

# **Drinking Water Quality Management Plan (DWQMP) Report**

**29 October 2018**

**Mareeba Shire Council**

SPID: **557**

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## Glossary of terms

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
<i>E. coli</i>	<i>Escherichia coli</i> , a bacterium which is considered to indicate the presence of faecal contamination and therefore potential health risk
HACCP	Hazard Analysis and Critical Control Points certification for protecting drinking water quality
mg/L	Milligrams per litre
MSC	Mareeba Shire Council
NTU	Nephelometric Turbidity Units
MPN/100mL	Most probable number per 100 millilitres
CFU/100mL	Colony forming units per 100 millilitres
<	Less than
>	Greater than

## TABLE of CONTENTS

<b>1. Introduction</b> .....	1
<b>2. Overview of Operations (optional)</b> .....	1
<b>3. Actions taken to implement the DWQMP</b> .....	1
3.1. Progress in implementing the risk management improvement program .....	1
3.2. Revisions made to the operational monitoring program to assist in maintaining the compliance with water quality criteria in verification monitoring .....	1
3.3. Amendments made to the DWQMP .....	1
<b>4. Compliance with water quality criteria for drinking water</b> .....	2
<b>5. Notifications to the Regulator under sections 102 and 102A of the Act</b> .....	2
<b>6. Customer complaints related to water quality</b> .....	2
6.1. Suspected Illness .....	2
6.2. Discoloured water .....	2
6.3. Taste and odour .....	3
6.4. Pressure .....	3
<b>7. Review of the DWQMP</b> .....	3

### **Appendix A**

*Summary of compliance with water quality criteria*

## 1. Introduction

This report documents the performance of **Mareeba Shire Council's** drinking water service with respect to water quality and performance in implementing the actions detailed in the drinking water quality management plan (DWQMP) as required under the *Water Supply (Safety and Reliability) Act 2008* (WSSR Act).

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 template has been prepared in accordance with the *Water Industry Regulatory Reform – drinking water quality management plan report factsheet* published by the Department of Energy and Water Supply, Queensland, accessible at [www.dews.qld.gov.au](http://www.dews.qld.gov.au).

## 2. Overview of Operations (optional)

The following table displays the townships within the Mareeba Shire Council supplied with potable water through reticulated delivery mains, the source of supply and the population served:

**Table 1 MSC Reticulated Potable Water Supply Schemes**

Scheme	Source of Supply	Population <sup>‡</sup>
Chillagoe	Bores	176
Dimbulah	SunWater Irrigation Channel	350
Mareeba	Barron River (SunWater Supplemented)	7,812
Kuranda	Barron River (SunWater Supplemented)	1,900
		10,238

## 3. Actions taken to implement the DWQMP

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

The RMIP, detailed in Appendix B of the DWQMP, has been reviewed and updated.

The projects listed, with mitigated risk from moderate and above, are scheduled for completion in financial years ending 2018 to 2020. The projects scheduled to be completed in financial year ending 2019 are budgeted and in progress.

### 3.2. Revisions made to the operational monitoring program to assist in maintaining the compliance with water quality criteria<sup>§</sup> in verification monitoring

No changes were made to the monitoring program as outlined in the DWQMP during this reporting period.

### 3.3. Amendments made to the DWQMP

The amended DWQMP was approved with conditions in a decision notice letter dated 9 August 2018. The next scheduled review of the MSC DWQMP is to be completed by 31 March 2020.

<sup>‡</sup> Population data (with access to potable water) as published in the 2018 SWIM report

<sup>§</sup> Refer to [Water Quality and Reporting Guideline for a Drinking Water Service](#) for the water quality criteria for drinking water.

## 4. Compliance with water quality criteria for drinking water

Mareeba Shire Council utilise the most current Australian Drinking Water Guidelines (ADWG), as well as the standards in the Public Health Regulation 2005, to ensure water quality criteria health guideline values are adhered to.

Details of the verification monitoring for the previous financial year are shown in Appendix A.

## 5. Notifications to the Regulator under sections 102 and 102A of the Act

During the past financial year there were **zero** instances where the Regulator was notified under section 102 of the Act and **zero** instances where the Regulator was notified under section 102A of the Act.

There were **zero** notifications involving the detection of *E. coli*\*.

There were no other incidents or events associated with the MSC potable water supplies reported to the regulator.

## 6. Customer complaints related to water quality

In the Mareeba Shire Council Customer Service Standards, which are publicly available on the MSC website, it is stated that:

*If customers have a complaint regarding water or wastewater services, MSC will investigate the complaint and take all reasonable action to solve the problem or address the issue promptly and effectively. If the issue or difficulty proves more complex, development of a solution will follow Council's complaints resolution process.*

Throughout the year the following water quality complaints were received:

**Table 2 Complaints with regard to water quality (per supply and type)**

	Suspected Illness	Discoloured water	Taste and odour	Pressure	Total
Chillagoe	0	0	0	0	0
Dimbulah	0	0	0	0	0
Mareeba	0	5	0	21	26
Kuranda	0	4	3	12	19
<b>Totals</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>33</b>	<b>45</b>

### 6.1. Suspected Illness

Complaints are sometimes received from customers who suspect their water may be associated with an illness they are experiencing. During the 2017-2018 financial year there were **zero (0)** confirmed cases of illness arising from any of MSC's water supply systems.

### 6.2. Discoloured water

All discoloured water complaints were investigated by MSC staff and where warranted the water mains within that area were flushed.

All water mains within the shire are flushed at a minimum of once per year.

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\* *E. coli* is an organism that may not directly represent a hazard to human health, but indicates the presence of recent faecal contamination

### 6.3. Taste and odour

Once reported by customers or detected by our employees, MSC investigates each issue to devise a prompt resolution. This may include investigating the water source, altering or adjusting the treatment procedures, and/or flushing the reticulation.

An investigation was conducted of each of the particular complaints listed in **Error! Reference source not found.** The investigations found no public health risks. As a precautionary measure Council Officers flushed the mains within the areas of complaint.

### 6.4. Pressure

There were thirty three (33) complaints related to low water pressure. Of the low pressure two (2) were found to be the residents responsibility (residential side of the water meter) and thirty one (31) were related to MSC infrastructure failure.

## 7. Review of the DWQMP

The amended DWQMP was approved with conditions in a decision notice letter dated 9 August 2018. The next scheduled review of the MSC DWQMP is to be completed by 31 March 2020.

## Appendix A

### Summary of compliance with water quality criteria

The results from the verification monitoring program have been compared against the levels of the water quality criteria specified by the Regulator in the *Water Quality and Reporting Guideline for a Drinking Water Service*.

The reported statistics may not include results derived from repeat samples, or from emergency or investigative samples undertaken in response to an elevated result.

#### **List of Tables**

Table A1	<i>Verification monitoring results: treated water in which an ADWG Health parameter (with a set minimum value for health considerations) was detected</i>
Table A2	<i>Verification monitoring results: showing all parameters that were detected in the treated water supplies for the Water Year</i>
Table A3	<i>Chillagoe Town Water Supply 2017 Reticulation E. coli monitoring</i>
Table A4	<i>Chillagoe Town Water Supply 2018 Reticulation E. coli monitoring</i>
Table A5	<i>Dimbulah Town Water Supply 2017 Reticulation E. coli monitoring</i>
Table A6	<i>Dimbulah Town Water Supply 2018 Reticulation E. coli monitoring</i>
Table A7	<i>Mareeba Town Water Supply 2017 Reticulation E. coli monitoring</i>
Table A8	<i>Mareeba Town Water Supply 2018 Reticulation E. coli monitoring</i>
Table A9	<i>Kuranda Town Water Supply 2017 Reticulation E. coli monitoring</i>
Table A10	<i>Kuranda Town Water Supply 2018 Reticulation E. coli monitoring</i>
Table A11	<i>In-House Chlorine Residual Results for 2017-2018 Water Year</i>
Table A12	<i>Verification Chlorine Residual Results for 2017-2018 Water Year</i>

**Table A1 Verification monitoring results: treated water in which an ADWG Health parameter (with a set minimum value for health considerations) was detected**

Scheme Name	Treated or Untreated	Parameter	Units	Frequency of Sampling	Total No. Samples Collected	No. of Samples Where Parameter Detected	Exceedance Value (ADWG Health)	No. of Samples Exceeding Water Quality Criteria	Min	Max	Average (Mean)	Limit of Reporting	Laboratory Name
Chillagoe	Treated	Arsenic	mg/L	Biannual	3	3	0.01		0.002	0.003	0.003	<0.001	CRC
Chillagoe	Treated	Barium	mg/L	Biannual	2	2	2		0.08	0.084	0.082	<0.001	CRC
Chillagoe	Treated	Cadmium	mg/L	Biannual	2	2	0.002		0.0001	0.0001	0.000	<0.0001	CRC
Chillagoe	Treated	Copper	mg/L	Biannual	2	2	2		0.034	0.044	0.039	<0.001	CRC
Chillagoe	Treated	Fluoride	mg/L	Biannual	2	2	1.5		0.1	0.14	0.120	<0.02	CRC
Chillagoe	Treated	Lead	mg/L	Biannual	10	10	0.01		0.001	0.007	0.003	<0.001	CRC
Dimbulah	Treated	Barium	mg/L	Biannual	2	2	2		0.015	0.016	0.016	<0.001	CRC
Dimbulah	Treated	Copper	mg/L	Biannual	2	2	2		0.005	0.008	0.007	<0.001	CRC
Dimbulah	Treated	Fluoride	mg/L	Biannual	2	2	1.5		0.04	0.06	0.050	<0.02	CRC
Dimbulah	Treated	Lead	mg/L	Biannual	2	1	0.01		0.001	0.001	0.001	<0.001	CRC
Dimbulah	Treated	Manganese	mg/L	Biannual	2	1	0.5		0.002	0.002	0.002	<0.001	CRC
Mareeba	Treated	Barium	mg/L	Biannual	2	2	2		0.009	0.01	0.010	<0.001	CRC
Mareeba	Treated	Copper	mg/L	Biannual	2	2	2		0.001	0.007	0.004	<0.001	CRC
Mareeba	Treated	Fluoride	mg/L	Biannual	2	2	1.5		0.05	0.05	0.050	<0.02	CRC
Kuranda	Treated	Arsenic	mg/L	Biannual	2	1	0.01		0.001	0.001	0.001	<0.001	CRC
Kuranda	Treated	Barium	mg/L	Biannual	2	2	2		0.01	0.012	0.011	<0.001	CRC
Kuranda	Treated	Copper	mg/L	Biannual	2	2	2		0.004	0.043	0.024	<0.001	CRC
Kuranda	Treated	Fluoride	mg/L	Biannual	2	2	1.5		0.04	0.06	0.050	<0.02	CRC
Kuranda	Treated	Lead	mg/L	Biannual	2	1	0.01		0.001	0.001	0.001	<0.001	CRC
Kuranda	Treated	Manganese	mg/L	Monthly	2	1	0.5		0.002	0.002	0.002	<0.001	CRC

**Table A2 Verification monitoring results: showing all parameters that were detected in the treated water supplies for the Water Year**

Scheme Name	Treated or Untreated	Parameter	Units	Frequency of Sampling	Total No. Samples Collected <sup>s</sup>	No. of Samples Where Parameter Detected	Exceedance Value (ADWG Health)	No. of Samples Exceeding Water Quality Criteria	Min	Max	Average (Mean)	Limit of Reporting	Laboratory Name
Chillagoe	Treated	Arsenic	mg/L	Biannual	3	3	0.01		0.002	0.003	0.003	<0.001	CRC
Chillagoe	Treated	Barium	mg/L	Biannual	2	2	2		0.08	0.084	0.082	<0.001	CRC
Chillagoe	Treated	Cadmium	mg/L	Biannual	2	2	0.002		0.0001	0.0001	0.000	<0.0001	CRC
Chillagoe	Treated	Calcium	mg/L	Biannual	2	2			110	120	115.000	<0.2	CRC
Chillagoe	Treated	Chloride	mg/L	Biannual	2	2	c		14	21	17.500	<0.1	CRC
Chillagoe	Treated	Copper	mg/L	Biannual	2	2	2		0.034	0.044	0.039	<0.001	CRC
Chillagoe	Treated	Electrical Conductance	uS/cm	Biannual	2	2			620	650	635.000	<1	CRC
Chillagoe	Treated	Fluoride	mg/L	Biannual	2	2	1.5		0.1	0.14	0.120	<0.02	CRC
Chillagoe	Treated	Silicon	mg/ L SiO2	Biannual	2	2			33	38	35.500	<0.1	CRC
Chillagoe	Treated	Langliers Index		Biannual	2	2			0.82	0.97	0.895	<0	CRC
Chillagoe	Treated	Lead	mg/L	Biannual	8	8	0.01		0.001	0.007	0.003	<0.001	CRC
Chillagoe	Treated	Magnesium	mg/L	Biannual	2	2			3.7	4	3.850	<0.1	CRC
Chillagoe	Treated	pH		Biannual	2	2	c		7.7	7.8	7.750	<0.1	CRC
Chillagoe	Treated	Potassium	mg/L	Biannual	2	2			1	1.2	1.100	<0.1	CRC
Chillagoe	Treated	Salinity	psu	Biannual	2	2			0.3	0.314	0.307	<0	CRC
Chillagoe	Treated	SAR_CALC	Units	Biannual	2	2			0.18	0.22	0.200	<0	CRC
Chillagoe	Treated	Sodium	mg/L	Biannual	2	2			7	9.1	8.050	<1	CRC
Chillagoe	Treated	Sulphate	mg/L	Biannual	2	2			6.2	8.3	7.250	<1	CRC
Chillagoe	Treated	Total Alkalinity	mg CaCO3 / L	Biannual	2	2			280	290	285.000	<0.1	CRC
Chillagoe	Treated	Total Dissolved Solids	mg/L	Biannual	2	2			380	400	390.000	<1	CRC
Chillagoe	Treated	Total Hardness	mg CaCO3 / L	Biannual	2	2			290	310	300.000	<1	CRC
Chillagoe	Treated	Vanadium	mg/L	Biannual	2	2			0.001	0.001	0.001	<0.001	CRC
Chillagoe	Treated	Zinc	mg/L	Biannual	2	2	c		0.029	0.037	0.033	<0.005	CRC
Dimbulah	Treated	Aluminium	mg/L	Monthly	2	2	c		0.012	0.013	0.013	<0.005	CRC
Dimbulah	Treated	Barium	mg/L	Biannual	2	2	2		0.015	0.016	0.016	<0.001	CRC
Dimbulah	Treated	Calcium	mg/L	Biannual	2	2			2	3	2.500	<0.2	CRC
Dimbulah	Treated	Chloride	mg/L	Biannual	2	2	c		12	13	12.500	<0.1	CRC
Dimbulah	Treated	Copper	mg/L	Biannual	2	2	2		0.005	0.008	0.007	<0.001	CRC
Dimbulah	Treated	Electrical Conductance	uS/cm	Biannual	2	2			78	82	80.000	<1	CRC
Dimbulah	Treated	Fluoride	mg/L	Biannual	2	2	1.5		0.04	0.06	0.050	<0.02	CRC
Dimbulah	Treated	Silicon	mg/ L SiO2	Biannual	2	2			10	12	11.000	<0.1	CRC
Dimbulah	Treated	Langliers Index		Biannual	2	2			-2.3	-2.3	-2.300	<0	CRC
Dimbulah	Treated	Lead	mg/L	Biannual	2	1	0.01		0.001	0.001	0.001	<0.001	CRC
Dimbulah	Treated	Magnesium	mg/L	Biannual	2	2			2.6	3	2.800	<0.1	CRC
Dimbulah	Treated	Manganese	mg/L	Monthly	2	1	0.5		0.002	0.002	0.002	<0.001	CRC
Dimbulah	Treated	pH		Biannual	2	2	c		7.3	7.4	7.350	<0.1	CRC
Dimbulah	Treated	pH @ 25 deg C		Biannual	2	2			9.6	9.7	9.650	<0.1	CRC
Dimbulah	Treated	Potassium	mg/L	Biannual	2	2			1.8	2	1.900	<0.1	CRC
Dimbulah	Treated	Salinity	psu	Biannual	2	2			0.0418	0.0434	0.043	<0	CRC
Dimbulah	Treated	SAR_CALC	Units	Biannual	2	2			0.66	0.84	0.750	<0	CRC
Dimbulah	Treated	Sodium	mg/L	Biannual	2	2			6.5	8	7.250	<1	CRC
Dimbulah	Treated	Sulphate	mg/L	Biannual	2	2			1.5	1.7	1.600	<1	CRC
Dimbulah	Treated	Total Alkalinity	mg CaCO3 / L	Biannual	2	2			15	16	15.500	<0.1	CRC



Scheme Name	Treated or Untreated	Parameter	Units	Frequency of Sampling	Total No. Samples Collected <sup>9</sup>	No. of Samples Where Parameter Detected	Exceedance Value (ADWG Health)	No. of Samples Exceeding Water Quality Criteria	Min	Max	Average (Mean)	Limit of Reporting	Laboratory Name
Dimbulah	Treated	Total Dissolved Solids	mg/L	Biannual	2	2			51	53	52.000	<1	CRC
Dimbulah	Treated	Total Hardness	mg CaCO3 / L	Biannual	2	2			17	18	17.500	<1	CRC
Dimbulah	Treated	Turbidity	NTU	Biannual	2	1	c		0.1	0.1	0.100	<0.1	CRC
Dimbulah	Treated	Zinc	mg/L	Biannual	2	1	c		0.007	0.007	0.007	<0.005	CRC
Mareeba	Treated	Aluminium	mg/L	Monthly	2	2	c		0.026	0.032	0.029	<0.005	CRC
Mareeba	Treated	Barium	mg/L	Biannual	2	2	2		0.009	0.01	0.010	<0.001	CRC
Mareeba	Treated	Calcium	mg/L	Biannual	2	2			4	5	4.500	<0.2	CRC
Mareeba	Treated	Chloride	mg/L	Biannual	2	2	c		14	18	16.000	<0.1	CRC
Mareeba	Treated	Copper	mg/L	Biannual	2	2	2		0.001	0.007	0.004	<0.001	CRC
Mareeba	Treated	Electrical Conductance	uS/cm	Biannual	2	2			120	140	130.000	<1	CRC
Mareeba	Treated	Fluoride	mg/L	Biannual	2	2	1.5		0.05	0.05	0.050	<0.02	CRC
Mareeba	Treated	Silicon	mg/ L SiO2	Biannual	2	2			20	21	20.500	<0.1	CRC
Mareeba	Treated	Langliers Index		Biannual	2	2			-1.6	-1.1	-1.350	<0	CRC
Mareeba	Treated	Magnesium	mg/L	Biannual	2	2			3	6	4.500	<0.1	CRC
Mareeba	Treated	pH		Biannual	2	2	c		7.7	7.9	7.800	<0.1	CRC
Mareeba	Treated	Potassium	mg/L	Biannual	2	2			2	2.1	2.050	<0.1	CRC
Mareeba	Treated	Salinity	psu	Biannual	2	2			0.0604	0.0675	0.064	<0	CRC
Mareeba	Treated	Sodium	mg/L	Biannual	2	2			12	13	12.500	<1	CRC
Mareeba	Treated	Sulphate	mg/L	Biannual	2	2			1.2	1.5	1.350	<1	CRC
Mareeba	Treated	Total Alkalinity	mg CaCO3 / L	Biannual	2	2			25	43	34.000	<0.1	CRC
Mareeba	Treated	Total Dissolved Solids	mg/L	Biannual	2	2			78	83	80.500	<1	CRC
Mareeba	Treated	Total Hardness	mg CaCO3 / L	Biannual	2	2			22	37	29.500	<1	CRC
Mareeba	Treated	Turbidity	NTU	Biannual	2	2	c		0.1	0.1	0.100	<0.1	CRC
Mareeba	Treated	Vanadium	mg/L	Biannual	2	2			0.001	0.001	0.001	<0.001	CRC
Kuranda	Treated	Aluminium	mg/L	Monthly	2	2	c		0.014	0.018	0.016	<0.005	CRC
Kuranda	Treated	Arsenic	mg/L	Biannual	2	1	0.01		0.001	0.001	0.001	<0.001	CRC
Kuranda	Treated	Barium	mg/L	Biannual	2	2	2		0.01	0.012	0.011	<0.001	CRC
Kuranda	Treated	Calcium	mg/L	Biannual	2	2			3	3.1	3.050	<0.2	CRC
Kuranda	Treated	Chloride	mg/L	Biannual	2	2	c		18	21	19.500	<0.1	CRC
Kuranda	Treated	Copper	mg/L	Biannual	2	2	2		0.004	0.043	0.024	<0.001	CRC
Kuranda	Treated	Electrical Conductance	uS/cm	Biannual	2	2			120	120	120.000	<1	CRC
Kuranda	Treated	Fluoride	mg/L	Biannual	2	2	1.5		0.04	0.06	0.050	<0.02	CRC
Kuranda	Treated	Silicon	mg/ L SiO2	Biannual	2	2			14	18	16.000	<0.1	CRC
Kuranda	Treated	Iron	mg/L	Monthly	2	1	c		0.016	0.016	0.016	<0.01	CRC
Kuranda	Treated	Langliers Index		Biannual	2	2			-2	-1.5	-1.750	<0	CRC
Kuranda	Treated	Lead	mg/L	Biannual	2	1	0.01		0.001	0.001	0.001	<0.001	CRC
Kuranda	Treated	Magnesium	mg/L	Biannual	2	2			2.5	4	3.250	<0.1	CRC
Kuranda	Treated	Manganese	mg/L	Monthly	2	1	0.5		0.002	0.002	0.002	<0.001	CRC
Kuranda	Treated	pH		Biannual	2	2	c		7.6	7.8	7.700	<0.1	CRC
Kuranda	Treated	pH @ 25 deg C		Biannual	2	2			9.3	9.5	9.400	<0.1	CRC
Kuranda	Treated	Potassium	mg/L	Biannual	2	2			1	1.8	1.400	<0.1	CRC
Kuranda	Treated	Salinity	psu	Biannual	2	2			0.059	0.0619	0.060	<0	CRC
Kuranda	Treated	SAR_CALC	Units	Biannual	2	2			0.89	1.4	1.145	<0	CRC
Kuranda	Treated	Sodium	mg/L	Biannual	2	2			10	14	12.000	<1	CRC

Scheme Name	Treated or Untreated	Parameter	Units	Frequency of Sampling	Total No. Samples Collected <sup>§</sup>	No. of Samples Where Parameter Detected	Exceedance Value (ADWG Health)	No. of Samples Exceeding Water Quality Criteria	Min	Max	Average (Mean)	Limit of Reporting	Laboratory Name
Kuranda	Treated	Sulphate	mg/L	Biannual	2	2			1.3	1.5	1.400	<1	CRC
Kuranda	Treated	Total Alkalinity	mg CaCO <sub>3</sub> / L	Biannual	2	2			17	33	25.000	<0.1	CRC
Kuranda	Treated	Total Dissolved Solids	mg/L	Biannual	2	2			72	74	73.000	<1	CRC
Kuranda	Treated	Total Hardness	mg CaCO <sub>3</sub> / L	Biannual	2	2			18	24	21.000	<1	CRC
Kuranda	Treated	Turbidity	NTU	Biannual	2	1	c		0.1	0.1	0.100	<0.1	CRC
Kuranda	Treated	Zinc	mg/L	Biannual	2	1	c		0.013	0.013	0.013	<0.005	CRC

<sup>§</sup> Reproduced from footnotes of Table 10.6 Guideline values for physical and chemical characteristics ADWG V3.4

HU = Hazen units; NTU = nephelometric turbidity units; THMs = trihalomethanes.

a Aesthetic values are not listed if the compound does not cause aesthetic problems, or if the value determined from health considerations is the same or lower.

b If present at all in Australian drinking waters, concentrations of all organic compounds other than disinfection byproducts are likely to be very low relative to the guideline value.

c Insufficient data to set a guideline value based on health considerations.

d The guideline value is below the limit of quantitation. Improved analytical procedures are required for this compound.

e The concentration of all chlorination byproducts can be minimised by removing naturally occurring organic matter from the source water, reducing the amount of chlorine added, or using an alternative disinfectant (which may produce other byproducts). Action to reduce trihalomethanes and other byproducts is encouraged but must not compromise disinfection.

f No corresponding fact sheet for these pesticides. Guideline values for these pesticides appeared in a previous version of the ADWG and have been retained in Table 10.5 for information purposes only.

Notes:

1 All values are as 'total' unless otherwise stated.

2 Routine monitoring for these compounds is not required unless there is potential for contamination of water supplies (e.g. accidental spillage).

**Table A3 Chillagoe Town Water Supply 2017 Reticulation E. coli monitoring**

Drinking water scheme:	Chillagoe											
Year	2017											
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
No. of samples collected	1	1	2	1	1	1	1	1	2	1	1	1
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	16	15	14	14	14	14	14	14	14	14	14	14
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE</b>												
The <i>Public Health Regulation 2005</i> (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no <i>E. Coli</i> . This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.												
This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).												

**Table A4 Chillagoe Town Water Supply 2018 Reticulation E. coli monitoring**

Drinking water scheme:		Chillagoe											
Year	2018												
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
No. of samples collected	1	1	2	1	1	1							
No. of samples collected in which <i>E. coli</i> is detected (i.e. a failure)	0	0	0	0	0	0							
No. of samples collected in previous 12 month period	14	14	14	14	14	14	13	12	10	9	8	7	
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0	
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
<b>CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE</b>													
The <i>Public Health Regulation 2005</i> (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no <i>E. Coli</i> . This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.													
This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).													

**Table A5 Dimbulah Town Water Supply 2017 Reticulation E. coli monitoring**

Drinking water scheme:		Dimbulah											
Year	2017												
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
No. of samples collected	8	8	11	8	10	8	4	5	5	4	5	4	
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	105	105	105	105	107	105	101	96	93	89	84	80	
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0	
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
<b>CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE</b>													
The <i>Public Health Regulation 2005</i> (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no <i>E. Coli</i> . This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.													
This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).													

**Table A6 Dimbulah Town Water Supply 2018 Reticulation E. coli monitoring**

Drinking water scheme:		Dimbulah											
Year	2018												
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
No. of samples collected	5	4	5	4	5	4							
No. of samples collected in which <i>E. coli</i> is detected (i.e. a failure)	0	0	0	0	0	0							
No. of samples collected in previous 12 month period	77	73	67	63	58	54	50	45	40	36	31	27	
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0	
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
<b><u>CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE</u></b>													
The <i>Public Health Regulation 2005</i> (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no <i>E. Coli</i> . This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.													
This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).													

**Table A7 Mareeba Town Water Supply 2017 Reticulation E. coli monitoring**

Drinking water scheme:		Mareeba											
Year	2017												
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
No. of samples collected	9	8	8	4	5	8	8	10	9	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	105	105	102	98	95	93	93	93	94	94	94	95	
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0	
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
<b>CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE</b>													
The <i>Public Health Regulation 2005</i> (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no <i>E. Coli</i> . This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.													
This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).													

**Table A8 Mareeba Town Water Supply 2018 Reticulation E. coli monitoring**

Drinking water scheme: Mareeba												
Year	2018											
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
No. of samples collected	10	8	9	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						
No. of samples collected in previous 12 month period	96	96	97	101	106	106	98	88	79	71	61	53
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b><u>CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE</u></b>												
The <i>Public Health Regulation 2005</i> (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no <i>E. Coli</i> . This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.												
This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).												



**Table A9 Kuranda Town Water Supply 2017 Reticulation E. coli monitoring**

Drinking water scheme: Kuranda												
Year	2017											
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
No. of samples collected	8	8	11	8	10	8	8	10	10	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	105	105	105	105	107	105	105	105	107	107	107	107
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
<b>CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE</b>												
The <i>Public Health Regulation 2005</i> (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no <i>E. Coli</i> . This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.												
This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).												

**Table A10 Kuranda Town Water Supply 2018 Reticulation E. coli monitoring**

Drinking water scheme:		Kuranda											
Year	2018												
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
No. of samples collected	10	8	9	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							
No. of samples collected in previous 12 month period	109	109	107	107	107	107	99	89	79	71	61	53	
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0	
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	
<b><u>CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE</u></b>													
The <i>Public Health Regulation 2005</i> (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no <i>E. Coli</i> . This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.													
This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).													

**Table A11 In-House Chlorine Residual Results for 2017-2018 Water Year**

Reporting Year	Reporting Period	Scheme	Population Served	System Component	Laboratory Name	Unit of Measure	LOR	Total No of Samples	Min Value	Max Value	Avg Value
2017	3	Chillagoe	176	Reticulation	Mareeba Shire Council	mg/L	<0.01	105	0.61	1.55	1.15
2017	3	Dimbulah	350	Reticulation	Mareeba Shire Council	mg/L	<0.01	77	0.88	1.37	1.12
2017	3	Mareeba	7,812	Reticulation	Mareeba Shire Council	mg/L	<0.01	116	0.34	1.23	0.85
2017	3	Kuranda	1,900	Reticulation	Mareeba Shire Council	mg/L	<0.01	78	0.55	1.25	0.98
2017	4	Chillagoe	176	Reticulation	Mareeba Shire Council	mg/L	<0.01	107	0.56	1.45	1.06
2017	4	Dimbulah	350	Reticulation	Mareeba Shire Council	mg/L	<0.01	78	0.76	1.42	1.09
2017	4	Mareeba	7,812	Reticulation	Mareeba Shire Council	mg/L	<0.01	117	0.21	1.44	0.78
2017	4	Kuranda	1,900	Reticulation	Mareeba Shire Council	mg/L	<0.01	76	0.51	1.45	0.97
2018	1	Chillagoe	176	Reticulation	Mareeba Shire Council	mg/L	<0.01	92	0.53	1.36	0.98
2018	1	Dimbulah	350	Reticulation	Mareeba Shire Council	mg/L	<0.01	78	0.64	1.83	1.05
2018	1	Mareeba	7,812	Reticulation	Mareeba Shire Council	mg/L	<0.01	117	0.21	1.60	0.67
2018	1	Kuranda	1,900	Reticulation	Mareeba Shire Council	mg/L	<0.01	78	0.53	1.56	1.02
2018	2	Chillagoe	176	Reticulation	Mareeba Shire Council	mg/L	<0.01	106	0.50	1.28	1.00
2018	2	Dimbulah	350	Reticulation	Mareeba Shire Council	mg/L	<0.01	78	0.67	1.68	1.12
2018	2	Mareeba	7,812	Reticulation	Mareeba Shire Council	mg/L	<0.01	117	0.49	1.76	0.99
2018	2	Kuranda	1,900	Reticulation	Mareeba Shire Council	mg/L	<0.01	78	0.55	1.36	1.07

**Table A12 Verification Chlorine Residual Results for 2017-2018 Water Year**

Reporting Year	Reporting Period	Scheme	Population Served	System Component	Laboratory Name	Unit of Measure	LOR	Total No of Samples	Min Value	Max Value	Avg Value
2017	3	Chillagoe	176	Reticulation	Cairns Regional Council	mg/L	<0.01	1	0.20	0.20	0.20
2017	3	Dimbulah	350	Reticulation	Cairns Regional Council	mg/L	<0.01	1	1.30	1.30	1.30
2017	3	Mareeba	7,812	Reticulation	Cairns Regional Council	mg/L	<0.01	1	1.30	1.30	1.30
2017	3	Kuranda	1,900	Reticulation	Cairns Regional Council	mg/L	<0.01	1	1.60	1.60	1.60
2017	4	Chillagoe	176	Reticulation	Cairns Regional Council	mg/L	<0.01	0	0	0	0
2017	4	Dimbulah	350	Reticulation	Cairns Regional Council	mg/L	<0.01	0	0	0	0
2017	4	Mareeba	7,812	Reticulation	Cairns Regional Council	mg/L	<0.01	0	0	0	0
2017	4	Kuranda	1,900	Reticulation	Cairns Regional Council	mg/L	<0.01	0	0	0	0
2018	1	Chillagoe	176	Reticulation	Cairns Regional Council	mg/L	<0.01	1	1.15	1.15	1.15
2018	1	Dimbulah	350	Reticulation	Cairns Regional Council	mg/L	<0.01	1	1.04	1.04	1.04
2018	1	Mareeba	7,812	Reticulation	Cairns Regional Council	mg/L	<0.01	1	1.47	1.47	1.47
2018	1	Kuranda	1,900	Reticulation	Cairns Regional Council	mg/L	<0.01	1	1.00	1.00	1.00
2018	2	Chillagoe	176	Reticulation	Cairns Regional Council	mg/L	<0.01	0	0	0	0
2018	2	Dimbulah	350	Reticulation	Cairns Regional Council	mg/L	<0.01	0	0	0	0
2018	2	Mareeba	7,812	Reticulation	Cairns Regional Council	mg/L	<0.01	0	0	0	0
2018	2	Kuranda	1,900	Reticulation	Cairns Regional Council	mg/L	<0.01	0	0	0	0