Drinking Water Quality Management DWQMP – Annual Report

2014-2015

Whitsunday Regional Council

Service Provider No.: 501 M

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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	*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 Whitsunday Regional Council's drinking water service with respect to water quality and performance in implementing the actions detailed in the 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.

It 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. Overview of Operations

Water and waste is managed within Whitsunday Regional Council by a separate business unit "Whitsunday Region Water and Waste" since July 2015.

Whitsunday Region Water and Waste maintains and operates 4 water treatment plants, supplying water to a seasonally fluctuating population of over 35 000 people, including residential, commercial, tourism and industrial customers.

Table 1 – Drinking Water Supplies

Scheme	Communities Served	Source	Treatment	Population served	Demand, ML/day
Bowen	Bowen, Brisk Bay, Merinda	Sub-surface intake in the Proserpine River	Conventional Flocculation with Dual media filtration. Disinfected with Sodium Hypochlorite.	10 800	8.4
Collinsville	Collinsville, Scottsville	Bowen River Weir, from Eungella Dam (Sunwater)	Conventional Flocculation and filtration. Disinfected with Sodium Hypochlorite.	3 800	2.3
Proserpine	Proserpine, Mt Julian	Aquifer bores, supplemented from Peter Faust Dam	Conventional Flocculation with Dual media filtration. Disinfected with Sodium Hypochlorite.	3 400	1.7
Coastal	Cannonvale, Airlie Beach, Mt Julian, Jubilee Pocket	Aquifer bores	Conventional Flocculation with Dual media filtration. Disinfected with Sodium Hypochlorite.	14 600	7.3

3. Actions taken to implement the DWQMP

Water quality has been ensured by the implementation of safeguards and barriers identified in the DWQMP. The number of barriers and safeguarding of the region's water quality have been hugely increased in the Bowen, Proserpine, Cannonvale and Airlie beach areas due to the new advanced water treatment plants. Water quality in other areas such as Collinsville

has been kept to high standards with the implementation of sampling regimes, maintenance schedules and hazard identifications highlighted in the DWQMP

Progress in implementing the risk management improvement program.

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

All risk management improvement programs outlined in the DWQMP have been implemented or are part of an ongoing maintenance strategy.

Revisions made to the operational monitoring program to assist in maintaining the compliance with water quality criteria[1] in verification monitoring.

Operational monitoring will be assessed as part of the DWQMP review currently underway. Risk assessments have been carried out covering the new plants and systems.

Amendments made to the DWQMP

No amendments have been completed, but are underway.

4. 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.

All samples taken during this financial year met the recommended values in the Australian Drinking Water Guidelines.

E. coli
There were no E.coli detected in any sample taken during this financial year.

Fluoride
Fluoride is not added to water within the Whitsunday Regional Council area, so levels detected are natural background levels.

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

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

There were no notifications involving the detection of *E. coli* – an organism that may not directly represent a hazard to human health, but indicates the presence of recent faecal contamination. There were no incidents which required Whitsunday Region Council to issue a boil water or do not drink notice in the communities.

There were no non-compliances with water quality criteria.

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

6. Customer complaints related to water quality

Whitsunday 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 2 - complaints about water quality

	Suspected Illness	Discoloured water	Taste and odour	Total
Bowen	1	8	2	11
Coastal	0	9	4	13
Collinsville	0	1	0	1
Proserpine	0	10	0	10
Total	1	28	6	35

Suspected Illness

The single suspected illness complaint concerned a young girl with a rash. Investigation revealed full compliance with guidelines. No risk to human health was determined.

Discoloured water

28 dirty water customer complaints were received from throughout the Whitsunday Regional Council area during the 2014-15 year. In each case the localised area was flushed to achieve clear water. No further action was required.

Taste and odour

Approximately half the taste and odour complaints were related to Chlorine, investigation indicated normal levels. No risk to human health was determined.

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

A previous review of the DWQMP indicated that it is no longer relevant to the new updated infrastructure, policies and procedures of Whitsunday Regional Council. It was recommended to update all information within the DWQMP, including hazard identification and risk management improvement programs.

In line with this recommendation, hazard identification workshops were held in July 2014 and May 2015. During this period there were significant changes in staff. The risk assessment process was carried out in conjunction with the hazard identification workshops to develop a complete and accurate assessment of the infrastructure through collaboration. The DWQMP is currently in the process of a complete rewrite.

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.

Verification monitoring was carried out as per the program stated in the DWQMP

The verification monitoring program is under review as part of the DWQMP review.

Table 3a - Verification monitoring results – Bowen Scheme

	Parameter	Units	Total No. samples collected	No. of samples in which parameter was detected	No. of samples exceeding water quality criteria	Min	Max	Average (mean)	Limit of reporting
In-house	pH		365	365	0	7.21	7.39	7.29	
	Electrical Conductivity	uS/cm	94	94	0	240	568	333	
	Turbidity	NTU	365	365	0	0.039	0.141	0.076	1
	Colour	Pt/Co	364	349	0	0	2	1	1
	Free Chlorine Residual	mg/L	365	365	0	1.05	3.13	1.87	0.01
	Total Chlorine Residual	mg/L	40	40	0	1.37	3.41	2.01	0.01
	Iron	mg/L	365	305	0	0	0.04	0.01	0.01
	Manganese	mg/L	365	363	0	0	0.014	0.003	0.001
	Aluminium	mg/L	365	365	0	0.001	0.034	0.018	0.001
	Alkalinity	mg/L	94	94	0	49.2	99	72.7	0.1
	Total Hardness	mg/L	94	94	0	44	130	74.1	0.1
NATA Lab Results	pH		19	19	0	7.39	7.81	7.57	
	Electrical Conductivity	uS/cm	19	19	0	273	581	355	
	Turbidity	NTU	19	2	0	<1	1	<1	1
	Total Alkalinity	mg/L	19	19	0	55	100	69.7	1
	Chloride	mg/L	19	19	0	34	100	53.3	1
	Sulphate	mg/L	19	19	0	13.1	18.4	15.7	0.1
	Fluoride	mg/L	19	19	0	0.05	0.08	0.07	0.01
	Hardness	mg/L	19	19	0	51	121	69.7	1
	Silica	mg/L	19	19	0	13	16	14.5	1
	Sodium	mg/L	19	19	0	32	62	40.6	1
	Potassium	mg/L	19	19	0	1.9	3.1	2.3	0.1
	Calcium	mg/L	19	19	0	11	29	16	1
	Iron	mg/L	19	1	0	<0.01	0.02	<0.01	0.005
	Manganese	mg/L	19	0	0	<0.01	<0.01	<0.01	0.0001
	Magnesium	mg/L	19	19	0	5.3	12	7.2	0.1
	Aluminium	mg/L	19	18	0	<0.003	0.026	0.016	0.003
	Antimony	mg/L	19	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Arsenic	mg/L	19	14	0	<0.0001	0.0002	0.0002	0.0001
	Barium	mg/L	19	19	0	0.026	0.059	0.038	0.0001
	Beryllium	mg/L	19	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Boron	mg/L	19	19	0	0.022	0.028	0.026	0.0001
	Cadmium	mg/L	19	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Chromium	mg/L	19	2	0	0.0002	0.0003	0.0003	0.0001
	Cobalt	mg/L	19	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Copper	mg/L	19	19	0	0.003	0.12	0.034	0.001
	Lead	mg/L	19	15	0	0.0002	0.0039	0.0007	0.0001
	Molybdenum	mg/L	19	18	0	0.0002	0.0005	0.0003	0.0001
	Nickel	mg/L	19	15	0	0.0002	0.0004	0.0003	0.0001
	Selenium	mg/L	19	0	0	<0.001	<0.001	<0.001	0.0001
	Silver	mg/L	19	0	0	<0.001	<0.001	<0.001	0.001
	Strontium	mg/L	19	19	0	0.13	0.32	0.18	0.0001
	Thallium	mg/L	19	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Titanium	mg/L	19	0	0	<0.001	<0.001	<0.001	0.001
	Uranium	mg/L	19	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Vanadium	mg/L	19	18	0	0.0003	0.0015	0.0006	0.0001
	Zinc	mg/L	19	19	0	0.002	0.024	0.0084	0.001
	Chloroform	ug/L	12	12	0	2	32	9.8	1
	Bromodichloro methane	ug/L	12	12	0	6	49	15.1	1
	Dibromochloro methane	ug/L	12	12	0	9	55	18.9	1
	Bromoform	ug/L	12	12	0	3	15	7.6	1
	Total THM's	ug/L	12	12	0	25	151	49.6	4

Table 3b - Verification monitoring results – Coastal Scheme

	Parameter	Units	Total No. samples collected	No. of samples in which parameter was detected	No. of samples exceeding water quality criteria	Min	Max	Average (mean)	Limit of reporting
In-house	pH		365	365	0	7.21	7.44	7.31	
	Electrical Conductivity	uS/cm	99	99	0	321	445	373.6	
	Turbidity	NTU	365	365	0	0.052	0.15	0.1	1
	Colour	Pt/Co	365	353	0	0	2	1	1
	Free Chlorine Residual	mg/L	365	365	0	0.92	2.1	1.4	0.01
	Total Chlorine Residual	mg/L	58	58	0	1.03	2.13	1.5	0.01
	Iron	mg/L	365	298	0	0	0.03	0.01	0.01
	Manganese	mg/L	363	363	0	0.001	0.019	0.007	0.001
	Aluminium	mg/L	365	365	0	0.01	0.068	0.032	0.001
	Alkalinity	mg/L	94	94	0	62	114.4	86.5	0.1
	Total Hardness	mg/L	94	94	0	71.6	99.6	85.8	0.1
NATA Lab Results	pH		20	20	0	7.36	7.77	7.56	
	Electrical Conductivity	uS/cm	20	20	0	322	444	372	
	Turbidity	NTU	20	20	0	<1	<1	<1	1
	Total Alkalinity	mg/L	20	20	0	67	89	75.9	1
	Chloride	mg/L	20	20	0	44	71	56.1	1
	Sulphate	mg/L	20	20	0	12	15.2	13.6	0.1
	Fluoride	mg/L	20	20	0	0.06	0.1	0.08	0.01
	Hardness	mg/L	20	20	0	70	94	80.5	1
	Silica	mg/L	20	20	0	26	38	28.5	1
	Sodium	mg/L	20	20	0	35	46	40.1	1
	Potassium	mg/L	20	20	0	1.2	1.8	1.53	0.1
	Calcium	mg/L	20	20	0	15	21	18	1
	Iron	mg/L	20	12	0	0.005	0.036	0.014	0.005
	Manganese	mg/L	20	20	0	0.0008	0.013	0.0041	0.0001
	Magnesium	mg/L	20	20	0	7.5	10	8.7	0.1
	Aluminium	mg/L	20	20	0	0.026	0.17	0.063	0.003
	Antimony	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Arsenic	mg/L	20	20	0	0.0002	0.0003	0.0003	0.0001
	Barium	mg/L	20	20	0	0.022	0.036	0.027	0.0001
	Beryllium	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Boron	mg/L	20	20	0	0.021	0.028	0.026	0.0001
	Cadmium	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Chromium	mg/L	20	16	0	0.0002	0.0003	0.0002	0.0001
	Cobalt	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Copper	mg/L	20	20	0	0.004	0.02	0.01	0.001
	Lead	mg/L	20	20	0	0.0002	0.0012	0.0005	0.0001
	Molybdenum	mg/L	20	20	0	0.0002	0.0004	0.0003	0.0001
	Nickel	mg/L	20	8	0	0.0002	0.0011	0.0004	0.0001
	Selenium	mg/L	20	0	0	<0.001	<0.001	<0.001	0.0001
	Silver	mg/L	20	0	0	<0.001	<0.001	<0.001	0.001
	Strontium	mg/L	20	20	0	0.2	0.26	0.22	0.0001
	Thallium	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Titanium	mg/L	20	0	0	<0.001	<0.001	<0.001	0.001
	Uranium	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Vanadium	mg/L	20	20	0	0.0007	0.0021	0.0015	0.0001
	Zinc	mg/L	20	20	0	0.002	0.021	0.0073	0.001
	Chloroform	ug/L	12	12	0	8	26	12.9	1
	Bromodichloro methane	ug/L	12	12	0	15	30	18.6	1
	Dibromochloro methane	ug/L	12	12	0	16	28	20.5	1
	Bromoform	ug/L	12	12	0	5	10	6.8	1
	Total THM's	ug/L	12	12	0	47	91	58.75	4

Table 3c - Verification monitoring results – Collinsville Scheme

	Parameter	Units	Total No. samples collected	No. of samples in which parameter was detected	No. of samples exceeding water quality criteria	Min	Max	Average (mean)	Limit of reporting
In-house	pH		363	363	0	6.75	7.7	7.34	
	Electrical Conductivity	uS/cm	103	103	0	139	350	250	
	Turbidity	NTU	364	364	0	0.07	0.43	0.13	1
	Colour	Pt/Co	364	209	0	0	7	1.42	1
	Free Chlorine Residual	mg/L	354	354	0	0.76	3	1.72	0.01
	Total Chlorine Residual	mg/L	99	99	0	0.95	3.3	2.06	0.01
	Iron	mg/L	363	307	0	0	0.05	0.01	0.01
	Manganese	mg/L	363	329	0	0	0.1	0.01	0.001
	Aluminium	mg/L	363	363	0	0.007	0.1	0.034	0.001
NATA Lab Results	pH		12	12	0	7.19	7.6	7.4	
	Electrical Conductivity	uS/cm	12	12	0	177	341	286.9	
	Turbidity	NTU	12	1	0	1	1	1	1
	Total Alkalinity	mg/L	12	12	0	44	121	71.5	1
	Chloride	mg/L	12	12	0	16	32	25.8	1
	Sulphate	mg/L	12	12	0	14.2	40	28.1	0.1
	Fluoride	mg/L	12	9	0	0.05	0.07	0.06	0.01
	Hardness	mg/L	12	12	0	39	124	80.4	1
	Silica	mg/L	12	12	0	12	17	14.9	1
	Sodium	mg/L	12	12	0	17	35	24.8	1
	Potassium	mg/L	12	12	0	0.9	2.1	1.7	0.1
	Calcium	mg/L	12	12	0	9.4	30	19.1	1
	Iron	mg/L	12	6	0	0.006	0.009	0.0073	0.005
	Manganese	mg/L	12	12	0	0.0008	0.011	0.0042	0.0001
	Magnesium	mg/L	12	12	0	3.7	12	7.9	0.1
	Aluminium	mg/L	12	12	0	0.011	0.046	0.027	0.003
	Antimony	mg/L	12	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Arsenic	mg/L	12	10	0	0.0002	0.0003	0.0002	0.0001
	Barium	mg/L	12	12	0	0.014	0.042	0.028	0.0001
	Beryllium	mg/L	12	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Boron	mg/L	12	12	0	0.014	0.026	0.022	0.0001
	Cadmium	mg/L	12	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Chromium	mg/L	12	1	0	0.0002	0.0002	0.0002	0.0001
	Cobalt	mg/L	12	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Copper	mg/L	12	12	0	0.004	0.082	0.0293	0.001
	Lead	mg/L	12	9	0	0.0002	0.0007	0.0004	0.0001
	Molybdenum	mg/L	12	12	0	0.0002	0.0006	0.0004	0.0001
	Nickel	mg/L	12	11	0	0.0002	0.0003	0.0003	0.0001
	Selenium	mg/L	12	0	0	<0.001	<0.001	<0.001	0.0001
	Silver	mg/L	12	0	0	<0.001	<0.001	<0.001	0.001
	Strontium	mg/L	12	12	0	0.07	0.23	0.16	0.0001
	Thallium	mg/L	12	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Titanium	mg/L	12	0	0	<0.001	<0.001	<0.001	0.001
	Uranium	mg/L	12	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Vanadium	mg/L	12	12	0	0.0009	0.0033	0.0021	0.0001
	Zinc	mg/L	12	12	0	0.004	0.12	0.0465	0.001
	Chloroform	ug/L	8	8	0	10	43	22.1	1
	Bromodichloro methane	ug/L	8	8	0	6	27	16.4	1
	Dibromochloro methane	ug/L	8	8	0	2	16	9	1
	Bromoform	ug/L	8	8	0	1	2	1.1	1
	Total THM's	ug/L	8	8	0	20	75	45.8	4

Table 3d - Verification monitoring results – Proserpine Scheme

	Parameter	Units	Total No. samples collected	No. of samples in which parameter was detected	No. of samples exceeding water quality criteria	Min	Max	Average (mean)	Limit of reporting
In-house	pH		90	90	0	7.45	7.72	7.6	
	Electrical Conductivity	uS/cm	90	90	0	205	434	278.9	
	Turbidity	NTU	90	90	0	0.008	0.563	0.15	1
	Colour	Pt/Co	90	85	0	0	2	1	1
	Free Chlorine Residual	mg/L	90	90	0	0.62	1.01	0.8	0.01
	Total Chlorine Residual	mg/L	66	90	0	0.71	1.15	0.9	0.01
	Iron	mg/L	90	90	0	0.01	0.2	0.02	0.01
	Manganese	mg/L	90	90	0	0.001	0.056	0.009	0.001
	Aluminium	mg/L	66	90	0	0.002	0.036	0.016	0.001
	Alkalinity	mg/L	52	90	0	53.2	91.6	70	0.1
	Total Hardness	mg/L	52	90	0	57.2	89.6	70.2	0.1
NATA Lab Results	pH		20	20	0	7.44	7.72	7.58	
	Electrical Conductivity	uS/cm	20	20	0	244	421	312	
	Turbidity	NTU	20	0	0	<1	<1	<1	1
	Total Alkalinity	mg/L	20	20	0	48	81	58.6	1
	Chloride	mg/L	20	20	0	32	63	46.7	1
	Sulphate	mg/L	20	20	0	13.7	19	15.9	0.1
	Fluoride	mg/L	20	20	0	0.06	0.09	0.07	0.01
	Hardness	mg/L	20	20	0	47	79	61.4	1
	Silica	mg/L	20	20	0	16	47	22.9	1
	Sodium	mg/L	20	20	0	27	49	35.2	1
	Potassium	mg/L	20	20	0	1.2	2.2	1.9	0.1
	Calcium	mg/L	20	20	0	10	17	13.2	1
	Iron	mg/L	20	10	0	0.005	0.044	0.0151	0.005
	Manganese	mg/L	20	20	0	0.0012	0.09	0.0111	0.0001
	Magnesium	mg/L	20	20	0	5.1	9.2	6.9	0.1
	Aluminium	mg/L	20	20	0	0.014	0.051	0.03	0.003
	Antimony	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Arsenic	mg/L	20	17	0	0.0002	0.0003	0.0002	0.0001
	Barium	mg/L	20	20	0	0.014	0.033	0.024	0.0001
	Beryllium	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Boron	mg/L	20	20	0	0.021	0.027	0.025	0.0001
	Cadmium	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Chromium	mg/L	20	2	0	0.0002	0.0002	0.0002	0.0001
	Cobalt	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Copper	mg/L	20	20	0	0.004	0.034	0.0106	0.001
	Lead	mg/L	20	7	0	0.0002	0.0013	0.0004	0.0001
	Molybdenum	mg/L	20	19	0	0.0002	0.0004	0.0003	0.0001
	Nickel	mg/L	20	3	0	0.0002	0.0004	0.0003	0.0001
	Selenium	mg/L	20	0	0	<0.001	<0.001	<0.001	0.0001
	Silver	mg/L	20	0	0	<0.001	<0.001	<0.001	0.001
	Strontium	mg/L	20	20	0	0.12	0.22	0.16	0.0001
	Thallium	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Titanium	mg/L	20	0	0	<0.001	<0.001	<0.001	0.001
	Uranium	mg/L	20	0	0	<0.0001	<0.0001	<0.0001	0.0001
	Vanadium	mg/L	20	20	0	0.0005	0.0021	0.0011	0.0001
	Zinc	mg/L	20	20	0	0.002	0.011	0.0054	0.001
	Chloroform	ug/L	12	12	0	0	7	3.1	1
	Bromodichloro methane	ug/L	12	12	0	3	13	7.4	1
	Dibromochloro methane	ug/L	12	12	0	7	17	12.2	1
	Bromoform	ug/L	12	12	0	3	8	5.4	1
	Total THM's	ug/L	12	12	0	15	43	28.1	4

Table 4 - Reticulation *E. coli* verification monitoring

Drinking water scheme:	Year	Month	No. of samples collected	No. of samples collected in which E. coli is detected (i.e. a failure)	No. of samples collected in previous 12 month period	No. of failures for previous 12 month period	% of samples that comply	Compliance with 98% annual value
Bowen Scheme	2014	July	6	0	48	0	100	YES
		Aug	10	0	53	0	100	YES
		Sept	8	0	49	0	100	YES
		Oct	17	0	62	0	100	YES
		Nov	12	0	72	0	100	YES
		Dec	12	0	82	0	100	YES
	2015	Jan	13	0	94	0	100	YES
		Feb	16	0	104	0	100	YES
		Mar	12	0	114	0	100	YES
		Apr	12	0	123	0	100	YES
		May	12	0	132	0	100	YES
		June	12	0	142	0	100	YES
Proserpine and Coastal Schemes	2014	July	13	0	124	0	100	YES
		Aug	32	0	145	0	100	YES
		Sept	31	0	165	0	100	YES
		Oct	33	0	185	0	100	YES
		Nov	28	0	204	0	100	YES
		Dec	26	0	226	0	100	YES
	2015	Jan	29	0	244	0	100	YES
		Feb	41	0	274	0	100	YES
		Mar	28	0	291	0	100	YES
		Apr	28	0	309	0	100	YES
		May	28	0	326	0	100	YES
		June	25	0	342	0	100	YES
Collinsville Scheme	2014	July	15	0	135	0	100	YES
		Aug	12	0	135	0	100	YES
		Sept	13	0	133	0	100	YES
		Oct	15	0	139	0	100	YES
		Nov	12	0	142	0	100	YES
		Dec	12	0	148	0	100	YES
	2015	Jan	11	0	147	0	100	YES
		Feb	13	0	148	0	100	YES
		Mar	9	0	142	0	100	YES
		Apr	10	0	143	0	100	YES
		May	11	0	142	0	100	YES
		June	10	0	143	0	100	YES

Appendix B – Implementation of the DWQMP Risk Management Improvement Program

Table 5 – Progress against the risk management improvement program in the approved DWQMP

Scheme Component / Sub-component	Action(s)	Target date/s	Status as at July 2015	Additional Detail
Catchment - Proserpine River - Bowen Supply – Algal blooms	Construction of Bowen water treatment plant commenced May 2012. Completion 2013	*Dec-13*	*Complete*	
Catchment – Proserpine River – Bowen Supply - Chlorine Overdose	Consider automation by installing online chlorine analyser that provides feedback to dosing pumps and online monitoring capability.	*TBC*	*Purchase and installation budgeted in 2015-16*	
Catchment - Proserpine River - Proserpine Supply – Algal blooms	Construction of Proserpine water treatment plant commenced May 2012. Completion 2013	*Dec-13*	*Complete*	
Bowen at- grade storage reservoirs - Bacterial, Viral and Protozoan contamination due to payout of reservoirs in the event of high demand or main break	At-grade reservoirs have been isolated from system. If reservoirs are required for satisfactory system operation, reconfiguration of valving to be carried out to ensure water cycles through reservoirs	Dec-12	*50% At grade reservoirs have been disconnected from system.*	*Investigation, Design, scope of work and physical work etc to be completed by end June 2016*
Bowen and Cannonvale reservoirs - Bacterial, Viral and Protozoan contamination due to animal or human entry	Program for major repairs or replacement of roof structures where required	Inspections and minor repairs Oct 2012. Major repairs as funding becomes available, nominal timeframe 2017.	*major repair complete*	*Full restoration to be added to 2016-17 budget*
Council owned RPZDs in reticulation network	RPZD testing schedule to be implemented with checks to ensure tests are completed on time. Faulty devices to be repaired or replaced	Dec-12	*Complete - Ongoing*	*Lists compiled and added to maintenance schedule*
Operation and Maintenance Procedures	Additional procedures required identified, drafted, reviewed and implemented	Dec-12	*Complete – needs regular review*	*ongoing*
Coastal and Collinsville Water Treatment Plant security	Review of security at treatment plant sites to ensure access of unauthorised persons is adequately controlled	Dec-12	*Complete*	