



DRINKING WATER QUALITY MANAGEMENT PLAN REPORT 2018

Douglas Shire Council

Reporting period: 1 July 2017 – 30 June 2018



Drinking Water Service Provider 558

December 2018

DOUGLAS **SHIRE**
COUNCIL

Improving Environmental Performance
Ngaral Kulji Bubungu - Eastern Kuku Yalanji
Pulmpa dakit jarral-a-kaling - Yirrganydji

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Drinking Water Quality Management Plan Report

1. Introduction

This report documents the performance of Douglas Shire Council (Council) as a Drinking Water Service Provider (SPID 558) during the financial year 2017-2018. Council is operating under an approved Drinking Water Quality Management Plan (DWQMP) to ensure consistent supply of safe drinking water in order to protect public health and as required under the *Water Supply (Safety and Reliability) Act 2008*.

The report provides a mechanism for providers to report publicly on their performance in managing drinking water service and drinking water quality.

2. Summary of schemes operated

Council operates three principle water supply schemes that source water from highly protected catchments and treats water to Australian Drinking Water Guideline (ADWG) standards utilising a combination of ultrafiltration and chlorination, with the ability to use supplemental UV disinfection. Additionally Whyanbeel Water Treatment Plant (WTP) has recently added a sodium carbonate pH adjustment step (Table 1).

Table 1. Summary of the three drinking water schemes.

Scheme	Water Source	Treatment Processes	Treatment Capacity (ML/day)	Towns Supplies
Daintree	Martin Creek	Pre-filtration, ultrafiltration, chlorination	0.49	Daintree Township
Mossman/Port Douglas	Rex Creek	Pre-filtration, ultrafiltration, chlorination	30.0	Mossman, North Mossman, Port Douglas, Craiglie, Newell Beach, Cooya Beach, Cassowary, Mowbray
Whyanbeel	Little Falls Creek	Pre-filtration, ultrafiltration, chlorination, sodium carbonate	4.9	Whyanbeel, Miallo, Bamboo, Rocky Point, Port Douglas Views, Wonga Beach

In addition there is a non-potable water supply scheme:

- Dagmar Heights

This scheme consists of a bore field pump system with no treatment and is a declared non-potable water supply.

3. Actions taken to implement the DWQMP

DWQMP is a public health based risk management plan that demonstrates how public health risks to our services are managed. Council's DWQMP was amended during the reporting period 2017-2018. The amended DWQMP was approved by the Regulator and the Council in June 2018. Within the amendment the Council has undertaken a system assessment and a public health risk assessment. Through the risk assessment process, Council has identified a number of risks to the drinking water schemes that require improvements over time. These are detailed within the approved DWQMP in the Hazard identification and risk assessment section. The actions undertaken and the progress of the Risk Management Improvement Plan (RMIP) can be found in Appendix A: Implementation of the DWQMP Risk Management Improvement Program. Together with the RMIP the DWQMP includes critical control point (CCP) limits, which ensure that operators become aware of potential issues faster, and respond to ensure that our customers receive safe drinking water.

Compliance with the CCPs is continually monitored via SCADA control system and operational checks are performed by plant operators. Operational monitoring is undertaken to meet the ADWG recommendations. Verification monitoring is undertaken regularly with external analyses undertaken at a National Association of Testing Authorities (NATA) certified laboratory. To further implement the DWQMP Council organises fortnightly internal meetings to relate messages and updates and to discuss water treatment operations.

All data is recorded and reviewed to ensure a system is in place to identify any potential risks that may arise in relation to water quality and allow for early intervention with corrective measures to ensure compliance.

4. Verification monitoring

Council undertook verification monitoring in accordance with the requirements of the DWQMP approved in 2016.

During the financial year 2017-2018 all physical, chemical and microbiological parameters measured met with the health guideline values in the ADWG including the standards in the Public Health Regulation 2005. Water quality data is presented in Appendix B: Water quality information and summary.

5. Notification to the Regulator under sections 102 and 201A of the Act

There were no incidents reported to the Regulator in financial year 2017-2018, which declared a high level of compliance imposed by the Water Supply (Safety and Reliability) Act 2008 during the audit period.

6. Customer complaints/notification

During the reporting period there were 5 water quality complaints/notifications within the three drinking water schemes (Table 2). These reports were handled by the Council staff by investigating the issue, flushing of the service water mains and/or by undertaking water quality monitoring. At all of the instances the drinking water quality provided demonstrated compliance with ADWG aesthetic and health guideline values. At some instances the issue was internal which lead to customer's responsibility to take action.

Table 2. Drinking water quality complaints/notifications during the financial year 2017-2018.

Scheme	Health concern	Discoloured Water	Taste and Odour	Other	Total
Daintree	0	0	0	0	0
Mossman / Port Douglas	0	2	1	1 (temperature)	4
Whyanbeel	0	0	1	0	1

7. DWQMP review outcomes

Council's DWQMP was amended in June 2018. The current review and amendment of the DWQMP was conducted following the external audit of our DWQMP, even though the audit noted no non-conformances. The amended DWQMP provides up to date information including capital improvements, critical control points, risk management improvement plan and updated verification monitoring program. There is a regulatory requirement to review the DWQMP biannually, however Council may review more frequently if believed that the DWQMP needs updating.

8. DWQMP audit findings

No audit was conducted during the reporting period July 2017 – June 2018.

Appendix A: Implementation of the DWQMP Risk Management Improvement Program

Table 3. Status update for RMIP

Scheme	Improvement actions	Status	Hazardous Event	Hazards Managed by Same Barriers
All Schemes	Rex Creek stage 2 intake upgrade	Under construction	Blocked Johnston screen	Failure of supply
M/PD	Craiglie Reservoir roof replacement	Design phase	Ingress into reservoirs	Limited supply
M/PD & W	Cooya Reservoir and Wonga Reservoir design	Under review	Ingress into reservoirs	Limited supply
All Schemes	Mains break procedure	To be finalised	Mains break	Failure of supply
All Schemes	Replacement of ageing AC mains	Ongoing	Mains break, increasing pH impacting residual disinfection	Failure of supply, bacteria/virus
All Schemes	Long term meter replacement strategy	Smart metering report completed. Trial to be commenced subject to funding.	Backflow e.g. from customer meters or standpipes	Protozoa
M/PD	Water demand management	RWSSA report completed and published 18/19	Demand exceeds supply	Limited supply
M/PD	Port Douglas Creeks Rd Reservoir	To be completed 18/19	Demand exceeds supply	Limited supply
M/PD	Alternate water supply	Commenced	Drought	Failure of supply
M/PD & W	Mossman/Port Douglas and Whyanbeel interconnection	Commenced	Cyclone	Failure of supply
All Schemes	Staff training	Ongoing	Operator error	Any
All Schemes	Bypass procedure	To be finalised	Accidental use of bypass	Protozoa and bacteria
All Schemes	Mapping of water reticulation system	Ongoing	Loss of knowledge	
M/PD	Project to line remaining area of race and angle Johnston screens to allow more self cleaning	Designed, to be completed 18/19	Blocked Johnston Screen	Failure of supply
Daintree	Daintree bore	Project to be finalised 18/19	Flood/Landslip	Failure of supply

Appendix B: Water quality information and summary

Daintree water supply scheme – Verification monitoring results

Table 4. Daintree water supply scheme verification monitoring results for financial year 2017-2018.

Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	ADWG health guideline value	No. of non compliant samples	Summary of results		
					Min	Max	Avg
Alkalinity (mg/L as CaCO ₃)	12	13	N/A	N/A	20	39	26
Chlorine residual (mg/L)	104	105	<5	0	0.3	1.2	0.9
Colour (PCU)	12	13	N/A	N/A	<5	<5	<5
Copper (mg/L)	12	13	<2	0	0.003	0.011	0.005
E.coli (MPN/100mL)	104	125	<1	0	<1	<1	<1
HPC (CFU/mL)	24	32	N/A	N/A	<1	~6	<1
Iron (mg/L)	12	13	N/A	N/A	<0.005	0.016	0.008
Manganese (mg/L)	12	13	<0.5	0	<0.005	<0.005	<0.005
pH (pH units)	104	125	N/A	N/A	6.6	8.7	7.6
Total Coliforms (MPN/100 mL)	104	125	N/A	N/A	<1	30.6	<1
Turbidity (NTU)	12	13	N/A	N/A	<0.5	0.6	<0.5

Table 5. Daintree water supply scheme E.coli compliance with annual value.

Year	2017-2018											
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
No. of samples collected	8	10	12	12	10	10	11	12	10	10	12	8
No. of samples collected in which E. coli 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	12	15	11	8	10	8	8	10	8	8	10	8
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100	100	100	100	100	100	100	100	100	100	100	100
Compliance with 98% annual value	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Mossman/Port Douglas water supply scheme – Verification monitoring results

Table 6. Mossman/Port Douglas water supply scheme verification monitoring results for financial year 2017-2018.

Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	ADWG health guideline value	No. of non compliant samples	Summary of results		
					Min	Max	Avg
Alkalinity (mg/L as CaCO ₃)	48	52	N/A	N/A	<5	10	5
Chlorine residual (mg/L)	832	836	<5	0	<0.1	1.6	0.9
Chlorite (mg/L)	24	52	<0.8	0	<0.05	0.16	<0.05
Colour (PCU)	144	156	N/A	N/A	<5	<5	<5
Copper (mg/L)	144	156	<2	0	<0.001	0.099	0.009
E.coli (MPN/100mL)	832	995	<1	0	<1	<1	<1
HPC (CFU/mL)	192	256	N/A	N/A	<1	300	2
Iron (mg/L)	144	156	N/A	N/A	<0.005	0.27	0.008
Manganese (mg/L)	144	156	<0.5	0	<0.005	<0.005	<0.005
pH (pH units)	832	1010	N/A	N/A	6	9.7	6.9
Total Coliforms (MPN/100 mL)	832	995	N/A	N/A	<1	200.5	<1
Turbidity (NTU)	144	156	N/A	N/A	<0.5	8.2	<0.5

Table 7. Mossman/ Port Douglas water supply scheme E.coli compliance with annual value.

Year	2017-2018											
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
No. of samples collected	64	80	96	85	91	80	94	84	80	80	96	65
No. of samples collected in which E. coli 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	64	85	67	64	80	64	66	68	76	64	80	64
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100	100	100	100	100	100	100	100	100	100	100	100
Compliance with 98% annual value	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Whyanbeel water supply scheme – Verification monitoring results

Table 8. Whyanbeel water supply scheme verification monitoring results for financial year 2017-2018.

Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	ADWG health guideline value	No. of non compliant samples	Summary of results		
					Min	Max	Avg
Alkalinity (mg/L as CaCO ₃)	24	26	N/A	N/A	<5	15	8
Chlorine residual (mg/L)	260	262	<5	0	<0.1	1.5	0.9
Chlorite (mg/L)	24	26	<0.8	0	<0.05	<0.05	<0.05
Colour (PCU)	36	39	N/A	N/A	<5	5	<5
Copper (mg/L)	36	39	<2	0	<0.001	0.018	0.007
E.coli (MPN/100mL)	260	312	<1	0	<1	<1	<1
HPC (CFU/mL)	60	80	N/A	N/A	<1	~8	<1
Iron (mg/L)	36	39	N/A	N/A	<0.005	0.034	0.014
Manganese (mg/L)	36	39	<0.5	0	<0.005	<0.005	<0.005
pH (pH units)	260	314	N/A	N/A	4.9	8.8	7.2
Total Coliforms (MPN/100 mL)	260	312	N/A	N/A	<1	25.4	<1
Turbidity (NTU)	36	39	N/A	N/A	<0.5	0.9	<0.5

Table 9. Whyanbeel water supply scheme E.coli compliance with annual value.

Year Month	2017-2018											
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
No. of samples collected	20	25	30	30	25	25	27	30	25	25	30	20
No. of samples collected in which E. coli 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	30	23	20	25	20	20	25	20	20	25	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	100	100	100	100	100	100	100	100	100	100	100
Compliance with 98% annual value	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y