

Drinking Water Monitoring Report Rushforth Water Supply 2023

Executive Summary

In 2023, Rushforth Water Supply 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.

Water Quality

Summary

Table 1. Rushforth Water Quality Compliance

Sample Type	Sample Count	Number of Characteristics	Number of Non-Compliant Samples	Compliance (%)
Physical	27	130	0	100
Chemical	27	494	0	100
Microbiological	737		1	99.86

The Rushforth Water Supply system achieved compliance of 100 % for physical, 100% for chemical, and 99.86% for microbiological samples. E coli was detected (1 mpn/100 mL) in one sample taken on 21st February 2023 from the water distribution network in the lower river. Low levels of disinfection were detected at the time the sample was collected. The pipeline was flushed, and the repeat sample returned negative.

Routine Drinking Water Monitoring Characteristics

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

Characteristic	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
Antimony	0.003	0.0002	0.0004	27	100
Arsenic	0.01	0.0008	0.001	27	100
Barium	2	0.0171	0.0312	27	100
Boron	4	0.008	0.0155	27	100
Cadmium	0.002	0.0001	0.00005	27	100
Chromium	0.05	0.0006	0.001	27	100
Fluoride	1.5	1.0352	1.15	27	100
Iodine	0.5	0.01	0.01	27	100
Lead	0.01	0.0009	0.0037	27	100

Manganese	0.5	0.0064	0.0213	27	100
Mercury	0.001	0.0004	0.0004	27	100
Molybdenum	0.05	0.0002	0.0004	27	100
Nickel	0.02	0.0003	0.0013	27	100
pH	6.5 - 8.5	7.463	7.9	27	100
Selenium	0.01	0.0035	0.0035	27	100
Silver	0.1	0.0001	0.0001	27	100
Uranium	0.02	0.0001	0.00005	27	100

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 a Guideline value are unlikely to pose a risk to health; compliance is based on analysing long term trends.

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

Characteristic	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
Copper	2	0.0883	0.531	27	100
Nitrate	50	2.0741	4	27	100
Nitrite	3	0.087	0.9	27	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.

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

Characteristic	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
Iron	0.3	0.2361	0.92	27	77.78
Sodium	180	8.7407	11	27	100
Total dissolved solids	10000	62.88890	78	27	100
Total hardness	200	49.5852	59.1	27	100
True Colour	15	2.5185	4	27	100
Turbidity	5	1.2778	3	27	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. Iron is sometimes detected above the Guideline Value in the Nymboida River that is the raw source of water for the Rushforth Water Treatment Plant.

Table 5. Rushforth Microbiological Water Quality Data

Characteristic	Guideline Value	Mean	Maximum	Sample count	Meeting Guideline Value (%)
E. coli	0	0.0014	1	737	99.86
Free Chlorine	0.2 - 5	0.7145	2.81	737	52.92
Total Chlorine	5	1.6557	4.6	737	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.