalmeny) on the 24 January 2024, however the sample container was cracked in transit which resulted in contamination of the sample. Follow-up analysis returned 0 MPN/100mL for E.coli.

Table 7. EB02 Microbiological Water Quality Data

Characteristic	Units	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
E. coli	mpn/100mL	0.0000	0.0083	1	120	99.17
Free Chlorine	mg/L	0.2-5	0.5683	1.3	120	100
Total Chlorine	mg/L	5.0000	0.6631	1.4	120	100

Other Monitoring

EB02 Per- and Poly-fluorinated alkyl substances (PFAS) testing

PFAS are a class of chemicals that have been developed for fire-fighting, stain and water resistance and other uses. They can pose a risk to health with prolonged exposure. The Guideline values for these materials are set to be protective over a lifetime of exposure. The National Health and Medical Research Council (NHMRC) has drafted an update of the PFAS Fact Sheet within the Australian Drinking Water Guidelines that includes revised and newly established health-based guideline values. In 2024, Council conducted an initial screening for PFAS in treated water. No PFAS related chemicals were detected in the Southern supply.

Table 8. EB02 PFAS Testing Result

Characteristic	Unit	Guideline Value	Mean	Maximum	Meeting Guideline Value (%)
Sum of perfluorooctane sulfonate (PFOS) and perfluorohexane sulfonate (PFHxS)	ug/L	0.07	0.00005	<0.0001	100
Perfluorooctanoic acid (PFOA)	ug/L	0.56	0.00005	<0.0001	100