Torres Strait Island
REGIONAL COUNCIL

Engineering Services

DRINKING WATER QUALITY MANAGEMENT PLAN

ANNUAL REPORT 2024

Torres Strait Island Regional Council Service Provider SP500

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1 Introduction

This is the Drinking Water Quality Management Plan (DWQMP) Annual Report for Torres Strait Island Regional Council (TSIRC) for the year ended 30 June 2024.

TSIRC is a registered service provider, identification (SPID) number 500, serving 4,083 people across 15 communities on 14 islands in the Torres Strait. Implementation of the approved DWQMP ensures safe drinking water to protect public health. An overview of the water services provided by TSIRC are listed below:

Table 1 Water Services Overview

Description	Metric
Population Served	4,083 people
No. of Raw Water Storage Facilities	12 lagoons
No. of Treated Water Storage Facilities	19 Reservoirs
Length of Delivery Mains	105km

This report summarises compliance with the approved plan over the financial year and includes:

- Activities undertaken during the year in operating the drinking water schemes
- Drinking water quality results for the year
- Summary of events that affected water quality during the year
- DWQMP review findings

This report is submitted to the Queensland Water Supply Regulator (Department of Regional Development, Manufacturing and Water - DRDMW) and is made available to the public through our website or for inspection upon request at any TSIRC office.

2 Summary of Schemes Operated

The table below summarises the drinking water schemes operated by TSIRC.

Table 2 Summary of Drinking Water Schemes Operated

			Raw Water Source						Pre-Treatment Process							Primary Treatment Process			
Scheme Name	Population	Connections	Well	Bore	Weir	Desalination	Lagoon (Rainfall)	Imported	Clarifier	Media Filtration	RO Desalination	Coagulation (Alum)	pH adjustment	Ultra-Filtration by TSC	Settling Tank	Ultra Filtration	Media Filtration	Bag Filtration	Chlorine Disinfection
01 - Boigu	199	82				3	1		■	■	■							■	■
02 - Dauan	131	58	4				1										■	■	■
03 - Saibai	340	104					1										■	■	■
04 - Mabuiag	253	60			1												■	■	■
05 - Badu	704	247	3									■	■			■			■
06 - Kubin	151	84	4		1		1										■	■	■
07 - St Pauls	242	118	3		1												■	■	■
08 - Hammond	253	100	1					1						■			■	■	■
09 - Iama	275	82				3				■	■				■				■
10 - Warraber	287	81				1	1			■	■						■	■	■
11 - Poruma	164	77				2	1			■	■				■		■		■
12 - Masig	283	106				2	1			■	■				■		■		■
13 - Ugar	69	34		2		1	1			■	■				■			■	■
14 - Erub	326	106	1				1									■			■
15 - Mer	406	111				3	1			■	■				■		■	■	■

3 Implementation of Drinking Water Quality Management Plan

Following a regular internal review of the DWQMP in June 2023, an application to amend the DWQMP was submitted. These amendments aimed to refine the 2022 DWQMP for better usability by field operators and to incorporate recommendations from the 2022 DWQMP audit findings and the Water Supply Regulator's August 2022 DWQMP approval conditions. The current version of the DWQMP was approved, with conditions, by the WSR on 30 May 2024. Hard copies have been distributed to each community and are also available online for engineering staff and on request.

3.1 Risk Management Improvement Plan

TSIRC's DWQMP Appendix K includes a Risk Management Improvement Plan (RMIP) which captures actions for improving the management of risks identified within the DWQMP. A copy of the RMIP as at 30 June 2024 is included in Appendix A.

3.2 Water Operator Training

TSIRC did not put any of its Water Officers through Cert II or Cert III training between July 2023 - June 2024.

In late 2021, TSIRC conducted a water symposium on Poruma where training was provided to the water operations team in conjunction with the Tropical Public Health Service. This symposium covered topics such as: leak detection, water chemistry, computer skills, water test equipment use and calibration and desalination.

In May 2022, TSIRC in conjunction with representatives from the Tropical Public Health Service and the Water Industry Operators Association of Australia commenced an operator skills mapping process to create an online platform to provide targeted and tailored Cert III training to key staff across the organisation. While progress has been made, this project has been reprioritised to be completed in 2025.

In June 2022, six water officers attended the Qld Health Water Symposium on Thursday Island, which included a training seminar and peer presentations.

As highlighted in Sections 4 and 5 of this report, insufficient operator training and support have contributed to drinking water incidents in the reporting period. Addressing this will be a focus for 2025.

3.3 Projects to Improve Water Quality

In addition to items in the RMIP, the following capital projects were completed in 2023-24, demonstrating TSIRC's commitment to improving water quality:

Table 3 Water quality improvement projects

Division	Project	Status
05 - Badu	Installation of dedicated reservoir outlet main to ensure appropriate chlorine levels in reservoir and reticulation network.	Works commenced November 2024

13 – Ugar	Installation of new desalination plant Installation of new WTP building with in-house laboratory	Completed
15 – Mer	Overhaul of 3 reverse osmosis desalination units	Completed

4 Operational and Verification Monitoring

TSIRC's DWQMP Appendix B - Water Quality Management describes the operational and verification monitoring parameters which are applicable to the various sample points across each water scheme:

- Daily testing: free chlorine, turbidity, conductivity and pH
- Monthly testing: E. coli
- 6 Monthly testing: metals, nutrients, anions and physical properties

The results from operational and verification monitoring sampling are presented in Appendix B and C respectively. Compliance with the E. coli 98% annual value is in Appendix D.

4.1 Operational Monitoring

A review of the data in Appendix B has highlighted that instances of results exceeding operational and reporting limits are being overlooked. Furthermore, many daily operational samples were missed. TSIRC has implemented alarms in SWIM to alert the W&WW team about breaches, enabling prompt investigations and reporting to regulators.

A lack of staff resourcing has contributed to things being missed, including the new SWIM alerts. Ongoing operator training is needed for understanding limits and proper sampling. Improved review of operational data and enhanced operator support are also identified areas for improvement.

4.2 Verification Monitoring

Review of the verification Monitoring Data highlighted three areas where treated drinking water was outside ADWG values:

- E. coli (refer Section 4.3 below)
- pH
- Hardness

All the Total Hardness results (measured as mg CaCO3 / L) were low (< 60 mg/L), except at Iama, indicating that the water in these communities is very soft. Excessively soft water can be corrosive, a common issue when reverse osmosis (RO) is used for water treatment. This is the case for many schemes experiencing soft water, including the following RO sites:

- Boigu
- Dauan
- Saibai
- Mabuiag
- Warraber
- Poruma
- Masig
- Ugar
- Erub
- Mer

Badu, Kubin and St Pauls also had results indicating soft water, however they do not use reverse osmosis. TSIRC will be investigating how to restore hardness to prevent corrosion, and the cause of softness at these communities. Hammond also had a low hardness result. This water is imported from another water service provider.

There was one high iron result (Boigu), and Warraber had one high Chloride and one high sodium result.

Figure 1 shows there were numerous missed verification samples during the reporting period. Logistics problems, like missed flights and delayed freight to the Cairns laboratory, were the main causes. TSIRC is taking steps to address this by reviewing and enhancing sampling logistics procedures, including better rescheduling of missed samples. There has been an improvement from last reporting period, with all schemes having at least one of two samples completed.

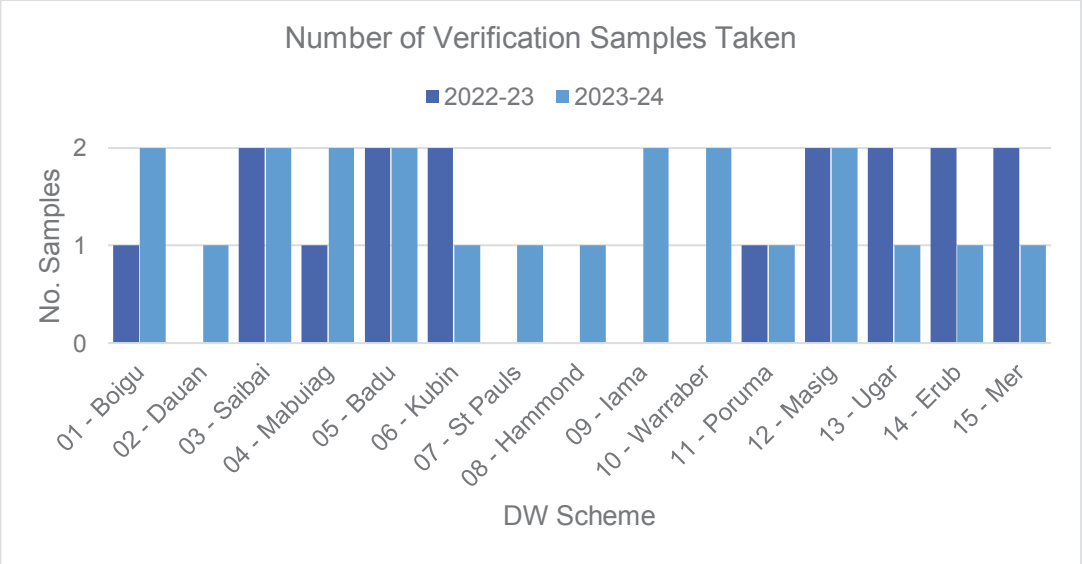


Figure 1 Number of Verification Samples Taken

4.3 E. coli Monitoring

There were two failed E. coli samples from operational and verification monitoring during the reporting period, both occurring at Badu on 2/5/24. The failures occurred during the active boil water alert (incident DWI-500-22-09492) at Badu so were not reported.

There were two E. coli detections on 9/2/24, at Warraber and Boigu, which were notified to the regulator (incidents DWI-500-24-10831 and DWI-500-24-10832 respectively). These samples were received outside the required 24-hour window for valid testing so these results were deemed invalid.

5 Incidents and Complaints

All incidents and complaints are managed in accordance with TSIRC's DWQMP Appendix G – Incidents and Complaints Management Plan. All known incidents and for this reporting period are summarised in Appendix E.

There was an increase in the number of complaints recorded in 2023-24, which were all resolved in a timely manner. Similar to prior years, the drinking water incidents in the reporting period revealed:

- Issues with chlorine dosing system hardware, an ongoing problem being addressed across all communities.
- Aged chlorine affecting effectiveness; water operators received guidance on proper handling, storage, and rotation.
- Need for improvement in operator training and support.

5.1 Alleged Illness

Alleged illness complaints are received from customers who believe their water supply is the cause of an illness. In these cases, recent laboratory samples are reviewed to supply information to the customer to reassure the water supply is meeting the Australian Drinking Water guidelines for health-related parameters.

5.2 Colour Complaints

Discoloured water can predominantly be attributed to emergency works being conducted on the water mains in the area. A change in flow direction can cause sediment to be disturbed in the pipe and push this into legs of water meters at resident's properties. While Water and Wastewater team endeavours to plan works were possible and deliver letters to residents explaining works, duration of time without water and potential effects such as dirty/cloudy water after the water is returned to service, emergencies still occur that require urgent attention and cannot be planned.

Water and Wastewater staff advise residents to run external taps to flush any dirty water trapped in their connection and if the water is still discoloured, Water and Wastewater staff return to the area and flush the delivery mains again.

5.3 Taste and Odour Complaints

The taste and odour complaints received are often related to chlorine in the network. Individual customers have very different tolerance levels and while as low as possible, this can be detected by customers with very sensitive taste and smell.

Chlorine can also react with organics in the pipe network, be affected by periods of low flow and temperature in the pipe network.

Water and Wastewater staff investigate all chlorine complaints and if recent results are not available for that area from daily testing, officers will attend the location and take a chlorine reading using a handheld chlorine meter.

6 DWQMP Audit Findings

The next external DWQMP audit is due in the year ended 30 June 2027.

7 DWQMP Internal Review

An internal review of the DWQMP was completed in June 2023. Based on the review findings, an application to amend the DWQMP was submitted to the regulator in August 2023. The regulator approved the amendments on 30 May 2024. A summary of the approved changes is provided in Appendix F.

Appendix A – Risk Management Improvement Plan (RMIP)

ID	Description	TSIRC Priority	Added Date	Status	Expected Completion Date	Availability of funding/ resources/ estimated cost	Comments	Scheme(s) Applicable
WS-01	Automated water parameter logging and/or business day testing of water parameters by water officer	Low	Sep-21	Commenced	5+ years	Unknown	Some WTP sites have turbidity analysers	All
WS-02	Install ultra filtration or UV for water scheme	Medium	Sep-21	Commenced	5+ years	Est. $1M per UF plant (note: no building works)	UF plants at Erub and Badu	1 2 3 4 6 7 8 9 10 11 12 13 15
WS-03	Provide hardstand or automated fire suppression system	Low	Sep-21	Not started	5+ years	Unknown	-	All
WS-04	Install escalated alarming system	High	Sep-21	Commenced	Dec-23	Funding available	Linked with WS-11	All
WS-05	Install automated backwash system	High	Sep-21	Commenced	5+ years	Est. $500k per WTP (note: no building works)	Automated backwash systems at Dauan, St Pauls, Kubin, Mabuiag and Hammond	1 3 4 9 10 11 12 13 14 15
WS-06	Provide E.coli testing station on island	Medium	Sep-21	Commenced	5+ years	Est. $100k per testing station (note: no building works)	E. Coli testing stations on Hammond, Badu, Iama, Dauan, Mabuiag and Ugar.	1 3 6 7 10 11 12 14 15
WS-08	Ensure all pipework is buried or SS316	Low	Sep-21	Not started	5+ years	Unknown	-	All
WS-09	Provide permanent desalination unit on island	Medium	Sep-21	Not started	5+ years	Est. $1M per desalination unit	-	All

ID	Description	TSIRC Priority	Added Date	Status	Expected Completion Date	Availability of funding/ resources/ estimated cost	Comments	Scheme(s) Applicable
WS-10	Ensure spare booster pump set is available on island for emergency installation	Medium	Sep-21	Not started	5+ years	Unknown	-	2
WS-12	Cyber security upgrade to radio telemetry networks (DNP3)	High	Sep-21	Not started	5+ years	Est. $2.5M	-	All
WS-13	Upgrade supply and return line to Badu reservoir (remove push / pull water system)	Very High	Sep-21	Commenced	Dec-24	Funding available	-	5
WS-14	Upgrade Erub reservoir to increase useable lifespan	Very High	Sep-21	Commenced	5+ years	Est. $1M	Temporary reservoir arrangement in place at Erub	14
WS-15	Develop stock procedures and ordering methodology	Medium	Sep-21	Commenced	Jun-24	Internal cost	-	All
WS-16	Develop preventative maintenance plan	Medium	Sep-21	Commenced	Jun-24	Internal cost	-	All
WS-17	Ensure water supply scheme reservoirs are adequately sized	Low	Sep-21	Not started	5+ years	Unknown	-	All
WS-18	Develop ownership agreement with TSC for 08 - Hammond Water Supply Scheme and establish communication protocol for TSC	Medium	Sep-21	Commenced	Dec-24	Internal cost	Draft MOU is in review	Hammond
WS-19	Install suitable chemical storage shed	Very High	Jul-23	Not started	5+ years	Unknown	Numerous site do not have adequate undercover chlorine storage available. New shed at Mer installed May-24	Verification Needed for relevant Schemes
WS-21	Raise Warraber seawall	Low	Jul-23	Not started	5+ years	Unknown	Refer to sea water inundation risks and actions under TSIRC's CHAS (Coastal Hazard Adaptation Strategy)	10

ID	Description	TSIRC Priority	Added Date	Status	Expected Completion Date	Availability of funding/ resources/ estimated cost	Comments	Scheme(s) Applicable
WS-22	Extend the water reticulation network at Kubin to include airport and motel	Low	Jul-23	Not started	5+ years	Unknown	-	6
WS-23	Create list of vulnerable customers	Medium	Jul-23	Not started	Jun-24	Internal cost	-	All
WS-24	Complete collection of sample point GPS locations. Merge GIS and TSIRC Mapping so maps of each island include infrastructure (buildings and mains) and accurate sample point locations.	Medium	Jul-23	Commenced	Jun-24	Internal cost	-	All
WS-25	Update schematics in A.3	Medium	Jul-23	Not started	Jun-25	Internal cost	Historical working versions have been lost so these need to be recreated and updated. Water Offcers still find these a useful resource for reference.	All
WS-26	Develop reactive and corrective maintenance plan	Medium	Dec-23	Commenced	Jun-24	Internal cost	-	All
WS-27	Review the CHAS Risk assessment for water assets and conduct water quality hazard assessment to identify scheme/community specific climate change risks. Broaden assessment to consider additional climate change hazards	Low	Jan-24	Not started	Dec-25	Internal Cost	Refer to background documentation and CHAS to understand climate change risks and responses for each community. Could focus on priority communities as a starting point.	All

ID	Description	TSIRC Priority	Added Date	Status	Expected Completion Date	Availability of funding/ resources/ estimated cost	Comments	Scheme(s) Applicable
WS-28	Raw water samples for seawater and saline groundwater sources	Low	Jan-24	Not started	Jun-25		Informs Raw Water Catchment Categorisation, refer DWQMP 2.2.6 and Appendix A.1.2.2 as well as mitigating lagoon Pathogen/Microbial Contaminant Hazards set out in the Appendix K.4	1 3 9 10 11 12 13 15
WS-29	Reassess the treatment barrier LRVs from manufacturer values and operating conditions.	Low	Jan-24	Not started	Jun-25		Informs Raw Water Catchment Categorisation, refer DWQMP 2.2.6 and Appendix A.1.2.2	All
WS-30	Investigate improvements to treatment barriers to achieve target LRVs	High	Jan-24	Commenced	Aug-24		-	All
WS-31	Investigate WTP and STP site security improvements	Medium	Dec-23	Not started	Jun-26	Unknown	-	All
WS-33	Investigate temporary intake line or alternative intake options to minimise potential for water loss due to poor jetty conditions	Low	Feb-24	Not Started			Boigu Jetty collapse Risk (Risk1.07)	1
WS-34	Raise Poruma seawall (or other as per CHAS)	Low	Jul-23	Not started	5+ years	Unknown	Refer to sea water inundation risks and actions under TSIRC's CHAS (Coastal Hazard Adaptation Strategy)	11
WS-35	Raise Masig seawall (or other as per CHAS)	Low	Jul-23	Not started	5+ years	Unknown	Refer to sea water inundation risks and actions under TSIRC's CHAS (Coastal Hazard Adaptation Strategy)	12
WS-36	Add a priority field for logging water defects / issues via the on-line tool to distinguish between the urgency of each work item.	Medium	Jan-24	Not Started	45474	NA	-	All

ID	Description	TSIRC Priority	Added Date	Status	Expected Completion Date	Availability of funding/ resources/ estimated cost	Comments	Scheme(s) Applicable
WS-37	Test and confirm alarms at each WTP	High	Jan-24	Not Started	Dec-24	NA	-	All
WS-38	Updating SWIM to include warning limits to match the CCP Matrix	Medium	Jan-24	Commenced	Dec-24	NA	With the aim of increasing notification to operators when critical limits exceeded	All
WS-39	Make media filter bypass valve lockable	Low	Feb-24	Not started	Feb-29	Operational budget	Safe Drinking Water Assessment 2016 recommendation	6
WS-40	Install inline turbidity monitoring for raw water or sample points before and after media filter.	Medium	Feb-24	Not started	Feb-26	Unknown	Safe Drinking Water Assessment 2016 recommendation	6 7
WS-41	Repair gate at Kubin reservoir so it can be locked.	Low	Feb-24	Not started	Feb-26	Unknown	Safe Drinking Water Assessment 2016 recommendation	6
WS-42	Install Raw Water Flow Meter	Medium	Feb-24	Not started	Feb-26	Unknown	Safe Drinking Water Assessment 2016 recommendation	6 7
WS-43	Reservoir site security improvements	Medium	Feb-24	Not started	Feb-26	Unknown	Reservoirs that require fencing for security	4,5,8,9,11,12,14
WS-44	Develop written procedure for first flush of creeks and weirs	Low	Feb-24	Not started	Feb-26	NA	Safe Drinking Water Assessment 2016 recommendation	6 7
WS-45	Develop/ensure written procedures for mobile RO unit are easily available to all relevant water operators.	Low	Feb-24	Not started	Feb-26	NA	Safe Drinking Water Assessment 2016 recommendation	6 7
WS-47	Ensure Operators have access to SOPs for all process elements at the WTP.	Medium	Feb-24	Not started	Dec-24	NA	Safe Drinking Water Assessment 2016 recommendation	All
WS-48	Review and improve the procedures for arranging	High	Feb-24	Commenced	Jun-24	NA		All

ID	Description	TSIRC Priority	Added Date	Status	Expected Completion Date	Availability of funding/ resources/ estimated cost	Comments	Scheme(s) Applicable
	sampling to improve the frequency of sampling							
WS-49	Investigate low pH levels	Low	Feb-24	Not started	Dec-24	NA	From historical data review	1,2,4,11,13
WS-50	Provide Cert 3 or Cert 4 training to all water operators	Medium	Feb-24	Not started	Jun-26	Unknown		All
WS-51	Investigate softness of water (low Hardness results)	Low	Feb-24	Not started	Dec-24	NA	From historical data review	All
WS-52	Ensure SWIM indicator alerts are set up for all scheme daily testing for critical and operational limits	Medium	Feb-24	Commenced	Dec-24	NA	Improve reporting of exceedances from DWQMP (Operational monitoring program)	All
WS-53	Refresher training on reporting and incidents	High	Apr-24	Not started	May-24	NA	Resulting from Mer incident, where regulator was not notified immediately	All
WS-54	Install cover over chlorine injection line at Mer to prevent breaks	High	May-24	Not started	Jun-24	NA	Resulting from Mer incident	15
WS-55	Upgrade Boigu WTP to include automatic backwashing of media filters	Low	May-24	Not Started	Jun-29	Unknown	Resulting from DWI-500-24-10977 – Boigu – Empty Reservoir	1

Appendix B - Water Quality – Operational Monitoring

Scheme	Sample Water Type	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Required	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
01 - Boigu	Raw	Conductivity	-	260	37	N/A	1.00	295.35	628	
		pH	-	260	36	N/A	6.69	7.53	9.90	
		Turbidity	-	260	37	N/A	0.01	118.39	4364.0	
	Treated	Conductivity	<1500µS/cm (CL)	260	210	0	144.6	407.76	1486	
		Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	1373	3	0.14	0.91	1.99	One-off readings (occurred in 1 or 2 of 6 sample points on the day) indicating the tap was not flushed sufficiently before the sample was taken; not reported to WSR.
		pH	6.5-8.5	260	207	185	6.50	6.66	10.35	82% pH samples taken were non-compliant, with 2% being above the upper limit. The remainder of pH readings were low and outside the operating range of the handheld meter, i.e. reading showed "<6.5". *Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	1363	3	0.01	0.88	9.01	One-off readings (occurred in 1 or 2 of 6 sample points on the day); not reported to WSR.
02 - Dauan	Raw	Conductivity	-	260	215	N/A	4.30	163.75	1503	One-off reading high reading, just over critical limit. Not reported to WSR.
		pH	-		215	N/A	4.56	7.38	13.90	
		Turbidity	-	260	215	N/A	0.08	9.47	191.20	
	Treated	Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	1390	20	0.02	1.17	2.87	
		pH	6.5-8.5	260	225	211	4.82	5.93	7.60	95% of pH samples collected were outside operational limits, all low however no extreme values (<4) that may adversely affect health. *Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	1384	1	0.01	1.21	5.60	One-off reading (occurred in 1 of 6 sample points on the day); not reported to WSR.

Scheme	Sample Water Type	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Required	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
03 - Saibai	Raw	Conductivity	-	260	94	N/A	0.81	125.69	267.10	
		pH	-		135	N/A	6.45	6.92	7.89	
		Turbidity	-	260	128	N/A	0.01	2.41	100.00	
	Treated	Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	907	**7**	0.05	0.96	1.92	One-off readings (occurred in 1 or 2 of 6 sample points on the day); not reported to WSR.
		pH	6.5-8.5	260	142	**7**	6.25	6.94	7.60	5% of pH results were not compliant, all low and no extreme values (<4) that may adversely affect health. *Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	833	**2**	0.01	1.37	6.20	One-off reading (occurred in 1 of 6 sample points on the day); not reported to WSR.
04 - Mabuiag	Raw	Conductivity	-	260	211	N/A	45	58.34	69	
		pH	-	260	212	N/A	6.50	6.50	6.62	
		Turbidity	-	260	212	N/A	0.19	0.92	5.83	
	Treated	Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	1295	**9**	0.03	0.93	2	8 of 9 non-compliant samples were reported to the WSR and a Boil Water Alert was raised, refer DWI-500-24-11018. Other non-compliant sample was a one-off reading (occurred in 1 of 6 sample points on the day); not reported to WSR.
		6.5-8.5	260	260	216	**180**	6.50	6.51	6.76	83% of pH samples collected were outside operational limits, all low however no extreme values (<4) that may adversely affect health. *Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	1287	0	0.01	0.49	3.41	

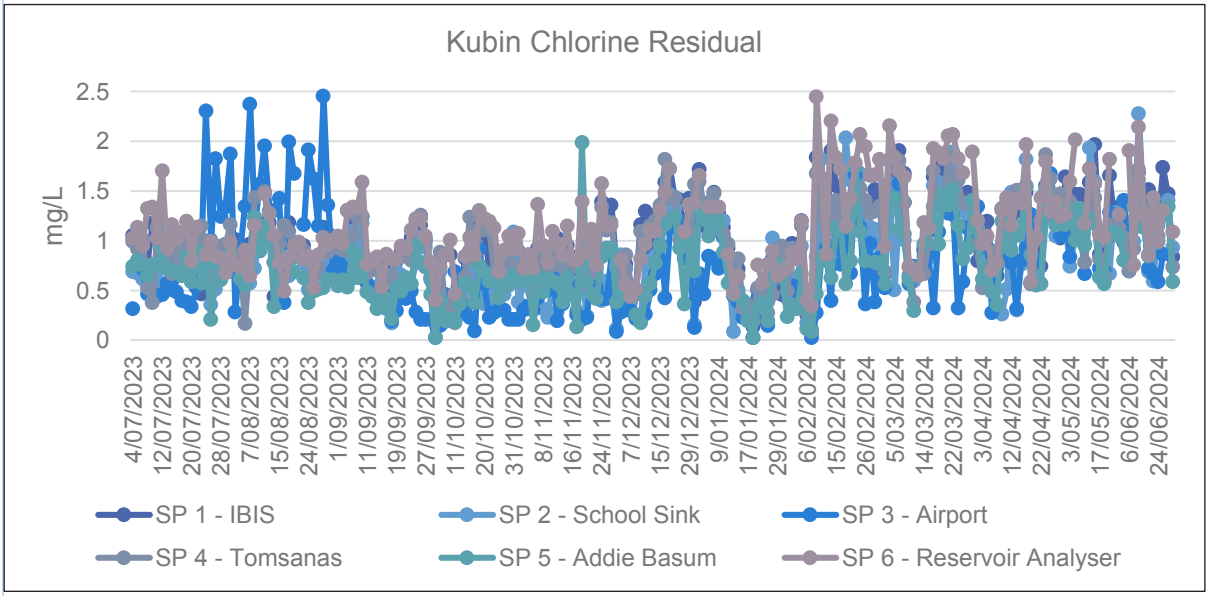
Scheme	Sample Water Type	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Required	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
05 - Badu	Raw	Conductivity	-	780	520	N/A	7.49	98.19	358.6	
		pH	-	780	1087	N/A	2.00	5.79	10.68	
		Turbidity	-	780	438	N/A	0.00	1.19	14	
	Treated	Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	1851	**887**	0.01	0.52	5	Refer DWI-500-22-09492. There has been an active BWA at Badu since 1/3/2022.
		6.5-8.5	260	260	302	**3**	6.32	7.32	7.89	*Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	1450	**1**	0.00	0.32	15	One-off reading of 15 NTU; next highest reading 3.74 NTU (occurred in 1 of 6 sample points on the day); not reported to WSR.
06 - Kubin	Raw	pH	-	260	72	N/A	6.50	6.51	6.75	
		Turbidity	-	260	111	N/A	0.01	0.56	9.42	
	Treated	Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	1233	**36**	0.02	0.91	2.45	*Refer Note 3.*
		6.5-8.5	260	260	156	**64**	5.61	6.59	8.40	41% of pH results were not compliant, all low and no extreme values (<4) that may adversely affect health. *Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	1244	**29**	0.01	0.70	16.40	*Refer Note 4.*
07 - St Pauls	Raw	Conductivity	-	260	39	N/A	40.90	69.40	99.60	
		Turbidity	-	260	59	N/A	0.01	0.48	1.75	
	Treated	Free Chlorine	0.2 - 5mg/L (h) (CL)	260	706	0	0.22	1.14	2.96	
		Turbidity	<5 NTU (a) (CL)	260	701	0	0.01	0.65	1.99	
08 - Hammond	Raw	Conductivity	-	260	220	N/A	6.50	75.08	198.40	For the reporting period, all water was imported from another water service provider and was already treated.
		Free Chlorine	-	1560	193	N/A	0.13	1.00	4.85	
		pH	-	260	193	N/A	0.61	6.96	8.40	
		Turbidity	-	260	172	N/A	0.01	1.01	4.19	
	Treated	Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	1312	**1**	0.05	0.81	2.26	Refer DWI-500-24-10957, BWA issued.
		Turbidity	<5 NTU (a) (CL)	1560	1040	**3**	0.01	1.01	7.52	One-off readings (occurred in 1 of 6 sample points on the day); not reported to WSR.

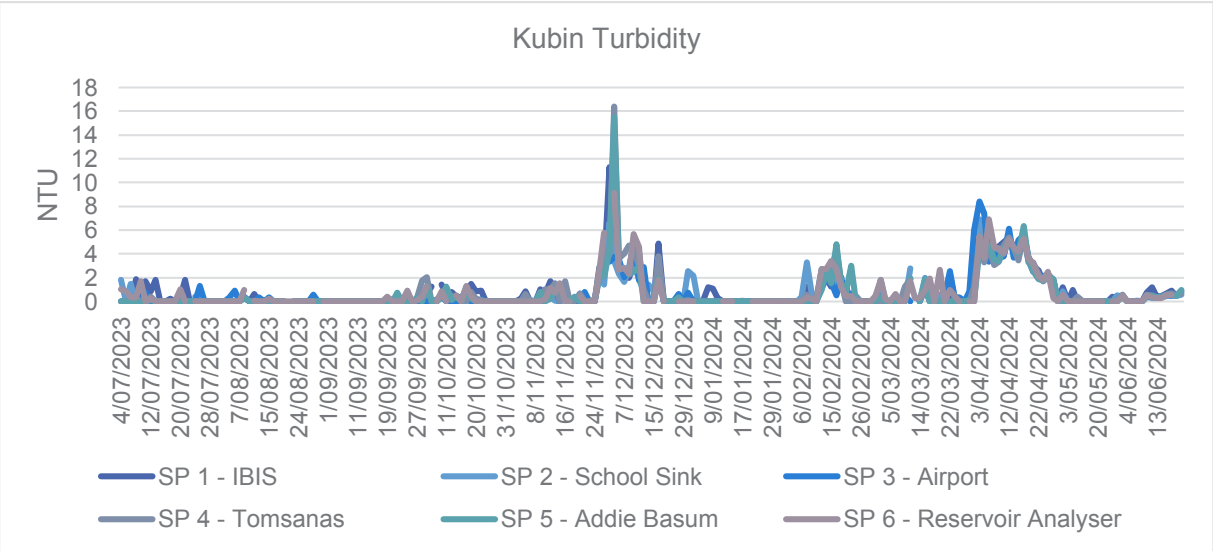
Scheme	Sample Water Type	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Required	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
09 – Iama	Raw	Conductivity	-	260	340	N/A	436	835.81	1185	
		pH	-	260	340	N/A	0.36	7.24	8.38	
		Turbidity	-	260	348	N/A	0.01	0.23	0.94	
	Treated	Conductivity	<1500µS/cm (CL)	260	312	5	494	905.38	5996	Five high conductivity readings 24 - 28/10/23 due to an RO unit requiring servicing. Reported to WSR, refer DWI-500-23-10540.
		Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	2022	8	0.09	0.87	2.18	One-off readings (occurred in 1 or 2 of 6 sample points on the day); not reported to WSR. *Refer Note 5*
		pH	6.5-8.5	260	307	9	5.34	7.29	8.66	3% of pH results were not compliant, with only 2 of the 9 samples being slightly high. no extreme values (<4 or >11) that may adversely affect health. *Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	2009	0	0.01	0.39	1.00	
10 - Warraber	Raw	Conductivity	-	260	5	N/A	262.1	322.76	343	
		pH	-	260	5	N/A	6.50	6.56	6.62	
		Turbidity	-	260	5	N/A	0.66	0.69	0.77	
	Treated	Conductivity	<1500µS/cm (CL)	260	198	0	1.32	724.75	1182	
		Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	1255	0	0.24	1.18	2.65	
		pH	6.5-8.5	260	197	49	6.40	6.59	7.60	*Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	1252	0	0.01	0.78	4.4	

Scheme	Sample Water Type	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Required	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
11 - Poruma	Raw	Conductivity	-	260	18	N/A	305	472.19	708.00	
		pH	-	260	19	N/A	5.69	6.59	7.20	
		Turbidity	-	260	22	N/A	0.50	0.81	1.21	
	Treated	Conductivity	<1500µS/cm (CL)	260	21	0	342	503.81	641.30	
		Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	621	0	0.21	0.88	1.89	
		pH	6.5-8.5	260	24	**7**	5.10	6.63	7.70	*Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	609	0	0.01	0.77	1.81	
12 - Masig	Raw	Conductivity	-	260	242	N/A	1	309.99	654	
		pH	-	260	244	N/A	6.00	6.57	7.94	
		Turbidity	-	260	234	N/A	0.01	0.46	1.51	
	Treated	Conductivity	<1500µS/cm (CL)	260	243	0	192	314.97	710	
		Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	1469	0	0.25	0.96	2.75	
		pH	6.5-8.5	260	245	**107**	6.00	6.63	7.60	*Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	1406	0	0.01	0.36	3.35	
13 - Ugar	Raw	Conductivity	-	260	210	N/A	155	438.17	642.90	
		pH	-	260	210	N/A	5.53	13.47	783.00	
		Turbidity	-	260	210	N/A	0.11	0.90	56.00	
	Treated	Conductivity	<1500µS/cm (CL)	260	210	0	175	463.41	702.70	
		Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	1253	**7**	0.02	0.88	2.54	*Refer Note 6.*
		pH	6.5-8.5	260	210	**52**	5.50	6.73	8.27	*Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	1255	0	0.06	0.68	2.84	

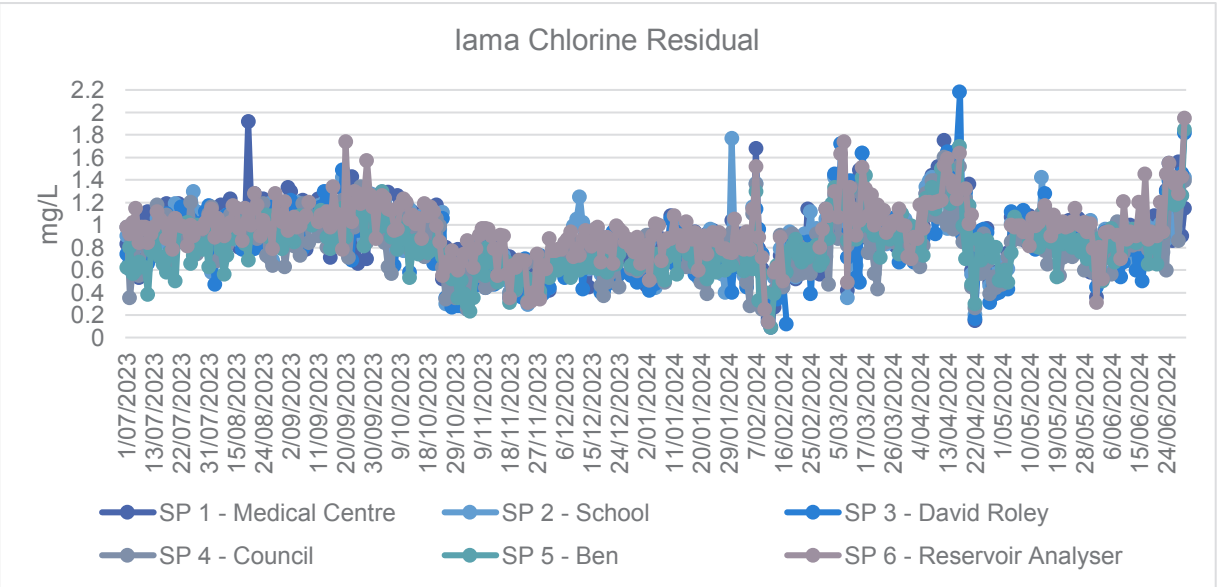
Scheme	Sample Water Type	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Required	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
14 - Erub	Raw	Conductivity	-	260	160	N/A	37.90	158.79	192	
		pH	-	260	320	N/A	6.10	7.13	48.70	
		Turbidity	-	260	319	N/A	8.70	43.25	223	
	Treated	Conductivity	<1500µS/cm (CL)	260	162	0	1.51	160.47	248	
		Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	977	**32**	0.02	1.27	3	*Refer Note 7.*
		pH	6.5-8.5	260	153	**1**	7.10	7.60	8.90	One-off high pH value, not extreme value (>11) that would adversely affect public health.
		Turbidity	<5 NTU (a) (CL)	1560	966	**4**	0.11	1.71	6	*Refer Note 8.*
15 - Mer	**Raw**	Conductivity	-	260	214	N/A	5.83	611.86	833	
		pH	-		219	N/A	5.90	6.83	8.23	
		Turbidity	-	260	221	N/A	0.01	0.04	1.15	
	Treated	Conductivity	<1500µS/cm (CL)	260	216	0	7.00	617.94	834	
		Free Chlorine	0.2 - 5mg/L (h) (CL)	1560	1337	**8**	0.08	0.87	5.00	• 4/11/23 chlorine residual in reservoir >5 mg/L (beyond limit of analyser). Incident reported, refer DWI-500-23-10566. • 7 low chlorine residual results on 28 and 29/12/23. Incident reported, refer DWI-500-23-10745.
		pH	6.5-8.5	260	220	**53**	5.51	6.79	8.01	*Refer Note 1.*
		Turbidity	<5 NTU (a) (CL)	1560	1332	0	0.01	0.04	1.40	

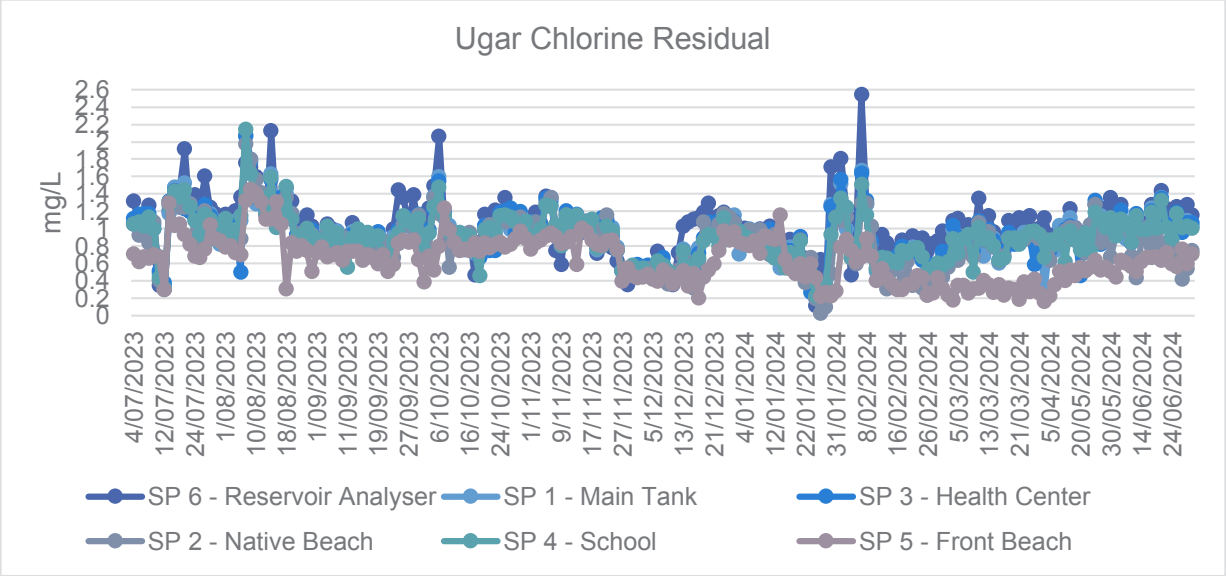
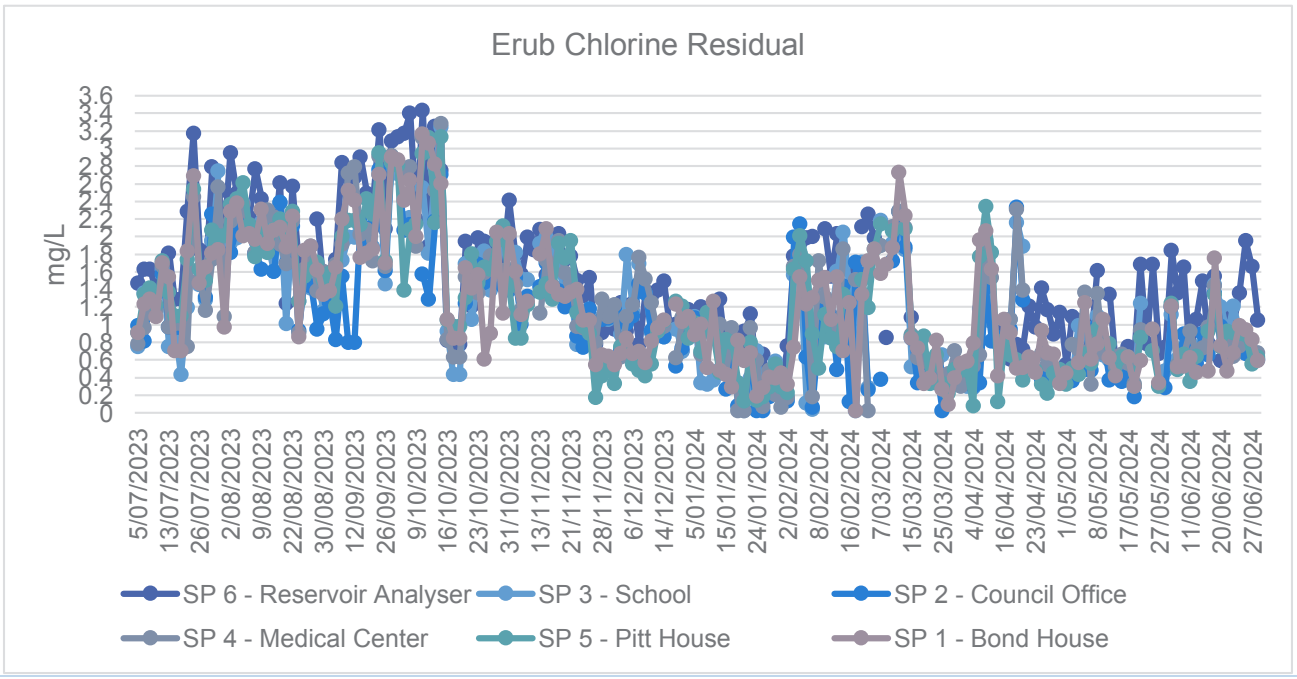
Notes on Operational Monitoring

1	Low pH readings are apparent across several schemes and will be investigated (refer RMIP WS-49).
2	Boigu had three chlorine residual results less than the critical limit of 0.2 mg/L. One on 19/9/23 and two on 14/9/23. These appear to be one-off readings (occurred in 1 or 2 of 6 sample points on the day) indicating the tap was not flushed sufficiently before the sample was taken and were not reported. Boigu also had three turbidity results higher than the critical limit of 5 mg/L. One on 21/2/24 and two on 19/9/23
3	Kubin had 36 non-compliant chlorine residual readings in the reporting period, all in the period September 2023 to February 2024. A new water operator commenced in September 2023, and these chlorine residual readings highlight the lack of training and support received there. Queensland Health sent an officer there in the first week of February 2024 as part of the WASH program, and results improved markedly. The reservoir results were always within critical limits and low readings in the reticulation network were a result of the officer not flushing lines regularly and before testing. These non-compliances were not identified at the time and therefore not reported to the regulator. 
4	Kubin recorded 29 high turbidity readings during the reporting period: • 7 between 29/11 and 11/12/23 • 9 between 2 and 5/4/24 • 13 between 12 and 17/4/24, reported to WSR; attributed to a scratched vial and a faulty handheld meter (refer DWI-500-24-10958). Turbidity spikes are common during the wet season. Some outlier values were likely due to operator error during sampling, such as scratched or dirty glass vials. It has been identified that further operator training is required in turbidity testing, reporting, and corrective actions for readings outside critical limits. Non-compliances at Kubin were not reported to the regulator due to oversight or lack of reporting to management. At the time, SWIM alerts were not fully implemented. These alerts are now operational, ensuring that limit breaches are promptly investigated and reported where necessary.

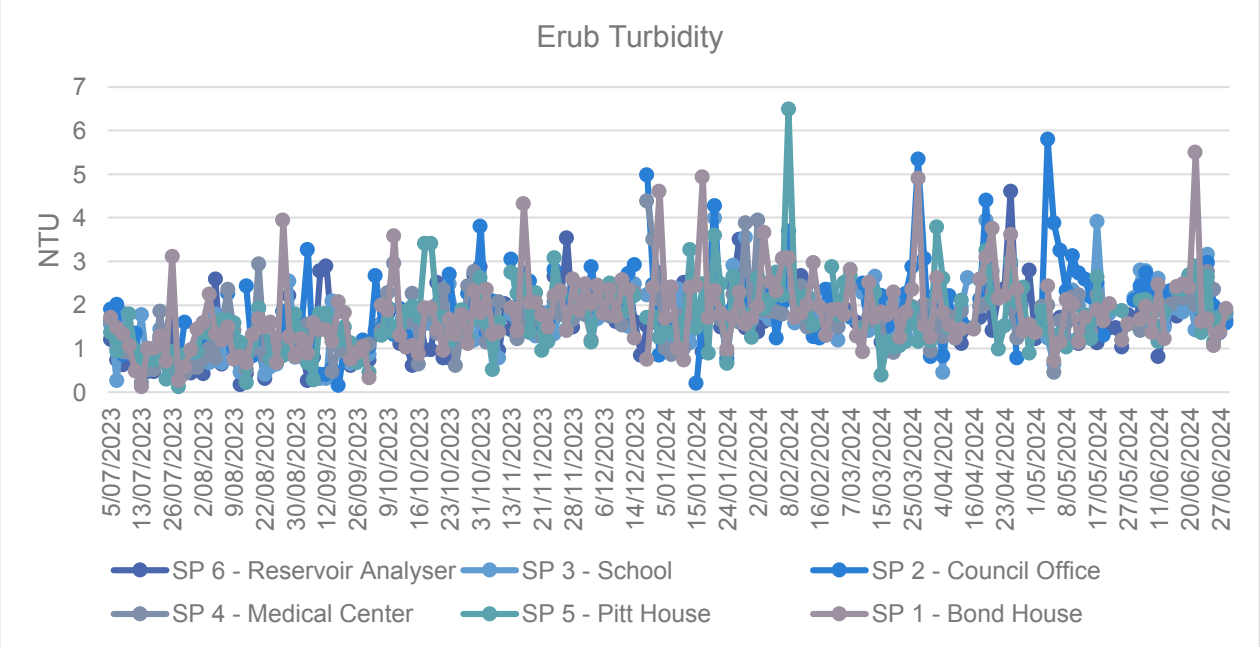


5	Non-compliances at Iama were not reported to the regulator due to oversight or lack of reporting to management. At the time, SWIM alerts were not fully implemented. These alerts are now operational, ensuring that limit breaches are promptly investigated and reported where necessary. Non-compliances likely due to insufficient flushing in the network.



6	Non-compliances at Ugar were not reported to the regulator due to oversight or lack of reporting to management. At the time, SWIM alerts were not fully implemented. These alerts are now operational, ensuring that limit breaches are promptly investigated and reported where necessary. Non-compliances likely due to insufficient flushing in the network. 
7	Non-compliances at Erub were not reported to the regulator due to oversight or lack of reporting to management. At the time, SWIM alerts were not fully implemented. These alerts are now operational, ensuring that limit breaches are promptly investigated and reported where necessary. Non-compliances likely due to insufficient flushing in the network. 

8	Four one-off high turbidity results. Outlier values were likely due to operator error during sampling, such as scratched or dirty glass vials. It has been identified that further operator training is required in turbidity testing, reporting, and corrective actions for readings outside critical limits. Non-compliances at Erub were not reported to the regulator due to oversight or lack of reporting to management. At the time, SWIM alerts were not fully implemented. These alerts are now operational, ensuring that limit breaches are promptly investigated and reported where necessary.



Appendix C - Water Quality – Verification Monitoring

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
01 - Boigu	**SP 1 - Church**	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	260.0	510	
	SP 2 - School	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	805.0	1600	
	SP 3 - Airport	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	15.00	20	
	SP 4 - STP	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	1205	2400	
	SP 5 - Health Centre	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	180	450.0	720	
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	2	0	310	495.0	680	
		pH	6.5-8.5	2	**2**	5.8	5.85	5.9	Both pH readings were low. Not reported to regulator since ADWG value is for aesthetics (pH >11 considered extreme and may affect health). Further investigation will be carried out into the low readings, and corrective actions undertaken if required; refer RMIP WS-49.
		Turbidity	<5 NTU (a) (CL)	2	0	0.2	0.55	0.9	
		Fluoride	<1.5 mg/L (h)	2	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	2	0	3.9	8.95	14	
		Chloride	<250mg/L (a)	2	0	86	138.00	190	
		Colour	15 HU (a)	2	0	1.7	4.25	6.8	
		Total Alkalinity	-	2	0	1.7	2.10	2.5	
		Silicon	-	2	0	0.2	0.20	0.2	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Calcium	-	2	0	1	1.90	2.8	
		Magnesium	-	2	0	1.6	4.20	6.8	
		Potassium	-	2	0	2.1	3.35	4.6	
		Sodium	<180 mg/L (a)	2	0	49	79.50	110	
		Total Hardness	60 - 200 mg/L (a)	2	2	9.1	22.05	35	Both reported results were < 60 mg CaCO3 which is below ADWG guideline for aesthetics. Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	2	1	0.05	0.22	0.389	One of two samples had high iron, or 0.389 mg/L (6/2/24). Not reported to regulator since aesthetic quality. Iron result on 16/7/24 (outside reporting period) was <0.05 mg/L.
		Manganese	<0.5 mg/L (h)	2	0	0.002	0.01	0.008	
		Total Dissolved Solids	<600 mg/L (a)	2	0	140	235.0	330	
	SP 7 - Raw Water (Lagoon)	Conductivity	<1500µS/cm (CL)	2	0	310	490.0	670	
		E coli	<1	2	0	3	31.00	59	
		pH	6.5-8.5	2	0	5.7	5.75	5.8	
		Turbidity	<5 NTU (a) (CL)	2	0	0.1	0.15	0.2	
		Colour	15 HU (a)	2	0	1.1	1.25	1.4	
02 – Dauan *Note 1*	**SP 1 - N. Mooka**	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 3 - Council	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 4 - S.	E coli	<1	1	0	1	1.00	1	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	1	0	280	280.0	280	
		pH	6.5-8.5	1	**1**	6.1	6.10	6.1	There was one pH result for the year, which was low (6.1). Not reported to regulator since ADWG value is for aesthetics (pH >11 considered extreme and may affect health). Further investigation will be carried out into the low readings, and corrective actions undertaken if required; refer RMIP WS-49.
		Turbidity	<5 NTU (a) (CL)	1	0	1	1.00	1	
		Fluoride	<1.5 mg/L (h)	1	0	0.05	0.05	0.05	
		Sulphate	<250 mg/L (a)	1	0	7.4	7.40	7.4	
		Chloride	<250mg/L (a)	1	0	68	68.00	68	
		Colour	15 HU (a)	1	0	5	5.00	5	
		Total Alkalinity	-	1	0	7.5	7.50	7.5	
		Silicon	-	1	0	32	32.00	32	
		Calcium	-	1	0	2.6	2.60	2.6	
		Magnesium	-	1	0	2.9	2.90	2.9	
		Potassium	-	1	0	1.5	1.50	1.5	
		Sodium	<180 mg/L (a)	1	0	44	44.00	44	
		Total Hardness	60 - 200 mg/L (a)	1	**1**	18	18.00	18	There was one hardness result (18 mg/L) for the year, which is below ADWG guideline of 60 mg/L for aesthetics. Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	1	0	0.115	0.12	0.115	
		Manganese	<0.5 mg/L (h)	1	0	0.006	0.01	0.006	
		Total Dissolved Solids	<600 mg/L (a)	1	0	160	160.00	160	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
	SP 7 - Raw Water (Lagoon)	Conductivity	<1500µS/cm (CL)	1	0	220	220.0	220	
		E coli	<1	1	0	20	20.00	20	
		pH	6.5-8.5	1	0	5.9	5.90	5.9	
		Turbidity	<5 NTU (a) (CL)	1	0	2.7	2.70	2.7	
		Colour	15 HU (a)	1	0	21	21.00	21	
	SP 10 - Raw Water (Well 1)	Conductivity	<1500µS/cm (CL)	1	0	290	290.0	290	
		E coli	<1	1	0	10	10.00	10	
		pH	6.5-8.5	1	0	5.7	5.70	5.7	
		Turbidity	<5 NTU (a) (CL)	1	0	15	15.00	15	
		Colour	15 HU (a)	1	0	24	24.00	24	
	SP 11 - Raw Water (Well 2)	Conductivity	<1500µS/cm (CL)	1	0	400	400.0	400	
		E coli	<1	1	0	20	20.00	20	
		pH	6.5-8.5	1	0	6	6.00	6	
		Turbidity	<5 NTU (a) (CL)	1	0	6.8	6.80	6.8	
		Colour	15 HU (a)	1	0	94	94.00	94	
	SP 13 - Raw Water (Well 4)	Conductivity	<1500µS/cm (CL)	1	0	190	190.0	190	
		E coli	<1	1	0	10	10.00	10	
		pH	6.5-8.5	1	0	6.2	6.20	6.2	
		Turbidity	<5 NTU (a) (CL)	1	0	75	75.00	75	
		Colour	15 HU (a)	1	0	150	150.0	150	
03 - Saibai	**SP 1 - Water Treatment Pit**	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 2 - Council Office	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
	SP 3 - Public Hall	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 4 - House Near Sewage Pit	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 5 - Singyal House Airport Road	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	2	0	200	215.0	230	
		pH	6.5-8.5	2	0	7.3	7.35	7.4	
		Turbidity	<5 NTU (a) (CL)	2	0	0.2	0.25	0.3	
		Fluoride	<1.5 mg/L (h)	2	0	0.06	0.07	0.07	
		Sulphate	<250 mg/L (a)	2	0	8.5	12.25	16	
		Chloride	<250mg/L (a)	2	0	18	18.50	19	
		Colour	15 HU (a)	2	0	6.5	6.55	6.6	
		Total Alkalinity	-	2	0	62	62.50	63	
		Silicon	-	2	0	6.4	6.90	7.4	
		Calcium	-	2	0	20	21.50	23	
		Magnesium	-	2	0	2.5	2.55	2.6	
		Potassium	-	2	0	3.7	3.85	4	
		Sodium	<180 mg/L (a)	2	0	14	15.00	16	
		Total Hardness	60 - 200 mg/L (a)	2	1	60	64.00	68	There was one hardness result (rounded up to 60 mg/L) for the year, which is marginally below ADWG guideline of 60 mg/L for aesthetics. Not reported to

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
									regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	2	0	0.095	0.18	0.264	
		Manganese	<0.5 mg/L (h)	2	0	0.029	0.03	0.036	
		Total Dissolved Solids	<600 mg/L (a)	2	0	110	115.0	120	
	SP 7 - Raw Water (Pre Filter)	Conductivity	<1500µS/cm (CL)	1	0	190	190.0	190	
		E coli	<1	1	0	13	13.00	13	
		pH	6.5-8.5	1	0	7.2	7.20	7.2	
		Turbidity	<5 NTU (a) (CL)	1	0	0.6	0.60	0.6	
		Colour	15 HU (a)	1	0	14	14.00	14	
04 - Mabuiag	**SP 1 - Airport Camp**	E coli	<1	3	0	1	1.00	1	
		Heterotrophic Plate Count	-	3	0	10	13.33	20	
	SP 2 - Council Office	E coli	<1	3	0	1	1.00	1	
		Heterotrophic Plate Count	-	3	0	10	10.00	10	
	SP 3 - IBIS Store	E coli	<1	3	0	1	1.00	1	
		Heterotrophic Plate Count	-	3	0	10	13.33	20	
	SP 4 - Medical Centre	E coli	<1	3	0	1	1.00	1	
		Heterotrophic Plate Count	-	3	0	10	10.00	10	
	SP 5 - School Duplex	E coli	<1	3	0	1	1.00	1	
		Heterotrophic Plate Count	-	3	0	10	10.00	10	
	SP 6 - Chlorine Analyser	Conductivity	<1500µS/cm (CL)	2	0	110	125.0	140	
		pH	6.5-8.5	2	**1**	6.4	6.50	6.6	One of two pH readings were low (6.4). Not reported to regulator since ADWG value is for aesthetics (pH >11 considered extreme

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
									and may affect health). Further investigation will be carried out into the low readings, and corrective actions undertaken if required; refer RMIP WS-49.
		Turbidity	<5 NTU (a) (CL)	2	0	0.1	0.75	1.4	
		Fluoride	<1.5 mg/L (h)	2	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	2	0	2.6	2.90	3.2	
		Chloride	<250mg/L (a)	2	0	26	29.00	32	
		Colour	15 HU (a)	2	0	1.5	3.00	4.5	
		Total Alkalinity	-	2	0	4.8	4.85	4.9	
		Silicon	-	2	0	7.2	8.40	9.6	
		Calcium	-	2	0	0.8	0.88	0.95	
		Magnesium	-	2	0	1.3	1.35	1.4	
		Potassium	-	2	0	1.8	2.15	2.5	
		Sodium	<180 mg/L (a)	2	0	17	19.50	22	
		Total Hardness	60 - 200 mg/L (a)	2	**2**	7.4	7.75	8.1	Both reported results were below ADWG guideline for aesthetics (7.4 mg/L, 8.1 mg/L). Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	2	0	0.05	0.05	0.056	
		Manganese	<0.5 mg/L (h)	2	0	0.002	0.01	0.01	
		Total Dissolved Solids	<600 mg/L (a)	2	0	62	67.00	72	
	SP 7 - Raw Water (Pre Filter)	Conductivity	<1500µS/cm (CL)	2	0	88	88.50	89	
		E coli	<1	2	0	6	7.50	9	
		pH	6.5-8.5	2	0	6.2	6.20	6.2	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Turbidity	<5 NTU (a) (CL)	2	0	0.2	0.55	0.9	
		Colour	15 HU (a)	2	0	6.3	8.65	11	
05 - Badu	**SP 1 - School**	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 2 - Police Station	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 3 - Motel	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 4 - Dogai	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 5 - Airport	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	25.00	40	
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	2	0	120	130.0	140	
		pH	6.5-8.5	2	0	7.4	7.55	7.7	
		Turbidity	<5 NTU (a) (CL)	2	0	0.1	0.10	0.1	
		Fluoride	<1.5 mg/L (h)	2	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	2	0	1	2.55	4.1	
		Chloride	<250mg/L (a)	2	0	11	14.50	18	
		Colour	15 HU (a)	2	0	1	4.50	8	
		Total Alkalinity	-	2	0	31	35.50	40	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Silicon	-	2	0	1.7	2.15	2.6	
		Calcium	-	2	0	0.2	0.24	0.28	
		Magnesium	-	2	0	0.31	0.60	0.88	
		Potassium	-	2	0	0.15	0.24	0.33	
		Sodium	<180 mg/L (a)	2	0	24	25.50	27	
		Total Hardness	60 - 200 mg/L (a)	2	2	1.8	3.05	4.3	Both reported results were below ADWG guideline for aesthetics (1.8 mg/L, 4.3 mg/L). Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	2	0	0.05	0.05	0.05	
		Manganese	<0.5 mg/L (h)	2	0	0.002	0.00	0.002	
		Total Dissolved Solids	<600 mg/L (a)	2	0	62	67.00	72	
	SP 8 - Raw Water (Raw Water Tank)	Conductivity	<1500µS/cm (CL)	1	0	84	84.00	84	
		E coli	<1	1	0	1	1.00	1	
		pH	6.5-8.5	1	0	4.1	4.10	4.1	
		Turbidity	<5 NTU (a) (CL)	1	0	0.7	0.70	0.7	
		Colour	15 HU (a)	1	0	34	34.00	34	
	SP 7 - Clear Water Tank	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 9 - Well 1	Conductivity	<1500µS/cm (CL)	2	0	110	170.0	230	
		E coli	<1	2	0	1	1.00	1	
		pH	6.5-8.5	2	0	6.9	7.20	7.5	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Turbidity	<5 NTU (a) (CL)	2	0	0.4	0.70	1	
		Colour	15 HU (a)	2	0	37	46.00	55	
	SP 10 - Well 2	Conductivity	<1500µS/cm (CL)	2	0	28	46.50	65	
		E coli	<1	2	0	1	1.00	1	
		pH	6.5-8.5	2	0	4.5	4.60	4.7	
		Turbidity	<5 NTU (a) (CL)	2	0	0.2	0.25	0.3	
		Colour	15 HU (a)	2	0	10	20.50	31	
	SP 11 - Well 3	Conductivity	<1500µS/cm (CL)	2	0	29	63.00	97	
		E coli	<1	2	0	1	1.00	1	
		pH	6.5-8.5	2	0	4	4.40	4.8	
		Turbidity	<5 NTU (a) (CL)	2	0	0.8	0.80	0.8	
		Colour	15 HU (a)	2	0	49	55.00	61	
06 - Kubin *Note 1*	**SP 6 - Reservoir Analyser**	Conductivity	<1500µS/cm (CL)	1	0	180	180.0	180	
		pH	6.5-8.5	1	**1**	6.4	6.40	6.4	The one pH reading for the period was low (6.4). Not reported to regulator since ADWG value is for aesthetics (pH >11 considered extreme and may affect health). Further investigation will be carried out into the low readings, and corrective actions undertaken if required; refer RMIP WS-49.
		Turbidity	<5 NTU (a) (CL)	1	0	0.8	0.80	0.8	
		Fluoride	<1.5 mg/L (h)	1	0	0.07	0.07	0.07	
		Sulphate	<250 mg/L (a)	1	0	5.2	5.20	5.2	
		Chloride	<250mg/L (a)	1	0	39	39.00	39	

Appendix C - Water Quality – Verification Monitoring

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
01 - Boigu	**SP 1 - Church**	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	260.0	510	
	SP 2 - School	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	805.0	1600	
	SP 3 - Airport	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	15.00	20	
	SP 4 - STP	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	1205	2400	
	SP 5 - Health Centre	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	180	450.0	720	
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	2	0	310	495.0	680	
		pH	6.5-8.5	2	**2**	5.8	5.85	5.9	Both pH readings were low. Not reported to regulator since ADWG value is for aesthetics (pH >11 considered extreme and may affect health). Further investigation will be carried out into the low readings, and corrective actions undertaken if required; refer RMIP WS-49.
		Turbidity	<5 NTU (a) (CL)	2	0	0.2	0.55	0.9	
		Fluoride	<1.5 mg/L (h)	2	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	2	0	3.9	8.95	14	
		Chloride	<250mg/L (a)	2	0	86	138.00	190	
		Colour	15 HU (a)	2	0	1.7	4.25	6.8	
		Total Alkalinity	-	2	0	1.7	2.10	2.5	
		Silicon	-	2	0	0.2	0.20	0.2	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Heterotrophic Plate Count	-	1	0	390	390.0	390	
		Fluoride	<1.5 mg/L (h)	1	0	0.07	0.07	0.07	
		Sulphate	<250 mg/L (a)	1	0	3.2	3.20	3.2	
		Chloride	<250mg/L (a)	1	0	34	34.00	34	
		Colour	15 HU (a)	2	0	49	68.00	87	
		Total Alkalinity	-	1	0	10	10.00	10	
		Silicon	-	1	0	14	14.00	14	
		Calcium	-	1	0	2.2	2.20	2.2	
		Magnesium	-	1	0	2.4	2.40	2.4	
		Potassium	-	1	0	2.8	2.80	2.8	
		Sodium	<180 mg/L (a)	1	0	22	22.00	22	
		Total Hardness	60 - 200 mg/L (a)	1	0	15	15.00	15	
		Iron	< 0.3 mg/L (a)	1	0	0.992	0.99	0.992	
		Manganese	<0.5 mg/L (h)	1	0	0.072	0.07	0.072	
		Total Dissolved Solids	<600 mg/L (a)	1	0	87	87.00	87	
07 - St Pauls *Note 1*	**SP 1 - S. Rosen**	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 2 - Gospel Church	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 3 - H. Mene	Heterotrophic Plate Count	-	1	0	150	150.0	150	
		E coli	<1	1	0	1	1.00	1	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
	SP 4 - School	Heterotrophic Plate Count	-	1	0	200	200.0	200	
	SP 5 - Community Police	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	1	0	99	99.00	99	
		pH	6.5-8.5	1	0	6.6	6.60	6.6	
		Turbidity	<5 NTU (a) (CL)	1	0	3.7	3.70	3.7	
		Fluoride	<1.5 mg/L (h)	1	0	0.03	0.03	0.03	
		Sulphate	<250 mg/L (a)	1	0	2.7	2.70	2.7	
		Chloride	<250mg/L (a)	1	0	20	20.00	20	
		Colour	15 HU (a)	1	0	13	13.00	13	
		Total Alkalinity	-	1	0	9.9	9.90	9.9	
		Silicon	-	1	0	8.9	8.90	8.9	
		Calcium	-	1	0	3.2	3.20	3.2	
		Magnesium	-	1	0	1.2	1.20	1.2	
		Potassium	-	1	0	0.83	0.83	0.83	
		Sodium	<180 mg/L (a)	1	0	14	14.00	14	
		Total Hardness	60 - 200 mg/L (a)	1	**1**	13	13.00	13	There was one hardness result (13 mg/L) for the year, which is below ADWG guideline of 60 mg/L for aesthetics. Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	1	0	0.233	0.23	0.233	
		Manganese	<0.5 mg/L (h)	1	0	0.232	0.23	0.232	
		Total Dissolved Solids	<600 mg/L (a)	1	0	57	57.00	57	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Turbidity	<5 NTU (a) (CL)	2	0	0.2	0.55	0.9	
		Colour	15 HU (a)	2	0	6.3	8.65	11	
05 - Badu	**SP 1 - School**	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 2 - Police Station	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 3 - Motel	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 4 - Dogai	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 5 - Airport	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	25.00	40	
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	2	0	120	130.0	140	
		pH	6.5-8.5	2	0	7.4	7.55	7.7	
		Turbidity	<5 NTU (a) (CL)	2	0	0.1	0.10	0.1	
		Fluoride	<1.5 mg/L (h)	2	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	2	0	1	2.55	4.1	
		Chloride	<250mg/L (a)	2	0	11	14.50	18	
		Colour	15 HU (a)	2	0	1	4.50	8	
		Total Alkalinity	-	2	0	31	35.50	40	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Magnesium	-	1	0	1.9	1.90	1.9	
		Potassium	-	1	0	1.6	1.60	1.6	
		Sodium	<180 mg/L (a)	1	0	16	16.00	16	
		Total Hardness	60 - 200 mg/L (a)	1	0	20	20.00	20	
		Iron	< 0.3 mg/L (a)	1	0	1.48	1.48	1.48	
		Manganese	<0.5 mg/L (h)	1	0	0.046	0.05	0.046	
		Total Dissolved Solids	<600 mg/L (a)	1	0	83	83.00	83	
08 – Hammond *Note 1*	**SP 3 - Bindjudas**	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 4 - Village	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 5 - Becklys	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	1	0	83	83.00	83	
		pH	6.5-8.5	1	0	7.4	7.40	7.4	
		Turbidity	<5 NTU (a) (CL)	1	0	0.1	0.10	0.1	
		Fluoride	<1.5 mg/L (h)	1	0	0.05	0.05	0.05	
		Sulphate	<250 mg/L (a)	1	0	1.5	1.50	1.5	
		Chloride	<250mg/L (a)	1	0	16	16.00	16	
		Colour	15 HU (a)	1	0	1	1.00	1	
		Total Alkalinity	-	1	0	12	12.00	12	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Silicon	-	1	0	10	10.00	10	
		Calcium	-	1	0	2.3	2.30	2.3	
		Magnesium	-	1	0	0.81	0.81	0.81	
		Potassium	-	1	0	1.8	1.80	1.8	
		Sodium	<180 mg/L (a)	1	0	11	11.00	11	
		Total Hardness	60 - 200 mg/L (a)	1	1	9.1	9.10	9.1	There was one hardness result (9.1 mg/L) for the year, which is below ADWG guideline of 60 mg/L for aesthetics. Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	1	0	0.05	0.05	0.05	
		Manganese	<0.5 mg/L (h)	1	0	0.011	0.01	0.011	
		Total Dissolved Solids	<600 mg/L (a)	1	0	51	51.00	51	
	SP 7 - Raw Water (Pre Filter)	Conductivity	<1500µS/cm (CL)	1	0	82	82.00	82	
		E coli	<1	1	0	1	1.00	1	
		pH	6.5-8.5	1	0	7.6	7.60	7.6	
		Turbidity	<5 NTU (a) (CL)	1	0	0.1	0.10	0.1	
		Colour	15 HU (a)	1	0	1	1.00	1	
	SP 8 - Well	Conductivity	<1500µS/cm (CL)	1	0	200	200.0	200	
		E coli	<1	1	0	10	10.00	10	
		pH	6.5-8.5	1	0	6.5	6.50	6.5	
		Turbidity	<5 NTU (a) (CL)	1	0	0.9	0.90	0.9	
		Colour	15 HU (a)	1	0	3	3.00	3	
09 – Iama		E coli	<1	2	0	1	1.00	1	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
Note 2	**SP 1 - Medical Centre**	Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 2 - School	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	130.0	250	
	SP 3 - David Roley	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	15.00	20	
	SP 4 - Council	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 5 - Ben	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 7 - Raw Water (Permeate Tank)	Conductivity	<1500µS/cm (CL)	2	0	890	935.0	980	
		E coli	<1	2	0	1	1.00	1	
		pH	6.5-8.5	2	0	6.7	6.80	6.9	
		Turbidity	<5 NTU (a) (CL)	2	0	0.1	0.10	0.1	
		Heterotrophic Plate Count	-	1	0	17000	17000	17000	
		Fluoride	<1.5 mg/L (h)	1	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	1	0	5.4	5.40	5.4	
		Chloride	<250mg/L (a)	1	0	240	240.0	240	
		Colour	15 HU (a)	2	0	1	1.00	1	
		Total Alkalinity	-	1	0	2.9	2.90	2.9	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Silicon	-	1	0	0.2	0.20	0.2	
		Calcium	-	1	0	0.67	0.67	0.67	
		Magnesium	-	1	0	2.1	2.10	2.1	
		Potassium	-	1	0	5.9	5.90	5.9	
		Sodium	<180 mg/L (a)	1	0	150	150.0	150	
		Total Hardness	60 - 200 mg/L (a)	1	0	10	10.00	10	
		Iron	< 0.3 mg/L (a)	1	0	0.05	0.05	0.05	
		Manganese	<0.5 mg/L (h)	1	0	0.002	0.00	0.002	
		Total Dissolved Solids	<600 mg/L (a)	1	0	410	410.0	410	
10 – Warraber *Note 1*	**SP 1 - Reservoir**	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 2 - Jensen P	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	50	60.00	70	
	SP 3 - William P	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	15.00	20	
	SP 4 - School	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 5 - Wharf	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	1	0	1300	1300	1300	
		pH	6.5-8.5	1	**1**	6.2	6.20	6.2	The one pH reading for the period was low (6.2). Not reported to regulator since ADWG value is for aesthetics (pH >11 considered extreme and may affect health). Further investigation will be carried out into the low readings, and corrective actions undertaken if required; refer RMIP WS-49.
		Turbidity	<5 NTU (a) (CL)	1	0	0.2	0.20	0.2	
		Fluoride	<1.5 mg/L (h)	1	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	1	0	16	16.00	16	
		Chloride	<250mg/L (a)	1	**1**	330	330.0	330	One non-compliant sample on 6/2/24 (330 mg/L). Not reported to regulator since ADWG value is for aesthetics.
		Colour	15 HU (a)	1	0	1.1	1.10	1.1	
		Total Alkalinity	-	1	0	5	5.00	5	
		Silicon	-	1	0	0.2	0.20	0.2	
		Calcium	-	1	0	3.9	3.90	3.9	
		Magnesium	-	1	0	8	8.00	8	
		Potassium	-	1	0	10	10.00	10	
		Sodium	<180 mg/L (a)	1	**1**	220	220.00	220	Non-compliant result on 6/2/24 was 220 mg/L. Not reported to regulator since ADWG value is for aesthetics
		Total Hardness	60 - 200 mg/L (a)	1	**1**	43	43.00	43	There was one hardness result (43 mg/L) for the year, which is below ADWG guideline of 60 mg/L for aesthetics. Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Iron	< 0.3 mg/L (a)	1	0	0.05	0.05	0.05	
		Manganese	<0.5 mg/L (h)	1	0	0.002	0.00	0.002	
		Total Dissolved Solids	<600 mg/L (a)	1	0	590	590.0	590	
	SP 7 - Raw Water (Lagoon)	Conductivity	<1500µS/cm (CL)	2	0	330	815.0	1300	
		E coli	<1	2	0	1	11.00	21	
		pH	6.5-8.5	2	0	6.4	6.55	6.7	
		Turbidity	<5 NTU (a) (CL)	2	0	0.1	0.15	0.2	
		Colour	15 HU (a)	2	0	1.3	1.35	1.4	
11 – Poruma *Note 1*	**SP 1 - Donga**	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 2 - Health Centre	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 3 - G Mosby House	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 4 - School	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	1	0	320	320.0	320	
		pH	6.5-8.5	1	**1**	6.4	6.40	6.4	The one pH reading for the period was low (6.4). Not reported to regulator since

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
									ADWG value is for aesthetics (pH >11 considered extreme and may affect health). Further investigation will be carried out into the low readings, and corrective actions undertaken if required; refer RMIP WS-49.
		Turbidity	<5 NTU (a) (CL)	1	0	0.1	0.10	0.1	
		Fluoride	<1.5 mg/L (h)	1	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	1	0	1.7	1.70	1.7	
		Chloride	<250mg/L (a)	1	0	85	85.00	85	
		Colour	15 HU (a)	1	0	1	1.00	1	
		Total Alkalinity	-	1	0	4.8	4.80	4.8	
		Silicon	-	1	0	0.2	0.20	0.2	
		Calcium	-	1	0	0.92	0.92	0.92	
		Magnesium	-	1	0	0.38	0.38	0.38	
		Potassium	-	1	0	2.2	2.20	2.2	
		Sodium	<180 mg/L (a)	1	0	54	54.00	54	
		Total Hardness	60 - 200 mg/L (a)	1	**1**	3.9	3.90	3.9	There was one hardness result (3.9 mg/L) for the year, which is below ADWG guideline of 60 mg/L for aesthetics. Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	1	0	0.05	0.05	0.05	
		Manganese	<0.5 mg/L (h)	1	0	0.002	0.00	0.002	
		Total Dissolved Solids	<600 mg/L (a)	1	0	150	150.0	150	
	Raw Water (Lagoon)	Conductivity	<1500µS/cm (CL)	1	0	300	300.0	300	
		E coli	<1	2	0	1	18.00	35	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		pH	6.5-8.5	1	0	6.2	6.20	6.2	
		Turbidity	<5 NTU (a) (CL)	1	0	0.2	0.20	0.2	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
		Colour	15 HU (a)	1	0	1.6	1.60	1.6	
12 - Masig	**SP 1 - School**	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 2 - Council Office	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	15.00	20	
	SP 3 - Freezer	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 4 - Jack	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 5 - Beatrice	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	2	0	290	435.0	580	
		pH	6.5-8.5	2	0	6.7	7.00	7.3	
		Turbidity	<5 NTU (a) (CL)	2	0	0.4	0.45	0.5	
		Fluoride	<1.5 mg/L (h)	2	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	2	0	1.4	3.60	5.8	
		Chloride	<250mg/L (a)	2	0	76	123.0	170	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Colour	15 HU (a)	2	0	1	2.25	3.5	
		Total Alkalinity	-	2	0	4.8	7.90	11	
		Silicon	-	2	0	0.2	0.20	0.2	
		Calcium	-	2	0	0.87	1.49	2.1	
		Magnesium	-	2	0	0.41	1.26	2.1	
		Potassium	-	2	0	1.8	2.55	3.3	
		Sodium	<180 mg/L (a)	2	0	50	90.00	130	
		Total Hardness	60 - 200 mg/L (a)	2	2	3.9	8.95	14	Both reported results were below ADWG guideline for aesthetics (3.9 mg/L, 14 mg/L). Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	2	0	0.05	0.14	0.237	
		Manganese	<0.5 mg/L (h)	2	0	0.002	0.01	0.012	
		Total Dissolved Solids	<600 mg/L (a)	2	0	130	220.0	310	
	SP 7 - Raw Water (Lagoon)	Conductivity	<1500µS/cm (CL)	2	0	170	290	410	
		E coli	<1	2	0	2	10.50	19	
		pH	6.5-8.5	2	0	6.2	6.25	6.3	
		Turbidity	<5 NTU (a) (CL)	2	0	0.1	0.15	0.2	
		Colour	15 HU (a)	2	0	1	1.10	1.2	
13 - Ugar	**SP 1 - Main Tank**	Conductivity	<1500µS/cm (CL)	1	0	470	470	470	
		E coli	<1	2	0	1	1.00	1	
		pH	6.5-8.5	1	1	6.5	6.50	6.5	The one pH reading for the period was low (6.5). Not reported to regulator since ADWG value is for aesthetics (pH >11

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
									considered extreme and may affect health). Further investigation will be carried out into the low readings, and corrective actions undertaken if required; refer RMIP WS-49.
		Turbidity	<5 NTU (a) (CL)	1	0	0.2	0.20	0.2	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
		Fluoride	<1.5 mg/L (h)	1	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	1	0	1.9	1.90	1.9	
		Chloride	<250mg/L (a)	1	0	140	140	140	
		Colour	15 HU (a)	1	0	1	1.00	1	
		Total Alkalinity	-	1	0	6.4	6.40	6.4	
		Silicon	-	1	0	0.45	0.45	0.45	
		Calcium	-	1	0	2	2.00	2	
		Magnesium	-	1	0	0.82	0.82	0.82	
		Potassium	-	1	0	3	3.00	3	
		Sodium	<180 mg/L (a)	1	0	80	80	80	
		Total Hardness	60 - 200 mg/L (a)	1	1	8.4	8.40	8.4	There was one hardness result (8.4 mg/L) for the year, which is below ADWG guideline of 60 mg/L for aesthetics. Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	1	0	0.05	0.05	0.05	
		Manganese	<0.5 mg/L (h)	1	0	0.003	0.00	0.003	
		Total Dissolved Solids	<600 mg/L (a)	1	0	230	230.0	230	
		E coli	<1	2	0	1	1.00	1	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
	SP 2 - Native Beach	Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 3 - Health Center	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 4 - School	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 5 - Front Beach	E coli	<1	2	0	1	1.00	1	
		Heterotrophic Plate Count	-	2	0	10	10.00	10	
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	1	0	240	240.0	240	
		pH	6.5-8.5	1	**1**	6.3	6.30	6.3	The one pH reading for the period was low (6.3). Not reported to regulator since ADWG value is for aesthetics (pH >11 considered extreme and may affect health). Further investigation will be carried out into the low readings, and corrective actions undertaken if required; refer RMIP WS-49.
		Turbidity	<5 NTU (a) (CL)	1	0	0.4	0.40	0.4	
		Fluoride	<1.5 mg/L (h)	1	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	1	0	1.1	1.10	1.1	
		Chloride	<250mg/L (a)	1	0	61	61.00	61	
		Colour	15 HU (a)	1	0	1.8	1.80	1.8	
		Total Alkalinity	-	1	0	8.7	8.70	8.7	
		Silicon	-	1	0	0.26	0.26	0.26	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Calcium	-	1	0	3.2	3.20	3.2	
		Magnesium	-	1	0	0.69	0.69	0.69	
		Potassium	-	1	0	1.3	1.30	1.3	
		Sodium	<180 mg/L (a)	1	0	38	38.00	38	
		Total Hardness	60 - 200 mg/L (a)	1	1	11	11.00	11	There was one hardness result (11 mg/L) for the year, which is below ADWG guideline of 60 mg/L for aesthetics. Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	1	0	0.05	0.05	0.05	
		Manganese	<0.5 mg/L (h)	1	0	0.035	0.04	0.035	
		Total Dissolved Solids	<600 mg/L (a)	1	0	110	110.0	110	
	SP 7 - Raw Water (Lagoon)	Conductivity	<1500µS/cm (CL)	2	0	140	295.0	450	
		E coli	<1	2	0	1	3.00	5	
		pH	6.5-8.5	2	0	6.1	6.10	6.1	
		Turbidity	<5 NTU (a) (CL)	2	0	0.1	0.30	0.5	
		Colour	15 HU (a)	2	0	1	2.75	4.5	
14 – Erub *Note 1*	**SP 1 - Bond House**	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 4 - Medical Centre	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	57000	57000	57000	
	SP 5 - Pitt House	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	

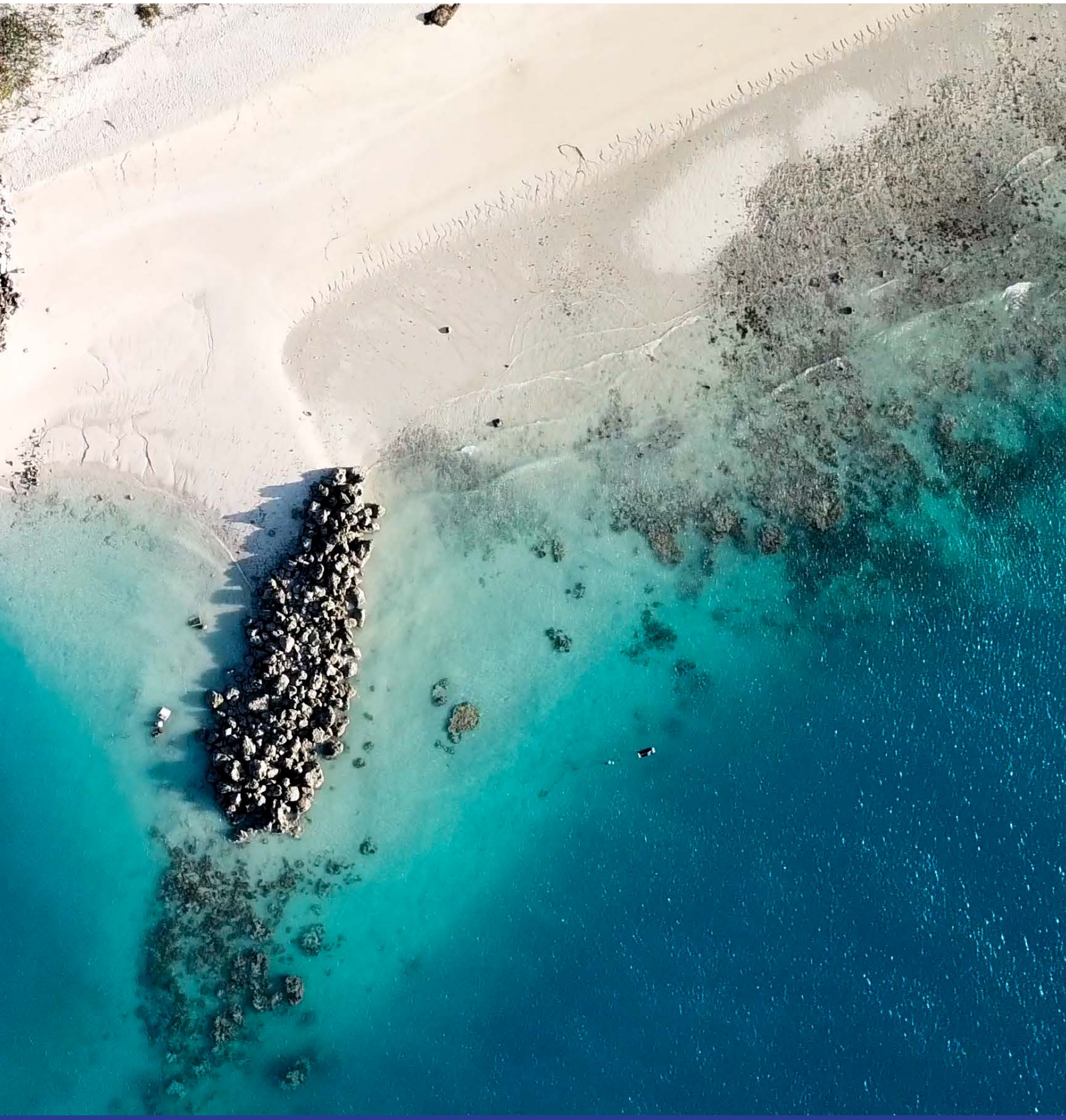
Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	1	0	190	190.0	190	
		pH	6.5-8.5	1	0	7.1	7.10	7.1	
		Turbidity	<5 NTU (a) (CL)	1	0	0.1	0.10	0.1	
		Fluoride	<1.5 mg/L (h)	1	0	0.08	0.08	0.08	
		Sulphate	<250 mg/L (a)	1	0	5.3	5.30	5.3	
		Chloride	<250mg/L (a)	1	0	28	28.00	28	
		Colour	15 HU (a)	1	0	2.7	2.70	2.7	
		Total Alkalinity	-	1	0	44	44.00	44	
		Silicon	-	1	0	34	34.00	34	
		Calcium	-	1	0	5.9	5.90	5.9	
		Magnesium	-	1	0	4.9	4.90	4.9	
		Potassium	-	1	0	2.5	2.50	2.5	
		Sodium	<180 mg/L (a)	1	0	25	25.00	25	
		Total Hardness	60 - 200 mg/L (a)	1	**1**	35	35.00	35	There was one hardness result (35 mg/L) for the year, which is below ADWG guideline of 60 mg/L for aesthetics. Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	1	0	0.05	0.05	0.05	
		Manganese	<0.5 mg/L (h)	1	0	0.004	0.00	0.004	
		Total Dissolved Solids	<600 mg/L (a)	1	0	130	130.0	130	
	SP 8 - Raw Water (Pre UF)	Conductivity	<1500µS/cm (CL)	2	0	180	235.0	290	
		E coli	<1	2	0	1	5.50	10	
		pH	6.5-8.5	2	0	6.5	6.65	6.8	

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Turbidity	<5 NTU (a) (CL)	2	0	9.9	13.95	18	
		Colour	15 HU (a)	2	0	27	47.50	68	
15 - Mer	**SP 1 - Desalination**	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 2 - Old School	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 3 - Dongas	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	160	160.00	160	
	SP 4 - Cemetery	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	7700	7700	7700	
	SP 5 - Area 3 Annie Salee House	E coli	<1	1	0	1	1.00	1	
		Heterotrophic Plate Count	-	1	0	10	10.00	10	
	SP 6 - Reservoir Analyser	Conductivity	<1500µS/cm (CL)	1	0	800	800.00	800	
		pH	6.5-8.5	1	1	6	6.00	6	The one pH reading for the period was low (6.0). Not reported to regulator since ADWG value is for aesthetics (pH >11 considered extreme and may affect health). Further investigation will be carried out into the low readings, and corrective actions undertaken if required; refer RMIP WS-49.

Scheme	Sample Point	Parameter	Operational Criteria / ADWG health guideline value	No. Samples Collected	No. Non-compliant Samples	Minimum	Average	Maximum	Comments
		Turbidity	<5 NTU (a) (CL)	1	0	0.2	0.20	0.2	
		Fluoride	<1.5 mg/L (h)	1	0	0.02	0.02	0.02	
		Sulphate	<250 mg/L (a)	1	0	2.5	2.50	2.5	
		Chloride	<250mg/L (a)	1	0	230	230.0	230	
		Colour	15 HU (a)	1	0	1	1.00	1	
		Total Alkalinity	-	1	0	2.1	2.10	2.1	
		Silicon	-	1	0	0.2	0.20	0.2	
		Calcium	-	1	0	1	1.00	1	
		Magnesium	-	1	0	1.2	1.20	1.2	
		Potassium	-	1	0	5.9	5.90	5.9	
		Sodium	<180 mg/L (a)	1	0	140	140.0	140	
		Total Hardness	60 - 200 mg/L (a)	1	1	7.4	7.40	7.4	There was one hardness result (7.4 mg/L) for the year, which is below ADWG guideline of 60 mg/L for aesthetics. Not reported to regulator since aesthetic quality. Existing RMIP item to investigate hardness, as this is an issue across all sites.
		Iron	< 0.3 mg/L (a)	1	0	0.05	0.05	0.05	
		Manganese	<0.5 mg/L (h)	1	0	0.004	0.00	0.004	
		Total Dissolved Solids	<600 mg/L (a)	1	0	380	380.0	380	
	Raw Water (Lagoon)	Conductivity	<1500µS/cm (CL)	1	0	770	770.0	770	
		E coli	<1	1	0	11	11.00	11	
		pH	6.5-8.5	1	0	5.6	5.60	5.6	
		Turbidity	<5 NTU (a) (CL)	1	0	0.2	0.20	0.2	
		Colour	15 HU (a)	1	0	1.5	1.50	1.5	

Notes on Verification Monitoring

1. TSIRC only completed one of two verification samples for the year ended 30 June 2024. This was due to logistical issues.
2. For unknown reasons the two verification samples were not taken at the Iama reservoir analyser in the reporting period. This was missed so was not reported to the regulator.



Appendix D - Water Quality – E. coli Compliance

01 - Boigu	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	6	5	5	5	5	5	10	3	3	5	5
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	51	51	56	56	56	56	56	61	59	62	62	62
No. of failures for previous 12 month period	1	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	98.0%	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

02 - Dauan	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	10	5	5	5	5	5	5	0	5	5	5	5
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	10	15	20	25	30	35	40	40	45	50	55	60
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

03 - Saibai	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	5	5	5	0	5	5	6	0	5	5	0
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	30	35	40	40	35	40	45	46	46	51	51	46
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	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

04 - Mabuiag	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	0	6	10	5	5	5	5	6	5	5	5	5
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	26	26	31	36	41	46	51	57	57	57	57	62
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

05 - Badu	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	10	5	5	5	5	5	11	0	5	5	5
No. of samples collected in which E. coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	2	0
No. of samples collected in previous 12 month period	77	76	76	76	76	76	76	76	66	66	66	66
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	2	2
% of samples that comply	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	97.0%	97.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO

06 - Kubin	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	0	0	0	0	0	5	1	0	0	5	5
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	42	36	31	26	21	15	20	21	21	21	16	21
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	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

07 - St Pauls	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	0	0	0	0	0	5	5	0	0	0	10
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	10	10	5	5	5	5	10	15	15	15	15	25
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	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

08 - Hammond	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	0	4	5	5	5	5	5	6	6	10	5
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	15	15	19	24	29	34	34	39	45	46	56	61
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

09 - Iama	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	5	5	10	5	5	5	5	5	5	5	5
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	41	40	40	45	50	55	55	55	60	60	60	65
No. of failures for previous 12 month period	1	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	97.6%	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	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

10 - Warraber	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	5	5	5	0	0	5	5	5	0	5	5
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	19	24	29	29	25	25	30	35	40	35	40	45
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

11 - Poruma	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	3	3	0	3	0	0	3	5	0	0	0	3
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	17	16	16	14	14	9	12	17	17	17	17	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	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

12 - Masig	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	6	5	5	5	5	5	6	5	5	5	5
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	32	32	37	42	47	52	57	58	57	62	62	62
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	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

13 - Ugar	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	6	0	0	0	0	0	0	0	0	10	0
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	37	43	43	37	32	32	27	22	16	11	21	21
No. of failures for previous 12 month period	3	3	3	2	2	2	1	1	0	0	0	0
% of samples that comply	91.9%	93.0%	93.0%	94.6%	93.8%	93.8%	96.3%	95.5%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES

14 - Erub	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	0	0	0	5	0	4	0	0	0	0	0
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	32	26	26	26	25	20	24	24	19	14	14	14
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	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

15 - Mer	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24
No. of samples collected	5	0	5	0	5	0	5	11	5	10	5	5
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	42	31	36	36	36	36	41	47	46	56	56	56
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	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Appendix E - Incidents and Complaints Register

Incident ID	Incident Number	Island	Incident/ Complaint	Date of Incident	Description of Incident	BWA Start Date	BWA End Date	Incident Resolved Date	Resolution Actions *(Note 1)*
I-40	DWI-500-23-10540	09 - Iama	Incident	24/10/23	High Conductivity in drinking water	24/10/23	03/11/23	03/11/23	WTP failed to shut down on high conductivity. Serviced RO unit.
I-41	N/A	09 - Iama	Complaint	24/10/23	Salty water	N/A	N/A	03/11/23	Related to DWI-500-23-10540
I-42	DWI-500-23-10566	15 - Mer	Incident	04/11/23	High chlorine residual in Clear Water Tank and community	04/11/23	08/11/23	08/11/23	Repairs carried out, SCADA issues remedied.
I-43	DWI-500-23-10567	08 - Hammond	Incident	06/11/23	Reservoir empty	N/A	N/A	20/11/23	Communication issues remedied. Supply restored.
I-44	DWI-500-23-10745	15 - Mer	Incident	28/12/23	Low Chlorine residuals due to leak in chlorine injection line	28/12/23	19/02/24	19/02/24	Repairs carried out to disinfection system.
I-45	DWI-500-24-10781	02 - Dauan	Incident	09/01/24	Low chlorine residuals due to loss of comms at reservoir	09/01/24	19/02/24	19/02/24	Communication issues remedied.
I-46	DWI-500-23-10622	04 - Mabuiag	Incident	04/12/23	Lagoon cover damage in bushfire	09/01/24		18/02/24	Lagoon cover still to be repaired, however DW safe.
I-47	Note 2	07 - St Pauls	Event	16/01/24	Change water restrictions from	N/A	N/A	22/04/24	Rainfall capture in lagoon and leak repairs meant

					Level 4 to Level 3				restrictions could be lifted.
I-48	Note 2	07 - St Pauls	Event	28/11/24	Impose Level 4 Water Restrictions	N/A	N/A	16/01/24	Rainfall capture in lagoon and leak repairs meant restrictions could be lifted.
I-50	Note 2	02 - Dauan	Event	28/11/23	Imposed Level 3 water restrictions.	N/A	N/A	22/04/24	Rainfall capture in lagoon and leak repairs meant restrictions could be lifted.
I-51	Note 2	14 - Erub	Event	28/11/23	Imposed Level 4 water restrictions.	N/A	N/A	22/04/24	Rainfall capture in lagoon and leak repairs meant restrictions could be lifted.
I-52	Note 2	06 - Kubin	Event	28/11/23	Imposed Level 4 water restrictions	N/A	N/A	22/04/24	Rainfall capture in lagoon and leak repairs meant restrictions could be lifted.
I-53	Note 2	04 - Mabuiag	Event	28/11/23	Imposed Level 3 water restrictions.	N/A	N/A	22/04/24	Rainfall capture in lagoon and leak repairs meant restrictions could be lifted.
I-54	DWI-500-23-10605	01 - Boigu	Incident	28/11/23	Loss of supply	N/A	N/A	19/02/24	Communications issues rectified
I-56	DWI-500-24-10831	10 - Warraber	Incident	09/02/24	E Coli detection in Cairns Lab sample. Sample	N/A	N/A	17/02/24	Checked chlorine levels and resampled

					received outside 24hr limit				
I-57	DWI-500-24-10832	01 - Boigu	Incident	09/02/24	E Coli detection in Cairns Lab sample. Sample received outside 24hr limit	N/A	N/A	17/02/24	Checked chlorine levels and resampled
I-58	DWI-500-24-10936	15 - Mer	Incident	31/03/24	Loss of supply due to power outage	N/A	N/A	05/04/24	Power restored by Ergon.
I-59	DWI-500-24-10957	08 - Hammond	Incident	17/04/24	Low chlorine residuals	17/04/24	27/05/24	27/05/24	Water imported from other WSP; chlorine residual restored.
I-60	DWI-500-24-10958	06 - Kubin	Incident	17/04/24	High turbidity readings	N/A	N/A	16/05/24	Faulty turbidimeter giving incorrect readings was replaced.
I-61	DWI-500-24-10977	01 - Boigu	Incident	30/04/24	Loss of supply			27/05/24	Communications issues rectified, supply restored.
I-62	DWI-500-24-10982	03 - Saibai	Incident	07/05/24	Low chlorine	07/05/24	27/05/24	27/05/24	P2P communications restored. Chlorine levels restored.
I-63	N/A	14 - Erub	Complaint	09/05/24	Complaint of strong taste and smell of chlorine	N/A	N/A	14/06/24	Investigated and chlorine levels were within ADWG limits.
I-64	N/A	01 - Boigu	Complaint	25/01/24	Resident complaint of no water to residence.	N/A	N/A	25/01/24	Community notice had been issued earlier in week about supply interruptions due to WTP power supply issues.

I-65	N/A	01 - Boigu	Complaint	25/01/24	Second resident complaint of no water to residence.	N/A	N/A	25/01/24	Community notice had been issued earlier in week about supply interruptions due to WTP power supply issues.
I-67	N/A	01 - Boigu	Complaint	28/11/23	Contractor complained of no water	N/A	N/A	27/05/24	Related to DWI-500-23-10605. Supply restored.
I-68	N/A	15 - Mer	Complaint	01/04/24	No water, power outage, incident raised	N/A	N/A	01/04/24	Power restored by Ergon. Supply restored.
I-73	DWI-500-24-11018	04 - Mabuiag	Incident	16/06/24	Low chlorine residual	17/06/24	28/06/24	01/07/24	Repairs carried out to disinfection system.

Notes:

1. In all incidents, investigations were carried out; community notified; and Council worked with the Queensland Tropical Health Unit and Water Supply Regulator to resolve the issue; and follow up samples were taken to ensure safe drinking water before lifting the boil water alert.
2. Event was not reported to regulator but should have been

Appendix F - Summary of DWQMP Amendments Resulting from Internal Review

DWQMP Section	Description of change
3.1 Risk Assessment Team	Updated risk assessment team in Appendix K.1
3.2 Risk Assessment Methodology	Updated risk level table
4.4 Drought Management Plan	Minor wording edits
4.5 Maintenance Management Plan	Minor wording edits
4.6 Defects and Issues Management Plan	Minor wording edits
4.7 Incidents and Complaints Management Plan	Minor wording edits
4.8 Communications Management Plan	Minor wording edits
4.9 Training Management Plan	Minor wording edits
4.10 Information Management Plan	Minor wording edits
4.12 Disinfection By-products	New section
4.13 Microbial risks	New section
Appendix A – Infrastructure Details	
A.1.1-A1.6	Amendments/updates
A.1.1	Updated populations per census and connections
A.1.3	Removed rows for 2 x 70kL mobile RO units as they are now permanently installed (at Ugar and Mer)
A.1.6	Removed rows for unused reservoirs: Dauan Eastern and Kubin old
A.2	Added in all new screen shots of GeoSCADA and TSIRC mapping
A.3	Historical schematics, maps, SCADA screen shots
Appendix B – Water Quality Management Plan	
B.1	Removed redundant sample point at Erub Added long & lat data for Masig and Mer
B.2	Removed Sewer Sample Test Matrix; Added sample SWIM local operations entry
B.3	Removed Sewer Licence Parameters; moved old B.5 to B.3
B.4	Removed logsheet examples; moved old B.6 to B.4
B.5	Moved old B.7 to B.5 (note, this was referred to under the heading Appendix B, however was left off the final PDF)
B.6	Moved B.6 to B.4 Added Water Quality Complaints summary
Appendix C – Leaks Management Plan	Minor wording edits
Appendix D – Demand Management Plan	• Changed all references to Drought Management Plan to Demand Management Plan for consistency throughout • Minor wording edits
Appendix E – Maintenance Management Plan	Minor wording edits
Appendix F – Defects and Issues Management Plan	• Minor wording edits • Updated extract from defects register

Appendix G – Incidents and Complaints Management Plan	• Minor wording edits • Updated incident & complaints register extract • Amended Incidents and complaints resolution procedure table and flowchart so only refers to colours (not colours and levels) • Amended CCP2 Turbidity table • Added in new Boil Water Alert Procedure
Appendix H – Communications Management Plan	• Minor wording edits
H.1	• Amended TSC line per Information Notice conditions (f) & (g) • Added back in line for Torres Strait Local Disaster Management Group • Added address details for new in-house labs
H.2	• Updated contact details and org structure
H.4, H.3	• removed Wastewater officer and Operations Manager Wastewater; added Executive Director Engineering
Appendix I – Training Management Plan	Minor wording edits, added DWQMP training module to table
Appendix J – Information Management Plan	Updated document and procedure register
Appendix K – Hazard Identification and Risk Assessment	• Updated K.1 for revision staff • Updated K.4 risk assessment matrix • Updated K.4 risk assessment matrix – removed references to 6-monthly testing for crypto and giardia • Updated K.6 RMIP and added new columns

DRINKING WATER QUALITY MANAGEMENT PLAN
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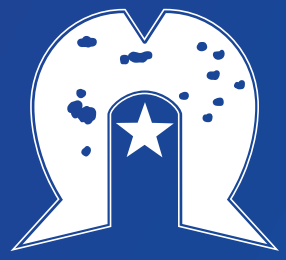

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