



# **Drinking Water Quality Management Plan Report**

Kowanyama Aboriginal Shire Council

SPID: 142

2022-2023 Financial Year

This report has been prepared in accordance with the Drinking Water Quality Management Plan Report Guidance Note.

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# 1 Introduction

This is the Drinking Water Quality Management Plan (DWQMP) report for Kowanyama Aboriginal Shire Council (KASC) for the financial year 2022-2023.

KASC is a registered service provider with identification (SPID) number 142. KASC is operating under an approved DWQMP to ensure consistent supply of safe quality drinking water in order to protect public health. This is done through proactive identification and minimisation of public health related risks associated with drinking water.

This DWQMP report includes:

- the activities undertaken over the financial year in operating our drinking water service
- drinking water quality summary
- summary of our performance in implementing our approved DWQMP

This report is submitted to the Regulator to fulfil our regulatory requirement, and is also made available to our customers through our website or for inspection upon request at council office.

## 2 Summary of scheme/s operated

Council manages the Kowanyama drinking water supply scheme and distributes treated water to the township of Kowanyama. The water supply scheme is comprised of multiple bore water sources, chlorination plant, service reservoirs, a pump station and distribution network.

Details of the scheme are noted in Table 1.

**Table 1 – Summary of schemes**

<b><i>Scheme</i></b>	<b><i>Water Source</i></b>	<b><i>Treatment processes</i></b>	<b><i>Treatment capacity</i></b>	<b><i>Towns supplied</i></b>
Kowanyama Water Supply	Great Artesian Basin – Kowanyama Bore 1,2 and 3	Chlorination	2ML/d	Kowanyama

### **3 DWQMP implementation**

The implementation of the DWQMP is discussed in this section, and also captured in the other sections that follow.

#### **3.1. Risk Management**

The process of keeping drinking water safe is one of risk management. Through efficient operations and implementation of the DWQMP, Council has ensured effective risk management to assure safe quality of drinking water to our customers.

During the reporting period, Council supplied drinking water that complied with the water quality criteria set in the Australian Drinking Water Guidelines. There were no incidents during the year.

#### **3.2. Monitoring**

Council maintains comprehensive monitoring programs to ensure that the quality of water supplied to customers is safe. The monitoring programs assist to identify any issue before it becomes a significant water quality incident. The results from the verification monitoring for the reporting period are discussed in section 5.

Council also undertakes operational monitoring, which includes the planned sequence of measurements and observations to assess and confirm the performance of our preventive or control measures. Measurements are of operational parameters that indicate whether processes are functioning effectively.

To ensure timely actions on operational monitoring data, Council uses a water quality spreadsheet to track and provide weekly summaries of water quality data. These actions will provide Council with additional information to act on water quality data.

Quality assurance is important to guarantee consistently reliable and legally defensible results and ensure customers are provided with the best quality water.

Council has the following quality management systems in place:

- microbiology and chemical parameter samples are sent to the Cairns Regional Council Water Laboratory, which is a NATA accredited laboratory
- operations staff have been appropriately trained to undertake sampling.

#### **3.3. Staff Awareness**

Implementation of the DWQMP is the responsibility of the Essential Services Manager (ESM). The ESM discusses issues relating to the implementation with water (and sewer) staff using informal meetings as required. The ESM is responsible for ensuring that all staff have appropriate training and undertake appropriate procedures while implementing the DWQMP.

#### **3.4. Improvement Plan**

Council maintains a culture of continuous improvement and are implementing the Improvement Plan of the DWQMP and making progress towards strengthening the management of the water supply. During the reporting period, Council implemented a number of actions including:

- reviewing the improvement program to better reflect the current operational conditions
- updating the DWQMP to reflect the changes in the installed infrastructure



The actions undertaken to implement the risk management improvement program are discussed in Table 2. Previous tasks which had been reported as completed in last year's annual report have been deleted.

**Table 2 – Risk management improvement program implementation status**

# Kowanyama Water Supply

Ref	Component	Event	Improvement Actions	Target Date	Action taken to date	Status and revised target date	Responsible Officer / Position
18	Whole of Service	Insufficient disinfection, chlorate formation	Develop a sodium hypochlorite management procedure, including a written agreement with the chemical supplier to supply the newest stock available, onsite stock rotation to ensure oldest stock is used first and the application of relevant Australian Standards.	2023	Council now recording stock concentration and rotating stock	2024	ESM
23	Whole of Service	Reservoir integrity breach	Repair rust damage to both reservoirs and replace the rubber seals on the roof, which have been attacked by birds	2023	Contract awarded for replacement of roof	March 2024	ESM

24	Whole of Service	Misinterpretation of schematics	Find/develop drawings for critical parts of the system as required. Improve labelling of valves, sample points and dosing points to increase ease of operation, particularly for staff who are less familiar with the equipment/system.	2023	Drawings completed. Labelling to be completed	2024	ESM
25	Whole of Service	Erroneous sampling results	Plan dedicated laboratory area, away from general office area.	Early 2023	New lab under construction- due for completion Jan 2024	2024	ESM
26	Whole of Service	Insufficient resourcing	Ensure current staff complete their already commenced training. Develop a register to identify ongoing training needs.	ongoing	Register template developed, although training records are maintained by HR. Requires updating	2024	ESM
30	Whole of Service	All Hazards	Undertake training on incident and emergency management. This should include working through a scenario.	Late 2023	ESM to source appropriate training	2023	ESM
32	Whole of Service	Lack of plant documentation and as-constructed drawings.	Upgraded hypochlorite plant to include OMM, drawings and valve labelling to improve documentation.	Late 2023	Documentation and labelling to be completed	2024	ESM

33	Whole of Service	Staff Continuity	Plan for alternative staff to assist ESM with EM Infrastructure with supervision and implementation of the DWQMP.	ongoing	KASC staff and roles continuously being reviewed	2024	ESM
34	Whole of Service	Calibration of instruments	Develop a calibration procedure and logsheet for benchtop analysers	2023	To be reviewed - new equipment has been introduced	2024	ESM
36	Whole of Service	PFOS/PFHxS	5-yearly PFOS/PFHxS sampling	Late 2023	5-yearly PFOS/PFHxS sampling programme to be added to DWQMP.	completed	ESM
37	Reticulation	Unknown dead ends or underutilised services. Poorly understood isolation requirements.'	Services survey to locate all services.	2023	All as-cons have been consolidated into one drawing. New pipework to be progressively added	to be updated 2024	ESM
38	Whole of Service	Poor calibration of instruments.	Procedure for calibrating instruments and logsheet	2023	To be reviewed - new equipment being introduced	2024	ESM
39	Catchment and source infrastructure	Lack of integrity at Bore 2	Install a concrete pad to seal Bore 2. Ensure that the bore	2023	ESM to arrange for installation	completed	ESM

			penetration is sealed with a hydrophilic seal.				
43	Whole of Service	Lack of plant documentation and operating instructions including SCADA interface.	Documentation for new salt water chlorine generator including SCADA to be developed	2023	Future use of salt water generator being considered	2024	ESM
44	Whole of Service	Lack of plant documentation and operating instructions for bore 3 filterbank.	Documentation for filterbank to be consolidated	2023	Documentation to be updated. Consideration to provide alternative filter media	2024	ESM
46	Whole of Service	SCADA hardware failure or unintentional program interference	Develop system of backup and recovery	2023	IT Dept developing internal systems	2024	ESM/KASC IT
47	Whole of Service	Cyber Security Event affecting SCADA - internal	Develop system to prevent, detect and recover from internal cyber attack	2023	IT Dept developing internal systems	2024	ESM/KASC IT
48	whole of Service	Cyber Security Event affecting SCADA - external	Develop systems to prevent, detect and recover from external cyber attack	2023	IT Dept developing internal systems	2024	ESM/KASC IT

## 4 Verification monitoring - water quality information and summary

This section discusses the compliance with the water quality criteria.

Verification and operational data have been taken from the data recorded on SWIMs during the period.

All laboratory data has been taken directly from external certified lab results.

**Table 3 – Drinking water quality performance - verification monitoring**

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
Kowanyama Water Supply	E. Coli	Monthly at 4 sites (48)	49	< 1 CFU/100mL	0	Results from Cairns Regional Council Water Laboratory.
Kowanyama Water Supply	Total Coliforms	Monthly at 4 sites (48)	49	<1 CFU/100mL	0	Results from Cairns Regional Council Water Laboratory
Kowanyama Water Supply	Heterotrophic Plate Counts	Monthly at 4 sites (48)	49	<10 CFU/mL		Results from Cairns Regional Council Water Laboratory
Kowanyama Water Supply	E. Coli	Weekly at 8 town sites (rotational)	62	0 MPN/100ml	0	In-house testing at reservoir and rotational at town sites.
Kowanyama Water Supply	Multiple chemical parameters, including metals, compounds, conductivity, TDS, hardness and turbidity as	Quarterly at Bores 1 and 2 and Bore 3	<ul style="list-style-type: none"> <li>One metal /physical / chemical test</li> <li>One full suite bore test including 5 Yearly PFAS, full ICPMS metal suite, radionuclides.</li> </ul>	various	0	Bore 1 and 2 Flouride levels generally fluctuate around and sometimes exceed the NHMRC guideline of 1.5mg/L, all reticulated blended water samples were compliant

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
	listed in DWQMP		<ul style="list-style-type: none"> <li>24 fluoride tests at bores and reservoir</li> </ul>			
Kowanyama Water Supply	Chlorates and Trihalomethanes	6-Monthly at the Treatment Plant Outlet	1-Chlorate test 1 THM test	0.25mg/L THM level	0	No recordings of high THM's

**Table 4. E. coli compliance with annual value**

**Drinking water scheme:** Kowanyama Water Supply – E-Coli results from certified **laboratory** (excludes in-house testing)

Year	2022– 2023											
	Month	July 22	Aug 22	Sept 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	Apr 23	May 23
No. of samples collected	7	0	0	4	7	0	4	0	6	7	7	7
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	8	8	7	0	4	6	0	7	7	8	0	0
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%
Compliance with 98% annual value	YES			YES	YES		YES		YES	YES	YES	YES

## 5 Incidents reported to the regulator

The incidents reported to the Regulator and management actions undertaken over the financial year are provided in this section.

**Table 5 – Incidents reported to the regulator**

Incident date	Scheme / location	Parameter / issue	Preventive actions
11/04/23	Kowanyama Drinking Water Supply	Incident DWI-142-23-10249 -monthly E-Coli water tests two weeks overdue due to samples not being delivered to Cairns Lab by new carrier (Skytrans). Incident closed 19/4/23	Carrier changed back to original (Hinterland Aviation)



## 7 DWQMP review outcomes

No reviews were undertaken during the reporting period. The next regular review is due before 1<sup>st</sup> July 2025

**Table 7 – DWQMP review outcomes**

Review component	Findings	Outcomes	Status of actions	Responsible Officer / Position
Nil reviews				

## 8 DWQMP audit findings

No audits were undertaken during the reporting period. The next audit is due before 1<sup>st</sup> March 2025

**Table 8 – DWQMP audit findings and status**

Item	Recommendation or OFI	Action	Status of Actions	Responsible Officer / Position
Nil Audits				