

Drinking Water Quality Management Plan Annual Report

1 July 2015 – 30 June 2016



Unitywater

Document Version and Modification Control

Date	Name	Position	Modification/Action
29/09/2016	P. Wetherell	Water Quality Officer	Draft
30/09/2016	A. Wilson	Water Quality Specialist	Review and update
30/09/2016	S. Jewell	Manager Network Operations	Endorsement of section 6
30/09/2016	S. McBride	Water Quality Manager	Final
05/12/2016	S. Taylor	Executive Manager Infrastructure Planning and Design	Endorsed

Service Provider Details

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Local Government Areas	Moreton Bay Regional Council Noosa Council Sunshine Coast Council

Glossary of Terms	
<	Less than
>	Greater than
ADWG	Australian Drinking Water Guidelines (2011)
DWQP	Drinking Water Quality Performance Report
AS/NZ 3500	<i>Australian New Zealand Standard 3500</i>
CCP	Critical Control Point
DEWS	Department of Energy and Water Supply (the regulator)
DWDS	Drinking Water Distribution System
DWQMP	Drinking Water Quality Management Plan
<i>E. coli</i>	<i>Escherichia coli</i> , a bacterium which may indicate the presence of faecal contamination and therefore potential health risk
FY 2015-2016	Financial year 2015-2016
HACCP	Hazard Analysis and Critical Control Point. An approach for managing the risk of drinking water supply contamination
Intelex	Unitywater safety incident reporting system for matters such as injury & notifications/hazard/near miss/equipment damage and is also our standards certification management system for audits and investigations.
mg/L	Milligrams per litre
ML	Mega litres
mpn/100mL	Most probable number per 100 millilitres
NPI	Northern Pipeline Interconnector
OFI	Opportunities For Improvement
OPRP	Operational pre requisite program
RA	Risk assessment
RMIP	Risk Management Improvement Plan
ROMM	Regional Operations Manager Meeting
SEQ	South East Queensland
SCADA	Supervisory Control and Data Acquisition
SHEQ	Safety Health Environment and Quality (Unitywater work area)
<i>the Act</i>	<i>Water Supply (Safety & Reliability) Act 2008</i>
VOC	Verification Of Competency
WQ	Water Quality
WTP	Water Treatment Plant

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1. Introduction

This report documents the performance of Unitywater's drinking water service with respect to water quality and performance in implementing the actions detailed in the drinking water quality management plan (DWQMP) as required under the *Water Supply (Safety and Reliability) Act 2008* (the Act).

The report assists the Regulator to determine whether the approved DWQMP and any approval conditions have been complied with and provides a mechanism for providers to report publicly on their performance in managing drinking water quality.

This report has been prepared in accordance with the *Water Industry Regulatory Reform – drinking water quality management plan report factsheet* published by the Department of Energy and Water Supply (DEWS), Queensland, accessible at www.dews.qld.gov.au, and the [DEWS drinking water quality management plan report template](#).

Table 1 - Reference to *the Act (2008)* criteria

Legislative Requirement under Section 142(3) of the Act	Content Guide	Section of this Report
Overview of operations (optional)	Contextual information of the water supply schemes that this annual report relates to.	Section 2
Actions taken to implement the DWQMP	Description of activities undertaken during the reporting period to implement the DWQMP: <ul style="list-style-type: none"> - Progress in implementing the risk management improvement program (RMIP) - Revisions made to the operational monitoring program - Amendments made to the DWQMP 	Section 3 Appendix A Appendix B
Compliance with water quality criteria for drinking water	<ul style="list-style-type: none"> - Verification monitoring results summary for the reporting period - Commentary on water quality results the Australian Drinking Water Guidelines, <i>E. coli</i> and fluoride standards 	Section 4 Appendix C
Notifications to the Regulator under sections 102 and 102A of <i>the Act</i>	<ul style="list-style-type: none"> - Non-compliances with the water quality criteria and corrective and preventive actions undertaken - Prescribed incidents or events reported to the Regulator and corrective and preventive actions undertaken 	Section 5
Customer complaints related to water quality	<ul style="list-style-type: none"> - Summary of water quality complaints - Summary of events and corrective action 	Section 6 Appendix D
Findings and recommendations of the DWQMP auditor	<ul style="list-style-type: none"> - Regulatory audit summary of findings - Outcomes of the DWQMP review 	Section 7
Outcome of the DWQMP review and how issues raised have been addressed	<ul style="list-style-type: none"> - Amendment of the DWQMP 	Section 8

2. Overview of Operations

Unitywater provides water and sewerage services to the Moreton Bay, Sunshine Coast and Noosa local authority regions. Unitywater operates and maintains more than \$3.1 billion of water and sewerage infrastructure, supplying services to residential and business customers spread across 5,223 square kilometres.

Unitywater receives treated water from the bulk water supplier Seqwater. The Unitywater service area has 5 supply regions, which are then broken down into 14 schemes. These regions include:

- **NPI South (Southern Grid)** – Caboolture; Bribie Island, Woodford, Redcliffe, Pine Rivers South
- **NPI North (Northern Grid)** – Noosa; Maroochy North (South Maroochy River); Maroochy South, Caloundra Coastal; Caloundra Railway Towns, Maleny
- **Dayboro** – Dayboro
- **Kenilworth** – Kenilworth
- **Pine Rivers North (Petrie)** – Pine Rivers North

Additional information is available in the 2015-16 Drinking water quality performance report (Appendix C).

3. Actions taken to implement the drinking water quality management plan

Unitywater's DWQMP has evolved since the first revision was submitted in 2011 and it will continue to be updated as risk management improvement actions are completed and operational philosophies change. A description of the implementation progress and related updates made during 2015-2016 are provided in this section and section 8. The three sub sections below are included to meet the requirements described in section 3 of the [DEWS drinking water quality management plan report template](#).

3.1. Risk management improvement actions

A progress summary table of the Risk Management Improvement Program (RMIP) is provided in Appendix A.

3.2. Revisions made to the operational monitoring program

A summary of the operational monitoring program revisions undertaken during the reporting period is included below.

- **Certification for ISO 22000: 2005** - In February 2016, Unitywater received ISO 22000: 2005 food safety management system certification (Refer Appendix B). This certification is best practice water quality management and provides additional assurance. A component of the certification is the Hazard Analysis Critical Control Point (HACCP) process. The HACCP plan describes the control measures for significant risks including critical control points (CCPs), prerequisite programs and operational prerequisite programs (OPRPs). Four OPRPs were implemented to address key contamination risks in the following areas:
 - Reservoir integrity

- Dosing station monitoring and control
- Mains commissioning
- Backflow prevention
- **Dosing station standardisation** – A project was undertaken to upgrade secondary dosing facilities throughout the region. The scope included installation of new analysers, reservoir mixers and dosing units. In addition, all secondary dosing facilities are now visible on the online monitoring platform and key sites are shared by Unitywater and Seqwater.

These improvements support the DWQMP and are considered good industry practice for drinking water quality management by independent ISO 22000 auditors. The revisions will be considered as part of the next formal risk assessment scheduled for 2017.

3.3. Amendments made to the drinking water quality management plan

In April 2016 Unitywater submitted an updated DWQMP to the DEWS. The DWQMP amendment application was approved on the 14 July 2016. Approval was made on the basis of assessment of the amended sections including:

- Registered service details
- Identification of hazards and hazardous events
- Risk management measures
- Operation and maintenance procedures
- Management of incidents and emergencies
- Verification monitoring
- Assessment of risks
 - Unitywater undertakes periodic formal risk assessment reviews. The last formal risk assessment was undertaken in June 2014. In September 2015 an internal review of the DWQMP risk register was undertaken as part of the HACCP implementation project described in section 3.2. The next formal risk assessment is scheduled for 2017.

4. Compliance with water quality criteria for drinking water

This section is included to meet the requirements of section 4 of the [DEWS drinking water quality management plan report template](#).

Unitywater provides an annual summary of water quality performance to customers, available on the www.unitywater.com. The 2015-16 Drinking water quality performance report (Appendix C) meets the requirements for the water quality performance aspect of this document. Please note that the reported statistics do not include results derived from repeat samples, or from emergency or investigative samples undertaken in response to an elevated result.

The 2015-16 Drinking water quality performance report includes a summary of the verification monitoring results. Key points include:

- Unitywater meets the requirements set by the *Public Health Regulation 2005* for drinking water, with 99.95% of all samples free of *E. coli*.

- Unitywater meets the chemical (health) performance requirements of the Australian Drinking Water Guidelines 2011 for every chemical tested in each of the 5 regions.¹
- Unitywater meets the chemical (aesthetic) performance requirements of the Australian Drinking Water Guidelines 2011 for every chemical tested in each of the 5 regions.

The verification monitoring programs are as described in the approved DWQMP. In FY2015-2016 approximately 30 new sample taps were installed to strengthen and support our approved verification monitoring program.

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

This section is included to meet the requirements outlined in section 5 of the [DEWS drinking water quality management plan report template](#).

5.1. Summary of notifications

- This financial year there were three instances where the Regulator was notified under sections 102 or 102A of *the Act*.
- 2 of 3 of these notifications involved the detection of *E. coli*.
- The remaining notification was due to a chlorine exceedence (5.3mg/L total chlorine)

It is important to note that these incidents did not require a 'boil water' or 'do not drink notice' because after consideration of each case it was determined there was no risk to public health. Additional detail on the individual notifications has been provided below.

5.2. Detailed description of the three notifications

Incident Description: There was a detection of *E. coli* from a routine sample taken on 18/01/2016 at the Castaways – Driftwood Drive sample site. The result was 1 mpn/100mL, with a disinfection residual of 1.0 mg/L free chlorine and 1.03 mg/L total chlorine (chlorinated system). It is unusual for *E. coli* to be detected in the presence of these levels of chlorine.

Corrective & Preventative Actions: A minor flush of 3 hydrants at the zone extents and the sample point was undertaken on the 19/01/2016 to confirm disinfection values. Chlorine residual values at flushing points were 0.6-0.7 mg/L. Based on the level of disinfection in the network it was extremely unlikely that a re-occurrence would be recorded, therefore no further actions outside of Unitywater's existing procedures were implemented.

Follow up sample results: Follow up sampling conducted on 19/01/2016 returned a negative result for *E. coli*, with a disinfection residual of 0.8 mg/L free chlorine and 0.9 mg/L total chlorine.

¹ Note that Unitywater receive fluoridated drinking water from Seqwater. Unitywater test for fluoride in all of our schemes. Each of these results met the requirements of Unitywater's approved verification monitoring plan.

Incident Description: There was a detection of high chlorine from a routine sample taken on 2/03/2016 at the Albany Creek High Level Reservoir, Gardonia Place sample site. Results were 5.33 mg/L total chlorine and 4.54 mg/L free chlorine.

Corrective & Preventative Actions: Field crew were immediately sent to site to isolate the dosing system. A nearby water pump station was manually operated to fill the reservoir and provide dilution. Following this activity, total chlorine results returned 2.33 mg/L. The dosing system was investigated to confirm the dosing system was operating as per normal operating conditions. This site has since been upgraded (as part of the dosing standardisation project) to allow SCADA connectivity and monitoring.

Follow up sample results: Follow up sampling conducted on 2/03/2016 returned a result of 4.4 mg/L total chlorine and 3.9 mg/L free chlorine. Field sampling undertaken returned a total chlorine result of 2.33 mg/L. In addition, sampling undertaken on the trunk water mains at Thiess Drive (Free chlorine 0.08 mg/L, total 0.35 mg/L) and Old Northern Road (free chlorine 0.09 mg/L, total chlorine 0.57mg/L) confirmed that no high chlorine residuals had reached the reticulation system

Incident Description: There was a detection of *E. coli* from a routine sample taken on 14/03/2016 at the Buderim/Mountain Creek – Golf Links Rd sample site. The result was 3 mpn/100mL, with a disinfection residual of 0.9 mg/L free chlorine and 1.0 mg/L total chlorine (chlorinated system). It is unusual for *E. coli* to be detected in the presence of these levels of chlorine.

Corrective and Preventative Actions: Reactive flushing was undertaken on the 15/03/2016 to draw water through the mains in this area together with flushing of the sample point.

Follow up sample results: Follow up sampling conducted on 15/03/2016 returned a negative result for *E. coli*, with a disinfection residual of 1.0 mg/L free chlorine and 1.0 mg/L total chlorine.

6. Customer complaints related to water quality

Please note that Unitywater refers to water quality complaints as water quality 'enquiries' for categorisation purposes. The majority of customer water quality enquiries received by Unitywater are typically related to dirty water. This is often due to sediment disturbance after network events (i.e. maintenance activities) which have an impact on water flow direction and/or velocity. Taste and odour enquiries are the other major contributor, followed by 'Other' and 'Health'. Taste and odour enquiries are often relatable to changes in source water quality, and/or disinfectant residual levels.

Table 2 provides a summary of the water quality enquiries received by region and scheme. The table addresses the reporting requirement as per table 1 in section 6 of the [DEWS drinking water quality management plan report template](#).

During the reporting period, Unitywater received 753 customer water quality enquiries. This represents a reduction from FY2014-15 results (1037 enquiries received).

This reduction in water quality enquiries is likely due to improvements in water quality management and supporting systems for example the water hygiene (5Cs) program.²

In addition, there were a number of events in the 2014-2015 which led to an increase in dirty water enquiries. These events included a breakpoint chlorination water quality improvement project and a temporary breakpoint chlorine intervention. These events *did not* occur during the current reporting period.

Due to the number of enquiries received in the 2015-2016 period, it is not practical to go into detail on each individual case within this report. Instead, a summary of the water quality enquiry clusters is included in Table 4 (Appendix D).

Table 2 - Customer water quality enquiries by region and scheme FY2015-2016

Water supply region	Water quality enquiry type				Grand total	Connected population (estimated) ³	per 1000 customers
	Dirty/milky	Taste/odour	Health	Other			
NPI South	261	94	8	5	368	335,567	1.09
NPI North	173	70	8	10	261	361,838	0.71
Dayboro	0	0	0	0	0	6359	0.00
Kenilworth	0	0	0	0	0	483	0.00
Pine Rivers North (Petrie)	105	15	2	2	124	84,753	1.46
Total	539	179	18	17	753	789,000	0.95

² Unitywater's 5Cs program provides guidance on hygienic work practices for field crews working on drinking water assets.

³ Population data calculated as follows: Southern Grid, Dayboro and Pine Rivers North (MBRC) - assume 2.7 persons per dwelling; Northern Grid and Kenilworth (SCC and Noosa) - assume 2.5 persons per dwelling (Source ABS, Census 2011)

6.1. Discussion of water quality enquiries received

This discussion section is included to meet the requirements of section 6 of the [DEWS drinking water quality management plan report template](#).

The majority of customer water quality enquiries are related to *dirty/milky* water (71.6%). *Taste and odour* enquiries were the other major category of customer enquiries (23.8%), followed by *health* (2.4%) and *other* (2.3%).

NPI South and Pine Rivers North Petrie regions returned levels of customer enquiries above the average of 0.95 enquiries per 1000 people connected (1.09 and 1.46 enquiries per 1000 respectively). A significant proportion these were due to mains breaks. There is a high proportion of older mains in the area which are likely a contributing factor to the breaks and dirty water.

Health – all health enquiries were prioritised for investigation. Typical response involved a site visit and onsite investigation, localised low velocity flushing, onsite monitoring/sampling of chlorine and turbidity levels and verbal assurance to the customer, as per Unitywater procedures.

Dirty/Milky water – Mains breaks and ongoing valve and hydrant replacement works have contributed to many of the dirty water complaints received. Areas with older mains (such as the Pine Rivers' examples discussed above) show a higher number of mains breaks. The typical response to these enquiries was a low velocity hydrant flush in proximity to the customer's address, and verbal assurance to the customer by visiting crew members.

Taste/Odour - On the 8th of March, changes were made by Seqwater affecting the source of water supply for residents across a large proportion of the UW supply network. Residents in many suburbs began to receive a blend that included water from the North Pine Water Treatment Plant (WTP). This different supply source has a different "profile", i.e. a different taste, odour and colour composition. In particular, the new catchment had a high concentration of Methyl-Isoborneol (MIB) a naturally occurring organic compound that has a strong earthy taste. This did not pose a hazard to human health, but impacted the taste of the water – which lead to an increase in customer taste and odour enquiries in the Redcliffe and Pine Rivers South areas. Seqwater increased powdered activated carbon (PAC) dosing to mitigate the taste issues.

7. Findings and recommendations of the drinking water quality management plan auditor

The below sections are included to meet the requirements of section 7 of the [DEWS drinking water quality management plan report template](#).

A DWQMP regulatory audit was undertaken by an independent auditor from BBTech Consulting in February/March 2016. The audit was conducted against version 7 of the DWQMP (approved in October 2015). There were no non-conformances identified by the auditors. As discussed in the audit report, ten (10) opportunities for improvement (OFIs) were identified.

A copy of the final audit report and response to audit findings was submitted to the DEWS in April 2016.

The purpose of the audit was to:

- Verify the accuracy of the monitoring and performance data provided to the regulator under the plan
- Assess Unitywater's compliance with the plan

- Assess the relevance of the plan in relation to Unitywater's drinking water service.

The key findings and recommendations of the audit report are discussed below.

7.1. Key audit findings

The audit focussed on three areas. A summary of the key audit findings from each area are discussed below:

1. Verification of data

Implementation of verification monitoring program

- The monitoring program presented in Appendix D of the DWQMP had been fully implemented.

Unitywater Performance Data provided to the Regulator

- **Water Quality Performance** - Unitywater is implementing the schedule of *E. coli* testing presented in the DWQMP. The results reported in the 2015-16 Drinking water quality performance report are accurate, and the requirements of the *Public Health Regulation 2005* have been met.
- **Required water quality non-compliance notification** - Unitywater's internal records of water quality non-compliances were consistent with notifications of water quality non - compliances reported to the Regulator in the 2014-15 Drinking water quality management plan annual report.
- **Customer Water Quality Enquiries** - 2014-15 Drinking Water Quality Management Plan annual report accurately reflects water quality complaints made by customers to Unitywater.

2. Implementation of the Drinking Water Quality Management Plan

The key findings of the report were:

- The DWQMP accurately reflects the issues in the Australian Drinking Water Guidelines
- The DWQMP is generally well implemented
- Unitywater is making substantial efforts to attain and maintain sound industry practice in many areas
- Unitywater has a solid culture that places emphasis on continuous improvement

3. Relevance of the Drinking Water Management Plan

Auditors found that the plan is relevant to Unitywater's drinking water services in that:

- Relevant elements (e.g. the monitoring program) are specifically targeted to the Unitywater system
- The risk assessment addresses all relevant risks associated with the Unitywater system
- Improvement initiatives are based on actual system performance

7.2. Key audit recommendations

Auditors suggested ten opportunities for improvement (OFI), which were acknowledged by Unitywater. Of the ten opportunities for improvement:

- 8 OFIs have been addressed through the updated DWQMP
- 2 OFIs have not been addressed because they are already incorporated in the current approved plan

Further details of the response to the ten OFIs were submitted to DEWS on April 2016 with the audit report.

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

The below sections are included to meet the requirements of section 8 of the [DEWS drinking water quality management plan report template](#).

8.1. Review and amendment of the DWQMP

Following the ISO 22000 certification and regulatory audit in February 2016, Unitywater reviewed and updated the DWQMP. In April 2016 the amended DWQMP (version 8) and the regulatory audit report were submitted to DEWS.

The amendments included:

- Updated list of five water supply regions
- Description of the HACCP system as recommended in ISO 22000: 2005
- Procedures for the Operational Pre-requisite programs
- Updated Incident Management Plan
- Updated verification monitoring plan
- Copy of ISO 22000 certificate

As discussed in section 3.3 the amended version was approved by DEWS on 14 July 2016.

Appendix A - Risk Management Improvement Program – Progress Report

Note: Action status is as of 28/10/2016⁴







Table 3 - Risk management improvement plan summary

ID	Action	Comment	Status	Progress	Action responsibility	Risk ID
RA11 (b)	Make recommendations (where relevant) for improvements to the WQ management system and gain Executive Manager approval to assign actions to responsible positions.	Process review group formed to address HACCP and DWQMP governance	Completed	Minuted process review group (PRG) meetings ongoing. Next meeting scheduled January 2017.	Water Quality Manager	Various
RA13 (b)	Improve visibility and reporting of reservoir predictive and corrective maintenance. This should allow a person to easily verify a) when an inspection took place, b) what predictive or corrective maintenance was identified as being necessary and c) whether the identified maintenance has been scheduled and completed.	OPRP Reservoir Integrity (A3114718) addresses this action	Ongoing	<ul style="list-style-type: none"> Initiated This action is being managed through the PRG In addition, internal audit made recommendations to improve implementation of OPRP. Audit actions loaded into Intelix for follow-up by action owner 	Manager Asset Knowledge and Performance	Various (High Risk in 2009 Risk Assessment)
RA17 (b)	Obtain confirmation from asset management branch that statutory requirements are compliant for backflow prevention device management (e.g. maintenance schedules and register).	OPRP Backflow prevention (A3114724) addresses this action	Complete	Internal OPRP audit recommended improvements, to be followed up in audit module.	Manager Asset Knowledge and Performance	Various (High Risk in 2009 Risk Assessment)
RA17 (c)	Confirm the process for hazard transfer of new connections, (predominantly high risk customers - see Table F in AS/NZ 3500) to Unitywater's drinking water network for visibility that statutory plumbing requirements have been met. The purpose of this is to demonstrate that Unitywater has oversight of the transferred hazard associated with third party connections.	OPRP Backflow prevention (A3114724) addresses this action	Completed	Following on from action completion, internal OPRP audit recommended improvements, to be followed up in audit module.	Manager Asset Knowledge and Performance	
RA17 (d)	Provide a 'register' to Asset Knowledge and Performance manager of high risk customers connected to Unitywater's drinking water network updated at regular intervals (e.g. quarterly) for the purpose of asset location identification. This action is reliant on the completion of RA17(c).	OPRP Backflow prevention (A3114724) addresses this action	Completed	Following on from action completion, internal OPRP audit recommended improvements, to be followed up in audit module.	Manager Infrastructure Planning and Development	
RA23 (a)	Identify relevant current procedures which relate to water quality management and identify gaps which may represent a high risk.	Procedure review performed as part of DWQMP/ISO 22000 audit preparation (2016).	Completed	Following on from action completion, internal OPRP audit recommended improvements, to be followed up in audit module.	Water Quality Manager	Various (including 5.03)
RA23 (b)	Develop standard, consolidated written procedures as required (following completion of RA23 (a).)	Part of ongoing procedure review activities	Ongoing	Part of ongoing procedure review activities.	Policy and Documentation Writer	
RA38	Review organisational position descriptions, and update to include: 1) clear outline of responsibilities for drinking water quality management at all levels Inclusion of 2) KPIs for drinking water quality management.	Position Description (PD) template has been updated to include responsibilities for drinking water quality management	Completed	Included in PDs as per new PD template.	Workforce Development Manager	
RA42	Deliver project for the installation of a chlorine dosing skid on the supply main between Glasshouse Reservoir and Beerburum.	Portable dosing skid installation facilities completed.	Completed	Dosing skid commissioned and delivered as part of dosing station standardisation project.	Network Projects Manager	
RA43	Install bulk supply point sample taps at key bulk supply points.	Bulk supply sample taps now installed.	Completed	All bulk supply sample points have been installed.	Capital Works Planning Manager	5.03

⁴ Please note that this progress report provides an update against the risk management improvement program (RMIP) summary provided in the DWQMP version 8, approved by the DEWS in July 2016.

ID	Action	Comment	Status	Progress	Action responsibility	Risk ID
RA44	<p>Deliver the implementation of the 'Verification of Competency' (VOC) in basic water quality sampling and testing' to the identified staff.</p> <p>Engage a third party to design a 'Verification of Competency' unit specific to basic water quality sampling and testing; in consultation with the Water Quality section</p> <p>Develop the implementation plan (including identification of the specific staff required to be competent) for delivery of the 'Verification of Competency in basic water quality sampling and testing'</p>	An action plan has been developed for the VOC by Learning & Development. Crews will undertake chlorine testing training prior to the VOC.	Ongoing	Initiated.	Learning and Development Programs Manager	5.03 N/A
RA45	<p>Update DWQMP as required for ISO22000 certification. This may include:</p> <ul style="list-style-type: none"> Outcomes of formal CCP identification Implementation and documentation of suitable CCPS, and CCP monitoring and reporting processes <p>Development and/or improvement of workflows and procedures</p>	Completed as per development of DWQMP version 8.	Completed	Completed as per DWQMP version 8.	Water Quality Manager	

Appendix B – ISO 22000: 2005 Food Safety Management System certificate

  	<h1>CERTIFICATE</h1> 								
	<p>This is to certify that</p>								
	<p>Northern SEQ Distributor - Retailer Authority Trading as Unitywater</p>								
	<p>33 King Street Caboolture, Queensland 4510 Australia</p>								
	<p>has implemented and maintains a Food Safety Management System.</p>								
	<p>Scope: Distribute drinking water to customers for consumption.</p>								
	<p>Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:</p>								
	<p>ISO 22000 : 2005</p>								
	<table><tr><td>Certificate registration no.</td><td>50000079 FSMS2013</td></tr><tr><td>Valid from</td><td>2018-02-15</td></tr><tr><td>Valid until</td><td>2019-02-14</td></tr><tr><td>Date of certification</td><td>2018-02-15</td></tr></table>	Certificate registration no.	50000079 FSMS2013	Valid from	2018-02-15	Valid until	2019-02-14	Date of certification	2018-02-15
	Certificate registration no.	50000079 FSMS2013							
Valid from	2018-02-15								
Valid until	2019-02-14								
Date of certification	2018-02-15								
 <p>Deutsche Akreditierungsstelle D-ZM-18402-01-00</p>									
<p>DQS CFS GmbH</p>  <p>Dr. Sled Sadek Managing Director</p>									
<p>Accredited Body: DQS CFS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main</p>									

Appendix C – 2015-16 Drinking water quality performance report

This report is uploaded to the Unitywater webpage for customer access. Please click the link below:

[2015-16 Drinking water quality performance report](#)

Appendix D – Water quality enquiry cluster investigation summary

Table 4 - Water quality enquiry cluster investigation summary 2015-2016

Water quality event ID	Event type	Date alert received	Water quality enquiry types within cluster				Investigation commentary	Corrective action
			Dirty/milky	Taste/ odour	Health	Other		
1033	Any WQ Enquiry: 3 in 12 hours, single DMA	01/12/2015	3	-	-	-	Mains pressure and flow testing was being undertaken which is suspected to have caused the water quality complaint.	No further action was taken after reactive flushing.
1034	Any WQ Enquiry: 3 in 12 hours, single DMA	9/12/2015	3	-	-	-	Complaints localised to Lawnton. Construction/Civil site works were being undertaken in proximity. It is suspected the use of water at the construction site may have caused a change in flow patterns. This may have stirred up sediments and led to initial complaint. Reactive flushing caused two subsequent complaints.	No further action was taken after reactive flushing.
1035	Any WQ Enquiry: 3 in 12 hours, single DMA	14/12/2015	3	-	-	-	Installation of pressure logger and flow meter by Construction Services.	No further action was taken after reactive flushing.
1036	Any WQ Enquiry: 4 in 24 hours, single DMA	15/12/2015	4	-	-	-	Installation of pressure logger and flow meter by Construction Services.	No further action was taken after reactive flushing.
1037	Any WQ Enquiry: 4 in 24 hours, single DMA	15/12/2015	5	-	-	-	Installation of pressure logger and flow meter by Construction Services.	No further action was taken after reactive flushing.
1038	Any WQ Enquiry: 3 in 12 hours, single DMA	16/12/2015	3	-	-	-	Pressure and Flow testing by contractor is suspected to have caused dirty water.	Extensive flushing of DMA undertaken.
1039	Any WQ Enquiry: 3 in 12 hours, single DMA	16/12/2015	4	-	-	-	Dirty water is suspected to have been caused by establishment of new DMA zone.	No further action was taken after reactive flushing.
1040	Health, Taste or Odour: 4 in 24 hours, all regions	18/01/2016	-	4	-	-	No reactive or planned works known to have caused the taste/odour issues. Suspect blue-green algae at North Pine WTP (referred to Seqwater).	No further action was taken after reactive flushing.
1041	Health, Taste or Odour: 4 in 24 hours, all regions	19/01/2016	-	4	-	-	No reactive or planned works known to have caused the taste/odour issues. Suspect blue-green algae at North Pine WTP (referred to Seqwater).	No further action was taken after reactive flushing.
1042	Health, Taste or Odour: 4 in 24 hours, all regions	19/01/2016	-	4	-	-	No reactive or planned works known to have caused the taste/odour issues. Suspect blue-green algae at North Pine WTP (referred to Seqwater).	No further action was taken after reactive flushing.
1043	Health, Taste or Odour: 4 in 24 hours, all regions	19/01/2016	-	5	-	-	No reactive or planned works known to have caused the taste/odour issues. Suspect blue-green algae at North Pine WTP (referred to Seqwater).	No further action was taken after reactive flushing.
1044	Any WQ Enquiry: 3 in 12 hours, single DMA	28/01/2016	3	-	-	-	No known reactive or planned works- unknown cause.	No further action was taken after reactive flushing.

1045	Any WQ Enquiry: 3 in 12 hours, single DMA	01/02/2016	3	-	-	-	Hydrant and Flow Testing being undertaken in DMA-NOUTL, TEWT and NPKLS that is suspected to have caused the dirty water complaints.	No further action was taken after reactive flushing.
1046	Health, Taste or Odour: 2 in 10 hours, single DMA	14/03/2016	-	2	-	-	Change in NPI flow by Seqwater has caused a change to taste in water supplied to customers in Caboolture area.	Customers advised about change in source water, no flushing undertaken as water still met ADWG.
1047	Health, Taste or Odour: 2 in 10 hours, single DMA	14/03/2016	-	3	-	-	Change in NPI flow by Seqwater has caused a change to taste in water supplied to customers in Caboolture area.	Customers advised about change in source water, no flushing undertaken as water still met ADWG.
1048	Any WQ Enquiry: 3 in 12 hours, single DMA	14/03/2016	1	3	-	-	Change in NPI flow by Seqwater has caused a change to taste in water supplied to customers in Caboolture area.	Customers advised about change in source water, no flushing undertaken as water still met ADWG.
1049	Any WQ Enquiry: 6 in 24 hours, all regions	16/03/2016	2	3	-	3	1. Four events due to Northern Pipeline Interconnector turnaround reflecting an earthy or mushy taste. 2. Other events in Buderim and Nambour not due to NPI turnaround, no reactive or planned works in area.	1. Seqwater contacted and increased Powdered Activated Carbon (PAC) dosing in response. 2. Reactive flushing undertaken
1050	Health, Taste or Odour: 4 in 24 hours, all regions	16/03/2016	-	4	-	-	Change in NPI flow by Seqwater has caused a change to taste in water supplied to customers in Caboolture area.	Customers advised about change in source water, no flushing undertaken as water still met ADWG.
1051	Any WQ Enquiry: 3 in 12 hours, single DMA	24/03/2016	-	-	3	-	All three health enquiries were investigated and customers assured that the water supply was not likely to be the cause of their illness. All three had residual chlorine present and presented clear (non-turbid) water.	Chlorine and turbidity monitored onsite. No further corrective action undertaken.
1052	Any WQ Enquiry: 6 in 24 hours, all regions	15/04/2016	5	-	-	-	Suspect that water quality complaint may be related to change in NPI: Seqwater have elevated levels of Geosmin.	Seqwater have increased MIB at North Pine WTP to treat elevated Geosmin level - No further action undertaken following localised flushing where required
1053	Any WQ Enquiry: 6 in 24 hours, all regions	18/04/2016	3	2	-	-	Suspect that water quality complaint may be related to change in NPI: Seqwater have elevated levels of Geosmin.	Seqwater have increased MIB at North Pine WTP to treat elevated Geosmin level - No further action undertaken following localised flushing where required
1054	Health, Taste or Odour: 4 in 24 hours, all regions	20/04/2016	-	4	-	-	Suspect that water quality complaint may be related to change in NPI: Seqwater have elevated levels of Geosmin.	Seqwater have increased MIB at North Pine WTP to treat elevated Geosmin level - No further action undertaken following localised flushing where required
1055	Any WQ Enquiry: 6 in 24 hours, all regions	7/05/2016	5	-	-	-	Enquiries may have been caused by the operation of a 450mm trunk main on Friday afternoon that caused a change in flow patterns and velocity.	Reactive flushing undertaken and monitored
1056	Any WQ Enquiry: 6 in 24 hours, all regions	1/06/2016	8	-	-	-	- James St, Caboolture – Planned works for Valve and Hydrant Replacement Works in Caboolture (31/5/16) - Horton Pde, Maroochydore – Planned works for Replace Valve Maroochydore (31/5/16) - Diane Pde, Kallangur – no planned or reactive works, cause unknown. - Shearwater Cl, Albany Creek - no planned or reactive works, cause unknown. - Blackall Tce, Nambour – Galvanised Iron pipe that is causing the dirty water (to be replaced). - David St, Burpengary – Reactive works to repair 375mm TM WO1598488 - Pitt Rd, Burpengary – Reactive works to repair 375mm TM WO1598488	In each case, reactive flushing undertaken and monitored.

1057	Any WQ Enquiry: 6 in 24 hours, all regions	22/06/2016	3	2	-	-	Water Quality complaints due to Ice Pigging program in Caboolture area.	No further action was taken after reactive flushing.
1058	Any WQ Enquiry: 6 in 24 hours, all regions	27/06/2016	5	2			<ul style="list-style-type: none"> - Gainsborough CRESCENT PEREGIAN SPRINGS; Planned Works - Valve Replacement monitor and flush if required - Lanata CRESCENT MOUNTAIN CREEK Crew comments indicate that smell could be rain water - Beverley WAY CABOOLTURE Planned Works - Ice Pigging monitor and flush if required - Morayfield ROAD BURPENGARY No Known Planned or Reactive Works reactive flushing - Kingsmill CIRCUIT PEREGIAN SPRINGS Planned Works - Valve Replacement monitor and flush if required - California Boulevard PEREGIAN BEACH planned Works - Valve Replacement monitor and flush if required - Old Emu Mountain Road PEREGIAN BEACH planned Works - valve replacement monitor and flush if required 	In each case, reactive flushing undertaken and monitored.