



# Redland

## CITY COUNCIL

SPID No. 541

### Drinking Water Quality Management Plan (DWQMP)

#### Annual Report

#### 2018/19

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This report has been prepared in accordance with the Drinking Water Quality Management Plan Report Guidance Note.



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## Notation and Abbreviations

<	Less than
>	Greater than
ADWG 2004	Australian Drinking Water Guidelines (2004). Published by the National Health and Medical Research Council of Australia
ADWG 2011	Australian Drinking Water Guidelines (2011). Published by the National Health and Medical Research Council of Australia
ALS	Australian Laboratory Services Laboratory Group
CFU/100mL	Colony forming units per 100 millilitres
<i>E. coli</i>	Escherichia coli, a bacterium which is considered to indicate the presence of faecal contamination and therefore potential health risk
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
QUU SAS	Queensland Urban Utilities Scientific Analytical Services
SMBI	Southern Moreton Bay Islands

## 1 Introduction

This report documents the performance of Redland City Council's (Service Provider Identification 541) drinking water service with respect to water quality and performance in implementing the actions detailed in the DWQMP as required under the Water Supply (Safety and Reliability) Act 2008 (the Act) for the 2018-19 financial year.

The report assists the Regulator to determine whether the approved DWQMP and any approval conditions have been complied with and provides a mechanism for providers to report publicly on their performance in managing drinking water quality.

This report has been prepared in accordance with the DWQMP report guidance note 2018 published by the Department of Natural Resource, Mines and Energy, Queensland, accessible at [www.dnrme.qld.gov.au](http://www.dnrme.qld.gov.au).

## 2 Summary of schemes operated

Redland City Council covers an area of approximately 537 square kilometres and has a population of approximately 155,000 people. Redland City Council provides drinking water to Redland City residents through four water supply schemes:

**Table 2.1 – Summary of Schemes (owned and operated by Seqwater)**

Scheme	Water Source*
Redland City and Southern Moreton Bay Islands	<ul style="list-style-type: none"> <li>• Eastern Pipeline Interconnector</li> <li>• North Stradbroke Island WTP</li> <li>• Capalaba WTP</li> </ul>
Dunwich	<ul style="list-style-type: none"> <li>• Dunwich WTP</li> </ul>
Amity Point	<ul style="list-style-type: none"> <li>• Amity Point WTP</li> </ul>
Point Lookout	<ul style="list-style-type: none"> <li>• Point Lookout WTP</li> </ul>

\*Refer to Seqwater annual report for details of WTP process and capacity

Redland City Council is responsible for receiving bulk water from Seqwater and delivering it to residents through its distribution network. This is done whilst ensuring that the water meets the Australian Drinking Water Guidelines (ADWG).

Redland City Council manages drinking water quality through an approved Drinking Water Quality Management Plan (DWQMP) which protects public health by ensuring the provision of a safe water supply.

Redland City Council manages, operates and maintains pumping stations and mains as part of its distribution network. Redland City Council manages, operates and maintains reservoirs in each of the North Stradbroke Island (NSI) township schemes. Seqwater owns and operates all mainland reservoirs. Redland City Council does not operate any re-chlorination facilities in its network.

### **3 DWQMP Implementation**

#### **3.1 Progress in implementing the risk management improvement program**

During the reporting period, a new acting Water Quality and Environmental Compliance Manager was recruited. Her role in relation to implementing the DWQMP was discussed during the handover from the previous Water Quality and Environmental Compliance Manager.

The risk management improvement program implementation status is included in [Appendix A](#).

#### **3.2 Revisions made to the operational monitoring program**

Verification monitoring is the only available option to monitor drinking water quality in the Redland City Council area. Seqwater owns, operates and monitors all chlorine dosing systems at the treatment plants and reservoirs and is responsible for operational monitoring of the system.

The sample collection and field analysis for the verification monitoring program for the entire financial year was contracted out to Queensland Urban Utilities Scientific Analytical Services Laboratory.

#### **3.3 Amendments made to the DWQMP**

DWQMP was reviewed on 4 June 2018 and was submitted for approval to the Regulator on 14 June 2018. The next internal review is due to be completed before 1 July 2020.

### **4 Verification monitoring - water quality information and summary**

The results from the verification monitoring program for *E. coli* have been compared against the water quality criteria specified in the DNRME *Drinking Water Quality Management Plan Report, Guidance Note*, 2018.

The results from the verification monitoring program for all other parameters have been compared against the National Water Quality Strategy, *Australian Drinking Water Guidelines 6 2011*, Version 3.5 updated August 2018.

The reported statistics do not include results derived from repeat samples, or from emergency or investigative samples undertaken in response to an elevated result or incident such as a main break.

The verification monitoring summaries are included in [Appendix B](#).

## 5 Incidents reported to the regulator

This financial year there was no instance where the Regulator was notified under sections 102 or 102A of the Act.

## 6 Customer complaints related to water quality

Redland City Council is required to report on the number of complaints, general details of complaints, and the responses undertaken.

Throughout the year the following complaints about water quality were received:

**Table 6.1– Complaints about water quality (total per 1000 connections)**

Water Supply Scheme	Connections*	Health Concern	Discoloured Water	Taste and Odour	Total
<b>Redland City Mainland</b>	66 737	0.03	1.93	0.66	2.62
<b>Dunwich</b>	465	0.00	2.15	0.00	2.15
<b>Point Lookout</b>	1 155	0.00	0.87	0.87	1.73
<b>Amity Point</b>	402	0.00	0.00	0.00	0.00
<b>Total*</b>	68 759	0.00	1.91	0.65	2.56

\* Total connected properties including vacant land

### 6.1 Suspected illness

Complaints are sometimes received from customers who suspect their water may be associated with an illness they are experiencing. Redland City Council investigates each complaint relating to alleged illness from our water supply, typically by taking samples at the customer's water meter and closest verification sampling point and testing them for the presence of E. coli, Total coliforms and free chlorine concentration.

During 2018/19 there were no confirmed cases of illness arising from the water supply system.

### 6.2 Discoloured water

As a response to any discoloured water customer complaints, various water mains were flushed in the vicinity of the complaint.

A regular mains flush program is in place to address this issue.

Dirty water complaints were related to dead-end mains and distribution system areas with low consumption. Associated areas were flushed to remove the dirty water.

### **6.3 Taste and odour**

The taste and odour complaints received are usually related to the taste of chlorine in the water supply. Investigation of each complaint found no public health risks. Where there was a complaint of an unusual taste or odour that could not be explained, samples were collected and checked using an internal water taste and odour panel to assist in determining the veracity of the complaints.

All samples tested complied with ADWG for parameter tested.

Staff explained to all customers the importance of free chlorine in drinking water.

## **7 DWQMP Review Outcomes**

There were no new hazards or hazardous events identified during the year that were not addressed in the approved DWQMP. Therefore there was no formal review of the DWQMP during 2018/19. The next internal review is due to be completed before 1 July 2020.

## **8 DWQMP audit findings**

No external DWQMP audit was carried out in 2018/19. As per the *Drinking Water Quality Management Plan Amendment Application – Information Notice for the Decision* dated 27 August 2018, the next external DWQMP audit is due by 1 July 2021.

## Appendix A - Implementation of the DWQMP Risk Management Improvement Program

**Table A.1 – Risk management improvement program implementation status**

Ref No.	Risk Type	Management Measure / Requirement	Proposed Action/s	Priority	Responsibility	Due Date	Status	Date Reviewed	Review Comments	New Close out Date	Status
RMIP-G18	General Improvement	Need to develop a system so O & M staff can more effectively provide asset condition feedback for use in asset management and planning.	Develop a system so O & M staff can more effectively provide asset condition feedback for use in asset management and planning.	2	Kevin McGuire	30/06/2013	Underway	27/05/2014	RCC commenced a project to replace its current maintenance management system. This project should provide better systems for asset condition feedback & recording. Go-live and system testing programmed for end of 2019 calendar year.	30/06/2020	Underway
RMIP-G18	General Improvement	Manage water quality trends better	Procure database software solution integrated with RCC's BI	3	Lara Harland	30/06/2019	Underway	30/06/2019	Database purchased and is now operational; data transfer is being implemented. Data is currently being put into both systems, it should be fully operational with the spreadsheets no longer used by the end of the year.	31/12/2019	Underway
RMIP-G19	General Improvement	Review ERP & Develop training and testing modules	Complete review of ERP including training examples	2	Kevin McGuire	30/06/2018	Underway	30/06/2019	Training is done annually with DWQMP review and the co-ordinated region-wide Operation Hydra. The plan needs to be updated to include cyber security	30/06/2020	
RMIP-G23	General Improvement	New health based requirements based on change from long-term to acute health risk for some DBPs (eg THM).	Develop procedure	3	Lara Harland	31/07/2020	Underway		Have obtained information from other service providers to use as input to the new procedure		



## Appendix B- Summary of compliance with water quality criteria

**Table B.1 – Verification Monitoring Redland City and SMBI Supply Scheme**

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value*	Health Guidelines
Chlorine free	QUU SAS	mg/L	0.1	Weekly	2209	2165	0	< 0.10	2.40	0.769	5
Fluoride	QUU SAS	mg/L	0.1	Weekly	133	132	0	0.18	0.85	0.608	1.5
pH	QUU SAS	pH Units	0.1	Weekly	2009	2009	~	6.56	8.20	7.363	NA
Turbidity	QUU SAS	NTU	0.1	Weekly	726.0	588	~	< 0.10	3.60	0.317	NA
Total THMs	QUU SAS	µg/L	<10	Monthly	97	93	0	< 10.00	180.0	73.2	250
Alkalinity	QUU SAS	mg/L	1	Quarterly	20	20	~	35.00	70.00	49.50	NA
Aluminium	QUU SAS	mg/L	0.001	Quarterly	20	20	~	0.022	0.058	0.035	NA
Arsenic	QUU SAS	mg/L	0.001	Quarterly	20	0	0	< 0.001	< 0.004	< 0.001	0.01
Boron	QUU SAS	mg/L	0.001	Quarterly	20	20	0	0.011	0.038	0.019	4
Cadmium	QUU SAS	mg/L	0.001	Quarterly	20	0	0	< 0.001	< 0.001	< 0.001	0.002
Calcium	QUU SAS	mg/L	0.1	Quarterly	20	20	~	16.00	28.0	21.3	NA
Chloride	QUU SAS	mg/L	1	Quarterly	20	20	~	11.00	51.000	32.90	NA
Chromium	QUU SAS	mg/L	0.001	Quarterly	20	0	0	< 0.001	< 0.001	< 0.001	0.05
Colour true	QUU SAS	Pt/Co U	0.5	Quarterly	20	2	~	< 0.50	1.100	1.000	NA
Conductivity	QUU SAS	µS/cm	1	Quarterly	20	20	~	160.0	360.0	249.5	NA
Copper	QUU SAS	mg/L	0.001	Quarterly	20	20	0	0.002	0.016	0.007	2
Cyanide	ALS	mg/L	0.001/0.004	Quarterly	20	0	0	< 0.001	< 0.004	< 0.004	0.08
Total Hardness	QUU SAS	mg/L	1	Quarterly	20	20	~	45.00	90.00	68.10	NA
Iron	QUU SAS	mg/L	0.001	Quarterly	20	20	~	0.004	0.040	0.015	NA
Lead	QUU SAS	mg/L	0.001	Quarterly	20	5	1	0.001	0.012	0.002	0.01
Mercury	QUU SAS	mg/L	0.0001	Quarterly	20	0	0	< 0.0001	< 0.0001	< 0.0001	0.001
Magnesium	QUU SAS	mg/L	0.01	Quarterly	20	20	~	1.10	7.20	3.60	NA
Manganese	QUU SAS	mg/L	0.001	Quarterly	20	20	0	0.001	0.013	0.004	0.5

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value*	Health Guidelines
Molybdenum	QUU SAS	mg/L	0.001	Quarterly	20	0	0	< 0.000	< 0.001	< 0.001	0.05
Nickel	QUU SAS	mg/L	0.001	Quarterly	20	0	0	< 0.001	< 0.001	< 0.001	0.02
Nitrate	QUU SAS	mg/L	0.001	Quarterly	20	20	0	0.02	0.26	0.19	50
Potassium	QUU SAS	mg/L	0.01	Quarterly	20	20	~	0.53	3.30	1.42	NA
Selenium	QUU SAS	mg/L	0.001	Quarterly	20	0	0	< 0.001	< 0.001	< 0.001	0.01
Silica	QUU SAS	mg/L	0.1	Quarterly	19	19	~	2.0	10.1	7.5	NA
Sodium	QUU SAS	mg/L	1	Quarterly	20	20	~	12.0	29.0	20.3	NA
Sulphate	QUU SAS	mg/L	1	Quarterly	20	20	~	3.3	48.0	15.2	NA
Total Dissolved Solids	QUU SAS	mg/L	5	Quarterly	20	20	~	100	230	159	NA
Zinc	QUU SAS	mg/L	0.001	Quarterly	20	16	~	< 0.001	0.017	0.005	NA

\* Where a result is less than the limit of reporting a value of zero has been used to calculate the average

**Table B.2 – Verification Monitoring Amity Point Supply Scheme**

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value*	Health Guidelines
Chlorine free	QUU SAS	mg/L	0.1	Weekly	133	133	0	0.3	1.8	1.2	5
Fluoride	QUU SAS	mg/L	0.1	Weekly	54	54	0	0.4	0.8	0.733	1.5
pH	QUU SAS	pH Units	0.1	Weekly	106	106	~	7.1	8.1	7.512	NA
Turbidity	QUU SAS	NTU	0.1	Weekly	53.0	45.0	~	<0.1	2.0000	0.343	NA
Total THMs	QUU SAS	µg/L	<10	Monthly	12	11	0	< 10	39	22.1	250
Alkalinity	QUU SAS	mg/L	1	Quarterly	4	4	~	20	22	21	NA
Aluminium	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.033	0.040	0.037	NA
Arsenic	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.01
Boron	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.014	0.016	0.015	4

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value*	Health Guidelines
Cadmium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.002
Calcium	QUU SAS	mg/L	0.1	Quarterly	4	4	~	6.8	9.1	8.5	NA
Chloride	QUU SAS	mg/L	1	Quarterly	4	4	~	3	62	44	NA
Chromium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.05
Colour true	QUU SAS	Pt/Co U	0.5	Quarterly	4	1	~	1.3	1.3	1.3	NA
Conductivity	QUU SAS	µS/cm	1	Quarterly	4	4	~	160	190	173	NA
Copper	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.004	0.007	0.005	2
Cyanide	ALS	mg/L	0.004	Quarterly	4	0	0	< 0.004	< 0.004	< 0.004	0.080
Total Hardness	QUU SAS	mg/L	1	Quarterly	4	4	~	25.0	31	29	NA
Iron	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.017	0.020	0.019	NA
Lead	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.010
Mercury	QUU SAS	mg/L	0.0001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.001
Magnesium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	1.6	2.1	1.9	NA
Manganese	QUU SAS	mg/L	0.001	Quarterly	4	1	0	< 0.001	0.003	0.003	0.5
Molybdenum	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.05
Nickel	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.02
Nitrate	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.190	0.240	0.223	50
Potassium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	0.59	0.68	0.65	NA
Selenium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.01
Silica	QUU SAS	mg/L	0.1	Quarterly	4	4	~	5.6	7.9	7.0	NA
Sodium	QUU SAS	mg/L	1	Quarterly	4	4	~	19	22	21	NA
Sulphate	QUU SAS	mg/L	1	Quarterly	4	4	0	3.6	5	4	NA
Total Dissolved Solids	QUU SAS	mg/L	5	Quarterly	4	4	~	110	120	113	NA
Zinc	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.002	0.006	0.0033	NA

\* Where a result is less than the limit of reporting a value of zero has been used to calculate the average

**Table B.3 – Verification Monitoring Dunwich Supply Scheme**

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value	Health Guidelines
Chlorine free	QUU SAS	mg/L	0.1	Weekly	123	123	0	0.1	2.1	1.1	5
Fluoride	QUU SAS	mg/L	0.1	Weekly	54	54	0	0.2	1.1	0.7	1.5
pH	QUU SAS	pH Units	0.1	Weekly	106	106	~	6.5	8.1	7.4	NA
Turbidity	QUU SAS	NTU	0.1	Weekly	53	43	~	< 0.1	1.4000	0.4	NA
Total THMs	QUU SAS	µg/L	<10	Monthly	12	9	0	< 10	22	13.1	250
Alkalinity	QUU SAS	mg/L	1	Quarterly	4	4	~	19	24	21	NA
Aluminium	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.006	0.009	0.008	NA
Arsenic	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.01
Boron	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.010	0.012	0.011	4
Cadmium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.002
Calcium	QUU SAS	mg/L	0.1	Quarterly	4	4	~	8.2	9.3	8.8	NA
Chloride	QUU SAS	mg/L	1	Quarterly	4	4	~	21	23	22	NA
Chromium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.05
Colour true	QUU SAS	Pt/Co U	0.5/1.0	Quarterly	4	1	~	0.6	0.6	0.6	NA
Conductivity	QUU SAS	µS/cm	1	Quarterly	4	4	~	120	130	123	NA
Copper	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.012	0.020	0.015	2
Cyanide	ALS	mg/L	0.004	Quarterly	4	0	0	< 0.004	< 0.004	< 0.004	0.080
Total Hardness	QUU SAS	mg/L	1	Quarterly	4	4	~	24.0	28	26	NA
Iron	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.012	0.027	0.020	NA
Lead	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.010
Mercury	QUU SAS	mg/L	0.0001	Quarterly	4	0	0	< 0.0001	< 0.0001	< 0.0001	0.001
Magnesium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	0.79	1	0.9	NA
Manganese	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.5
Molybdenum	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.05
Nickel	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.02
Nitrate	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.082	0.890	0.287	50

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value	Health Guidelines
Potassium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	0.35	0.41	0.38	NA
Selenium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.01
Silica	QUU SAS	mg/L	0.1	Quarterly	4	4	~	7.6	9.9	9.0	NA
Sodium	QUU SAS	mg/L	1	Quarterly	4	4	~	12	13	12	NA
Sulphate	QUU SAS	mg/L	1	Quarterly	4	1	0	< 1.0000	2.4	2.4	NA
Total Dissolved Solids	QUU SAS	mg/L	5	Quarterly	4	4	~	75	81	77	NA
Zinc	QUU SAS	mg/L	0.001	Quarterly	4	2	0	< 0.001	0.0013	0.0012	NA

\* Where a result is less than the limit of reporting a value of zero has been used to calculate the average

**Table B.4 – Verification Monitoring Point Lookout Supply Scheme**

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value	Health Guidelines
Chlorine free	QUU SAS	mg/L	0.1	Weekly	119	119	0	0.6	1.6	1.1	5
Fluoride	QUU SAS	mg/L	0.1	Weekly	54.0	54.0	0	0.5	0.9	0.8	1.5
pH	QUU SAS	pH Units	0.1	Weekly	105	105	~	7.1	8.3	7.7	NA
Turbidity	QUU SAS	NTU	0.1	Weekly	54.0	43.0	~	<0.1	1.3000	0.3	NA
Total THMs	QUU SAS	µg/L	<10	Monthly	12	4	0	< 10	13	8.3	250
Alkalinity	QUU SAS	mg/L	1	Quarterly	4	4	~	17	19	18	NA
Aluminium	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.020	0.021	0.021	NA
Arsenic	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.01
Boron	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.016	0.018	0.017	4
Cadmium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.002
Calcium	QUU SAS	mg/L	0.1	Quarterly	4	4	~	6.5	7.5	7.1	NA
Chloride	QUU SAS	mg/L	1	Quarterly	4	4	~	46	50	48	NA

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value	Health Guidelines
Chromium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.05
Colour true	QUU SAS	Pt/Co U	0.5	Quarterly	4	1	~	< 1.0	1.1	1	NA
Conductivity	QUU SAS	µS/cm	1	Quarterly	4	4	~	190	200	198	NA
Copper	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.014	0.018	0.016	2
Cyanide	ALS	mg/L	0.004	Quarterly	4	0	0	< 0.004	< 0.004	< 0.004	0.080
Total Hardness	QUU SAS	mg/L	1	Quarterly	4	4	~	26.0	30	29	NA
Iron	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.0063	0.010	0.008	NA
Lead	QUU SAS	mg/L	0.001	Quarterly	4	1	0	< 0.001	0.003	0.003	0.010
Mercury	QUU SAS	mg/L	0.0001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.001
Magnesium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	2.4	2.8	2.6	NA
Manganese	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.5
Molybdenum	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.05
Nickel	QUU SAS	mg/L	0.001	Quarterly	4	1	0	< 0.001	0.0018	0.0018	0.02
Nitrate	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.060	0.071	0.064	50
Potassium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	0.95	1.10	1.00	NA
Selenium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	< 0.001	< 0.001	< 0.001	0.01
Silica	QUU SAS	mg/L	0.1	Quarterly	4	4	~	7.0	9.6	8.8	NA
Sodium	QUU SAS	mg/L	1	Quarterly	4	4	~	26	28	27	NA
Sulphate	QUU SAS	mg/L	1	Quarterly	4	4	~	4.8	7	6	NA
Total Dissolved Solids	QUU SAS	mg/L	5	Quarterly	4	4	~	120	130	128	NA
Zinc	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.0084	0.0230	0.0151	NA

\* Where a result is less than the limit of reporting a value of zero has been used to calculate the average

**Table B.5 – E. coli compliance with Annual Value Redland City and SMBI Supply Scheme**

Year	2018 - 2019											
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
No. of samples collected	55	45	45	43	48	41	44	44	40	45	54	45
No. of samples collected in which <i>E. coli</i> is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	524	524	514	512	505	515	508	507	501	500	503	499
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

**Table B.6 – E. coli compliance with Annual Value Amity Pt Supply Scheme**

Year	2018 - 2019											
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
No. of samples collected	10	8	8	8	10	6	10	8	8	8	10	8
No. of samples collected in which <i>E. coli</i> is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	104	102	102	102	102	102	104	102	102	102	102	102
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES



**Table B.7 – E. coli compliance with Annual Value Dunwich Supply Scheme**

Year	2018 - 2019											
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
No. of samples collected	22	12	6	8	10	6	10	8	8	8	9	7
No. of samples collected in which <i>E. coli</i> is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	106	118	116	116	116	116	116	116	116	116	115	114
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

**Table B.8 – E. coli compliance with Annual Value Pt Lookout Supply Scheme**

<i>Year</i>	<i>2018 - 2019</i>											
<i>Month</i>	<i>July</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>June</i>
No. of samples collected	10	6	7	8	10	5	4	5	5	5	9	7
No. of samples collected in which <i>E. coli</i> is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	100	98	97	97	97	96	90	87	84	83	82	81
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES