Drinking Water Quality Management Plan (DWQMP) report

2016/17

Maranoa Regional Council

SPID: 494

PO Box 42 Mitchell QLD 4465 1300 007 662 council@maranoa.qld.gov.au

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

E. coli Escherichia coli, 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

NTU Nephelometric Turbidity Units

MPN/100mL Most probable number per 100 millilitres
CFU/100mL Colony forming units per 100 millilitres

< Less than > Greater than

1. Introduction

This report documents the performance of Maranoa Regional 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 (the 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.

2. Actions taken to implement the DWQMP

Operational limits have been set and are monitored by field crews. Verification monitoring is also carried out by our laboratory staff on a routine basis. Results that are out of operational limits are referred to supervisors for corrective action.

Progress in implementing the risk management improvement program

Refer to the Appendices for a summary of progress in implementing each of the Improvement Program actions.

Key Improvement items are tagged for capital upgrade consideration each financial year, or applied for when suitable external funding becomes available. Operational improvements are conducted within existing operational budgets based on their priority.

Revisions made to the operational monitoring program to assist in maintaining the compliance with water quality criteria¹ in verification monitoring.

The current approved plan is in effect with copies dispatched to all operational staff, and regular discussion with field staff to make them aware of the requirements under the plan.

Amendments made to the DWQMP

An informal internal review of the plan was undertaken after a change of Manager, early in the FY.

The new Manager was brought up to speed with the current plan and the improvement items required to continually improve the networks.

This year the amendments proposed to be made to the plan involve updating the organizational structure, and updating the infrastructure maps of towns where upgrades have been carried out.

¹ Refer to Water Quality and Reporting Guideline for a Drinking Water Service for the water quality criteria for drinking water.

3. Compliance with water quality criteria for drinking water

The water quality criteria mean health guideline values in the most current Australian Drinking Water Guidelines, as well as the standards in the Public Health Regulation 2005.

Amby

Parameter	Unit	Limit	Samples	Non-Conforming	Max
E. coli	MPN/100mL	<1	31	0	<1
Chlorine (Total)	mg/L	<5	22	0	3.20

Injune

Parameter	Unit	Limit	Samples	Non-Conforming	Max
E. coli	MPN/100mL	<1	88	0	<1
Chlorine (Total)	mg/L	<5	5	0	0.76

Jackson

Parameter	Unit	Limit	Samples	Non-Conforming	Max
E. coli	MPN/100mL	<1	20	0	<1
Chlorine (Total)	mg/L	<5	20	0	0.90

Mitchell

	Parameter	Unit	Limit	Samples	Non-Conforming	Max
	E. coli	MPN/100mL	<1	71	0	<1
Cł	hlorine (Total)	mg/L	<5	14	0	3.40

Muckadilla

Parameter	Unit	Limit	Samples	Non-Conforming	Max
E. coli	MPN/100mL	<1	24	0	<1
Chlorine (Total)	mg/L	<5	24	0	1.10

Mungallala

Parameter	Unit	Limit	Samples	Non-Conforming	Max
E. coli	MPN/100mL	<1	26	0	<1
Chlorine (Total)	mg/L	<5	8	0	0.86

Roma

Parameter	Unit	Limit	Samples	Non-Conforming	Max
E. coli	MPN/100mL	<1	705	0	<1
Chlorine (Total)	mg/L	<5	705	0	2.61

Surat

Parameter	Unit	Limit	Samples	Non-Conforming	Max
E. coli	MPN/100mL	<1	90	0	<1
Chlorine (Total)	mg/L	<5	90	0	2.10

Wallumbilla

Parameter	Unit	Limit	Samples	Non-Conforming	Max
E. coli	MPN/100mL	<1	40	0	<1
Chlorine (Total)	mg/L	<5	40	0	1.62

Yuleba

Parameter	Unit	Limit	Samples	Non-Conforming	Max
E. coli	MPN/100mL	<1	40	0	<1
Chlorine (Total)	mg/L	<5	40	0	1.80

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

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

5. Customer complaints related to water quality

Maranoa Regional 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 1 - complaints about water quality, (including per 1000 customers)

	Suspected Illness	Discoloured water	Taste and odour	Total
Amby	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Injune	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Jackson	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Mitchell	0 (0.00)	1 (1.70)	0 (0.00)	1 (1.70)
Muckadilla	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Mungallala	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Roma	0 (0.00)	4 (1.16)	6 (1.74)	10 (2.90)
Surat	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Wallumbilla	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Yuleba	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Total	0 (0.00)	5 (1.00)	6 (1.20)	11 (2.20)

Suspected Illness

Complaints are sometimes received from customers who suspect their water may be associated with an illness they are experiencing. Maranoa Regional Council investigates each complaint relating to alleged illness from our water quality, typically by testing the customers tap and closest reticulation sampling point for the presence of *E. coli*.

During 2016/17, there were no confirmed cases of illness arising from the water supply system. With the reports that were received being for skin irritation attributed to chlorine disinfection in the towns. Chlorine levels were tested and found to be within acceptable limits and could not be adjusted lower without compromising chlorine residual in further segments of the network.

Discoloured water

In 2016/17, 5 customer complaints were received from within the towns of Mitchell and Roma. As per standard procedure the areas were flushed to remove the dirty water and to achieve detectable chlorine residuals.

Taste and odour

The taste and odour complaints received are typically related to the smell of sulphur in the water supply bores. Once reported by customers or detected by our employees, Maranoa Regional Council investigates the issue to devise a prompt resolution, which may include flushing the reticulation. Investigation of each complaint found no public health risks, for either microbiological or chemical parameters. These odour complaints reoccur annually and coincide with hotter water being drawn up by the bores due to higher demand during summer.

6. Findings and recommendations of the DWQMP auditor

Maranoa Regional Council engaged Viridis Consultants to conduct a regular audit of the DWQMP during June 2017, covering the time period from 2016/17. The purpose of the audit was to verify the accuracy of the monitoring and performance data provided to the Regulator; assess compliance with the DWQMP; and to assess the relevance of the DWQMP in relation to the service provided. A summary of, and recommendations from, the Audit report are included below:

- Ensure bore and reservoir inspections are undertaken, records maintained and that potential for water and vermin ingress is prevented.
- Chlorine and pH should always be measured when sampling E. coli, if it is a chlorinated water.
- Investigate high turbidities at bores INJ02 and MUN01.
- Ensure verification monitoring for E. coli is undertaken as described in the plan.
- The risk improvement items in relation to the management of the Surat WTP filtration must be actioned as soon as possible. Filtered water turbidity should not be above 1 NTU where Chlorine disinfection is used. As protozoa is a hazard the target turbidity should be <0.2 NTU from individual filters and not above 0.5 NTU at any time.</p>

Outcome of the review of the DWQMP and how issues raised have been addressed

A review of the DWQMP was conducted following the external audit by Viridis Consultants. The purpose of the review was to ensure that the DWQMP remains relevant, having regard to the operation of the drinking water service. The review was conducted by:

- Graham Sweetlove (Manager WS&G)
- Ben Godford (Team Coordinator WS&G)

The review made the following findings:

- Update staff structure
- Update scheme details and diagrams, due to projects being completed
- Incorporate the recommendations of the Auditor's report
- Update the RMIP completed items, and add newly identified items.
- Updated contact listing (staff, external, regulatory and suppliers)
- Updated records management to reflect changes to systems utilised
- Amend Operating Limits of Surat WTP
- Refresher training of field staff and their knowledge of the DWQMP
- Amendments to the Plan are currently under assessment by the Regulator, subject to an information requirement notice.

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 do not include results derived from repeat samples, or from emergency or investigative samples undertaken in response to an elevated result.

Table 2 - Verification monitoring results

Scheme name	Scheme component	Parameter	Frequency of sampling	Total No. samples collected	Laboratory name
Amby	Bore	Standard Chemical & Heavy Metals	Annual	1	QHFSS
Injune	Bores	Standard Chemical & Heavy Metals	Annual	2	QHFSS
Jackson	Bore	Standard Chemical & Heavy Metals	Annual	1	QHFSS
Mitchell	Bores	Standard Chemical & Heavy Metals	Annual	2	QHFSS
Muckadilla	Bore	Standard Chemical & Heavy Metals	Annual	1	QHFSS
Mungallala	Bore	Standard Chemical & Heavy Metals	Annual	1	QHFSS
Roma	Bores	Standard Chemical & Heavy Metals	Annual	9	QHFSS
Surat	River	Standard Chemical, Heavy Metals, THMs and Pesticides	Annual	1	QHFSS
Wallumbilla	Bore	Standard Chemical & Heavy Metals	Annual	1	QHFSS
Yuleba	Bore	Standard Chemical & Heavy Metals	Annual	1	QHFSS

Heavy Metals Analysis

		Aluminium	Arsenic	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Nickel	Zinc
	Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Limit of R	Reporting	0.003	0.0001	0.0001	0.0001	0.001	0.005	0.0001	0.0001	0.0001	0.001
Hea	alth Limit	N/A	0.0100	0.0020	0.0500	2.000	N/A	0.0100	0.5000	0.0200	N/A
Aesth	etic Limit	0.200	N/A	N/A	N/A	1.000	0.300	N/A	0.1000	N/A	3.000
Amby	Bore 1	0.004	<0.0001	<0.0001	<0.0001	0.007	0.150	<0.0001	0.0210	<0.0001	0.002
Injune	Bore 2	0.003	<0.0001	<0.0001	<0.0001	0.054	0.130	0.0009	0.0061	<0.0001	0.016
	Bore 3	<0.003	<0.0001	<0.0001	<0.0001	0.007	0.310	0.0003	0.0110	<0.0001	0.005
Jackson	Bore 1	0.005	<0.0001	<0.0001	<0.0001	0.008	0.180	<0.0001	0.0056	<0.0001	0.003
Mitchell	Bore 1	0.045	0.0012	<0.0001	<0.0001	0.005	0.006	0.0002	0.0020	<0.0001	0.002
	Bore 2	0.041	0.0014	<0.0001	<0.0001	0.012	<0.005	0.0007	0.0022	<0.0001	0.012
Muckadilla	Bore 1	0.018	<0.0001	<0.0001	<0.0001	0.005	0.026	0.0003	0.0054	0.0002	0.008
Mungallala	Bore 1	<0.003	<0.0001	<0.0001	<0.0001	0.004	0.230	<0.0001	0.0470	0.0002	0.003
Roma	Bore 3	0.004	<0.0001	<0.0001	<0.0001	0.007	0.440	<0.0001	0.0290	<0.0001	0.009
	Bore 9	0.003	0.0002	<0.0001	<0.0001	0.007	0.300	0.0002	0.0140	0.0002	0.030
	Bore 11	0.008	0.0002	<0.0001	<0.0001	0.005	0.047	<0.0001	0.0055	<0.0001	<0.001
	Bore 13	0.009	<0.0001	<0.0001	<0.0001	0.005	0.008	<0.0001	0.0069	<0.0001	<0.001
	Bore 14	0.010	<0.0001	<0.0001	<0.0001	0.006	0.020	<0.0001	0.0081	<0.0001	0.003
	Bore 15	0.009	<0.0001	<0.0001	<0.0001	0.004	0.006	<0.0001	0.0058	<0.0001	<0.001
	Bore 16	0.011	0.0003	<0.0001	<0.0001	0.006	0.012	<0.0001	0.0052	<0.0001	0.002
	Bore 17	0.012	0.0002	<0.0001	<0.0001	0.007	<0.005	<0.0001	0.0064	<0.0001	0.002
	Bore 18	0.011	0.0002	<0.0001	<0.0001	0.006	0.018	0.0006	0.0080	<0.0001	0.002
Surat	Treated	0.014	0.0002	<0.0001	<0.0001	0.014	0.008	0.0003	0.0014	0.0010	0.004
Wallumbilla	Bore 1	0.004	<0.0001	<0.0001	<0.0001	0.008	0.031	<0.0001	0.0067	<0.0001	0.002
Yuleba	Bore 1	0.006	0.0002	<0.0001	<0.0001	0.010	0.043	<0.0001	0.0030	<0.0001	0.003



CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

(CZMARN)

PO Box 42

MITCHELL QLD 4465

Client Order No.

Laboratory Reference : SSP0056704 : GODFORD_B

Date Received Laboratory Number : 08-Sep-2017 : 17NA9899

Batch No

: 048-28

ATTN: B Godford

Client Reference Date Sampled Sample Source

Sample Point

Further Information:

: AM_TR

: 30-Aug-2017 : Reticulated : Amby Retic

Submitting Authority

: Maranoa Regional Council

Reason for Analysis : Compliance Water Treatment : Chlorinated

Scheme/Job/Survey

Sampler

Nethod		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
			н	ealth Aesthetic		CATIONS			Health	Aesthetic
8320	Conductivity @ 25°C	μs/cm	2170		18195	Sodium	mg/L	460		180
8226	pH	at 22°C	8.37	6.5 - 8.5	18195	Potassium	mg/L	1.9		
8209	Total Hardness*	mg CaCO ₃ /L	36	200	18195	Calcium	mg/L	14		
8209	Temporary Hardness*	mg CaCO ₃ /L	36		18195	Magnesium	mg/L	0.2		
8208	Alkalinity	mg CaCO ₃ /L	138		18209	Hydrogen*	mg/L	0.0		
8209	Residual Alkalinity*	mea/L	2.0			, -	-			
8195	Silica	mg/L	17	80		ANIONS				
8209	Total Dissolved Ions*	mg/L	1320		18209	Bicarbonate*	mg/L	164		
8209	Total Dissolved Solids*	mg/L	1260	600	18209	Carbonate*	mg/L	2.3		
					18209	Hydroxide*	mg/L	0.0		
8206	True Colour	Hazen	2	15	18204	Chloride	mg/L	420		250
8212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	< 0.25	1.5	
	,				18204	Nitrate	mg/L	< 2.5	50	
8209	pH Sat.* (calc. for CaC	O ₃)	8.2		18204	Sulphate	mg/L	270	500	250
8209	Saturation Index*	u,	0.2							
8209	Mole Ratio*		2.5			OTHER DISS	OLVED	ELEME	NTS	
8209	Sodium Absorpt. Ratio*		33		18195	Iron	mg/L	0.01		0.3
8209	Figure of Merit Ratio*		0.0		18195	Manganese	mg/L	< 0.01	0.5	0.1
					18195	Zinc	mg/L	< 0.01		3
otes:	" parameter is derived from calcula				18195	Aluminium	mg/L	< 0.05		0.2
	** Australian Drinking Water Guidel V not determined	lines 2011 (ADWG) He	salth and Aesthetic	Values	18195	Boron	mg/L	0.14	4	
ab use On		A 20.11 Imb 0.4	9A VC 0.5	7	18195	Copper	mg/L	< 0.03	2	1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report.

The water does not comply with the Australian Drinking Water Guidelines 2011 for Chloride, Sodium, Sulphate and Total Dissolved Solids.

Unsuitable for irrigation (IC, IL). Consult DPI. Suitable for all stock.



Shundres Hung

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

29-Sep-2017

This report overrides all previous reports. The results relate solely to the samplers as received and are limited to the specific tests undertaken as listed on the report. The results on this report are confidential and sen not to be used or disclosed to any other person or used for any other purpose, whether directly or indirectly, unless that use is disclosed or the purpose is expressly suthorised in writing by Queensland Health and the named recipient on this report. To the bullest extent person or used for any other purpose, whether directly or indirectly, unless that use is disclosed or the purpose is expressly suthorised in writing by Queensland Health and the named recipient on this report. To the bullest extent person or used to the purpose is expressly suthorised the which arise because of (all) problems related to the merchantability, finess or quality of the sampleth, or (b) any negligent or unlashed act or consistings by Queensland Health under this agreement (including the limiting and/or method under which the samplets were taken, stored or transported).

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CERTIFICATE OF ANALYSIS

CLIENT: (CZMARN)

Maranoa Regional Council

PO Box 42

MITCHELL QLD 4465

Units

μs/cm

at 22°C

mg CaCO₃

mg CaCO₃

mg CaCO₃

mg/L

mg/L

Hazen

** Australian Drinking Water Guidelines 2011 (ADWG) Health and Apphetic Values

NTU

Laboratory Reference

: SSP0056704

Client Order No. Date Received

: GODFORD_B

Laboratory Number

: 08-Sep-2017 : 17NA9882

Batch No

: 048-11

ATTN: B Godford

Client Reference Date Sampled Sample Source

Sample Point

Method

18320

18226

18209

18209

18208

18209 18195

18209

18209

18206

18212

18209

18209

18209

18209

18209

pΗ

Alkalinity

True Colour

Mole Ratio*

Saturation Index*

Turbidity

: INJUNE_BORE_2

: 31-Aug-2017

: Bore

: Injune Bore 2 Further Information: : Raw

Conductivity @ 25°C

Temporary Hardness*

Total Dissolved Ions*

Total Dissolved Solids* mg/L

pH Sat.* (calc. for CaCO₃)

Sodium Absorpt. Ratio*

parameter is derived from calculation.

Figure of Merit Ratio*

Total Hardness*

Residual Alkalinity*

Submitting Authority : Maranoa Regional Council : Compliance

Reason for Analysis

Water Treatment Scheme/Job/Survey

18195

18195

18195

18195

Iron

Zinc

Manganese

Aluminium

Sampler

	Result	Guidelines **	Method		Units	Result	Guid	lelines **
		Health Aesthetic		CATIONS			Health	Aesthetic
	341		18195	Sodium	mg/L	82		180
	8.12	6.5 - 8.5	18195	Potassium	mg/L	0.9		
₃ /L	6.1	200	18195	Calcium	mg/L	2.4		
₃ /L	6.1		18195	Magnesium	mg/L	< 0.1		
₃ /L	152		18209	Hydrogen*	mg/L	0.0		
	2.9							
	16	80		ANIONS				
	291		18209	Bicarbonate*	mg/L	182		
	215	600	18209	Carbonate*	mg/L	1.9		
			18209	Hydroxide*	mg/L	0.0		
	3	15	18204	Chloride	mg/L	16		250
	<1	5	18204	Fluoride	mg/L	0.08	1.5	
			18204	Nitrate	mg/L	< 0.5	50	
	8.9		18204	Sulphate	mg/L	7	500	250

	" Australian Difficing Water Guidelines 2011 (ADWG) Health and Aesthetic Values " not determined							Boron	mg/L	< 0.02
Lab use Only:	TE 650.00	TC 3.72	TA 3.62	Imb 0.09 A	VC 0.58		18195	Copper	mg/L	< 0.03
Please note	that the co	ncentratio	n of total ek	ements prese	nt may be highe	er than that of	dissolved	elements	stated in this re	eport.
The water of	complies wit	th Australia	in Drinking	Water Guidel	ines 2011 for th	e parameters	tested.			

-0.8

1.2

0.0

Unsuitable for irrigation (IL). Consult DPI. Suitable for all stock.



Shulas. Hue

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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Enquiries Shu-Huel (Daphne) Huang (+61 7) 3096 2803 Daphne.Huang@health.qld.gov.au 39 Kessels Road Coopers Plains QLD 4108 AUSTRALIA PO Box 594 Archerfield QLD 4108 AUSTRALIA Phone (+61) 1800 000 FSS (377) Fax (+61 7) 3098 2977 Email FSS@health.qld.gov.au

OTHER DISSOLVED ELEMENTS

mg/L

mg/L

mg/L 0.12

mg/L <0.01

0.01

2

< 0.05

0.3

0.1

0.2

3

1



CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

(CZMARN) PO Box 42

MITCHELL QLD 4465

Client Order No.

Laboratory Reference : SSP0056704 : GODFORD_B

Date Received Laboratory Number

: 08-Sep-2017 : 17NA9883

Batch No

: 048-12

ATTN: B Godford

Client Reference Date Sampled

: INJUNE_BORE_3

Sample Source Sample Point Further Information:

: 31-Aug-2017 : Bore : Injune Bore 3 : Raw

Submitting Authority : Maranoa Regional Council Reason for Analysis

Compliance

Water Treatment Scheme/Job/Survey Sampler

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
			He	ealth Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	µв/ст	369		18195	Sodium	mg/L	86		180
18226	pH	at 22°C	8.05	6.5 - 8.5	18195	Potassium	mg/L	1.2		
18209	Total Hardness*	mg CaCO ₃ /L	8.7	200	18195	Calcium	mg/L	3.4		
18209	Temporary Hardness*	mg CaCO ₃ /L	8.7		18195	Magnesium	mg/L	< 0.1		
18208	Alkalinity	mg CaCO ₃ /L	155		18209	Hydrogen*	mg/L	0.0		
18209	Residual Alkalinity*	meg/L	2.9				-			
18195	Silica	mg/L	16	80		ANIONS				
18209	Total Dissolved Ions*	mg/L	306		18209	Bicarbonate*	mg/L	187		
18209	Total Dissolved Solids*	mg/L	227	600	18209	Carbonate*	mg/L	1.2		
					18209	Hydroxide*	mg/L	0.0		
18206	True Colour	Hazen	5	15	18204	Chloride	mg/L	20		250
18212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.09	1.5	
					18204	Nitrate	mg/L	< 0.5	50	
18209	pH Sat.* (calc. for CaC	O ₃)	8.7		18204	Sulphate	mg/L	7	500	250
18209	Saturation Index*		-0.7							
18209	Mole Ratio*		1.5			OTHER DISS	OLVED	ELEME	NTS	
18209	Sodium Absorpt. Ratio*		13		18195	Iron	mg/L	0.22		0.3
18209	Figure of Merit Ratio*		0.0		18195	Manganese	mg/L	0.01	0.5	0.1
					18195	Zinc	mg/L	< 0.01		3
lotes:	* parameter is derived from calcula				18195	Aluminium	mg/L	< 0.05		0.2
	" Australian Drinking Water Guide V not determined	lines 2011 (ADWG) He	ealth and Aesthetic	Values	18195	Boron	mg/L	< 0.02	4	
ab use On	1101 001011111100	TA 3.83 Imb 0.1	1 A UC 0.57		18195	Copper	mg/L	< 0.03	2	1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report.

The water complies with Australian Drinking Water Guidelines 2011 for the parameters tested.

Unsuitable for irrigation (IL). Consult DPI.

Suitable for all stock.



Shurles Hug

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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Enquiries Shu-Huel (Daphne) Huang (+61 7) 3096 2603 Daphne.Huang@health.qld.gov.au

39 Kessels Road Coopers Plains QLD 4108 AUSTRALIA PO Box 594 Archerfield QLD 4108 AUSTRALIA Phone (+61) 1800 000 FSS (377) Fax (+61 7) 3095 2977 Email FSS@health.qkf.gov.au



CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

PO Box 42 (CZMARN)

MITCHELL QLD 4465

Client Order No. Date Received

Laboratory Reference : SSP0056704 : GODFORD_B : 08-Sep-2017

Laboratory Number Batch No

: 17NA9888 : 048-17

ATTN: B Godford

Client Reference Date Sampled

: JR : 14-Aug-2017

: Reticulated Jackson Retic

Sample Source Sample Point Further Information: Submitting Authority

: Maranoa Regional Council

Reason for Analysis Water Treatment Scheme/Job/Survey

: Compliance : Chlorinated

Sampler

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
				fealth Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	1790		18195	Sodium	mg/L	420		180
18226	pH	at 22°C	8.66	6.5 - 8.5	18195	Potassium	mg/L	1.3		
18209	Total Hardness*	mg CaCO ₃ /L	6.2	200	18195	Calcium	mg/L	2.1		
18209	Temporary Hardness*	mg CaCO ₃ /L	6.2		18195	Magnesium	mg/L	0.2		
18208	Alkalinity	mg CaCO ₃ /L	567		18209	Hydrogen*	mg/L	0.0		
18209	Residual Alkalinity*	mea/L	11							
18195	Silica	mg/L	16	80		ANIONS				
18209	Total Dissolved Ions*	mg/L	1350		18209	Bicarbonate*	mg/L	647		
8209	Total Dissolved Solids*	mg/L	1030	600	18209	Carbonate*	mg/L	21		
					18209	Hydroxide*	mg/L	0.1		
18206	True Colour	Hazen	5	15	18204	Chloride	mg/L	250		250
8212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.82	1.5	
	,				18204	Nitrate	mg/L	< 1	50	
8209	pH Sat.* (calc. for CaC	O ₃)	8.4		18204	Sulphate	mg/L	< 2	500	250
8209	Saturation Index*		0.3				-			
8209	Mole Ratio*		1.3			OTHER DISS	OLVED	ELEME	NTS	
18209	Sodium Absorpt. Ratio*	•	74		18195	Iron	mg/L	0.15		0.3
8209	Figure of Merit Ratio*		0.0		18195	Manganese	mg/L	< 0.01	0.5	0.1
	•				18195	Zinc	mg/L	< 0.01		3
lotes:	* parameter is derived from calcula				18195	Aluminium	mg/L	< 0.05		0.2
	"* Australian Drinking Water Guide '-' not determined	lines 2011 (ADWG) Hi	ealth and Aestheti	c Values	18195	Boron	mg/L	1.2	4	
ab use On		FA 18.39 Imb 0.2	1A UC 0.5	57	18195	Copper	mg/L	< 0.03	2	1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report. The water does not comply with the Australian Drinking Water Guidelines 2011 for Sodium, Total Dissolved Solids and pH. Unsuitable for irrigation (IC, IL). Consult DPI.

Suitable for all stock.



Shurles Hug

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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Phone (+61) 1800 000 FSS (377) Fax (+61 7) 3095 2977 Email FSS@health.qld.gov.au

Standard Chemical Analysis - Mitchell Bore 1



Forensic and Scientific Services

CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

PO Box 42 (CZMARN)

MITCHELL QLD 4465

Client Order No. Date Received

Laboratory Reference : SSP0056704 : GODFORD_B

Laboratory Number

: 08-Sep-2017 : 17NA9879

Batch No

: 048-08

ATTN: B Godford

Client Reference Date Sampled

Further Information:

: MIT_BORE_1 : 30-Aug-2017

Sample Source : Bore Sample Point

: Mitchell Bore 1

Submitting Authority : Maranoa Regional Council

Reason for Analysis : Compliance Water Treatment

Scheme/Job/Survey Sampler

Nethod		Units	Result	Guid	delines **	Method		Units	Result	Guid	delines **
			н	lealth	Aesthetic		CATIONS			Health	Aesthetic
8320	Conductivity @ 25°C	μs/cm	593			18195	Sodium	mg/L	140		180
8226	pH	at 22°C	9.12		6.5 - 8.5	18195	Potassium	mg/L	0.4		
8209	Total Hardness*	mg CaCO ₃ /L	2.7		200	18195	Calcium	mg/L	1.1		
8209	Temporary Hardness*	mg CaCO ₃ /L	2.7			18195	Magnesium	mg/L	< 0.1		
8208	Alkalinity	mg CaCO ₃ /L	204			18209	Hydrogen*	mg/L	0.0		
8209	Residual Alkalinity*	meg/L	4.0				,				
8195	Silica	mg/L	30		80		ANIONS				
8209	Total Dissolved Ions*	mg/L	438			18209	Bicarbonate*	mg/L	209		
8209	Total Dissolved Solids*		362		600	18209	Carbonate*	mg/L	19		
						18209	Hydroxide*	mg/L	0.2		
8206	True Colour	Hazen	<1		15	18204	Chloride	mg/L	51		250
8212	Turbidity	NTU	<1		5	18204	Fluoride	mg/L	0.19	1.5	
	,					18204	Nitrate	mg/L	< 0.5	50	
8209	pH Sat.* (calc. for CaCo	O ₃)	9.1			18204	Sulphate	mg/L	19	500	250
8209	Saturation Index*		0.0								
8209	Mole Ratio*		0.7				OTHER DISS	OLVED	ELEME	NTS	
8209	Sodium Absorpt. Ratio*	•	37			18195	Iron	mg/L	< 0.01		0.3
8209	Figure of Merit Ratio*		0.0			18195	Manganese	mg/L	< 0.01	0.5	0.1
						18195	Zinc	mg/L	0.01		3
otes:	* parameter is derived from calcula					18195	Aluminium	mg/L	< 0.05		0.2
	** Australian Drinking Water Guidel •* not determined	lines 2011 (ADWG) He	salth and Aesthetic	Values		18195	Boron	mg/L	0.05	4	
ab use On		A 5.93 Imb 0.14	IA UC 0.5	6		18195	Copper	mg/L	< 0.03	2	1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report.

The water does not comply with the Australian Drinking Water Guidelines 2011 for pH.

Unsuitable for irrigation (IL). Consult DPI.

Suitable for all stock.



Shu-les. Hug

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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Enquiries Shu-Huel (Daphne) Huang

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Standard Chemical Analysis - Mitchell Bore 2



Forensic and Scientific Services

CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

PO Box 42 (CZMARN)

MITCHELL QLD 4465

Client Order No. Date Received Laboratory Number

Laboratory Reference : SSP0056704 : GODFORD_B

: 08-Sep-2017 : 17NA9880

Batch No

: 048-09

ATTN: B Godford

Client Reference Date Sampled

: MIT_BORE_2 : 30-Aug-2017

Sample Source Sample Point Further Information: : Raw

: Bore : Mitchell Bore 2 Water Treatment

Reason for Analysis : Compliance

Submitting Authority : Maranoa Regional Council

Scheme/Job/Survey Sampler

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
			He	ealth Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	607		18195	Sodium	mg/L	140		180
18226	pH	at 22°C	9.08	6.5 - 8.5	18195	Potassium	mg/L	0.5		
18209	Total Hardness*	mg CaCO ₃ /L	2.9	200	18195	Calcium	mg/L	1.2		
8209	Temporary Hardness*	mg CaCO ₃ /L	2.9		18195	Magnesium	mg/L	< 0.1		
8208	Alkalinity	mg CaCO ₃ /L	204		18209	Hydrogen*	mg/L	0.0		
8209	Residual Alkalinity*	meg/L	4.0				-			
8195	Silica	mg/L	30	80		ANIONS				
8209	Total Dissolved Ions*	mg/L	450		18209	Bicarbonate*	mg/L	216		
8209	Total Dissolved Solids*	mg/L	370	600	18209	Carbonate*	mg/L	16		
					18209	Hydroxide*	mg/L	0.2		
8206	True Colour	Hazen	<1	15	18204	Chloride	mg/L	57		250
8212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.22	1.5	
					18204	Nitrate	mg/L	< 0.5	50	
8209	pH Sat.* (calc. for CaC	O ₃)	9.1		18204	Sulphate	mg/L	19	500	250
8209	Saturation Index*		0.0							
8209	Mole Ratio*		0.8			OTHER DISS	OLVED	ELEME	NTS	
8209	Sodium Absorpt. Ratio*		36		18195	Iron	mg/L	< 0.01		0.3
8209	Figure of Merit Ratio*		0.0		18195	Manganese	mg/L	< 0.01	0.5	0.1
					18195	Zinc	mg/L	< 0.01		3
otes:	* parameter is derived from calcula		alth and Annibatta	Mahan	18195	Aluminium	mg/L	< 0.05		0.2
	[™] Australian Drinking Water Guidel [™] not determined	iines 2011 (ADWG) He	ann and Aesthetic	values	18195	Boron	mg/L	0.04	4	
ab use On		TA 6.08 Imb 0.12	2A VC 0.56	3	18195	Copper	mg/L	< 0.03	2	1

The water does not comply with the Australian Drinking Water Guidelines 2011 for pH.

Unsuitable for irrigation (IL). Consult DPI.

Suitable for all stock.

Shu-les. Hue

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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17NA9880

Enquiries Shu-Huel (Daphne) Huang (+61 7) 3095 2803 Daphne.Huang@health.qld.gov.au 39 Kessels Road Coopers Plains QLD 4108 AUSTRALIA PO Box 594 Archerlield QLD 4108 AUSTRALIA Phone (+61) 1800 000 F88 (377) Fax (+61 7) 3096 2977 Email F88@health.qld.gov.au

Standard Chemical Analysis - Muckadilla Bore 1



Forensic and Scientific Services

CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

PO Box 42 (CZMARN)

MITCHELL QLD 4465

Client Order No. Date Received Laboratory Number Batch No

Laboratory Reference : SSP0056704 : GODFORD_B : 08-Sep-2017

: 17NA9900 : 048-29

ATTN: B Godford

Client Reference Date Sampled

: MUCK_BORE_1 : 30-Aug-2017

: Bore

Sample Source Sample Point : Muckadilla Bore Further Information:

Submitting Authority : Maranoa Regional Council

Reason for Analysis : Compliance Water Treatment : Chlorinated

Scheme/Job/Survey Sampler

od		Units	Result	Guidelines **				
	CATIONS			Health	Aesthetic			
95	Sodium	mg/L	170		180			
95	Potoccium	ma/l	0.8					

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
				fealth Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	710		18195	Sodium	mg/L	170		180
18226	pH	at 22°C	8.88	6.5 - 8.5	18195	Potassium	mg/L	0.8		
18209	Total Hardness*	mg CaCO ₃ /L	3.0	200	18195	Calcium	mg/L	1.2		
18209	Temporary Hardness*	mg CaCO ₃ /L	3.0		18195	Magnesium	mg/L	< 0.1		
18208	Alkalinity	mg CaCO ₃ /L	281		18209	Hydrogen*	mg/L	0.0		
8209	Residual Alkalinity*	mea/L	5.5			, ,				
18195	Silica	mg/L	22	80		ANIONS				
18209	Total Dissolved Ions*	mg/L	564		18209	Bicarbonate*	mg/L	305		
8209	Total Dissolved Solids*	mg/L	431	600	18209	Carbonate*	mg/L	18		
		-			18209	Hydroxide*	mg/L	0.1		
8206	True Colour	Hazen	3	15	18204	Chloride	mg/L	47		250
8212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.12	1.5	
					18204	Nitrate	mg/L	< 0.5	50	
8209	pH Sat.* (calc. for CaC	O ₃)	8.9		18204	Sulphate	mg/L	20	500	250
18209	Saturation Index*		-0.1							
8209	Mole Ratio*		0.6			OTHER DISS	OLVED	ELEME	NTS	
8209	Sodium Absorpt. Ratio'	•	43		18195	Iron	mg/L	0.01		0.3
8209	Figure of Merit Ratio*		0.0		18195	Manganese	mg/L	< 0.01	0.5	0.1
					18195	Zinc	mg/L	< 0.01		3
lotes:	* parameter is derived from calcula				18195	Aluminium	mg/L	< 0.05		0.2
	 Australian Drinking Water Guide rot determined 	iines 2011 (ADWG) Hi	aith and Aestheti	: Values	18195	Boron	mg/L	0.05	4	
ab use Oni		A 7.36 Imb 0.16	SA VC 0.5	37	18195	Copper	mg/L	< 0.03	2	1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report.

The water does not comply with the Australian Drinking Water Guidelines 2011 for pH.

Unsuitable for irrigation (IB, IL). Consult DPI.

Suitable for all stock.

17NA9900

Shu los Hug

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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Phone (+61) 1800 000 FSS (377) Fax (+61 7) 3096 2977 Email FSS@health.qld.gov.au



CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

(CZMARN) PO Box 42

MITCHELL QLD 4465

Laboratory Reference

: SSP0056704

Client Order No. Date Received

GODFORD_B

Laboratory Number

: 08-Sep-2017 : 17NA9901

Batch No

: 048-30

ATTN: B Godford

Client Reference Date Sampled Sample Source

Sample Point

: MUNG_BORE_1 : 30-Aug-2017

: Bore

: Mungallala Bore Further Information:

Reason for Analysis

Submitting Authority : Maranoa Regional Council

: Compliance

Water Treatment Scheme/Job/Survey

Sampler

Method		Units	Result	Guid	elines **	Method		Units	Result	Guid	delines **
			١	lealth .	Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	596			18195	Sodium	mg/L	97		180
18226	pН	at 22°C	7.78		6.5 - 8.5	18195	Potassium	mg/L	4.7		100
18209	Total Hardness*	mg CaCO ₃ /L	73		200	18195	Calcium	mg/L	25		
8209	Temporary Hardness*	mg CaCO ₃ /L	73			18195	Magnesium	mg/L	2.6		
8208	Alkalinity	mg CaCO ₃ /L	129			18209	Hydrogen*	mg/L	0.0		
8209	Residual Alkalinity*	mea/L	1.1			10200	riyarogen	mg/L	0.0		
8195	Silica	mg/L	32		80		ANIONS				
8209	Total Dissolved Ions*	mg/L	415		00	18209	Bicarbonate*	mall	156		
8209	Total Dissolved Solids*	ma/L	367		600	18209	Carbonate*	mg/L			
					000	18209		mg/L	0.6		
8206	True Colour	Hazen	8		15	18204	Hydroxide* Chloride	mg/L	0.0		
8212	Turbidity	NTU	<1		5	18204		mg/L	66		250
	,		~ 1		5		Fluoride	mg/L	0.09	1.5	
8209	pH Sat.* (calc. for CaCo	20)	7.9			18204	Nitrate	mg/L	< 0.5	50	
8209	Saturation Index*	03)	-0.2			18204	Sulphate	mg/L	63	500	250
8209	Mole Ratio*										
8209	Sodium Absorpt. Ratio*		2.3				OTHER DISS	OLVED	ELEME	STV	
8209	Figure of Merit Ratio*		4.9			18195	Iron	mg/L	0.02		0.3
0203	rigure of Ment Ratio		0.3			18195	Manganese	mg/L	0.04	0.5	0.1
ites:	* parameter is derived from calculat	lan.				18195	Zinc	mg/L	< 0.01		3
	" Australian Drinking Water Guideli		alth and Assthatic	Volume		18195	Aluminium	mg/L	< 0.05		0.2
	not determined	, portograd	and Pressive to	V01000		18195	Boron	mg/L	0.06	4	
	y: TE 1053.00 TC 5.78 T/ ote that the concentration of	A 5.76 Imb 0.02				18195	Copper	ma/i	< 0.03	2	1

ents present may be higher than that of dissolved elements stated in this report.

The water complies with Australian Drinking Water Guidelines 2011 for the parameters tested. Marginal quality for irrigation (IK). Consult DPI.

Suitable for all stock.



Shur Reathur

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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Phone Email

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Phone (+61) 1800 000 FSS (377) Fax (+61 7) 3096 2977 Email FSS@health.qld.gov.au

Standard Chemical Analysis - Roma Bore 3



Forensic and Scientific Services

CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

PO Box 42 (CZMARN)

MITCHELL QLD 4465

Client Order No. Date Received

Laboratory Reference : SSP0056704 : GODFORD_B

Laboratory Number Batch No

: 08-Sep-2017 : 17NA9891 : 048-20

ATTN: B Godford

Client Reference Date Sampled

: BORE_3 : 30-Aug-2017

Sample Source Sample Point Further Information:

: Bore Roma Bore 3

Submitting Authority : Maranoa Regional Council

Reason for Analysis : Compliance Water Treatment

Schem	e/Job/Survey
Sampl	

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
				lealth Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	2630		18195	Sodium	mg/L	560		180
18226	pH	at 22°C	8.65	6.5 - 8.5	18195	Potassium	mg/L	2.0		
18209	Total Hardness*	mg CaCO ₃ /L	15	200	18195	Calcium	mg/L	5.8		
18209	Temporary Hardness*	mg CaCO ₃ /L	15		18195	Magnesium	mg/L	0.1		
18208	Alkalinity	mg CaCO ₃ /L	293		18209	Hydrogen*	mg/L	0.0		
18209	Residual Alkalinity*	meg/L	5.5			,				
18195	Silica	mg/L	15	80		ANIONS				
18209	Total Dissolved Ions*	mg/L	1590		18209	Bicarbonate*	mg/L	337		
18209	Total Dissolved Solids*	mg/L	1430	600	18209	Carbonate*	mg/L	9.6		
		-			18209	Hydroxide*	mg/L	0.1		
18206	True Colour	Hazen	2	15	18204	Chloride	mg/L	630		250
18212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.90	1.5	
					18204	Nitrate	mg/L	< 2.5	50	
18209	pH Sat.* (calc. for CaC	O ₃)	8.3		18204	Sulphate	mg/L	42	500	250
18209	Saturation Index*	-	0.4							
18209	Mole Ratio*		2.0			OTHER DISS	OLVED	ELEME	NTS	
18209	Sodium Absorpt. Ratio*	•	62		18195	Iron	mg/L	0.07		0.3
18209	Figure of Merit Ratio*		0.0		18195	Manganese	mg/L	0.03	0.5	0.1
					18195	Zinc	mg/L	< 0.01		3
Votes:	* parameter is derived from calcula				18195	Aluminium	mg/L	< 0.05		0.2
	** Australian Drinking Water Guidel V not determined	ines 2011 (ADWG) He	ealth and Aesthetic	: Values	18195	Boron	mg/L	1.5	4	
ab use On		A 24.58 Imb 0.0	OA I/C 0.5	14	18195	Copper	mg/L	< 0.03	2	1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report.

The water does not comply with the Australian Drinking Water Guidelines 2011 for Chloride, Sodium, Total Dissolved Solids and pH. Unsuitable for irrigation (IC, IL). Consult DPI.

Suitable for all stock.



Shu-Ros Hug

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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Enquiries Shu-Huel (Daphne) Huang

17NA9891

(+61 7) 3096 2003 Daphne.Huang@health.qld.gov.au

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Phone (+61) 1800 000 FSS (377) Fax (+61 7) 3095 2977 Email FSS@health.qld.gov.au



CERTIFICATE OF ANALYSIS

CLIENT: (CZMARN)

Maranoa Regional Council

PO Box 42

MITCHELL QLD 4465

Laboratory Reference : SSP0056704 Client Order No.

: GODFORD_B

Date Received Laboratory Number

: 08-Sep-2017 : 17NA9892

Batch No

: 048-21

ATTN: B Godford

Client Reference Date Sampled Sample Source

: BORE 9

: 30-Aug-2017 : Bore

Sample Point : Roma Bore 9 Further Information: : Raw

Submitting Authority Reason for Analysis

: Maranoa Regional Council : Compliance

Water Treatment

Sampler

Scheme/Job/Survey

Method		Units	Result	Guid	delines **	Method		Units	Result	Guid	felines **
			н	lealth	Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	1910			18195	Sodium	mg/L	440		180
18226	pH	at 22°C	8.56		6.5 - 8.5	18195	Potassium	mg/L	1.5		
18209	Total Hardness*	mg CaCO ₃ /L	16		200	18195	Calcium	mg/L	5.8		
18209	Temporary Hardness*	mg CaCO ₃ /L	16			18195	Magnesium	mg/L	0.3		
18208	Alkalinity	mg CaCO ₃ /L	486			18209	Hydrogen*	mg/L	0.0		
18209	Residual Alkalinity*	meg/L	9.4				, ,				
18195	Silica	mg/L	15		80		ANIONS				
18209	Total Dissolved Ions*	mg/L	1380			18209	Bicarbonate*	mg/L	560		
18209	Total Dissolved Solids*	mg/L	1110		600	18209	Carbonate*	mg/L	16		
						18209	Hydroxide*	mg/L	0.1		
8206	True Colour	Hazen	2		15	18204	Chloride	mg/L	280		250
8212	Turbidity	NTU	<1		5	18204	Fluoride	mg/L	0.70	1.5	
						18204	Nitrate	mg/L	< 1	50	
8209	pH Sat.* (calc. for CaC	O ₃)	8.0			18204	Sulphate	mg/L	77	500	250
8209	Saturation Index*		0.5					-			
8209	Mole Ratio*		1.5				OTHER DISS	OLVED	ELEME	NTS	
8209	Sodium Absorpt. Ratio*		48			18195	Iron	mg/L	0.05		0.3
8209	Figure of Merit Ratio*		0.0			18195	Manganese	mg/L	0.01	0.5	0.1
						18195	Zinc	mg/L	< 0.01		3
lotes:	* parameter is derived from calcula		oakh and Andhalia	Materia		18195	Aluminium	mg/L	< 0.05		0.2
	** Australian Drinking Water Guidel V not determined	ines zur i (ADWG) H	eaim and Aesthetic	values		18195	Boron	ma/L	1.3	4	

VC 0.57

Imb 0.25 A

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report.

The water does not comply with the Australian Drinking Water Guidelines 2011 for Chloride, Sodium, Total Dissolved Solids and pH. Unsuitable for irrigation (IC, IL). Consult DPI.

Suitable for all stock.



Lab use Only: TE 3243.00 TC 19.43 TA 19.17

Shurles Hug

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

18195 Copper

This report overrides all previous reports. The results relate solely to the sample's as received and are limited to the specific tests understaken as listed on the report. The results on this report are confidential and are not to be used or disclosed to any other person or used for any other purpose, whether directly or indirectly, unless that use is disclosed or the purpose is expressly authorised in writing by Queensland Health and the named recipient on this report. To the fullest extent permitted by law, Queensland Health will not be liable for any loss or claim (including legal costs calculated on an indemnity basis, which arise because of (iii) protriems related to the merchantability, threes or quality of the sampleity, or (b) any negligant or unifiently are or missions by Queensland Health under this agreement (including the liming and/or method under which the sample's were taken, stored or transported).

Enquiries Shu-Huel (Daphne) Huang (+61 7) 3096 2803 Daphne.Huang@health.qld.gov.au 39 Kessels Road Coopera Plains QLD 4108 AUSTRALIA

PO Box 594 Archerlield QLD 4108 AUSTRALIA

Phone (+61) 1800 000 FSS (377) Fax (+61 7) 3096 2977 Email FSS@health.qld.gov.au

< 0.03



CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

(CZMARN)

PO Box 42

MITCHELL QLD 4465

Laboratory Reference : SSP0056704 Client Order No.

: GODFORD_B

Date Received Laboratory Number

: 08-Sep-2017 : 17NA9878

Batch No

: 048-07

ATTN: B Godford

Client Reference Date Sampled

: BORE_11

: 30-Aug-2017 : Bore

Sample Source Sample Point Further Information: : Raw

: Roma Bore 11

Submitting Authority Reason for Analysis

: Maranoa Regional Council : Compliance

Water Treatment

acheme/Job/aurve)	/
Sampler	

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
			н	ealth Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	1180		18195	Sodium	mg/L	280		180
18226	pH	at 22°C	8.84	6.5 - 8.5	18195	Potassium	mg/L	1.0		
18209	Total Hardness*	mg CaCO ₃ /L	4.5	200	18195	Calcium	mg/L	1.7		
18209	Temporary Hardness*	mg CaCO ₃ /L	4.5		18195	Magnesium	mg/L	< 0.1		
18208	Alkalinity	mg CaCO ₃ /L	369		18209	Hydrogen*	mg/L	0.0		
18209	Residual Alkalinity*	meg/L	7.3				-			
18195	Silica	mg/L	19	80		ANIONS				
18209	Total Dissolved Ions*	mg/L	895		18209	Bicarbonate*	mg/L	412		
18209	Total Dissolved Solids*	mg/L	704	600	18209	Carbonate*	mg/L	19		
					18209	Hydroxide*	mg/L	0.1		
18206	True Colour	Hazen	1	15	18204	Chloride	mg/L	120		250
18212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.23	1.5	
					18204	Nitrate	mg/L	< 0.5	50	
8209	pH Sat.* (calc. for CaC	O ₃)	8.7		18204	Sulphate	mg/L	62	500	250
18209	Saturation Index*		0.2							
8209	Mole Ratio*		1.0			OTHER DISS	OLVED	ELEME	NTS	
18209	Sodium Absorpt. Ratio*	•	57		18195	Iron	mg/L	0.02		0.3
18209	Figure of Merit Ratio*		0.0		18195	Manganese	mg/L	< 0.01	0.5	0.1
	-				18195	Zinc	mg/L	< 0.01		3
iotes:	* parameter is derived from calcula				18195	Aluminium	mg/L	< 0.05		0.2
	** Australian Drinking Water Guidel V not determined	ines 2011 (ADWG) Ho	saith and Aesthetic	Values	18195	Boron	mg/L	0.22	4	
ab use On		A 12.01 Imb 0.3	3 A I/C 0.5	8	18195	Copper	mg/L	< 0.03	2	1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report. The water does not comply with the Australian Drinking Water Guidelines 2011 for Sodium, Total Dissolved Solids and pH. Unsuitable for irrigation (IB, IL). Consult DPI.

Suitable for all stock.



Shu-less. Hue

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

(CZMARN)

PO Box 42

MITCHELL QLD 4465

Laboratory Reference : SSP0056704

Client Order No. Date Received

: GODFORD_B : 08-Sep-2017

Laboratory Number Batch No

: 17NA9876 : 048-05

ATTN: B Godford

Client Reference Date Sampled

Further Information: : Raw

Sample Source

Sample Point

: BORE_13

: 30-Aug-2017

: Bore

: Roma Bore 13

Reason for Analysis : Compliance

Submitting Authority : Maranoa Regional Council

Water Treatment

Scheme/Job/Survey

Sampler

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
			1	Health Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	883		18195	Sodium	mg/L	210		180
18226	pH	at 22°C	8.91	6.5 - 8.5	18195	Potassium	mg/L	8.0		
18209	Total Hardness*	mg CaCO ₃ /L	3.3	200	18195	Calcium	mg/L	1.3		
18209	Temporary Hardness*	mg CaCO ₃ /L	3.3		18195	Magnesium	mg/L	< 0.1		
18208	Alkalinity	mg CaCO ₃ /L	332		18209	Hydrogen*	mg/L	0.0		
18209	Residual Alkalinity*	meq/L	6.6							
18195	Silica	mg/L	18	80		ANIONS				
18209	Total Dissolved Ions*	mg/L	683		18209	Bicarbonate*	mg/L	338		
18209	Total Dissolved Solids*	mg/L	529	600	18209	Carbonate*	mg/L	33		
					18209	Hydroxide*	mg/L	0.2		
18206	True Colour	Hazen	<1	15	18204	Chloride	mg/L	65		250
18212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.16	1.5	
					18204	Nitrate	mg/L	< 0.5	50	
18209	pH Sat.* (calc. for CaC	O ₃)	8.9		18204	Sulphate	mg/L	31	500	250
18209	Saturation Index*		0.1				-			
18209	Mole Ratio*		0.5			OTHER DISS	OLVED	ELEME	NTS	
18209	Sodium Absorpt. Ratio*		51		18195	Iron	mg/L	< 0.01		0.3
18209	Figure of Merit Ratio*		0.0		18195	Manganese	mg/L	< 0.01	0.5	0.1
					18195	Zinc	mg/L	< 0.01		3
Notes:	* parameter is derived from calcula			la Mahana	18195	Aluminium	mg/L	< 0.05		0.2
	** Australian Drinking Water Guidel Y not determined	ines 2011 (ADWG) Hi	eann and Aesthet	ic values	18195	Boron	mg/L	0.09	4	
Lab use On		A 9.14 Imb 0.2	1A VC 0.	58	18195	Copper	mg/L	< 0.03	2	1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report.

The water does not comply with the Australian Drinking Water Guidelines 2011 for Sodium and pH.

Unsuitable for irrigation (IB, IL). Consult DPI.

Suitable for all stock.



17NA9876

Shules Hug

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

(CZMARN)

PO Box 42

MITCHELL QLD 4465

ATTN: B Godford

Laboratory Reference : SSP0056704 Client Order No.

: GODFORD_B : 08-Sep-2017

Date Received Laboratory Number Batch No

: 17NA9895

: 048-24

Client Reference Date Sampled Sample Source

: BORE 14 : 30-Aug-2017 : Bore

Sample Point Roma Bore 14 Further Information: : Raw

Submitting Authority : Maranoa Regional Council Reason for Analysis : Compliance

Water Treatment Scheme/Job/Survey

Sampler

Method		Units	Result	Guid	elines **	Method		Units	Result	Guid	delines **
				Health	Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	810			18195	Sodium	mg/L	200		180
18226	pH	at 22°C	8.87		6.5 - 8.5	18195	Potassium	mg/L	0.8		
18209	Total Hardness*	mg CaCO ₃ /L	3.0		200	18195	Calcium	mg/L	1.2		
8209	Temporary Hardness*	mg CaCO ₃ /L	3.0			18195	Magnesium	mg/L	< 0.1		
8208	Alkalinity	mg CaCO ₃ /L	333			18209	Hydrogen*	mg/L	0.0		
18209	Residual Alkalinity*	meg/L	6.6				, ,				
18195	Silica	mg/L	18		80		ANIONS				
18209	Total Dissolved Ions*	mg/L	657			18209	Bicarbonate*	mg/L	368		
8209	Total Dissolved Solids*	mg/L	488		600	18209	Carbonate*	mg/L	18		
						18209	Hydroxide*	mg/L	0.1		
18206	True Colour	Hazen	1		15	18204	Chloride	mg/L	50		250
8212	Turbidity	NTU	<1		5	18204	Fluoride	mg/L	0.17	1.5	
						18204	Nitrate	mg/L	< 0.5	50	
8209	pH Sat.* (calc. for CaCo	O ₃)	8.9			18204	Sulphate	mg/L	21	500	250
8209	Saturation Index*	-	0.0				•				
8209	Mole Ratio*		0.7				OTHER DISS	OLVED	ELEME	NTS	
8209	Sodium Absorpt. Ratio*		49			18195	Iron	mg/L	< 0.01		0.3
8209	Figure of Merit Ratio*		0.0			18195	Manganese	mg/L	< 0.01	0.5	0.1
	-					18195	Zinc	mg/L	< 0.01		3
otes:	* parameter is derived from calcula					18195	Aluminium	mg/L	< 0.05		0.2
	** Australian Drinking Water Guidel * not determined	ines 2011 (ADWG) He	alth and Aesthe	tic Values		18195	Boron	mg/L	0.08	4	0
ab use Onl		A 8.52 Imb 0.12	IA UCO	.58		18195	Copper	mg/L	< 0.03	2	1

The water does not comply with the Australian Drinking Water Guidelines 2011 for Sodium and pH.

Unsuitable for irrigation (IB, IL). Consult DPI.

Suitable for all stock.

17NA9895

Shu-les. Hug

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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Enquiries Shu-Huel (Dephne) Huang Phone (+61.7) 3095 2803 Phone Email Daphne.Huang@health.qld.gov.au 39 Kessels Road Coopers Plains QLD 4108 AUSTRALIA

PO Box 594 Archerfield QLD 4108 AUSTRALIA

Phone (+61) 1800 000 FSS (377) Fax (461 7) 3096 2977 Email FSS@health.qld.gov.au



CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

PO Box 42 (CZMARN)

MITCHELL QLD 4465

Laboratory Reference : SSP0056704 Client Order No. Date Received

: GODFORD_B

Laboratory Number

: 08-Sep-2017 : 17NA9877

Batch No

: 048-06

ATTN: B Godford

Client Reference Date Sampled Sample Source

Sample Point

Further Information:

: BORE 15

: 30-Aug-2017 : Bore

Roma Bore 15 : Raw

Submitting Authority Reason for Analysis

: Maranoa Regional Council : Compliance

Water Treatment

Scheme/J	ob/Survey	
Sampler		

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	lelines **
			н	lealth Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	890		18195	Sodium	mg/L	220		180
18226	pH	at 22°C	8.88	6.5 - 8.5	18195	Potassium	mg/L	0.9		
8209	Total Hardness*	mg CaCO ₃ /L	3.2	200	18195	Calcium	mg/L	1.2		
8209	Temporary Hardness*	mg CaCO ₃ /L	3.2		18195	Magnesium	mg/L	< 0.1		
8208	Alkalinity	mg CaCO ₃ /L	359		18209	Hydrogen*	mg/L	0.0		
8209	Residual Alkalinity*	meg/L	7.1			, ,				
8195	Silica	mg/L	19	80		ANIONS				
8209	Total Dissolved Ions*	mg/L	719		18209	Bicarbonate*	mg/L	398		
8209	Total Dissolved Solids*		535	600	18209	Carbonate*	mg/L	20		
					18209	Hydroxide*	mg/L	0.1		
B206	True Colour	Hazen	<1	15	18204	Chloride	mg/L	63		250
8212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.17	1.5	
	•				18204	Nitrate	mg/L	< 0.5	50	
B209	pH Sat.* (calc. for CaC	O ₃)	8.8		18204	Sulphate	mg/L	19	500	250
8209	Saturation Index*	Q,	0.1							
8209	Mole Ratio*		0.7			OTHER DISS	OLVED	ELEME	NTS	
8209	Sodium Absorpt. Ratio*	,	52		18195	Iron	mg/L	< 0.01		0.3
8209	Figure of Merit Ratio*		0.0		18195	Manganese	mg/L	< 0.01	0.5	0.1
	•				18195	Zinc	mg/L	< 0.01		3
otes:	* parameter is derived from calculation.				18195	Aluminium	mg/L	< 0.05		0.2
	** Australian Drinking Water Guidel	lines 2011 (ADWG) Hy	ealth and Aesthetic	: Waltues:						

"Australian Drinking Water Guidelines 2011 (AOWG) Health and Aesthetic Values 18195 Boron mg/L 0.1

Lab use Only: TE 1500.00 TC 9.52 TA 9.36 Imb 0.16A I/C 0.58 18195 Copper mg/L <0.0

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report. The water does not comply with the Australian Drinking Water Guidelines 2011 for Sodium and pH. < 0.03

** Australian Drinking Water Guidelines 2011 (ADWG) Health and Aesthetic Values

Unsuitable for irrigation (IB, IL). Consult DPI.

Suitable for all stock.



Shu-les. Hue

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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Enquiries Shu-Huel (Daphne) Huang (+61 7) 3096 2803 Daphne.Huang@health.qld.gov.au 39 Kessels Road Coopers Plains QLD 4108 AUSTRALIA PO Box 594 Archerlield QLD 4108 AUSTRALIA

Phone (+61) 1800 000 FSS (377) Fax (461 7) 3096 2977 Email FSS@health.qld.gov.au

mg/L 0.12

4

2

Standard Chemical Analysis - Roma Bore 16



Forensic and Scientific Services

CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

(CZMARN)

PO Box 42

MITCHELL QLD 4465

Client Order No. : GODFORD_B Date Received

Laboratory Reference : SSP0056704

Laboratory Number

: 08-Sep-2017

Batch No

: 17NA9894 : 048-23

ATTN: B Godford

Client Reference Date Sampled

: BORE 16

: Bore

Sample Source Sample Point Further Information:

: Roma Bore 16

: 30-Aug-2017

Reason for Analysis

Submitting Authority : Maranoa Regional Council : Compliance

water rreatment	
Scheme/Job/Survey	:
Sampler	

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
			н	ealth Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	1020		18195	Sodium	mg/L	230		180
18226	pH	at 22°C	8.89	6.5 - 8.5	18195	Potassium	mg/L	0.9		
18209	Total Hardness*	mg CaCO ₃ /L	4.2	200	18195	Calcium	mg/L	1.6		
18209	Temporary Hardness*	mg CaCO ₃ /L	4.2		18195	Magnesium	mg/L	< 0.1		
8208	Alkalinity	mg CaCO ₃ /L	312		18209	Hydrogen*	mg/L	0.0		
8209	Residual Alkalinity*	mea/L	6.1			,		010		
8195	Silica	mg/L	19	80		ANIONS				
8209	Total Dissolved Ions*	mg/L	753		18209	Bicarbonate*	mg/L	344		
8209	Total Dissolved Solids*		597	600	18209	Carbonate*	mg/L	18		
				-	18209	Hydroxide*	mg/L	0.1		
8206	True Colour	Hazen	1	15	18204	Chloride	mg/L	93		250
8212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.17	1.5	200
	,				18204	Nitrate	mg/L	<0.5	50	
8209	pH Sat.* (calc. for CaCo	0-)	8.8		18204	Sulphate	mg/L	66	500	250
8209	Saturation Index*	-3/	0.1		10204	oulpriate	mgrc	00	500	250
8209	Mole Ratio*		1.0			OTHER DISS	OI VED	ELEME	NTC	
8209	Sodium Absorpt. Ratio*		49		18195	Iron	mg/L	<0.01	NIO	0.3
8209	Figure of Merit Ratio*		0.0		18195		_	<0.01	0.5	
0200	rigare or mont riatio		0.0		18195	Manganese Zinc	mg/L		0.5	0.1
otes:	* parameter is derived from calcular	tion.			18195		mg/L	< 0.01		3
	** Australian Drinking Water Guidelines 2011 (ADWG) Health and Assthetic Values					Aluminium	mg/L	< 0.05		0.2
	✓ not determined				18195	Boron	mg/L	0.14	4	
	y: TE 1772.00 TC 10.07 T	A 10.25 Imb 0.18		7	18195	Copper	mg/L	< 0.03	2	- 1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report.

The water does not comply with the Australian Drinking Water Guidelines 2011 for Sodium and pH.

Unsuitable for irrigation (IB, IL). Consult DPI.

Suitable for all stock.



Shu- Rose Hug

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

29-Sep-2017

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89506-8452 Printed: 10:08 29-Sep-17 shdp3 1

Page: 1 of 1



CERTIFICATE OF ANALYSIS

CLIENT: (CZMARN)

Maranoa Regional Council

PO Box 42

MITCHELL QLD 4465

Client Order No.

Laboratory Reference : SSP0056704

Date Received

: GODFORD_B : 08-Sep-2017

Laboratory Number

: 17NA9893

Batch No

: 048-22

ATTN: B Godford

Client Reference

: BORE_17

: 30-Aug-2017

Date Sampled Sample Source Sample Point

: Bore

Further Information: : Raw

: Roma Bore17

Submitting Authority : Maranoa Regional Council

Reason for Analys

Water Treatment

Scheme/Job/Survey Sampler

318	: Compilance		
	:		
ev			

Method		Units	Result	Guidelin	es **	Method		Units	Result	Guid	delines **
				dealth Aes	thetic		CATIONS			Health	Aesthetic
8320	Conductivity @ 25°C	μs/cm	951			18195	Sodium	mg/L	220		180
8226	pH	at 22°C	8.33	6.5	- 8.5	18195	Potassium	mg/L	0.9		
8209	Total Hardness*	mg CaCO ₃ /L	3.4		200	18195	Calcium	mg/L	1.3		
8209	Temporary Hardness*	mg CaCO ₃ /L	3.4			18195	Magnesium	mg/L	< 0.1		
8208	Alkalinity	mg CaCO ₃ /L	300			18209	Hydrogen*	mg/L	0.0		
8209	Residual Alkalinity*	meq/L	5.9					-			
8195	Silica	mg/L	20		80		ANIONS				
8209	Total Dissolved Ions*	mg/L	727			18209	Bicarbonate*	mg/L	354		
8209	Total Dissolved Solids*	mg/L	568		600	18209	Carbonate*	mg/L	5.7		
						18209	Hydroxide*	mg/L	0.0		
8206	True Colour	Hazen	<1		15	18204	Chloride	mg/L	87		250
8212	Turbidity	NTU	<1		5	18204	Fluoride	mg/L	0.15	1.5	
						18204	Nitrate	mg/L	< 0.5	50	
8209	pH Sat.* (calc. for CaC	O ₃)	8.9			18204	Sulphate	mg/L	62	500	250
8209	Saturation Index*	-	-0.5					-			
8209	Mole Ratio*		1.4				OTHER DISS	OLVED	ELEME	NTS	
8209	Sodium Absorpt. Ratio*		51			18195	Iron	mg/L	< 0.01		0.3
8209	Figure of Merit Ratio*		0.0			18195	Manganese	mg/L	< 0.01	0.5	0.1
	-					18195	Zinc	mg/L	< 0.01		3
ites:	* parameter is derived from calcula					18195	Aluminium	mg/L	< 0.05		0.2
	" Australian Drinking Water Guidel ' not determined	ines 2011 (ADWG) He	safft and Aestheti	c Values		18195	Boron	mg/L	0.09	4	
ab use On		A 9.73 Imb 0.20	OA UC OS	5B		18195	Copper	ma/L	< 0.03	2	1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report.

The water does not comply with the Australian Drinking Water Guidelines 2011 for Sodium.

Unsuitable for irrigation (IB, IL). Consult DPI.

Suitable for all stock.



Shulas Hug

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

29-Sep-2017

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Standard Chemical Analysis - Roma Bore 18



Forensic and Scientific Services

CERTIFICATE OF ANALYSIS

CLIENT:

Maranoa Regional Council

(CZMARN)

PO Box 42

MITCHELL QLD 4465

Client Order No. : GODFORD_B Date Received

Laboratory Reference : SSP0056704

Laboratory Number Batch No

: 08-Sep-2017 : 17NA9890 : 048-19

ATTN: B Godford

Client Reference Date Sampled Sample Source

Further Information:

Sample Point

: BORE_18

: 30-Aug-2017

: Bore

: Roma Bore 18

Submitting Authority : Maranoa Regional Council

Reason for Analysis : Compliance Water Treatment

Scheme/Job/Survey Sampler

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
			н	ealth Aesthetic		CATIONS			Health	Aesthetic
8320	Conductivity @ 25°C	μs/cm	793		18195	Sodium	mg/L	190		180
8226	pH	at 22°C	8.91	6.5 - 8.5	18195	Potassium	mg/L	0.8		
8209	Total Hardness*	mg CaCO ₃ /L	3.2	200	18195	Calcium	mg/L	1.3		
8209	Temporary Hardness*	mg CaCO ₃ /L	3.2		18195	Magnesium	mg/L	< 0.1		
8208	Alkalinity	mg CaCO ₃ /L	322		18209	Hydrogen*	mg/L	0.0		
8209	Residual Alkalinity*	meq/L	6.4				-			
8195	Silica	mg/L	18	80		ANIONS				
8209	Total Dissolved Ions*	mg/L	637		18209	Bicarbonate*	mg/L	350		
8209	Total Dissolved Solids*	mg/L	478	600	18209	Carbonate*	mg/L	21		
					18209	Hydroxide*	mg/L	0.1		
8206	True Colour	Hazen	2	15	18204	Chloride	mg/L	48		250
8212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.15	1.5	
					18204	Nitrate	mg/L	< 0.5	50	
8209	pH Sat.* (calc. for CaCo	O ₃)	8.9		18204	Sulphate	mg/L	23	500	250
8209	Saturation Index*	_	0.0							
8209	Mole Ratio*		0.6			OTHER DISS	OLVED	ELEME	NTS	
8209	Sodium Absorpt. Ratio*	•	47		18195	Iron	mg/L	< 0.01		0.3
8209	Figure of Merit Ratio*		0.0		18195	Manganese	mg/L	< 0.01	0.5	0.1
					18195	Zinc	mg/L	< 0.01		3
otes:	* parameter is derived from calculation.				18195	Aluminium	mg/L	< 0.05		0.2
" Australian Drinking Water Guidelines 2011 (ADWG) Health and Aesthetic Values " not determined			18195	Boron	mg/L	0.06	4			
ab use On		A 8.28 Imb 0.20	0A VC 0.5	8	18195	Copper	mg/L	< 0.03	2	1

se note that the concentration of total elements present may be higher than that of dissolved elements stated in this report.

The water does not comply with the Australian Drinking Water Guidelines 2011 for Sodium and pH.

Unsuitable for irrigation (IB, IL). Consult DPI.

Suitable for all stock.



Shu- Reathurg

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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Standard Chemical Analysis - Surat Treated Water



Forensic and Scientific Services

CERTIFICATE OF ANALYSIS

CLIENT :

Maranoa Regional Council

(CZMARN)

PO Box 42

MITCHELL QLD 4465

Laboratory Reference

: SSP0056704

Client Order No. Date Received

: GODFORD_B : 08-Sep-2017

Laboratory Number Batch No

: 17NA9874 : 048-03

ATTN: B Godford

Client Reference Date Sampled Sample Source

Sample Point

: SURAT_TREAT

: River : Surat

: 29-Aug-2017

Submitting Authority Reason for Analysis Water Treatment Scheme/Job/Survey

: Maranoa Regional Council

: Compliance Treated

Sampler

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
			3	Health Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	μs/cm	246		18195	Sodium	mg/L	22		180
18226	pH	at 22°C	7.75	6.5 - 8.5	18195	Potassium	mg/L	5.1		
8209	Total Hardness*	mg CaCO ₃ /L	63	200	18195	Calcium	mg/L	15		
8209	Temporary Hardness*	mg CaCO ₃ /L	63		18195	Magnesium	mg/L	5.9		
8208	Alkalinity	mg CaCO ₃ /L	69		18209	Hydrogen*	mg/L	0.0		
8209	Residual Alkalinity*	meq/L	0.1		920 E.W	\$1560.00 Tibel.	70000			
8195	Silica	mg/L	16	80		ANIONS				
8209	Total Dissolved Ions*	mg/L	167		18209	Bicarbonate*	mg/L	84		
8209	Total Dissolved Solids*	mg/L	140	600	18209	Carbonate*	mg/L	0.3		
					18209	Hydroxide*	mg/L	0.0		
8206	True Colour	Hazen	3	15	18204	Chloride	mg/L	28		250
8212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.11	1.5	
					18204	Nitrate	mg/L	1.7	50	
8209	pH Sat.* (calc. for CaC	O ₃)	8.4		18204	Sulphate	mg/L	4	500	250
8209	Saturation Index*		-0.7			6272227216	1000			
8209	Mole Ratio*		2.3			OTHER DISS	OLVED	ELEME	NTS	
8209	Sodium Absorpt. Ratio*	•	1.2		18195	Iron	mg/L	< 0.01		0.3
8209	Figure of Merit Ratio*		1.3		18195	Manganese	mg/L	< 0.01	0.5	0.1
					18195	Zinc	mg/L	< 0.01		3
otes:	* parameter is derived from calcula	to Make an	18195	Aluminium	mg/L	< 0.05		0.2		
	[™] Australian Drinking Water Guidel [™] not determined	ic Values	18195	Boron	mg/L	0.04	4			
ab use On		A 2.30 Imb 0.0	SA NC 0.	51	18195	Copper	mg/L	< 0.03	2	1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report.

The water complies with Australian Drinking Water Guidelines 2011 for the parameters tested.

Suitable for irrigation of all crops except tobacco.

Suitable for all stock.



Shurles Hug

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

27-Sep-2017

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Forensic and Scientific Services HealthSupport

CERTIFICATE OF ANALYSIS

CLIENT : (CZMARN)

Maranoa Regional Council

PO Box 42

MITCHELL QLD 4465

Laboratory Reference : SSP0056704

Client Order No. Date Received

: GODFORD_B : 08-Sep-2017

Laboratory Number

: 17NA9886

Batch No

: 048-15

ATTN: B Godford

Client Beference Date Sampled Sample Source

Sample Point Further Information: : WB_1

: 14-Aug-2017

Bore

Wallumbilla Bore 1

Submitting Authority : Maranoa Regional Council Reason for Analysis Water Treatment

: Compliance

Scheme/Job/Survey Sampler

Method		Units	Result	Guidelines **	Method		Units	Result	Guid	delines **
				Health Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	us/cm	1530		18195	Sodium	mg/L	370		180
18226	pH	at 22°C	8.70	6.5 - 8.5	18195	Potassium	mg/L	1.2		
18209	Total Hardness*	mg CaCO ₃ /L	6.6	200	18195	Calcium	mg/L	2.3		
18209	Temporary Hardness*	mg CaCO ₃ /L	6.6		18195	Magnesium	mg/L	0.2		
18208	Alkalinity	mg CaCO ₃ /L	557		18209	Hydrogen*	mg/L	0.0		
18209	Residual Alkalinity*	mea/L	11			200000000000000000000000000000000000000				
18195	Silica	mg/L	14	80		ANIONS				
18209	Total Dissolved Ions*	mg/L	1210		18209	Bicarbonate*	mg/L	642		
18209	Total Dissolved Solids*		896	600	18209	Carbonate*	mg/L	18		
100000					18209	Hydroxide*	mg/L	0.1		
18206	True Colour	Hazen	2	15	18204	Chloride	mg/L	170		250
8212	Turbidity	NTU	<1	5	18204	Fluoride	mg/L	0.39	1.5	
					18204	Nitrate	mg/L	< 0.5	50	
8209	pH Sat.* (calc. for CaC	O ₃)	8.4		18204	Sulphate	mg/L	7	500	250
18209	Saturation Index*		0.3							
18209	Mole Ratio*		1.2			OTHER DISS	OLVE	ELEME	NTS	
18209	Sodium Absorpt, Ratio	•	63		18195	Iron	mg/L	0.03		0.3
18209	Figure of Merit Ratio*		0.0		18195	Manganese	mg/L	< 0.01	0.5	0.1
	TOM DESCRIPTION OF STREET				18195	Zinc	mg/L	< 0.01		3
Notes:	* parameter is derived from calcula			anarana.	18195	Aluminium	mg/L	< 0.05		0.2
	** Australian Drinking Water Guide ** not determined	inc values	18195	Boron	mg/L	0.56	4			
Lab use On		TA 18.03 Imp 0.1	BA UC	0.58	18195	Copper	mg/L	< 0.03	2	1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report. The water does not comply with the Australian Drinking Water Guidelines 2011 for Sodium, Total Dissolved Solids and pH. Unsuitable for irrigation (IC, IL). Consult DPI.

Suitable for all stock.



17NA9886

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

29-Sep-2017

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Standard Chemical Analysis - Yuleba Bore 1



Forensic and Scientific Services

CERTIFICATE OF ANALYSIS

CLIENT : (CZMARN)

Maranoa Regional Council

PO Box 42

MITCHELL QLD 4465

Client Order No. Date Received

Laboratory Reference : SSP0056704 : GODFORD_B

Laboratory Number

: 08-Sep-2017 : 17NA9887

Batch No

: 048-16

ATTN: B Godford

Client Reference Date Sampled Sample Source

Sample Point

Further Information:

: 14-Aug-2017

: Reticulated : Yuleba Retic

Submitting Authority : Maranoa Regional Council

Reason for Analysis Water Treatment Scheme/Job/Survey

: Compliance Chlorinated

Sampler

Method		Units	Result	Guid	delines **	Method	3	Units	Result	Guid	delines **
				Health	Aesthetic		CATIONS			Health	Aesthetic
18320	Conductivity @ 25°C	με/cm	1560			18195	Sodium	mg/L	370		180
18226	pH	at 22°C	8.75		6.5 - 8.5	18195	Potassium	mg/L	1.2		
18209	Total Hardness*	mg CaCO ₃ /L	4.3		200	18195	Calcium	mg/L	1.5		
18209	Temporary Hardness*	mg CaCO ₃ /L	4.3			18195	Magnesium	mg/L	0.1		
18208	Alkalinity	mg CaCO ₃ /L	522			18209	Hydrogen*	mg/L	0.0		
18209	Residual Alkalinity*	meg/L	10								
18195	Silica	mg/L	17		80		ANIONS				
18209	Total Dissolved Ions*	mg/L	1190			18209	Bicarbonate*	mg/L	588		
18209	Total Dissolved Solids*	mg/L	910		600	18209	Carbonate*	mg/L	24		
						18209	Hydroxide*	mg/L	0.1		
18206	True Colour	Hazen	1		15	18204	Chloride	mg/L	190		250
18212	Turbidity	NTU	<1		5	18204	Fluoride	mg/L	0.54	1.5	
	and the second					18204	Nitrate	mg/L	< 1	50	
18209	pH Sat.* (calc. for CaC	O ₃)	8.6			18204	Sulphate	mg/L	17	500	250
18209	Saturation Index*	(5%)	0.2								
18209	Mole Ratio*		1.1				OTHER DISS	OLVE	ELEME	NTS	
18209	Sodium Absorpt. Ratio	•	77			18195	Iron	mg/L	0.03		0.3
18209	Figure of Merit Ratio*		0.0			18195	Manganese	mg/L	< 0.01	0.5	0.1

Please note that the concentration of total elements present may be higher than that of dissolved elements stated in this report. The water does not comply with the Australian Drinking Water Guidelines 2011 for Sodium, Total Dissolved Solids and pH.

Unsuitable for irrigation (IC, IL). Consult DPI.

parameter is derived from calculation.

Vinot determined Lab use Only: TE 2714.00 TC 16.12 TA 16.23 Imb 0.11 A

Australian Drinking Water Guidelines 2011 (ADWG) Health and Aesthelic Values

Suitable for all stock.



Shu- Rea. Hu

Shu-Huei (Daphne) Huang Chemist, Inorganic Chemistry

29-Sep-2017

18195 Zinc

Aluminium

Boron

Copper

18195

18195

18195

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mg/L <0.01

mg/L <0.05

0.59

< 0.03

4

2

mg/L

mg/L

0.2

THM Analysis – Surat Potable Water

Sample Description			Surat		
Method	Trihalomethanes	Health Value	Units	Reporting Limit	17KE6870
28017	Chloroform		μg/L	1	91
28017	Bromodichloromethane		μg/L	1	28
28017	Dibromochloromethane		μg/L	1	6
28017	Bromoform		μg/L	1	< 1
28017	Total Trihalomethanes	250	μg/L	4	120

Pesticide Analysis (Surat River)

Method	Organochlorine Pesticides	Health Value	Units	Reporting Limit	17KE6869	17KE6870
16315	Aldrin	0.3	μg/L	0.1	< 0.2	< 0.2
16315	Dieldrin	0.3	μg/L	0.1	< 0.2	< 0.2
16315	Total Aldrin & Dieldrin	0.3	μg/L	0.2	< 0.4	< 0.4
16315	Chlordane cis	2	μg/L	0.1	< 0.2	< 0.2
16315	Chlordane trans	2	μg/L	0.1	< 0.2	< 0.2
16315	Total Chlordane	2	μg/L	0.2	< 0.4	< 0.4
16315	Chlordene		μg/L	0.1	< 0.2	< 0.2
16315	Chlordene epoxide		μg/L	0.1	< 0.2	< 0.2
16315	Chlordene-1-hydroxy		μg/L	0.1	< 0.2	< 0.2
16315	Chlordene-1-hydroxy-2,3-epoxide		μg/L	0.1	< 0.2	< 0.2
16315	DDD (pp)	9	μg/L	0.1	< 0.2	< 0.2
16315	DDE (pp)	9	μg/L	0.1	< 0.2	< 0.2
16315	DDT (op)	9	μg/L μg/L	0.1	< 2.0	< 1.9
16315	DDT (pp)	9	μg/L	0.1	< 2.0	< 1.9
16315	Total DDT	9	μg/L	0.4	< 4.7	< 4.7
16315	DDD (op)	9	μg/L			
16315	DDE (op)	_	μg/L	0.1	< 0.2	< 0.2
			μg/L	0.1	< 0.2	< 0.2
16315	Dicofol	4	μg/L	1.5	< 2.9	< 2.9
16315	α-Endosulfan	20	μg/L	0.5	< 1	< 1
16315	β-Endosulfan	20	μg/L	0.1	< 0.2	< 0.2
16315	Endosulfan sulfate	20	μg/L	0.1	< 0.2	< 0.2
16315	Total Endosulfan	20	μg/L	0.7	< 1.4	< 1.4
16315	Endosulfan ether		μg/L	0.1	< 0.2	< 0.2
16315	Endosulfan lactone		μg/L	0.5	< 1	<1
Method	Organochlorine Pesticides (cont.)	Health Value	Units	Reporting Limit	17KE6869	17KE6870
16315	Endrin	Value	μg/L	0.2	< 0.4	< 0.4
16315	Endrin aldehyde		μg/L	0.1	< 0.2	< 0.2
16315	HCB		μg/L	0.2	< 0.4	< 0.4
16315	α-HCH	-	μg/L	0.1	< 0.2	< 0.2
16315	В-НСН	_		0.1	< 0.2	< 0.2
16315	δ-HCH		μg/L			
16315		0.0	μg/L	0.1	< 0.2	< 0.2
	Heptachlor	0.3	μg/L	0.1	< 0.2	< 0.2
16315	Heptachlor epoxide	0.3	μg/L	0.1	< 0.2	< 0.2
16315	Total Heptachlor	0.3	μg/L	0.2	< 0.4	< 0.4
16315	Lindane (γ-HCH)	10	μg/L	0.1	< 0.2	< 0.2
16315	Methoxychlor	300	μg/L	0.1	< 0.2	< 0.2
16315	Nonachlor cis		μg/L	0.1	< 0.2	< 0.2
16315	Nonachlor trans		μg/L	0.1	< 0.2	< 0.2
16315	Ovuchlordana	2	μg/L	0.1	< 0.2	< 0.2
	Oxychlordane				moderated to the second	
Method	Organophosphate Pesticides	Health Value	Units	Reporting Limit	17KE6869	17KE6870
Method 16315	Organophosphate Pesticides Azinphos-ethyl	Health	Units μg/L	Limit 0.1	< 0.2	17KE6870 < 0.2
16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl	Health	Units μg/L μg/L	0.1 0.1	< 0.2 < 0.2	17KE6870 < 0.2 < 0.2
16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl	Health Value	Units μg/L μg/L	Limit 0.1	< 0.2	17KE6870 < 0.2
16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl	Health Value	Units μg/L	0.1 0.1	< 0.2 < 0.2	17KE6870 < 0.2 < 0.2
16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos	Health Value	Units µg/L µg/L µg/L	0.1 0.1 0.1 0.1	< 0.2 < 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion	Health Value 30 10	Units μg/L μg/L μg/L μg/L μg/L	0.1 0.1 0.1 0.1 0.1	< 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos	Health Value 30 10	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L	0.1 0.1 0.1 0.1 0.1 0.1	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos	Health Value 30 10 0.5	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L	Limit 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl	Health Value 30 10 0.5	Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl Chlorpyrifos oxon	Health Value 30 10 0.5	Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/	0.1	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl Chlorpyrifos oxon Coumaphos	Health Value 30 10 0.5	Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	< 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos coxon Coumaphos Demeton-O-methyl	Health Value 30 10 0.5	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	0.1	< 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl Chlorpyrifos oxon Coumaphos Demeton-O-methyl Demeton-S	Health Value 30 10 0.5	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	0.1	< 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl Chlorpyrifos oxon Coumaphos Demeton-O-methyl Demeton-S Demeton-S-methyl	Health Value 30 10 0.5 2 10	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	0.1	< 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl Chlorpyrifos oxon Coumaphos Demeton-O-methyl Demeton-S Demeton-S-methyl Diazinon	Health Value 30 10 0.5 2 10	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Limit 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.	< 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl Chlorpyrifos oxon Coumaphos Demeton-O-methyl Demeton-S Demeton-S-methyl Diazinon Dichlorvos	Health Value 30 10 0.5 2 10 4 5	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Limit 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.	< 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl Chlorpyrifos oxon Coumaphos Demeton-O-methyl Demeton-S Demeton-S-methyl Diazinon Dichlorvos Dimethoate	Health Value 30 10 0.5 2 10 4 5 7	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	0.1	< 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl Chlorpyrifos oxon Coumaphos Demeton-O-methyl Demeton-S Demeton-S-methyl Diazinon Dichlorvos Dimethoate Omethoate	Health Value 30 10 0.5 2 10 4 5 7 1	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	0.1	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.3 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos coxon Coumaphos Demeton-O-methyl Demeton-S Demeton-S-methyl Diazinon Dichlorvos Dimethoate Omethoate Total Dimethoate	Health Value 30 10 0.5 2 10 4 5 7	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	0.1	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.02 < 0.2 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.6 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl Chlorpyrifos oxon Coumaphos Demeton-O-methyl Demeton-S Demeton-S-methyl Diazinon Dichlorvos Dimethoate Omethoate Total Dimethoate Dioxathion	Health Value 30 10 0.5 2 10 4 5 7 1 7	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	0.1	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.02 < 0.2 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.6 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos con Coumaphos Demeton-O-methyl Demeton-S Demeton-S-methyl Diazinon Dichlorvos Dimethoate Omethoate Total Dimethoate Dioxathion Disulfoton	Health Value 30 10 0.5 2 10 4 5 7 1 7	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Limit 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.6 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.02 < 0.03 < 0.04 < 0.06 < 0.02 < 0.02
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16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl Chlorpyrifos oxon Coumaphos Demeton-O-methyl Demeton-S Demeton-S-methyl Diazinon Dichlorvos Dimethoate Total Dimethoate Dioxathion Disulfoton Ethion Ethoprophos	Health Value 30 10 0.5 2 10 4 5 7 1 7	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Limit 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
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16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos-methyl Chlorpyrifos oxon Coumaphos Demeton-O-methyl Diazinon Dichlorvos Dimethoate Omethoate Total Dimethoate Dioxathion Ethoprophos Etrimphos Etrimphos Etrimphos Etrimphos Etrimphos Etrimphos Etrimphos Famphur	Health Value 30 10 0.5 2 10 4 5 7 1 7 4 4 1 0.5 30	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Limit 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
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16315 16315	Organophosphate Pesticides Azinphos-ethyl Azinphos-methyl Bromophos-ethyl Cadusafos Carbophenothion Chlorfenvinphos Chlorpyrifos Chlorpyrifos con Coumaphos Demeton-O-methyl Demeton-S Demeton-S-methyl Diazinon Dichlorvos Dimethoate Omethoate Total Dimethoate Dioxathion Disulfoton Ethion Ethoprophos Etrimphos Famphur Fenamiphos Fenchlorphos	Health Value 30 10 0.5 2 10 4 5 7 1 7 4 4 1 0.5 30	Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Limit 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2

Method	Organophosphate Pesticides (cont.)	Health Value	Units	Reporting Limit	17KE6869	17KE6870
16315	Isofenphos		μg/L	0.1	< 0.2	< 0.2
16315	Malathion (Maldison)	70	μg/L	0.1	< 0.2	< 0.2
16315	Methidathion	6	μg/L	0.1	< 0.2	< 0.2
16315	Mevinphos	5	μg/L	0.1	< 0.2	< 0.2
16315	Monocrotophos	2	μg/L	0.1	< 0.2	< 0.2
16315	Oxydemeton-methyl		μg/L	0.2	< 0.4	< 0.4
16315	Parathion (ethyl)	20	μg/L	0.1	< 0.2	< 0.2
16315	Parathion-methyl	0.7	μg/L	0.1	< 0.2	< 0.2
16315	Phorate		μg/L	0.1	< 0.2	< 0.2
16315	Phosmet		μg/L	0.1	< 0.2	< 0.2
16315	Phosphamidon		μg/L	0.1	< 0.2	< 0.2
16315	Pirimiphos-methyl	90	μg/L	0.1	< 0.2	< 0.2
16315	Profenofos	0.3	μg/L	0.1	< 0.2	< 0.2
16315	Prothiofos		μg/L	0.1	< 0.2	< 0.2
16315	Pyrazophos	20	μg/L	0.1	< 0.2	< 0.2
16315	Sulprofos	10	μg/L	0.1	< 0.2	< 0.2
16315	Temephos	400	μg/L	0.1	< 2.0	< 1.9
16315	Terbufos	1	μg/L	0.1	< 0.2	< 0.2
16315	Tetrachlorvinphos	100	μg/L	0.1	< 0.2	< 0.2

Method	Herbicides by LCMS	Health Value	Units	Reporting Limit	17KE6869	17KE6870
16315	Ametryn	70	μg/L	0.01	< 0.02	< 0.02
16315	Atrazine	20	μg/L	0.01	0.15	0.15
16315	Bromacil	400	μg/L	0.01	< 0.02	< 0.02
16315	Desethyl Atrazine		μg/L	0.01	0.04	0.04
16315	Desisopropyl Atrazine		μg/L	0.02	< 0.04	< 0.04
16315	Diuron	20	μg/L	0.01	0.06	< 0.02
16315	Fluometuron	70	μg/L	0.02	< 0.04	< 0.04
16315	Hexazinone	400	μg/L	0.01	< 0.02	< 0.02
16315	Imidacloprid		μg/L	0.01	< 0.02	< 0.02
16315	Metolachlor	300	μg/L	0.01	0.37	0.38
16315	Prometryn		μg/L	0.01	< 0.02	< 0.02
16315	Simazine	20	μg/L	0.01	< 0.02	< 0.02
16315	Tebuthiuron		μg/L	0.01	0.06	0.06
16315	Terbutryn	400	μg/L	0.01	< 0.02	< 0.02

Method	Herbicides by GCMS	Health Value	Units	Reporting Limit	17KE6869	17KE6870
16315	Amitraz	9	μg/L	0.1	< 0.2	< 0.2
16315	3,4-Dichloroaniline		μg/L	0.1	< 0.2	< 0.2
16315	Diclofop-methyl	5	μg/L	0.1	< 0.2	< 0.2
16315	Fluazifop-butyl		μg/L	0.1	< 0.2	< 0.2
16315	Haloxyfop-2-etotyl	1	μg/L	0.1	< 0.2	< 0.2
16315	Haloxyfop-methyl	1	μg/L	0.1	< 0.2	< 0.2
16315	Metribuzin	70	μg/L	0.1	< 0.2	< 0.2
16315	Molinate	4	μg/L	0.1	< 0.2	< 0.2
16315	Oxyfluorfen		μg/L	0.1	< 0.2	< 0.2
16315	Pendimethalin	400	μg/L	0.1	< 0.2	< 0.2
16315	Propanil	700	μg/L	0.1	< 0.2	< 0.2
16315	Propazine	50	μg/L	0.1	< 0.2	< 0.2
16315	Terbuthylazine	10	μg/L	0.1	< 0.2	< 0.2
16315	Triallate		μg/L	0.1	< 0.2	< 0.2
16315	Trifluralin	90	μg/L	0.1	< 0.2	< 0.2

Method	Other Pesticides	Health Value	Units	Reporting Limit	17KE6869	17KE6870
16315	Benalaxyl		μg/L	0.1	< 0.2	< 0.2
16315	Bendiocarb		μg/L	0.1	< 0.2	< 0.2
16315	Bitertanol		μg/L	0.1	< 0.2	< 0.2
16315	Captan	400	μg/L	0.1	< 2.0	< 1.9
16315	Carbaryl	30	μg/L	0.1	< 0.2	< 0.2
6315	DEET	- 00	μg/L	0.1	< 0.2	< 0.2
6315		-		0.2	< 0.4	< 0.4
	Dimethomorph	+	μg/L			
16315	Fipronil	0.7	μg/L	0.1	< 0.2	< 0.2
16315	Flutriafol		μg/L	0.1	< 0.2	< 0.2
16315	Furalaxyl		μg/L	0.1	< 0.2	< 0.2
16315	Metalaxyl		μg/L	0.1	< 0.2	< 0.2
16315	Methoprene		μg/L	0.1	< 0.2	< 0.2
16315	Oxadiazon		μg/L	0.1	< 0.2	< 0.2
16315	Piperonyl butoxide	600	μg/L	0.1	< 0.2	< 0.2
16315	Pirimicarb	7	μg/L	0.2	< 0.4	< 0.4
16315	Praziquantel			0.1	< 0.2	< 0.2
			μg/L			
16315	Procymidone		μg/L	0.1	< 0.2	< 0.2
16315	Propargite	7	μg/L	0.1	< 0.2	< 0.2
16315	Propiconazole	100	μg/L	0.1	< 0.2	< 0.2
16315	Propoxur		μg/L	0.1	< 0.2	< 0.2
16315	Rotenone		μg/L	0.1	< 2.0	< 1.9
16315	Tebuconazole	1	μg/L	0.1	< 0.2	< 0.2
16315	Tetradifon		μg/L	0.1	< 0.2	< 0.2
		1				
16315	Thiabendazole		μg/L	0.2	< 0.4	< 0.4
16315	Triadimefon	90	μg/L	0.1	< 0.2	< 0.2
16315	Triadimenol		μg/L	0.1	< 0.2	< 0.2
16315	Total Triadimefon	90	μg/L	0.3	< 0.6	< 0.6
16315	Vinclozolin		μg/L	0.1	< 0.2	< 0.2
Method	Synthetic Pyrethroids	Health Value	Units	Reporting Limit	17KE6869	17KE6870
16315	Bifenthrin		μg/L	0.1	< 0.2	< 0.2
16315	Bioresmethrin	100	μg/L	0.1	< 0.2	< 0.2
16315	Cyfluthrin	50	μg/L	0.1	< 0.2	< 0.2
16315	Cyhalothrin		μg/L	0.1	< 0.2	< 0.2
16315		200		0.1	< 0.2	< 0.2
	Cypermethrin	200	μg/L			
16315	Deltamethrin	40	μg/L	0.1	< 0.2	< 0.2
16315	Fenvalerate	60	µg/L	0.1	< 0.2	< 0.2
16315	Fluvalinate		μg/L	0.1	< 0.2	< 0.2
16315	Permethrin	200	μg/L	0.1	< 0.2	< 0.2
16315	Phenothrin		μg/L	0.1	< 0.2	< 0.2
16315	Tetramethrin		μg/L	0.1	< 0.2	< 0.2
16315			Mg/L	0.1	< 0.2	< 0.2
10313					< 0.2	
	Transfluthrin		μ g/L	0.1		< 0.2
Method	Other Compounds		μg/L Units	Reporting	17KE6869	17KE6870
	Other Compounds		Units	Reporting Limit		17KE6870
16315	Other Compounds Benzenesulfonanilide		Units µg/L	Reporting Limit 0.2	< 0.4	17KE6870 < 0.4
16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole		Units μg/L μg/L	Reporting Limit 0.2 0.7	< 0.4 < 1.4	17KE6870 < 0.4 < 1.4
16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl		Units μg/L μg/L μg/L	Reporting Limit 0.2 0.7 0.1	< 0.4 < 1.4 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2
16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl		Units µg/L µg/L µg/L µg/L µg/L	Reporting Limit 0.2 0.7 0.1 0.2	< 0.4 < 1.4 < 0.2 < 0.4	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4
16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol		Units µg/L µg/L µg/L µg/L µg/L µg/L	Reporting Limit 0.2 0.7 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4
16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol		Units µg/L µg/L µg/L µg/L µg/L	Reporting Limit 0.2 0.7 0.1 0.2	< 0.4 < 1.4 < 0.2 < 0.4	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4
16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L	Reporting Limit 0.2 0.7 0.1 0.2 0.2	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2
Method 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.2 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol		Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.2 0.1 0.1 0.3	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.4 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT)		Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.1 0.1 0.1 0.3 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide		Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.2 0.1 0.1 0.3 0.1 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.2 0.2 0.1 0.1 0.1 0.1 0.3 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin Moclobemide		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.2 0.1 0.1 0.1 0.1 0.3 0.1 0.1 0.1 1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 1.9
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide lcaridin Moclobemide Musk Ketone		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.2 0.1 0.1 0.1 0.1 0.3 0.1 0.1 0.1 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.02 < 0.2 < 0.2 < 0.2 < 0.2 < 1.9 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin Moclobemide Musk Ketone Musk Xylene		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.2 0.1 0.1 0.1 0.1 0.3 0.1 0.1 0.1 1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 1.9 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin Moclobemide Musk Ketone Musk Xylene N-Butylbenzenesulfonamide		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.2 0.1 0.1 0.1 0.1 0.3 0.1 0.1 0.1 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.02 < 0.2 < 0.2 < 0.2 < 0.2 < 1.9 < 0.2
16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin Moclobemide Musk Ketone Musk Xylene		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.2 0.1 0.1 0.1 0.1 0.3 0.1 0.1 0.1 1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin Moclobemide Musk Ketone Musk Xylene N-Butylbenzenesulfonamide		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin Moclobemide Musk Ketone Musk Xylene N-Butylbenzenesulfonamide N-Butyltoluenesulfonamide Tonalid		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin Moclobemide Musk Ketone Musk Xylene N-Butylbenzenesulfonamide N-Butyltoluenesulfonamide Tonalid Triclosan		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.1 0.1 0.1 0.3 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.2 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin Moclobemide Musk Ketone Musk Xylene N-Butylbenzenesulfonamide N-Butyltoluenesulfonamide Tonalid Triclosan Triclosan methyl ether		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.1 0.1 0.1 0.3 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 1.9 < 0.2 < 0.2 < 0.2 < 1.9 < 0.0 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin Moclobemide Musk Ketone Musk Xylene N-Butylbenzenesulfonamide N-Butyltoluenesulfonamide Tonalid Triclosan Triclosan methyl ether Tri-n-butyl phosphate		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin Moclobemide Musk Ketone Musk Kylene N-Butyltoluenesulfonamide N-Butyltoluenesulfonamide Tonalid Triclosan Triclosan methyl ether Tri-n-butyl phosphate Triethyl phosphate		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 1.9 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide lcaridin Moclobemide Musk Ketone Musk Kylene N-Butyltoluenesulfonamide N-Butyltoluenesulfonamide Tonalid Triclosan Triclosan methyl ether Tri-n-butyl phosphate Trise(chloroethyl) phosphate		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2
16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315 16315	Other Compounds Benzenesulfonanilide 1H-Benzotriazole 1H-Benzotriazole, 1-methyl 1H-Benzotriazole, 5-methyl 2-Benzyl-4-chlorophenol 4-Chloro-3,5-dimethylphenol 2,4-Di-t-butylphenol 2,6-Di-t-butylphenol 2,6-Di-t-butyl-p-cresol (BHT) Galaxolide Icaridin Moclobemide Musk Ketone Musk Kylene N-Butyltoluenesulfonamide N-Butyltoluenesulfonamide Tonalid Triclosan Triclosan methyl ether Tri-n-butyl phosphate Triethyl phosphate		Units µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/	Reporting Limit 0.2 0.7 0.1 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	< 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	17KE6870 < 0.4 < 1.4 < 0.2 < 0.4 < 0.4 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 1.9 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2

Table 3 - Reticulation E. coli verification monitoring

Drinking water scheme: Amby

Year		2016/17											
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	June	
No. of samples collected	3	2	2	2	2	2	2	2	2	4	4	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	47	45	43	41	39	37	35	33	31	31	31	31	
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	

CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE

The *Public Health Regulation 2005* (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no *E. Coli*. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.

Drinking water scheme: Injune

Year		2016/17											
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	June	
No. of samples collected	5	8	8	8	8	8	8	8	6	7	7	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	95	95	87	87	87	87	87	87	85	85	85	88	
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	

CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE

The *Public Health Regulation 2005* (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no *E. Coli*. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.

Drinking water scheme: Jackson

Year		2016/17										
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	June
No. of samples collected	2	1	1	1	1	2	2	2	2	2	2	2
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	24	23	22	21	20	20	20	20	20	20	20	20
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

CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE

The *Public Health Regulation 2005* (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no *E. Coli*. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.

Drinking water scheme: Mitchell

Year		2016/17										
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	June
No. of samples collected	6	6	5	6	6	6	6	6	6	6	6	6
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	109	106	111	100	106	93	92	89	83	80	74	71
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

CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE

The *Public Health Regulation 2005* (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no *E. Coli*. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.

Drinking water scheme: Muckadilla

Year		2016/17										
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	June
No. of samples collected	2	2	2	2	2	2	2	2	2	2	2	2
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	20	20	22	20	22	22	24	24	24	24	22	24
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

CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE

The *Public Health Regulation 2005* (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no *E. Coli*. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.

Drinking water scheme: Mungallala

Year	2016/17											
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	June
No. of samples collected	2	2	2	2	2	2	2	2	2	2	3	3
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	35	34	36	32	34	30	29	28	27	26	26	26
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

CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE

The *Public Health Regulation 2005* (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no *E. Coli*. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.

Drinking water scheme:

Roma

Year		2016/17										
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	June
No. of samples collected	65	67	44	65	52	49	42	74	67	52	69	59
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	255	311	346	402	443	482	512	556	605	637	684	705
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

CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE

The Public Health Regulation 2005 (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no E. Coli. This requirement is refered to as the 'annual value' in Schedule 3A of the regulation.

Drinking water scheme: Surat

Year		2016/17										
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	June
No. of samples collected	5	5	5	5	5	15	5	15	15	5	5	5
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	69	69	69	69	66	73	70	80	90	90	90	90
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

CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE

The *Public Health Regulation 2005* (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no *E. Coli*. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.

Drinking water scheme: Wallumbilla

Year		2016/17										
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	June
No. of samples collected	4	2	2	2	2	4	4	4	4	4	4	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	48	46	44	42	40	40	40	40	40	40	40	40
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

CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE

The *Public Health Regulation 2005* (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no *E. Coli*. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.

Drinking water scheme: Yuleba

Year		2016/17										
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Мау	June
No. of samples collected	4	2	2	2	2	4	4	4	4	4	4	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	48	46	44	42	40	40	40	40	40	40	40	40
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

CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE

The *Public Health Regulation 2005* (the regulation) requires that 98 per cent of samples taken in a 12 month period should contain no *E. Coli*. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation.

Appendix B – Implementation of the DWQMP Risk Management Improvement Program

Table 4 – Progress against the risk management improvement program in the approved DWQMP

Item No.	Scheme Component / Sub- component	Action(s)	Target date/s	Status as at Dec 2017	(If implementing these actions will take longer than anticipated, please provide detail, as it may affect the approved DWQMP)
	Surat	Filter Media Replacement	December 2016	Complete	
	Surat	Clarifier Upgrade & Tank Replacement	June 2017	Installed undergoing final commissioning	
	Roma	Hydrogeological Assessment	March 2017	Complete	
	Roma	Reservoir Sealing	June 2017	Complete	