

RECYCLED WATER QUALITY SUMMARIES

ANNUAL REPORT 2023/2024



1. BACKGROUND

This report details Urban Utilities recycled water quality for the 2023 – 2024 financial year. Urban Utilities provides safe recycled water across our five local government supply areas.

The *Public Health Act 2005* is the primary legislation for low exposure recycled water schemes such as:

- Municipal open space irrigations;
- Irrigation of pasture and fodder crops;
- Irrigations of highly process food crops;
- Dust suppression.

Service Provide Details

Name

Central SEQ Distributor-Retailer Authority trading as Urban

Service Provider ID

521

Contact details

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The *Public Health Regulation 2018* sets water quality performance criteria based on the five recycled water classes as described in Table 1 below.

Class	Quality limit
A+	Less than 1 E. coli cfu / 100mL or MPN / 100mL in at least 95% of samples taken in the previous 12 months*
А	Less than 10 E. coli cfu / 100mL or MPN / 100mL in at least 95% of samples taken in the previous 12 months
В	Less than 100 E. coli cfu / 100mL or MPN / 100mL in at least 95% of samples taken in the previous 12 months
С	Less than 1,000 E. coli cfu / 100mL or MPN / 100mL in at least 95% of samples taken in the previous 12 months
D	Less than 10,000 E. coli cfu / 100mL or MPN / 100mL in at least 95% of samples taken in the previous 12 months

Table 1: Recycled water quality limits as described in the Public Health Regulation 2018

Recycled water annual report

We're required to create an Annual Report under Section 273 of the *Water Supply (Safety and Reliability) Act 2008* for all schemes where the end use requires a Regulatory approved Recycled Water Management Plan. The report is formatted as required under the Act and is available on <u>our public website</u>. We are happy to share it with you in accordance with Section 576 of the Act.



Verification Monitoring Program

The supply of safe recycled water is Urban Utilities responsibility. The Verification Monitoring Program is conducted at each of our recycled water schemes to verify our treatment processes are effectively removing hazards and allows continuous assessment against the public health quality limits and operational control triggers.

The quality parameters were monitored and reviewed in accordance with Queensland legislative requirements and the <u>Guideline for low-exposure recycled water schemes</u>. The water quality limits are provided in Table 2.

End-use Monitoring Program

In addition to the Verification Monitoring Program, Urban Utilities undertakes monitoring of the recycled water quality to ensure it meets our customer's needs.

Quality Testing

The Scientific Analytical Services Laboratory¹ (SAS Laboratory) is our laboratory service provider and performs our sampling and analytical requirements. SAS Laboratory conducts weekly sampling for each of our recycled water schemes.



tests conducted



5,461 samples collected



6,771 ML

of recycled water supplied or exported



¹ The SAS Lab is accredited by the National Association of Testing Authorities (NATA).

Class	Supply Scheme name	Parameter	Limit	
		Escherichia coli	≥1 cfu/100mL	
Class A+		F-RNA bacteriophages	≥1 pfu/100mL	
	• vvynnum	Somatic coliphages	≥1 pfu/100mL	
		Clostridium perfringens	≥1 cfu/100mL	
Class A	 Boonah Class A (SRN063) Fairfield North and South (SRN024) Forest Hill (SRN197) Gibson Island Goodna Kalbar (SRN068) Kooralbyn (SRN200) Lowood (SRN035) 	Escherichia coli	>10 cfu/100mL	
Class B	 Aratula (SRN308) Beaudesert (SRN062) Esk Class B (SRN065) Gatton (SRN00010) Karana Down (SRN069) Kilcoy (SRN199) 	Escherichia coli	>100 cfu/100mL	
Class C	 Boonah Class C (SRN063) Carole Park (SRN064) Esk Class C (SRN065) Oxley Creek Rosewood (SRN072) Toogoolawah 	Escherichia coli	>1,000 cfu/100mL	

Table	2: Urban	Utilities site	e specific limits	as described in l	Public Health	Regulation	2018
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2. QUALITY SUMMARIES

The site-specific recycled water quality summaries for each scheme are provided below used internally or by third parties. Urban Utilities has organised extra testing in addition to the *E. coli* compliance testing and included below. This data was collected within the 2023 - 2024 financial year.

Canungra and Sandgate RRCs have been excluded as they do not currently supply recycled water customers.

Aratula RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	51	417	864	1307
Escherichia coli	cfu/100mL	51	<1	8	350
Free Chlorine	mg/L	51	<0.1	0.16	0.56
Total Chlorine	mg/L	51	<0.1	4.39	6.06
Turbidity	NTU	51	3.3	10.3	18.5

Beaudesert RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	765	1130	1479
Escherichia coli	cfu/100mL	52	<1	<1	5
Free Chlorine	mg/L	52	<0.1	0.14	0.65
Total Chlorine	mg/L	52	0.63	3.74	6.06
Turbidity	NTU	52	2.2	5.1	11.3

Boonah RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	714	1155	1500
Escherichia coli	cfu/100mL	52	<1	<1	5
Free Chlorine	mg/L	52	<0.1	0.15	0.64
Total Chlorine	mg/L	52	<0.1	3.55	6.06

Bundamba RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	601	900	1204
Escherichia coli	cfu/100mL	52	<1	9	90
Free Chlorine	mg/L	52	<0.1	<0.1	0.59
Total Chlorine	mg/L	52	<0.1	1.39	6.06
Turbidity	NTU	52	0.9	2.1	12.2



Carole Park RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	730	1687	2513
Escherichia coli	cfu/100mL	52	<1	113	3200
Free Chlorine	mg/L	52	<0.1	<0.1	0.16
Total Chlorine	mg/L	52	<0.1	<0.1	3.75
Turbidity	NTU	4	<0.5	1.53	2.9

Esk RRC- Class B

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	943	1127	1343
Escherichia coli	cfu/100mL	52	<1	<1	4
Free Chlorine	mg/L	52	<0.1	0.25	0.66
Total Chlorine	mg/L	52	1.21	5.1	6.06

Esk RRC- Class C

Parameter	Units	Samples collected	Minimum	Average	Maximum
Escherichia coli	cfu/100mL	52	1	19	360
Free Chlorine	mg/L	52	<0.1	0.26	1.6
Total Chlorine	mg/L	52	0.94	4.64	6.06
Turbidity	NTU	52	1.2	6	13.3

Fairfield RRC- South

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	666	1119	1323
Escherichia coli	cfu/100mL	52	<1	<1	5
Free Chlorine	mg/L	52	<0.1	0.13	1.69
Total Chlorine	mg/L	52	0.21	2.37	4.24



Fairfield RRC- North

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm		See Fairfield S	South RRC	
Escherichia coli	cfu/100mL	52	<1	1	26
Free Chlorine	mg/L	52	<0.1	<0.1	0.29
Total Chlorine	mg/L	52	<0.1	0.74	1.76

Forest Hill RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	12	638	1099	1438
Escherichia coli	cfu/100mL	51	<1	<1	<1
Free Chlorine	mg/L	51	<0.1	0.18	0.58
Total Chlorine	mg/L	51	0.14	4.23	6.06

Gatton RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	51	728	1099	1278
Escherichia coli	cfu/100mL	51	<1	124	6060
Free Chlorine	mg/L	51	<0.1	0.22	0.67
Total Chlorine	mg/L	51	<0.1	5.07	6.06

Gibson Island RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Escherichia coli	cfu/100mL	52	<1	<1	5
Free Chlorine	mg/L	52	<0.1	0.85	6.06
Total Chlorine	mg/L	52	0.19	1.69	6.06
Turbidity	NTU	51	0.3	1.2	8.5



Goodna RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	503	766	997
Escherichia coli	cfu/100mL	52	<1	<1	5
Free Chlorine	mg/L	52	<0.1	0.45	2.52
Total Chlorine	mg/L	52	0.27	1.22	3.18

Helidon RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	923	1099	1309
Escherichia coli	cfu/100mL	52	<1	18	520
Free Chlorine	mg/L	52	<0.1	0.19	0.63
Total Chlorine	mg/L	52	<0.1	4.92	6.06
Turbidity	NTU	52	24.1	81	188

Kalbar RRC

Parameter	Units	Samples collected*	Minimum	Average	Maximum
Conductivity	uS/cm	44	875	1261	4881
Escherichia coli	cfu/100mL	45	<1	2	61
Free Chlorine	mg/L	45	<0.1	0.22	1.28
Total Chlorine	mg/L	44	<0.1	4.17	6.06

* Scheme was offline and therefore several weeks did not require sampling.

Karana Downs RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	547	855	1044
Escherichia coli	cfu/100mL	52	<1	17	260
Free Chlorine	mg/L	52	<0.1	<0.1	0.42
Total Chlorine	mg/L	52	<0.1	1.71	3.98



Kilcoy RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	592	1007	1146
Escherichia coli	cfu/100mL	52	<1	16	400
Free Chlorine	mg/L	52	<0.1	0.25	1.69
Total Chlorine	mg/L	52	1.29	4.52	6.06
Turbidity	NTU	12	<0.005	0.009	0.017

Kooralbyn RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	825	1055	1233
Escherichia coli	cfu/100mL	52	<1	1	19
Free Chlorine	mg/L	52	<0.1	0.65	6.06
Total Chlorine	mg/L	52	<0.1	0.94	6.06

Laidley RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	12	782	1117	1307
Escherichia coli	cfu/100mL	26	<1	<1	12
Free Chlorine	mg/L	26	<0.1	<0.1	0.25
Total Chlorine	mg/L	26	<0.1	3.66	6.06
Turbidity	NTU	26	<0.1	1.6	16.1

Lowood RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	12	669	783	959
Escherichia coli	cfu/100mL	52	<1	<1	5
Free Chlorine	mg/L	52	<0.1	0.13	1.16
Total Chlorine	mg/L	52	<0.1	0.65	3.89



Luggage RRC –

Scheme offline. Please see Wynnum RRC below for indicative reverse osmosis results.

Oxley Creek RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Escherichia coli	cfu/100mL	52	<1	1969	57000
Free Chlorine	mg/L	52	<0.1	<0.1	0.36
Total Chlorine	mg/L	52	<0.1	0.85	3.15
Turbidity	NTU	51	0.9	1.9	7.6

Rosewood RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	516	886	1095
Escherichia coli	cfu/100mL	52	<1	10	310
Free Chlorine	mg/L	52	<0.1	<0.1	0.67
Total Chlorine	mg/L	52	0.33	2.05	6.06

Toogoolawah RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	27	228	738	1073
Escherichia coli	cfu/100mL	52	5	5	5
Free Chlorine	mg/L	52	<0.1	0.19	1.36
Total Chlorine	mg/L	52	<0.1	4.1	6.06

Wacol RRC

Parameter	Units	Samples collected	Minimum	Average	Maximum
Conductivity	uS/cm	52	659	892	1047
Escherichia coli	cfu/100mL	52	21	1021	6060
Free Chlorine	mg/L	52	<0.1	<0.1	<0.1
Total Chlorine	mg/L	52	<0.1	0.18	0.91
Turbidity	NTU	52	0.5	1	2.1



Wynnum RRC- Industrial Class A+

Parameter	Units	Samples collected	Minimum	Average	Maximum
Aluminium as Al	mg/L	12	<0.001	0.0007	0.0016
Ammonia	mg/L	50	<0.004	0.0037	0.0149
Arsenic as As	mg/L	12	<0.001	<0.001	<0.001
Barium as Ba	mg/L	12	<0.001	<0.001	<0.001
Cadmium as Cd	mg/L	12	<0.001	<0.001	<0.001
Chromium as Cr	mg/L	12	<0.001	<0.001	<0.001
Clostridium perfringens	cfu/100mL	51	<1	<1	<1
Conductivity online– Post membrane	uS/cm	247	23.4	32.7	50.1
Conductivity online– Pre membrane	uS/cm	119	65.7	118	187.9
Copper as Cu	mg/L	12	<0.001	<0.001	<0.001
Escherichia coli	cfu/100mL	51	<1	<1	<1
Free Chlorine	mg/L	51	<0.1	0.42	0.69
F-RNA Coliphage	pfu/100mL	51	<1	<1	<1
Inorganic N by FIA (Calc)	mg/L	50	0.0593	0.175	0.669
Iron as Fe	mg/L	12	<0.001	0.0008	0 .0046
Lead as Pb	mg/L	12	<0.001	<0.001	<0.001
Manganese as Mn	mg/L	12	<0.001	<0.001	<0.001
Mercury as Hg	µg/L	12	<0.01	0.0071	0.0307
Nickel as Ni	mg/L	12	<0.001	<0.001	<0.001
Nitrite + Nitrate as N	mg/L	50	0.0545	0.172	0.669
pH - Field	pH Unit	51	6.51	7.48	7.98
Sodium as Na	mg/L	50	4.71	11.562	32.76
Somatic Coliphage	pfu/100mL	51	<1	<1	<1
Thermotolerant Coliforms (MF)	cfu/100mL	51	<1	<1	<1
Total Chlorine	mg/L	51	0.19	0.50	0.81
Total Nitrogen as N	mg/L	50	0.053	0.231	0.729
Total Phosphorus as P	mg/L	12	<0.01	<0.01	<0.01
Turbidity	NTU	50	<1	0.19	0.71
Zinc as Zn	mg/L	12	<0.001	0.0008	0.003



For more information

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