

Drinking Water Quality Management Plan Report

Financial Year
2016-2017



Drinking Water Quality Management Plan (DWQMP) report

Financial Year 2016-2017

NORTH BURNETT REGIONAL COUNCIL

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Glossary of terms

ADWG 2004	Australian Drinking Water Guidelines (2004). Published by the National Health and Medical Research Council of Australia
ADWG 2011	Australian Drinking Water Guidelines (2011). Published by the National Health and Medical Research Council of Australia
<i>E. coli</i>	<i>Escherichia coli</i> , a bacterium which is considered to indicate the presence of faecal contamination and therefore potential health risk
HACCP	Hazard Analysis and Critical Control Points certification for protecting drinking water quality
mg/L	Milligrams per litre
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

North Burnett Regional Council (NBRC) is listed as Service Provider Identification Number (SPID Number) 490 with the Department of Energy and Water Supply.

NBRC supplies potable water through seven separate systems to the towns of Monto, Mulgildie, Eidsvold, Mundubbera, Gayndah, Biggenden and Mt Perry.

This report details NBRC's compliance with its Drinking Water Quality Management Plan (DWQMP).

2. Actions taken to implement the DWQMP

Progress in implementing the risk management improvement program

Refer to the tables below for a summary of progress in implementing each of the Improvement Program actions

Biggenden Water

Scheme Component / Sub-component	Hazard/ Hazardous event	Priority	Risk Improvement Actions			Target dates	Status
			interim	short-term	long-term		
Treatment	Biological Contamination	Medium		<p>Biggenden 2013-01 Operation of Chlorine injection system needs to be linked to water flow.</p> <p>Biggenden 2013-02 Online analyser will be installed and alarmed</p>		Short term – Sept 2014	<p>Item 1 – completed</p> <p>Item 2 – Installation Completed. Annual Third Party Calibration Program initiated.</p>
Reticulation	Trihalomethane (THM) Concentration	Medium		<p>Review the existing monitoring program to include testing for THM levels. Periodic samples will be submitted to the Qld Health Forensic Laboratory to determine current levels of THM and indicate future frequencies for further sampling and testing</p>		Short term – Sept 2014	THM Sampling results through QHFSS Lab has shown THM levels are below reporting level.

Eidsvold Water

Scheme Component / Sub-component	Hazard/ Hazardous event	Priority	Risk Improvement Actions			Target dates	Status
			interim	short-term	long-term		
Treatment	Biological Contamination	Medium		<p>Eidsvold 2013-01: Additional chlorine injection to be installed at the WTP reservoir.</p> <p>Eidsvold 2013-02: On line chlorine analyser will be installed and alarmed to SCADA</p> <p>Eidsvold 2013-03: Chlorine levels in retic system will be tested at least weekly.</p> <p>Eidsvold 2013-04: Additional chlorine injection system to be installed on the Airport Rd reservoir</p>		Short term – Sept 2014	<p>New Water Treatment Plant constructed and Operational.</p> <p>Item 1 – WTP has been designed with both UV disinfection and post treatment chlorination. Additional chlorine injection at reservoir is no longer required based on new WTP design and location.</p> <p>Item 2 – Installation Completed. Annual Calibration Program initiated.</p> <p>Item 3 – Completed. Testing is carried out on a weekly basis</p> <p>Item 4 – New chlorine dosing system has been installed at Airport Road reservoir.</p>
Treatment	Chemical Contamination	Medium		<p>Eidsvold 2013-02: On-line chlorine analyser will be installed and alarmed to SCADA</p> <p>Eidsvold 2013-05: Control logic for chemical addition to be re-programmed to be a function of raw water flow.</p>		Short term – Sept 2014	<p>Item 1 - Installation Completed. Annual Calibration Program Initiated</p> <p>Item 2 – Complete</p>
Reticulation	Trihalomethane (THM) Concentration	Medium		<p>Review the existing monitoring program to include testing for THM levels. Periodic samples will be submitted to the Qld Health Forensic Laboratory to determine current levels of THM and indicate future frequencies for further sampling and testing</p>		Short term – Sept 2014	<p>THM Sampling results through QHFSS Lab has shown THM levels are below reporting level.</p>

Gayndah Water

Scheme Component / Sub-component	Hazard/ Hazardous event	Priority	Risk Improvement Actions			Target dates	Status
			interim	short-term	long-term		
Treatment	Biological Contamination	Medium		<p>Gayndah 2013-01: Operation of the chlorine injection system needs to be linked to raw water meter signal.</p> <p>Gayndah 2013-02: On line chlorine analyser to be installed and alarmed to SCADA</p>		Short term – Sept 2014	<p>Item 1 – Complete</p> <p>Item 2 - Installation Completed. Annual Calibration Program initiated.</p>
Reticulation	Trihalomethane (THM) Concentration	Medium		<p>Review the existing monitoring program to include testing for THM levels. Periodic samples will be submitted to the Qld Health Forensic Laboratory to determine current levels of THM and indicate future frequencies for further sampling and testing</p>		Short term – Sept 2014	<p>THM Sampling results through QHFSS Lab has shown THM levels are below reporting level.</p>

Monto Water

Scheme Component / Sub-component	Hazard/ Hazardous event	Priority	Risk Improvement Actions			Target dates	Status
			interim	short-term	long-term		
Treatment	Biological Contamination	Medium		<p>Monto 2013-01: Additional chlorine injection to be installed at the Tower reservoir.</p> <p>Monto 2013-01: On line chlorine analyser will be installed and alarmed to SCADA</p> <p>Monto 2013-01: Chlorine levels in retic system will be tested at least weekly.</p>		Short term – Sept 2014	<p>Item 1 – Recommendation to re-prioritise this short term action as a longer term proposal with a re-design of the reservoir inlet pipework to include a flow actuated dosing system.</p> <p>Item 2 – Installation Completed. Annual Calibration Program initiated.</p> <p>Item 3 - Testing is carried out on a weekly basis</p>
Reticulation	Trihalomethane (THM) Concentration	Medium		<p>Review the existing monitoring program to include testing for THM levels. Periodic samples will be submitted to the Qld Health Forensic Laboratory to determine current levels of THM and indicate future frequencies for further sampling and testing</p>		Short term – Sept 2014	<p>THM Sampling results through QHFSS Lab has shown THM levels are below reporting level.</p>

Mount Perry Water

Scheme Component / Sub-component	Hazard/ Hazardous event	Priority	Risk Improvement Actions			Target dates	Status
			interim	short-term	long-term		
Treatment	Biological Contamination	Medium		<p>Mount Perry 2013-01: Operation of chlorine injection needs to be triggered from water meter signal.</p> <p>Mount Perry 2013-02: On line analyser will be installed and alarmed to SCADA</p> <p>Mount Perry 2013-03: Chlorine levels in retic system will be tested at least weekly.</p>		Short term – Sept 2014	<p>Item 1 – Completed.</p> <p>Item 2 – Installation Completed. Annual Calibration Program initiated.</p> <p>Item 3 - Testing is carried out on a weekly basis</p>
Reticulation	Trihalomethane (THM) Concentration	Medium		<p>Review the existing monitoring program to include testing for THM levels. Periodic samples will be submitted to the Qld Health Forensic Laboratory to determine current levels of THM and indicate future frequencies for further sampling and testing</p>		Short term – Sept 2014	<p>THM Sampling results through QHFSS Lab has shown THM levels are below reporting level.</p>

Mulgildie Water

Scheme Component / Sub-component	Hazard/ Hazardous event	Priority	Risk Improvement Actions			Target dates	Status
			interim	short-term	long-term		
Treatment	Biological Contamination	High		<p>Mulgildie 2013-01: Additional chlorine booster to be installed at the WTP reservoir.</p> <p>Mulgildie 2013-02: On line analyser will be installed to trigger alarm and auto shutdown.</p> <p>Mulgildie 2013-03: Chlorine levels in retic system will be tested at least weekly.</p>		Short term – Sept 2014	<p>Item 1 – Recommendation to remove this item as completion of items 2 & 3 make this requirement redundant.</p> <p>Item 2 – Installation Completed. Annual Calibration Program initiated.</p> <p>Item 3 - Testing is carried out on a weekly basis</p>
Treatment	Chemical Contamination	High		<p>Mulgildie 2013-04: On-line analysers will be installed to trigger alarm and auto shutdown.</p> <p>Mulgildie 2013-05: Cover open topped sand filters</p>		Short term – Sept 2014	<p>Item 1 – Installation Completed. Annual Calibration Program initiated.</p> <p>Item 2 - Complete</p>
Reticulation	Trihalomethane (THM) Concentration	Medium		<p>Review the existing monitoring program to include testing for THM levels.</p> <p>Periodic samples will be submitted to the Qld Health Forensic Laboratory to determine current levels of THM and indicate future frequencies for further sampling and testing</p>		Short term – Sept 2014	<p>THM Sampling results through QHFSS Lab has shown THM levels are below reporting level.</p>

Mundubbera Water

Scheme Component / Sub-component	Hazard/ Hazardous event	Priority	Risk Improvement Actions			Target dates	Status
			interim	short-term	long-term		
Treatment	Biological Contamination	Medium		Mundubbera 2013-01: Operation of the chlorine injection system needs to be linked to water flow Mundubbera 2013-02: On line analyser will be installed alarmed.		Short term – Sept 2014	Item 1 – Chlorine injection is triggered on a flow signal as is all treatment chemicals for this plant. Item 2 – Installation Completed. Annual Calibration Program initiated.
Reticulation	Trihalomethane (THM) Concentration	Medium		Review the existing monitoring program to include testing for THM levels. Periodic samples will be submitted to the Qld Health Forensic Laboratory to determine current levels of THM and indicate future frequencies for further sampling and testing		Short term – Sept 2014	THM Sampling results through QHFSS Lab has shown THM levels are below reporting level.

3. Compliance with water quality criteria for drinking water

Verification Monitoring

The following tables details the Verification Monitoring conducted by NBRC. NBRC engages Queensland Health and Forensic Services (QHFSS) to perform both weekly and monthly testing of water across the seven water schemes. The following tables include the parameters to be monitored, monitoring locations, frequency to ensure compliance with drinking water quality criteria; and how excursions are managed.

Biggenden Verification Monitoring

As the Biggenden system supplies a population less than 1000 biological verification monitoring is performed monthly. Key elements of Biggenden’s verification monitoring table are listed in **Table 3-1**.

Table 3-1 Biggenden Verification Monitoring

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
Bacterial <ul style="list-style-type: none"> E.coli Coliforms 	Nil detect		Biological contamination	Monthly. One sample is obtained.	Monthly. Two samples are obtained from the residual chlorine test locations shown in Table 15.1	QHFSS	<ol style="list-style-type: none"> NBRC Water and Wastewater Officer and Assistance Director – Technical Services notified. Public notification process. DEHP and Qld Health notified.
Physio Chemical <ul style="list-style-type: none"> Turbidity pH 	<ul style="list-style-type: none"> 0.2 to 0 NTU C 	<ul style="list-style-type: none"> 5 NTU 6.5 to 8.5 - 	Reduced aesthetic quality.		–Monthly. One sample is obtained from the residual chlorine test locations shown in	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence.

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
•					Table 15.1		3. Corrective action implemented and documented
General Metals • Manganese • Copper •	• 0.5 • 2 •	• 0.1 • 1 •	Exceedence of health based limits.		Monthly. One sample obtained as above.	QHFSS	1. Water Quality Data received from analysing authority. 2. Incident report completed identifying the cause of exceedence. 3. Corrective action implemented and documented
Heavy Metals • Arsenic	• 0.01	• N/A	Exceedence of health based limits.	12 monthly. One sample obtained.		QHFSS	1. Water Quality Data received from analysing authority. 2. Incident report completed identifying the cause of exceedence. 3. Corrective action implemented and documented – investigate alternate water sources
Anions • Nitrate •	• 50 •	• - •	Exceedence of health based limits.		Monthly. One sample obtained as above	QHFSS	1. Water Quality Data received from analysing authority. 2. Incident report completed identifying the cause of exceedence. 3. Corrective action implemented and documented

Biggenden Verification Monitoring Results 2016-2017

	E.coli	Coliforms	Turbidity	pH	Manganese	Copper	Nitrate	Arsenic
Result (max/min)	0	0	<1NTU	6.56-7.85	<0.01mg/l	<0.03mg/l	<2.5mg/l	.0012mg/l
Guideline Value, ADWG (2004)	Zero in 100ml	Zero in 100ml	<5NTU	6.5-8.5	0.5mg/l	2mg/l	50mg/l	.01mg/l
Number of Samples tested	30	30	11	11	11	11	11	1
Number of exceedances	0	0	0	0	0	0	0	0
% Compliance with ADWG	100%	100%	100%	100%	100%	100%	100%	100%

Eidsvold Verification Monitoring

The Eidsvold system also services a population less than 1000, however because of a past history of exceedences biological verification monitoring is performed weekly. Key elements of Eidsvold’s verification monitoring table are listed in **Table 3-2**.

Table 3-2 Eidsvold Verification Monitoring

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
Bacterial <ul style="list-style-type: none"> E.coli Coliforms 	Nil detect		Biological contamination	Weekly. One sample is obtained.	Weekly. Two samples are obtained from the residual chlorine test locations shown in Table 15.2	QHFSS	<ol style="list-style-type: none"> NBRC Water and Wastewater Officer and Assistance Director – Technical Services notified. Public notification process. DEHP and Qld Health notified.
Physio Chemical <ul style="list-style-type: none"> Turbidity pH 	<ul style="list-style-type: none"> 0.2 to 0 NTU C 	<ul style="list-style-type: none"> 5 NTU 6.5 to 8.5 	Reduced aesthetic quality.	–	– Monthly. One sample is obtained from the residual chlorine test locations shown in Table 15.2	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence. Corrective action implemented and documented
General Metals <ul style="list-style-type: none"> Manganese Copper 	<ul style="list-style-type: none"> 0.5 2 	<ul style="list-style-type: none"> 0.1 1 	Exceedance of health based limits.		Monthly. One sample obtained as above	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence.

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
							3. Corrective action implemented and documented
Anions • Nitrate •	• 50 •	• - •	Exceedance of health based limits.		Monthly One sample obtained as above	QHFSS	1. Water Quality Data received from analysing authority. 2. Incident report completed identifying the cause of exceedence. 3. Corrective action implemented and documented

Eidsvold Verification Monitoring Results 2016-2017

	E.coli	Coliforms	Turbidity	pH	Manganese	Copper	Nitrate
Result (max/min)	0	0	3NTU	7.62-8.20	0.05mg/l	<0.04mg/l	<1.4mg/l
Guideline Value, ADWG (2004)	Zero in 100ml	Zero in 100ml	<5NTU	6.5-8.5	0.5mg/l	2mg/l	50mg/l
Number of Samples tested	127	127	42	42	42	42	42
Number of exceedances	0	0	0	0	0	0	0
% Compliance with ADWG	100%	100%	100%	100%	100%	100%	100%

Gayndah Verification Monitoring

As the Gayndah system serves more than 1000 population biological verification monitoring is performed weekly. Key elements of Gayndah’s verification monitoring table are listed in **Table 3-3**.

Table 3-3 Gayndah Verification Monitoring

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
Bacterial <ul style="list-style-type: none"> E.coli Coliforms 	Nil detect		Biological contamination	Weekly One sample is obtained.	Weekly. Two samples are obtained from the residual chlorine test locations shown in Table 15.3	QHFSS	<ol style="list-style-type: none"> NBRC Water and Wastewater Officer and Assistance Director – Technical Services notified. Public notification process. DEHP and Qld Health notified.
Physio Chemical <ul style="list-style-type: none"> Turbidity pH 	<ul style="list-style-type: none"> 0.2 to 0 NTU C 	<ul style="list-style-type: none"> 5 NTU 6.5 to 8.5 	Reduced aesthetic quality.	–	– Monthly. One sample is obtained from the residual chlorine test locations shown in Table 15.3	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence. Corrective action implemented and documented
General Metals <ul style="list-style-type: none"> Manganese 	<ul style="list-style-type: none"> 0.5 	<ul style="list-style-type: none"> 0.1 	Exceedence of health based limits.		Monthly One sample obtained as above	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority.

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
<ul style="list-style-type: none"> Copper 	<ul style="list-style-type: none"> 2 	<ul style="list-style-type: none"> 1 					<ol style="list-style-type: none"> Incident report completed identifying the cause of exceedence. Corrective action implemented and documented
Anions <ul style="list-style-type: none"> Nitrate 	<ul style="list-style-type: none"> 50 	<ul style="list-style-type: none"> - 	Exceedance of health based limits.		Monthly One sample obtained as above	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence. Corrective action implemented and documented

Gayndah Verification Monitoring Results 2016-2017

	E.coli	Coliforms	Turbidity	pH	Manganese	Copper	Nitrate
Result (max/min)	0	0	2NTU	6.69-7.87	<0.01mg/l	0.14mg/l	2.7mg/l
Guideline Value, ADWG (2004)	Zero in 100ml	Zero in 100ml	<5NTU	6.5-8.5	0.5mg/l	2mg/l	50mg/l
Number of Samples tested	123	123	44	44	44	44	44
Number of exceedances	0	0	0	0	0	0	0
% Compliance with ADWG	100%	100%	100%	100%	100%	100%	100%

Monto Verification Monitoring

The Monto system services a population greater than 1000 so biological verification monitoring is performed weekly. Key elements of Monto’s verification monitoring table are listed in **Table 3-4**.

Table 3-4 Monto Verification Monitoring

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
Bacterial <ul style="list-style-type: none"> E.coli Coliforms 	Nil detect		Biological contamination	Weekly. One sample is obtained.	Weekly. Two samples are obtained from the residual chlorine test locations shown in Table 15.4	QHFSS	<ol style="list-style-type: none"> NBRC Water and Wastewater Officer and Assistance Director – Technical Services notified. Public notification process. DEHP and Qld Health notified.
Physio Chemical <ul style="list-style-type: none"> Turbidity pH 	<ul style="list-style-type: none"> 0.2 to 0 NTU C 	<ul style="list-style-type: none"> 5 NTU 6.5 to 8.5 	Reduced aesthetic quality.	–	–Monthly. One sample is obtained from the residual chlorine test locations shown in Table 15.4	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence. Corrective action implemented and documented
General Metals <ul style="list-style-type: none"> Manganese Copper 	<ul style="list-style-type: none"> 0.5 2 	<ul style="list-style-type: none"> 0.1 1 	Exceedence of health based limits.		Monthly One sample obtained as above	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence. Corrective action implemented

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
							and documented
Anions • Nitrate •	• 50 •	• - •	Exceedence of health based limits.		Monthly One sample obtained as above	QHFSS	1. Water Quality Data received from analysing authority. 2. Incident report completed identifying the cause of exceedence. 3. Corrective action implemented and documented

Monto Verification Monitoring Results 2016-2017

	E.coli	Coliforms	Turbidity	pH	Manganese	Copper	Nitrate
Result (max/min)	0	0	8NTU	7.29-7.81	<0.01mg/l	<0.03mg/l	6.3mg/l
Guideline Value, ADWG (2004)	Zero in 100ml	Zero in 100ml	<5NTU	6.5-8.5	0.5mg/l	2mg/l	50mg/l
Number of Samples tested	138	138	11	11	11	11	11
Number of exceedances	0	0	0	0	0	0	0
% Compliance with ADWG	100%	100%	100%	100%	100%	100%	100%

Mount Perry Verification Monitoring

The Mount Perry system services a population less than 1000 and biological verification monitoring is performed monthly. Key elements of Mount Perry’s verification monitoring table are listed in **Table 3-5**.

Table 3-5 Mount Perry Verification Monitoring

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
Bacterial <ul style="list-style-type: none"> E.coli Coliforms 	Nil detect		Biological contamination	Monthly. One sample is obtained.	Monthly. One sample is obtained from the residual chlorine test locations shown in Table 15.5	QHFSS	<ol style="list-style-type: none"> NBRC Water and Wastewater Officer and Assistance Director – Technical Services notified. Public notification process. DEHP and Qld Health notified.
Physio Chemical <ul style="list-style-type: none"> Turbidity pH 	<ul style="list-style-type: none"> 0.2 to 0 NTU C 	<ul style="list-style-type: none"> 5 NTU 6.5 to 8.5 	Reduced aesthetic quality.	–	–Monthly. One sample is obtained from the residual chlorine test locations shown in Table 15.5	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence. Corrective action implemented and documented
General Metals <ul style="list-style-type: none"> Manganese Copper 	<ul style="list-style-type: none"> c 0.5 c 	<ul style="list-style-type: none"> 0.3 0.1 0.2 	Exceedence of health based limits.		Monthly One sample obtained as above	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence.

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
	<ul style="list-style-type: none"> • 4 • 2 • 	<ul style="list-style-type: none"> • N/A • 1 • 					3. Corrective action implemented and documented
Anions <ul style="list-style-type: none"> • Nitrate • 	<ul style="list-style-type: none"> • 50 • 	<ul style="list-style-type: none"> • - • 	Exceedence of health based limits.		Monthly One sample obtained as above	QHFSS	1. Water Quality Data received from analysing authority. 2. Incident report completed identifying the cause of exceedence. 3. Corrective action implemented and documented

Mount Perry Verification Monitoring Results 2016-2017

	E.coli	Coliforms	Turbidity	pH	Manganese	Copper	Nitrate
Result (max/min)	0	0	<1NTU	7.37-7.82	<0.01mg/l	0.16mg/l	<0.5mg/l
Guideline Value, ADWG (2004)	Zero in 100ml	Zero in 100ml	<5NTU	6.5-8.5	0.5mg/l	2mg/l	50mg/l
Number of Samples tested	29	29	11	11	11	11	11
Number of exceedances	0	0	0	0	0	0	0
% Compliance with ADWG	100%	100%	100%	100%	100%	100%	100%

Mulgildie Verification Monitoring

The Mulgildie system services a population less than 1,000 and biological verification monitoring is performed monthly. Key elements of Mulgildie’s verification monitoring table are listed in **Table 3-6**.

Table 3-6 Mulgildie Verification Monitoring

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
Bacterial <ul style="list-style-type: none"> E.coli Coliforms 	Nil detect		Biological contamination	Monthly. One sample is obtained.	Monthly. One sample is obtained from the residual chlorine test locations shown in Table 15.6	QHFSS	<ol style="list-style-type: none"> NBRC Water and Wastewater Officer and Assistance Director – Technical Services notified. Public notification process. DEHP and Qld Health notified.
Physio Chemical <ul style="list-style-type: none"> Turbidity pH 	<ul style="list-style-type: none"> 0.2 to 0 NTU C 	<ul style="list-style-type: none"> 5 NTU 6.5 to 8.5 	Reduced aesthetic quality.	–	–Monthly. One sample is obtained from the residual chlorine test locations shown in Table 15.6	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence. Corrective action implemented and documented
General Metals <ul style="list-style-type: none"> Manganese Copper 	<ul style="list-style-type: none"> 0.5 2 	<ul style="list-style-type: none"> 0.1 1 	Exceedence of health based limits.		Monthly One sample obtained as above	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence. Corrective action implemented

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
							and documented
Anions • Nitrate •	• 50 •	• - •	Exceedence of health based limits.		Monthly One sample obtained as above	QHFSS	1. Water Quality Data received from analysing authority. 2. Incident report completed identifying the cause of exceedence. 3. Corrective action implemented and documented

Mulgildie Verification Monitoring Results 2016-2017

	E.coli	Coliforms	Turbidity	pH	Manganese	Copper	Nitrate
Result (max/min)	0	0	3NTU	6.83-7.88	<0.01mg/l	<0.03mg/l	1.3mg/l
Guideline Value, ADWG (2004)	Zero in 100ml	Zero in 100ml	<5NTU	6.5-8.5	0.5mg/l	2mg/l	50mg/l
Number of Samples tested	22	22	11	11	11	11	11
Number of exceedances	0	0	0	0	0	0	0
% Compliance with ADWG	100%	100%	100%	100%	100%	100%	100%

Mundubbera Verification Monitoring

The Mundubbera system services a population greater than 1000 and biological verification monitoring is performed weekly. Key elements of Mundubbera’s verification monitoring table are listed in **Table 3-7**.

Table 3-7 Mundubbera Verification Monitoring

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
Bacterial <ul style="list-style-type: none"> E.coli Coliforms 	Nil detect		Biological contamination	Weekly. One sample is obtained.	Weekly. Two samples are obtained from the residual chlorine test locations shown in Table 15.7	QHFSS	<ol style="list-style-type: none"> NBRC Water and Wastewater Officer and Assistance Director – Technical Services notified. Public notification process. DEHP and Qld Health notified.
Physio Chemical <ul style="list-style-type: none"> Turbidity pH 	<ul style="list-style-type: none"> 0.2 to 0 NTU C - 	<ul style="list-style-type: none"> 5 NTU 6.5 to 8.5 	Reduced aesthetic quality.	–	–Monthly. One sample is obtained from the residual chlorine test locations shown in Table 15.7	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence. Corrective action implemented and documented
General Metals <ul style="list-style-type: none"> Manganese Copper 	<ul style="list-style-type: none"> 0.5 2 	<ul style="list-style-type: none"> 0.1 1 	Exceedence of health based limits.		Monthly One sample obtained as above	QHFSS	<ol style="list-style-type: none"> Water Quality Data received from analysing authority. Incident report completed identifying the cause of exceedence. Corrective action implemented

Contaminant Class	ADWG Value (mg/L unless specified)		Associated Hazard	Frequency		Analysing Authority	Response to Exceedences
	Health	Aesthetic		At WTP Outlet	In distribution system		
							and documented
Anions • Nitrate •	• 50 •	• - •	Exceedence of health based limits.		Monthly One sample obtained as above	QHFSS	1. Water Quality Data received from analysing authority. 2. Incident report completed identifying the cause of exceedence. 3. Corrective action implemented and documented

Mundubbera Verification Monitoring Results 2016-2017

	E.coli	Coliforms	Turbidity	pH	Manganese	Copper	Nitrate
Result (max/min)	0	0	2NTU	6.78-8.05	<0.04mg/l	0.59mg/l	2.0mg/l
Guideline Value, ADWG (2004)	Zero in 100ml	Zero in 100ml	<5NTU	6.5-8.5	0.5mg/l	2mg/l	50mg/l
Number of Samples tested	136	136	48	48	48	48	48
Number of exceedances	0	0	0	0	0	0	0
% Compliance with ADWG	100%	100%	100%	100%	100%	100%	100%

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

This financial year there was one instance where the Regulator was notified under sections 102 or 102A of the Act.

On the 24/05/17 there was a Chlorine exceedance (8mg/L in Reticulation system) which occurred in the Eidsvold Water Scheme. The exceedance was reported to the regulator within 3 Hours of the event. Reservoir One was emptied and flushing of the reticulation was actioned whilst the township was fed off of Reservoir 2.

A subsequent investigation concluded:

The primary cause was operator error. A chlorine analyser cell had been isolated for maintenance and had not been put back on line. This resulted in the chlorine pump dosing continually to try and reach its set point value.

Since the exceedance North Burnett Regional Council has installed an additional Chlorine Analyser (linked to SCADA) at Reservoir One to ensure compliance with ADWG 2011 limits.

5. Customer complaints related to water quality

Customer Service Standards regarding water quality and continuity of supply were fully achieved during 2015/2016. The table below shows the results achieved against targets set. North Burnett Regional Council's customer service standards have been reviewed in accordance with changes to the Water Supply (Safety and Reliability) Act 2008 (Qld) and the Customer Service Standards Notice issued to North Burnett Regional Council in 2015.

Performance Indicators	Target	Actual
Continuity of your water supply		
Notice of planned interruption	≥ 48 hours	100%
Restoration of services from a planned interruption	90% restored within 6 hours	100%
Response to unplanned interruption after notification	≤ 2 hours	100%
Restoration of services from an unplanned interruption	90% restored within 5 hours	100%
Frequency of unplanned service interruptions	≤ 100 main breaks/100 km main/yr.	51.9
Quality of your water supply		
Treated Drinking Water Quality - Physical/Chemical parameters only	≥ 80% ADWG Aesthetic parameter compliance	100%
Treated Drinking Water Quality - microbiological	≥ 98% Faecal coliforms compliance	100%
No. of drinking water complaints per 1,000 connections/year	≤ 50	2.4
Adequacy of your water supply		
Water pressure	≥ 16m ≥ 95% of the time	100%
Water Flow	≥ 20l/s ≥ 90% of the time	100%

6. Audit Results.

Results of an audit of the DWQMP

NBRC's DWQMP has not yet been externally audited.