

DRINKING WATER QUALITY MANAGEMENT PLAN REPORT

01 July 2015 to 30 June 2016

Quilpie Shire Council
SPID: 108

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Glossary of terms

ADWG 2004	Australian Drinking Water Guidelines (2004). Published by the National Health and Medical Research Council of Australia
ADWG 2011	Australian Drinking Water Guidelines (2011). Published by the National Health and Medical Research Council of Australia
E. coli	<i>Escherichia coli</i> , a bacterium which is considered to indicate the presence of faecal contamination and therefore potential health risk
HACCP	Hazard Analysis and Critical Control Points certification for protecting drinking water quality
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
MPN/100mL	Most probable number per 100 millilitres
CFU/100mL	Colony forming units per 100 millilitres
<	Less than
>	Greater than

Introduction

This report documents the performance of Quilpie Shire Council's drinking water service with respect to water quality and performance in implementing the actions detailed in the Drinking Water Quality Management Plan (DWQMP) as required under the *Water Supply (Safety and Reliability) Act 2008* (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 water service providers to report publicly on their performance in managing drinking water quality.

1. Overview of Operations

1.1 Quilpie

Quilpie water supply comprises of two sealed artesian bores. Water is reticulated directly to premises without treatment. Bore No. 2 supplies the town with its main water supply. Bore No. 1 can be used as a backup if required and may be used to supply water to proposed new subdivisions. Water is supplied to approximately 650 residents.

1.2 Eromanga

Eromanga has about 40 residents and is serviced by four sub-artesian bores. Water is piped into a reservoir where filtration, reverse osmosis and chlorine dosing systems treat water that is then transferred to a clean water tank, which is then fed into the towns water supply network

The complete system is controlled and monitored by a PLC with an HMI panel in the main control building. Radio links between each of the four bores and the main control provide run signals to pumps and fault indications back to the PLC and HMI touchscreen.

2. Actions taken to implement the DWQMP

Progress in implementing the risk management improvement program.

Council continues to distribution of the fact sheet provided by Queensland Health – *Naturally Occurring Flouride in Quilpie's Drinking Water*.

Council is currently investigating options available to record all information relative to maintenance and repairs to infrastructure and water sample results electronically in an efficient manner.

Safe Work Method Statements for Operations staff performing maintenance and repairs have been implemented by Councils Workplace Health & Safety Officer

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

Procedure 5 of the Operations & Maintenance Procedure has been amended to include the following:

1.3 Procedure 5 - Information Management Plan

Information is transparent

Accessible

Accurate data

Quality information that supports decision making and risk analysis

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

Increase compliance and

Decrease cost

1. Record on work order or other records:
 - Location of repair (sketch with key dimensions),
 - Any parts and materials used,
 - Any faults identified (pipe failure record including nature and probable cause),
 - Repairs undertaken,
 - Any additional work required (drain clearing, turfing, road surfacing, etc.), and
 - Times of arrival and repair.
2. Enter work carried out into computerised maintenance management system, all new connections are to have the plan recorded in Councils rates database against the rates assessment card.
3. Water sample results to be recorded to InfoXpert and entered into <\\quilpie.infoxpert.edrms@SSL\DavWWWRoot\DAV\User Workspace\Hennessy Angela\Water Samples\Water Sample Results.xlsx>

3. Compliance with water quality criteria for drinking water

Quilpie water quality does not meet the Australian Drinking Water Guidelines due to naturally occurring high levels of fluoride.

parameter	unit of measure	total number of samples collected	number of samples that did not meet the water quality criteria	maximum concentration or count
Nitrate	mg/L	5	0	<0.5
Sulphate	mg/L	5	0	9
Fluoride (naturally occurring)	mg/L	5	5	1.8
Aluminium (acid-soluble)	mg/L	5	0	<0.05
Boron	mg/L	5	0	0.47
Copper	mg/L	5	0	<0.03
Iron	mg/L	5	0	<0.01
Manganese	mg/L	5	0	<0.01
Zinc	mg/L	5	0	<0.01
pH	pH Units	5	0	9.31
Turbidity	NTU	5	0	<1
Escherichia coli (E.coli) Public Health Regulation 2005		23*	0	0

Samples are collected randomly from two or the three sample locations.

EROMANGA

parameter	unit of measure	total number of samples collected	number of samples that did not meet the water quality criteria	maximum concentration or count
Nitrate	mg/L	5	0	5.8
Sulphate	mg/L	5	0	14.3
Fluoride (naturally occurring)	mg/L	5	0	.13
Aluminium (acid-soluble)	mg/L	5	0	<0.05
Boron	mg/L	5	0	0.21
Copper	mg/L	5	0	0.04
Iron	mg/L	5	0	0.07
Manganese	mg/L	5	0	<0.01
Zinc	mg/L	5	0	0.05
pH	pH Units	5	0	7.56
Turbidity	NTU	5	1	30
Chlorine	mg/L	38	0	1.7184
Escherichia coli (E.coli) Public Health Regulation 2005		23*	0	0

Samples are collected randomly from two or the three sample locations.

Quilpie Shire conducts in house monthly E.coli sampling use Colilert 18, Forensic and Scientific Services conduct analysis of water samples for human consumption quarterly.

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

This financial year there was three instances where the Regulator was notified under sections 102 or 102A of the Act for exceedance of fluoride levels - ID **DWI-7-108-00003** on the following dates 22.07.15, 23.09.15 & 05.04.16. No action was taken as fluoride in the Quilpie water is naturally occurring. This is an ongoing incident.

5. Customer complaints related to water quality

Quilpie Shire 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
Scheme 1 Quilpie			0	0
Scheme 2 Eromanga			0	0
Total			0	0

Suspected Illness

Quilpie Shire 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 2015-2016 there were no confirmed cases of illness arising from the drinking water supply system.

Discoloured water

During 2015-2016 there were no complaints received concerning the colour of the Drinking Water Supply

Taste and odour

During 2015-2016 there was no complaints received concerning the water odour arising from the drinking water supply system.

Routine standard analysis results indicate no change in the bore water components. Quilpie water is sourced from the Great Artesian Basin, and reticulated to the residents in its natural state. An odour and unpleasant taste may be detected due to the components.

Additional routine analysis and eColi samples are collected for testing with no changes in the water properties detected.

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

DWQMP was reviewed and amended by George Bourne & Associates to include the Eromanga water treatment plant and information as per the information requirement notices dated 24 March 2016 and 24 August 2016.

7. Audit of the DWQMP

A regular audit of the DWQMP is due before 22/08/2017 and planned to be undertaken in the 2016/2017 financial year

Appendix A – Quarterly Reporting E Coli Calculation containing a 12 month “rolling” annual value.

Drinking water
scheme:

Quilpie

Year	2015											
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
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	18	20	22	22	20	20	22	24	26	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.

This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).

Drinking water scheme: Quilpie

Year	2016											
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
No. of samples collected	2	2	2	1	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		
No. of samples collected in previous 12 month period	24	24	24	23	23	23	23	23	23	23	21	19
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

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This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).

Drinking water scheme: Eromanga

Year	2015											
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
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												24
No. of failures for previous 12 month period												0
% of samples that comply												100.0%
Compliance with 98% annual value												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.

This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).

The shaded out area is not applicable if data is not available for the previous 12 months.

Drinking water scheme: Eromanga

Year	2016											
Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
No. of samples collected	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	24	24	24	24	24	24	24	24	24	24	22	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.

This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).