



**DRINKING WATER QUALITY
MANAGEMENT PLAN REPORT
2017/18**

29 AUGUST 2018

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1 INTRODUCTION

This report documents the performance of Mount Isa City Council's (MICC) 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.

2 OVERVIEW OF OPERATIONS

Council manages two drinking water schemes – Mount Isa and Camooweal.

To supply the city of Mount Isa, MICC receives treated water from Mount Isa Water Board (MIWB) before distributing to its approximately 21,000 consumers. Water for the Mount Isa scheme is obtained from two storage dams – Lake Julius and Lake Moondarra – on the Leichhardt River to the north of the city.

Camooweal utilises a local groundwater source via two sub-artesian bores with chlorine disinfection as the only treatment. Drinking water is supplied to an estimated local population of 187 people.

3 DWQMP IMPLEMENTATION

3.1 Risk management improvement program (RMIP)

Please see Attachment 1 for a breakdown on progress regarding the actions taken to reduce our drinking water risks in 2017-18.

3.2 Monitoring

The results from the verification monitoring for the reporting period are discussed in section 5.

3.3 Amendments to the plan

We recently updated our DWQMP, which was subsequently approved on 12 September 2017. Changes included:

- Updated drinking water risk assessments
- Updated infrastructure details
- Updated water quality information summary
- Updated incident and emergency response information
- Updated operational and verification monitoring details
- Updated risk management improvement program actions
- Critical Control Point Procedure
- Boil water alert and Do not drink alert templates

4 NOTIFICATIONS TO THE REGULATOR

This financial year there were two instances where the Regulator was notified under sections 102 or 102A of the Act*.

1. Camooweal *E. coli* detection – July 2017

In July 2017, a drinking water sample was incorrectly collected from a rainwater tank (not used for drinking) instead of a town water tap. This rainwater tank sample returned a positive *E. coli* result.

Although this was not part of Council's water supply, we informed the Regulator and identified an alternative tap for water sampling purposes.

2. Camooweal *E. coli* detections – February and March 2018

Through February and March 2018, there were multiple detections of *E. coli* in the Camooweal drinking water supply. In response to these detections, we issued a boil water alert to the residents of Camooweal. Initial response actions included disinfection with chlorine and mains flushing; all of which was undertaken in communication with the Regulator.

We lifted the boil water alert in March following several days of clear results, and there have been no further *E. coli* detections since. Part of the circumstances that led to the incident involved the failure of our chlorination system, which has since been repaired.

MICC is continuing to investigate this incident and will review whether additional actions are required to prevent the reoccurrence of the issue.

** the Regulator was notified in August 2017 regarding elevated turbidity results from prior years. These instances were summarised in our 2016-17 DWQMP Report and have not been repeated in this report.*

5 COMPLIANCE WITH WATER QUALITY CRITERIA

Verification of drinking water quality provides an assessment of the overall performance of the system and the ultimate quality of the drinking water being supplied to customers. It confirms compliance with water quality criteria set by DNRME, Queensland Health and any other formal requirements.

Mount Isa City Council undertakes verification monitoring in both schemes to ensure that the water quality that we provide to our customers is safe; council exceeds the required monitoring frequency outlined in the *Public Health Regulation 2005*.

5.1 Mount Isa Scheme

The verification monitoring data are summarised in Table 1, 2 & 3.

Table 1: Mount Isa Terminal reservoir monitoring data

	Free Chlorine (mg/L)	pH (pH units)	Turbidity (NTU)	HPC (cfu/mL)	Total coliforms (MPN/100 mL)	<i>E. coli</i> (MPN/100 mL)	Iron (mg/L)	THMs (µg/L)
Minimum	0.1	7.0	0.2	1	<1	<1	0.02	89
Maximum	1.6	7.8	8.6	>738	>200	<1	0.2	159
Average	1.0	7.5	1.2	70	5	<1	0.09	126
Number	50	50	51	14	50	50	4	4

**Note: this reservoir is managed by MIWB, however samples are collected by MICC to verify the performance. Construction work undertaken at the Terminal Reservoir site is believed to have impacted the representativeness of the sample tap leading to elevated HPC and Total Coliforms detections (it is believed that the plumbing was modified).*

Table 2: Annual testing for Mount Isa Terminal reservoir

Analyte	Result (mg/L unless otherwise stated)
Total Oxidised Nitrogen	<0.01
Nitrate	<0.01
Nitrite	<0.01
Aluminium	<0.01
Arsenic	0.002
Barium	0.033
Beryllium	<0.001
Boron	<0.05
Cadmium	<0.0001
Chromium	<0.001
Copper	0.008
Iodide	<0.01
Iron	0.1
Lead	<0.001
Manganese	0.029
Mercury	<0.0001
Molybdenum	<0.001
Nickel	<0.005
Selenium	<0.01
Silver	<0.001
Zinc	0.006
Fluoride	0.2
Hardness	78 (mg/L as CaCO ₃)
TDS	202

**Note: this reservoir is managed by MIWB, however samples are collected by MICC to verify the performance.*

Table 3: Mount Isa Reticulation Monitoring Data

	Chlorine (mg/L)	pH (pH units)	Turbidity (NTU)	HPC (cfu/mL)	Total coliforms (MPN/100 mL)	<i>E. coli</i> (MPN/100 mL)	Iron (mg/L)	THMs (µg/L)
Minimum	0.1	7.2	0.1	<1	<1	<1	<0.05	79
Maximum	1.6	8.0	1.9	623	2	<1	0.1	146
Average	0.32	7.6	0.32	19	<1	<1	<0.05	115
Number	449	449	449	77	151	329	12	12

5.2 Camooweal Scheme

The verification monitoring data for the Camooweal scheme reticulation sites (combined), and level of compliance are summarised in Table 4.

Table 4: Camooweal Reticulation Monitoring Data

	Free Chlorine (mg/L)	pH (pH units)	Turbidity (NTU)	HPC (cfu/mL)	Total coliforms (MPN/100mL)	<i>E. coli</i> (MPN/100mL)	THMs (µg/L)
Minimum	<0.1	7.2	0.1	<1	<1	<1	5
Maximum	5.0	7.8	2.6	372	>200	30.6	11
Average	0.27	7.4	0.5	72	5	<1	6
Number	359	321	326	13	285	354	16

5.3 Public Health Regulation compliance summary

Council is required to monitor for *E. coli* in its drinking water schemes as per the *Public Health Regulation 2005*. Our performance against the requirements is summarised in Table 5 below:

Table 5: Public Health Regulation Compliance Summary

Scheme	Number of samples required	Number of samples collected	Compliance	Performance requirement (% samples negative)	Actual performance (% samples negative)	Compliance
Mount Isa	88	329	✓	98	100	✓
Camooweal	12	354	✓	98	91	✗

6 CUSTOMER COMPLAINTS

There were 2 water quality related complaints (dirty water) received for the Mount Isa scheme. There were no complaints received for the Camooweal scheme.

In response to dirty water the crews either flushed the main/line, cleaned and flushed the meter and/or checked the chlorine level. Dirty water is usually resolved through these corrective actions unless the crews identified it was an internal plumbing issue.

7 DWQMP REVIEW

A regular review of the DWQMP was not conducted within the 2018-19 financial year. The next review is required to be undertaken prior to 31 May 2020.

8 DWQMP AUDIT

No audit was required to be undertaken within the 2017-18 financial year. The next audit for Mount Isa City Council's DWQMP is required prior to 31 May 2021.

9 ATTACHMENTS

Attachment 1: RMIP actions

Ref	Scheme	Improvement Action	Responsibility	Timeframe	Status	Comments
WQ1	Mount Isa	<i>Investigate assigning or installing a sampling location which provides better representation of the incoming treated supply.</i>	<i>Team Leader - Water and Sewerage</i>	<i>Dec-15</i>	<i>Complete</i>	
WQ2	Mount Isa	<i>Investigate the need for management of reservoir levels in consultation with MIWB (for e.g. winter and summer levels).</i>	<i>Team Leader - Water and Sewerage</i>	<i>Jun-16</i>	<i>Complete</i>	
WQ3	Mount Isa	Investigate and identify users that may be of potential concern; check backflow requirements and gaps; maintain backflow register; and enforce council backflow policy. This will need to be undertaken by a Trade Waste Officer or like and most probably will need to be recruited by MICC.	Team Leader – Water and Sewerage	Extended to 30/06/2019	In Progress	Investigation underway in hiring an external consultant to commence this.
WQ4	Camooweal	<i>Educate public about connection between caves and groundwater (fact sheet with Rates Notice).</i>	<i>Team Leader - Water and Sewerage</i>	<i>Jun-17</i>	<i>Complete</i>	
WQ5	Camooweal	<i>Increase monitoring of turbidity and E. coli at the bores during the wet season (twice monthly) to investigate any possible surface water influence.</i>	<i>Laboratory Technician</i>	<i>Nov-15</i>	<i>Complete</i>	
WQ6	Camooweal	Investigate possibility of installing a telemetry system, which would provide remote visibility and be able to send alarms on chlorine system. Include online turbidity analyser with remote visibility and alarming.	Team Leader and Director	Extended to 30/06/2019	In Progress	Budget has been allocated for this FY – expressions of interest on the design of this system is at present being formulated.

Ref	Scheme	Improvement Action	Responsibility	Timeframe	Status	Comments
WQ7	Camooweal	<i>Investigate C.t to first customer. Use results of this in conjunction with outcomes of WQ5.</i>	<i>Team Leader - Water and Sewerage</i>	<i>Jun-16</i>	<i>Complete</i>	
WQ8	Mount Isa	Investigate mixing and online chlorine dosing in the remaining reservoirs, with alarms for dosing failure or faults.	Team Leader and Director	Extended to 30/06/19	In progress	Trialling of a equalised pressure system throughout Mt Isa has since found that the installation of chlorination units on all reservoirs is not required, with the exception of Reservoir 4. Further trailing and modelling will be carried out in late 2018, and the designs will be finalised once this has been completed. This is also in line with WQ13.
WQ9	Service Wide	<i>Prepare Operations and Maintenance (O&M) manuals for the schemes, detailing routine tasks undertaken.</i>	<i>Team Leader - Water and Sewerage</i>	<i>30/06/18</i>	<i>Complete</i>	
WQ10	Service Wide	<i>Review existing process for water quality related document currency and record retention</i>	<i>Team Leader - Water and Sewerage</i>	<i>Jun-17</i>	<i>Complete</i>	
WQ11	Service Wide	Strengthen laboratory QA/QC practices, including SOPs, calibration, record keeping etc to ensure high quality results	Team Leader and Laboratory Technician	Extended to 30/06/19	In progress	Currently in progress as new Laboratory Technician has commenced with Council and is working on these procedures.
WQ12 (New)	Mount Isa	Address vermin proofing issues at Reservoir 3 and seek funding for reservoir replacement	Team Leader Water & Sewerage	Extended to 30/06/19	In progress	Temporary vermin proofing measures installed. Construction of the new Reservoir 3A has begun in June 2018.

Ref	Scheme	Improvement Action	Responsibility	Timeframe	Status	Comments
WQ13 (New)	Mount Isa	Undertake hydraulic modelling of network in collaboration with MIWB and reconfigure network to improve water circulation and decrease water age.	Team Leader Water & Sewerage	Extended to 30/06/19	In progress	Trialling of a equalised pressure system throughout Mt Isa has since found that the installation of chlorination units on all reservoirs is not required. With the exception of Reservoir 4. Further trailing and modelling will be carried out in late 2018, where the designs will be finalised once this has been completed.