



# Drinking Water Quality Management Plan Annual Report

**Financial Year 2019 – 2020**

**Pormpuraaw Aboriginal Shire Council  
Service Provider Number 148**

24 Thinraathin Street, Pormpuraaw Queensland 4892

26 September 2020

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# 1 Introduction

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## 1.1 About Council

This document is the Drinking Water Quality Management Plan (DWQMP) annual report for Pormpuraaw Aboriginal Shire Council (PASC) for the financial year 2019–2020.

The DWQMP has been established and is being adhered to in order to protect public health through the identification and minimisation of public health-related risks associated with drinking water, and has been approved by the Qld Government. To ensure a consistent supply of safe quality drinking water, council proactively identifies and minimises those risks.

## 1.2 Purpose

This DWQMP annual report purpose is to:

- Describe the activities undertaken over the financial year in operating our drinking water service to minimise risk;
- Provide a summary of the drinking water quality information obtained for the scheme throughout the financial year;
- Summarise council's performance in implementing its approved DWQMP.

## 1.3 Scope

This report is submitted to the Regulator to fulfil our regulatory requirement for DWQMP reporting requirements set out in the Water Supply (Safety and Reliability) Act 2008 (the Act).

This report is also made available to our customers via our website.

This report is undertaken in accordance with the approved activities under council's 2018 DWQMP Revision B, which was current for the 2019-2020 financial year.

## 2 Summary of Scheme Operated

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With the introduction of the Act, water service providers were required to register as a drinking water service provider for the delivery of a drinking water service.

Council is a registered drinking water service provider, with the service provider identification (SPID) number as 148.

Council manages the Pormpuraaw drinking water supply scheme and distributes treated water to the Pormpuraaw community. The water supply scheme is comprised of infrastructure as described below.

**Table 2.1 – Summary of Pormpuraaw’s Scheme**

Item	Details
Scheme Name	PASC Township
Water Sources	Bores 1 & 2
Alternative Water Sources	Bores 3 & 4. This is not used and would require system augmentation and disinfection capability in order for them to be added to the system
Towns supplied	1 - Pormpuraaw
Treatment processes	Chlorination only with pump station
Treatment Capacity	1.3 M/L per day
Clear Water Storages	1 x 500kL 1 x 2ML
Town Reservoirs	2 x 120kL elevated water tanks
Reticulation Network	Approximately 35 kilometres
Verification Sampling Points	12 located within the reticulation network
Operational Sampling Points	3, located at Bore 1, Bore 2, and the chlorine analyser at the Water Treatment Plant

## 3 DWQMP Implementation

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### 3.1 Risk Management

The process of keeping drinking water safe is one of risk management. Council has been working to consistently monitor and record water quality and provide ongoing support to its staff through training and supervision. These 2 risks are the primary areas of management identified in the current risk assessment.

Other issues were identified in the risk assessment were high fluoride levels and bore blockage, both of which require no further action.

A formal review of the DWQMP was undertaken in September 2020 in parallel with the annual report writing. Although outside this reporting period, that review has identified relevant improvement actions to strengthen water quality management.

### 3.2 Monitoring

Council maintains a monitoring program to verify that the quality of water supplied to customers is safe. The monitoring program assists 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 4.

A parallel review of the DWQMP identified some investigations to determine if additional parameters needed to be added to the monitoring program.

### 3.3 Improvement Plan

The actions undertaken to implement the DWQMP are summarised below. A primary concern remains about obtaining and retaining competent water operations staff, and ensuring training occurs.

Again, a formal review of the DWQMP was undertaken in September 2020 and identified a significant increase in actions required over the next few years to ensure system infrastructure is adequate and operated effectively.

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The actions undertaken to implement the risk management improvement program are discussed in the table below.

**Table 3.1 – Risk Management Improvement Program Implementation Status**

Scheme name	Ref	Component	Improvement actions	Target date	Actions taken to date	Status and revised target date	Responsible Officer / Position
PASC	DI01	Disinfection	Acquire critical spare parts for chlorine gas disinfection system	June 2019	Complete spare parts inventory on hand, gas regulators, auto valves, rotameters, ejector pumps, ejectors, tubing, fittings, inline filters, also have on hand a new preloaded SCADA computer, new radio control modems for all sites	Completed in 2018-2019.	Executive Manager Environment/ CEO
PASC	WSO2	Staff Training	Untrained Staff (formal)	June 2020	Negotiations underway with LGAQ to fund delivery of Cert III Water Operations training to three PASC Water Operations staff members, this is also supported by Qld Health Cairns	Ongoing. There are currently 2 vacancies for water operations staff. Target Date: October 2020 for obtaining new staff, and training needs will be reassessed at that time depending on candidate skills and experience.	Executive Manager Environment/ CEO
PASC	WS04	Staff training	Water Quality data storage and summary	December 2019	New Senior Plumber appointed and trained with data entry and storage. A copy is kept on PASC server	Status is closed, however, PASC will monitor this status in 2019-2020 to ensure non-recurrence.	Executive Manager Environment/ CEO

## 4 Verification Monitoring - Water Quality Information and Summary

### 4.1 Monthly Verification

This section discusses compliance with the monthly water quality criteria.

**Table 4.1 – Drinking Water Quality Performance – Verification Monitoring Compliance Summary**

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples collected and tested	No. of non-compliant samples	Water quality criteria (i.e. ADWG health guideline value)	Required Performance %	Actual Performance %	Comments
PASC SPID148	Coliforms E.coli	72	72	0	<1 CFU/100mL	98	100	No Issues, Free chlorine levels consistent and averaged 0.89 mg/L
PASC SPID148	Coliforms Total Coliforms	72	72	0	<1 CFU/100mL (Additional limit added by PASC)	-	100	No Issues
PASC SPID148	Heterotrophic Plate Count	72	72	4	≤10 CFU/mL (Additional limit added by PASC)	-	94.4%	Exceedance found at: <ul style="list-style-type: none"> <li>▪ 2 x Southwest house</li> <li>▪ 1 x School</li> <li>▪ 1 x Northeast House</li> </ul> Action: Flushing performed.

**Table 4.2 – E. coli Compliance with Annual Value Limit**

Year	2018 – 2019											
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	6	6	6	6	6	6	6	6	6	6	6	6
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	72	72	72	72	72	72	72	72	72	72	72	72
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

**\*Calculate percentage using a 12 month 'rolling' annual value**

The *Public Health Regulation 2005* (the regulation) requires that 98 per cent of samples taken in a 12-month period should contain no *E. Coli*. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation. This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).



## 4.2 Quarterly Verification

This section discusses compliance with the quarterly water quality criteria.

**Table 4.3 – Compliance with Quarterly Verification Checks**

Parameter	Min	5th %ile	Average	95th %ile	Max	Guideline Values		Compliance	Count	Comments	
						Health	Aesthetic				
							Lower				Upper
<b>Pormpuraaw - Bore # 1</b>											
E coli	0	0	0	0	0	1			100%	11	1 sample missed.
pH	7.8	0	7.97	0	8.1		6.5	8	100%	12	
Turbidity	0.1	0.12	0.21	0.39	0.4			5	100%	12	
Calcium	40	40.4	42.9	44.8	45				-	12	
Chloride	150	152	182.5	208	210			250	100%	12	
Electrical Conductance	950	952	1047	1078	1100			1500	100%	12	
Fluoride	0.63	0.633	0.654	0.713	0.72	1.5			100%	12	
ICPMS Aluminium	0.005	0	0.0050	0.0045	0.005			0.2	100%	12	
ICPMS Arsenic	0.0004	0.00046	0.0009	0.000985	0.001	0.01			100%	12	
ICPMS Cadmium	0	0	0	0	0	0.002			100%	12	
ICPMS Copper	0.001	0.001	0.003	0.007	0.007	2		1	100%	12	
ICPMS Iron	0.023	0.023	0.044	0.074	0.08			0.3	100%	12	
ICPMS Lead	0.0005	0.000	0.0010	0.0004	0.0014	0.01			100%	12	
ICPMS Manganese	0.0004	0.0014	0.0038	0.0053	0.0054	0.5		0.1	100%	12	
ICPOES Silicon	27	27.15	28.08	29.85	30			80	100%	12	
Magnesium	29	7.83	29.83	30.7	31					12	
Potassium	6.6	6.64	7.08	7.67	7.7					12	
Sodium	100	101.5	127.5	148.5	150			180	100%	12	
Sulphate	11	11.1	12.7	12.9	13	500		250	100%	12	
Total Alkalinity	260	262	275	298	300		60	200	0%	12	
Total Dissolved Solids	500	505	566	607.5	610			600	83%	12	
Total Hardness	220	221	230	239	240			200	0%	12	

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Parameter	Min	5th %ile	Average	95th %ile	Max	Guideline Values			Compliance	Count	Comments
						Health	Aesthetic				
							Lower	Upper			
<b>Pormpuraaw - Bore 2</b>											
E coli	0	0	0	0	0	1			100%	12	
pH	7.7	7.72	7.93	8.08	8.1		6.5	8	80%	12	
Turbidity	0.1	0.12	0.24	0.48	0.5			5	100%	12	
Calcium	40	40.4	42.8	45.6	46				-	12	
Chloride	120	124	152.5	192	200			250	100%	12	
Electrical Conductance	960	962	985	1078	1100			1500	100%	12	
Fluoride	0.61	0.614	0.641	0.677	0.68	1.5			100%	12	
ICPMS Aluminium	0.005	0	0.0150	0.022	0.025			0.2	100%	12	
ICPMS Arsenic	0.0004	0.00044	0.0009	0.00098	0.001	0.01			100%	12	
ICPMS Cadmium	0.0003	0.000015	0	0.000285	0.0003	0.002			100%	12	
ICPMS Copper	0.001	0.000	0.002	0.004	0.004	2		1	100%	12	
ICPMS Iron	0.027	0.038	0.065	0.078	0.08			0.3	100%	12	
ICPMS Lead	0.0006	0.000	0.0006	0.0005	0.0006	0.01			100%	12	
ICPMS Manganese	0.0019	0.0023	0.0046	0.0057	0.006	0.5		0.1	100%	12	
ICPOES Silicon	27	27.15	27.75	29.85	30			80	100%	12	
Magnesium	28	28.15	29.75	30.85	31					12	
Potassium	6	6.12	6.75	7.28	7.4					12	
Sodium	100	101.5	111.7	137	140			180	100%	12	
Sulphate	10	10.15	11.3	12.85	13	500		250	100%	12	
Total Alkalinity	230	234.5	263	278.5	280		60	200	0%	12	
Total Dissolved Solids	500	502	527	594	610			600	80%	12	
Total Hardness	220	221	229	239	240			200	0%	12	

## 5 Reporting to the Regulator

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### 5.1 Non-compliances with Water Quality Criteria and Actions

100% compliance with the water quality criteria was achieved for the water supply scheme.

### 5.2 Prescribed Incidents or Events and Actions

There were no incidents.

**Table 5.1 – Incidents Reported to the Regulator**

Incident date	Location	Parameter/Issue	Preventive Corrective actions
Nil incidents			

## 6 Customer Complaints

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This section discusses the details of any complaints received about the drinking water service.

**Table 6.1 – Customer Water Quality Complaints**

Scheme	Health concern	Dirty water	Taste and odour	Other
Nil complaints				
<b>Total</b>				

## 7 DWQMP Review Outcomes

No review of the DWQMP was undertaken during the reporting period. A review was undertaken in 2018 which was outside the reporting period and will be reported in the next Annual Report. As discussed earlier a major plan review was being undertaken at the time of this report but was outside of the reporting period.

Status of the outcomes of the 2018 review is below and **highlights** those actions that were still outstanding from the previous annual report.

**Table 7.1 – DWQMP Review Outcomes (Review Date of 20/03/2018 and Status)**

Review component	Findings	Outcomes	Status of actions	Responsible Officer / Position
Service description	Need to update the description of the current system	Service description and general background information updated in DWQMP	Completed in 2018 DWQMP	Executive Manager Environment
Details of infrastructure	Need to include gas dosing, booster pump station and new 2ML reservoir	DWQMP infrastructure details updated	Completed in 2018 DWQMP	Executive Manager Environment
Water quality and catchment characteristics	No changes required	Not applicable	Not applicable	Executive Manager Environment
Risk assessment	Need to review the risk assessment considering the current operating environment	DWQMP Risk Assessment updated to reflect the current environment	Completed in 2018 DWQMP	Executive Manager Environment
Operations and maintenance procedures	Need to update the O&M procedures to reflect new gas system and new Reservoir	DWQMP O&M procedures updated to reflect new system	Completed in 2018 DWQMP	Executive Manager Environment
Management of incidents and emergencies	Need to update boil water alert procedures and proforma	Procedure and proforma developed	Completed December 2018	Executive Manager Environment

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<b>Review component</b>	<b>Findings</b>	<b>Outcomes</b>	<b>Status of actions</b>	<b>Responsible Officer / Position</b>
Risk management improvement program	A number of improvement actions have been implemented	Improvements included in DWQMP and older completed improvements have been deleted	2 of 3 actions closed. Please see Section 3 Table 2 for details.	Executive Manager Environment
Service-wide information management	No changes	Not applicable	Not applicable	Executive Manager Environment
Operational monitoring	Need to review plans, parameters, locations, testing method, frequency and target/limits	DWQMP monitoring plans updated to reflect new requirements	Completed in 2018 DWQMP	Executive Manager Environment
Verification monitoring	Need to improve the accuracy of data to the Regulator	Update data collection proformas and reports	Completed in 2018 DWQMP	Executive Manager Environment

## 8 DWQMP Audit Findings

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Northern Water Management was engaged by PASC, to undertake the first regular (external) audit of its registered water supply services under a single DWQMP, the audit was completed in September 2018.

A status summary of the actions recommended is provided below.

The actions undertaken to address the audit recommendations are outlined in Table 8.

**Table 8.1 – Latest DWQMP Audit Findings and Status**

Item	Type	Action	Status of Actions	Responsible Officer/Position
1.	OFI	It is suggested that the council consider implementing SWIMLocal or a similar tool to manage the verification (and operational) data;	Closed – Implemented in 2019.	-
2.	OFI	It is suggested that a limit is placed on HPC such as 10 (in line with CRC limit on the report) in order to trigger an action;	Open – to be added to the draft DWQMP September 2020.	Senior Plumber
3.	OFI	Provide certificate and further training for operational staff;	Ongoing. There are currently 2 vacancies for water operations staff. Target Date: October 2020 for obtaining new staff, and training needs will be reassessed at that time depending on candidate skills and experience.	Executive Manager Environment
4.	OFI	There is an opportunity to add all water quality incidents to the electronic information management system in addition to the email system. This may avoid any action issues such as when someone is on leave;	Open – Added to the draft DWQMP September 2020.	Senior Plumber
5.	OFI	Create a procedure for verifying the SCADA parameters regularly with verifiable results;	Open – Added to the draft DWQMP September 2020.	Senior Plumber
6.	OFI	Update procedures to include machinery disinfection prior to use in water management situations where cross-contamination may be a risk;	Open – Added to the draft DWQMP September 2020.	Senior Plumber
7.	OFI	Reticulation staff should receive further training reticulated water safety such as that offered through WIOA;	Open – Added to the draft DWQMP September 2020.	Executive Manager Environment
8.	OFI	Update the mains flushing procedure to be in line with industry-accepted practices such as that provided by WIOA;	Open – Added to the draft DWQMP September 2020.	Senior Plumber
9.	OFI	A procedure needs to be in place to ensure that all drinking water materials purchased are certified to Australian Standards or are WaterMark approved;	Open – Added to the draft DWQMP September 2020.	Senior Plumber



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Item	Type	Action	Status of Actions	Responsible Officer/Position
10.	OFI	Consider engaging a consultant to provide ongoing specialist drinking water quality management advice;	Closed – Consultant engaged to undertake a detailed review of the DWQMP which sets up the actions needed.	-
11.	OFI	Create a rolling cycle of procedural updates;	Open – Added to the draft DWQMP September 2020.	Senior Plumber
12.	OFI	It is suggested, that a roster system is implemented;	Open – Added to the draft DWQMP September 2020.	Senior Plumber
13.	OFI	Add a scenario for water treatment for the next mock emergency practice;	Open – Added to the draft DWQMP September 2020.	Executive Manager Environment
14.	OFI	Throw out any old and unused chemicals;	Closed – action undertaken	-
15.	OFI	Create an instrument calibration program;	Open – Added to the draft DWQMP September 2020.	Senior Plumber
16.	OFI	Create a procedure for regular calibration of the various instruments.	Open – Added to the draft DWQMP September 2020.	Senior Plumber

## Prepared by

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## NWM Approval

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This document is authorised for release once all signatures have been obtained.

In signing this approval, I agree that the document meets the standards required for the project and approve the project to progress.

### **REVISION 0 of this document is recommended by the Specialist External Advisor:**

Northern Water Management Pty Ltd:

Jeff Ballard  
Director



\_\_\_\_\_  
Signature

26-Sep-20

\_\_\_\_\_  
Date

## Scope and Limitations

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This document has been prepared by NWM for Pormpuraaw Aboriginal Shire Council and may only be used and relied on by Pormpuraaw Aboriginal Shire Council for the purpose agreed between NWM and Pormpuraaw Aboriginal Shire Council as set out in this document.

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## Document History

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#	Author	Checked	Approved	Issue Purpose	Date
Draft	NWM	AH	RM	Draft report for comment	17 Sept 2020
Final	NWM	AH	RM	Final	26 Sept 2020

## PASC Approvals

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This document is authorised for release once all signatures have been obtained.

In signing this approval, I agree that the document meets the standards required for the project and approve the project to progress.

### **This document is endorsed by the Senior Plumber:**

Pormpuraaw Aboriginal Shire  
Council Ltd:

Andrew Healey  
**Senior Plumber**

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### **This document is endorsed by the Executive Manager Environment:**

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Robbie Morris  
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