Cooranbong Water

LICENCE PLAN AUDIT
REPORT

Flow Systems

May 2021

4.00

Document Status:	Version:	4.00		
Document History:	*Status*	*Notes*	*Version*	*Date*
	Internal draft		1.0	29/9/2020
	For issue	Reviewed by SC	2.0	9/10/2020
	Final Report	Audit findings updated with additional evidence provided Reviewed by SC	3.0	3/11/2020
	Audit addendum added	Addendum on the adequacy of updates to Critical Control Point and Log Reduction Value documentation added as Appendix B. No changes have been made to version 3.0 of this report other than the addendum.	4.0	14/05/2021
Author:	Natalie Crawford, Annalisa Contos			
Contact:	Annalisa Contos Atom Consulting 65 Cambourne Ave St Ives NSW 2075 annalisa@atomconsulting.com.au 02 9488 7742			
File Name:	FSY2006P Flow Systems Licence Plan Audit report_Cooranbang_v4.docx			

Executive Summary

Audit scope

This report presents the findings of the licence plan audit of Cooranbong Water Pty Ltd, consistent with the audit requirements set out in IPART's *Audit Guideline, Water Industry Competition Act 2006 (NSW)* (July 2020).

The audit scope includes the adequacy and currency of the Cooranbong Licence Plans.

An addendum has been added to this audit report on the adequacy of updates to Critical Control Point and Log Reduction Value documentation as Appendix B. No changes have been made to version 3.0 of this report other than the addendum.

The licence plans subject to audit are the:

- Cooranbong Scheme Management Plan
- Recycled Water Quality plan
- Drinking Water Quality Plan.

Audit findings

Flow Systems have a Drinking Water Quality Plan (DWQP) and a Recycled Water Quality Plan (RWQP) that details how the ADWG Framework and AGWR Framework elements, components and actions are met. The Plans' structure is simple yet comprehensively documents how Flow System meets the requirements of the ADWG and AGWR Frameworks. Documents specific to individual sites are referenced in the Site-Specific Management Plan. The well-structured document hierarchy enables a clear line of sight from the Frameworks' requirements to operational documents and activities.

A summary of compliance of the Cooranbong Water Quality Plans (drinking and recycled) is shown in Table i-i.

The Licence Plans as a whole are considered adequate, with a few deficiencies noted in relation to reporting and processes relating to the updating of documentation following scheme expansion. These are considered non-material and do not impact the commencement of the scheme. Recommendations have been included to address these shortcomings.

Table i-i. Summary of compliance with Cooranbong Water Quality Licence Plans

Requirement	Licence Plan	Compliance
Schedule 1 clause 7(1) (a)	Water quality plan (drinking)	Non-compliant non material
Schedule 1 clause 7(1) (b)	Water quality plan (recycled)	Non-compliant non material

Recommendations

Six audit recommendations were made for the Cooranbong Water Quality Licence Plans, summaries of these can found in Section 4.1.3 and Section 4.2.3. It is recommended that these be assessed as part of the next scheduled DWQP and RWQP

licence plan audits (noting that this is scheduled for 2021) and does not impact scheme commencement. There were recommendations in the draft version of this report that have been removed due to subsequent provision of audit evidence.

Contents

Tables

1 Introduction

1.1 Objectives

This report presents the findings of the licence plan audit of Cooranbong Water Pty Ltd, consistent with audit requirements set out in IPART's *Audit Guideline, Water Industry Competition Act 2006 (NSW)* (July 2020).

1.2 Licensee's infrastructure, systems and procedures

Cooranbong Water Pty Ltd is wholly owned by Flow Systems Pty Ltd. We refer to Flow Systems as the service provider throughout this report as it was Flow Systems' licence plans that were audited.

Flow Systems operations and obligations are managed through an integrated Business Management System (BMS), independently certified to:

- AS/NZS ISO 9001 Quality Management Systems
- AS/NZS ISO 14001 Environmental Management System
- AS/NZS 4801 Work Health and Safety Management Systems
- OHSAS 18001:2007 Occupational Health and Safety Management Systems.

The BMS is managed through a SharePoint site. As Flow Systems operate a number of schemes under the WIC Act it has a cross-functional approach to its systems and procedures. It has overarching documents including its:

- Drinking Water Quality Plan
- Recycled Water Quality Plan
- Infrastructure Operating Plan
- Incident Management Plan
- Asset Management Plan
- Monitoring and Sampling Plan

These are supported by both utility-wide and scheme-specific documentation. The documents that detail how Flow Systems meets their licence plan requirements are called up in these plans. We have recorded the documents we audited as part of these plans in Appendix A.

2 Audit method

2.1 Audit scope

The audit scope includes the adequacy and currency of the Cooranbong Licence Plans.

The licence plans subject to audit are the:

- Cooranbong Scheme Management Plan
- Recycled Water Quality Plan
- Drinking Water Quality Plan.

A separate New Infrastructure Audit is being conducted of Cooranbong by another auditor. Verification of onsite infrastructure, including testing the accuracy of the process flow diagram is out of the scope of this audit, as it has been assumed that this is being as part of the New Infrastructure Audit.

The following will inform the audit criteria:

- *Audit Guideline, Water Industry Competition Act 2006 (NSW)* (IPART July 2020)
- *Water Industry Competition Regulation* requirements
- AS/NZS 19011:2019 Guidelines for Auditing Management Systems.

Table 2-1. Summary of licence plan audit requirements

Requirement	Details
Audit Guidelines	**Water Quality Plan audit** Audits the adequacy of a licensee's Water Quality Plan, and its compliance with legislative requirements, in accordance with the requirements of Schedule 1 clause 7(1) of the WIC Regulation. A licensee's Water Quality Plan for drinking water or non-potable water must be consistent with the actions outlined in the 12 framework elements of the ADWG (for drinking water) and the AGWR (for non-potable water).
WIC Regulation Schedule 1 clause 7(1)	**7 Water quality plans** (1) Before commencing to operate water infrastructure commercially, the licensed network operator for the infrastructure must prepare, and forward to IPART, a water quality plan, in relation to the water supplied from the infrastructure, that specifies: (a) if the water so supplied is drinking water, how the 12 elements of the framework for the management of drinking water quality, as detailed in the Australian Drinking Water Guidelines, have been addressed and will be implemented, and (b) if the water so supplied is non-potable water, how the 12 elements of the framework for the management of recycled water quality and use, as detailed in the Australian Guidelines for Water Recycling, have been addressed and will be implemented and, having regard to those guidelines, the purposes for which the water may be used and the purposes for which the water may not be used.

2.1.1 Audit standards

In conducting this audit, we adopted the audit standard *ISO 19011:2018 Guidelines for auditing management systems*. This standard ensures that the audit is conducted in accordance with an established and recognised audit protocol.

Regard was also given to the following standards/guidelines, especially where these provide specific detail that are appropriate to this audit:

- Audit Guideline, *Water Industry Competition Act 2006 (NSW)* (IPART July 2020)
- ASAE 3100 (2017) Compliance Engagements issued by the Auditing and Assurance Standards Board

- ISO/IEC 17021-1:2015 Conformity Assessment – Requirements for bodies providing audit and certification of management systems (contains principles and requirements for the competence, consistency and impartiality of the audit and certification of management systems of all types).

2.2 Audit steps

A summary of audit steps is shown in Table 2-2.

Table 2-2. Audit steps

Step	Item	Details
Step 1	Initiation	Licensee initiates audit via WILMA
	Engagement of approved auditor	Licensee engages approved auditor to undertake audit
	Audit proposal	Auditor develops audit proposal and provides it to licensee for submission to IPART via WILMA
		Licensee submits the audit proposal to IPART for approval via WILMA IPART reviews proposal
		IPART approves audit proposal
Step 2	Opening meeting	Auditor conducts opening meeting
	Audit interviews	Auditor undertakes interviews
Step 3	Draft audit report	Auditor prepares draft audit report and submits it via WILMA
		Licensee and IPART review draft audit report Opportunity for comment on the draft audit report
	Final audit report	Auditor finalises audit report
	Final audit report submission	Auditor submits final report to IPART via WILMA
Step 4	Non-compliance matters	Non-compliance matters will be addressed in accordance with IPART's Compliance and Enforcement Policy

Source**:** Audit Guideline, *Water Industry Competition Act 2006* (NSW) (IPART, July 2020)

2.3 Audit grades

The audit grade definitions used in assessing the auditee's performance against the requirements are set out in Table 2-3.

Table 2-3. Audit grades

Grade	Detail
Compliant	Sufficient evidence is available to confirm that the requirements have been met.
Non-compliant (non-material)	Sufficient evidence is not available to confirm that the requirements have been met and the deficiency does not adversely impact the ability of the licensee to achieve defined objectives or assure controlled processes, products or outcomes.
Non-compliant (material)	Sufficient evidence is not available to confirm the requirements have been met and the deficiency does adversely impact the ability of the licensee to achieve defined objectives or assure controlled processes, products or outcomes.
No requirement	There is no requirement for the licensee to meet this criterion within the audit period.

Source: Audit Guideline, *Water Industry Competition Act 2006* (NSW) (IPART, July 2020)

2.4 Audit team

The audit team qualifications are shown in Table 2-4.

Table 2-4. Audit team

Team Member	Details
Dr Annalisa Contos Lead Auditor	Dr Annalisa Contos holds the following auditor qualifications: 1. A registered Exemplar Global lead auditor (Certificate No. 113465): a. Exemplar Global -DW (Drinking Water) b. Exemplar Global -RW (Recycled Water) c. Exemplar Global TL-AU (Lead Auditor) 2. NSW IPART (Independent Pricing and Regulatory Tribunal) qualified: a. Lead Auditor and Area Specialist Drinking Water Quality b. Lead Auditor and Area Specialist Licence and Regulatory Compliance c. Lead Auditor and Area Specialist Infrastructure Performance d. Lead Auditor and Area Specialist Recycled Water Quality e. Lead Auditor and Area Specialist Sewage Management f. Area Specialist Environmental Management

Team Member	Details
Natalie Crawford Auditor	Natalie Crawford holds the following auditor qualifications: 1. A registered Exemplar Global lead auditor (Certificate No. 130608): a. Exemplar Global -DW (Drinking Water) b. Exemplar Global -RW (Recycled Water) c. Exemplar Global TL-AU (Lead Auditor) 2. NSW IPART (Independent Pricing and Regulatory Tribunal) qualified: a. Auditor Licence and regulatory compliance b. Drinking Water Quality Auditor and Area Specialist c. Recycled Water Quality Auditor and Area Specialist d. Environmental management Auditor and Area Specialist
Steven Contos Peer Review	Steven Contos holds the following auditor qualifications 1. A registered Exemplar Global auditor (Certificate No. 122777): a. Exemplar Global -DW (Drinking Water) b. Exemplar Global -RW (Recycled Water) c. Exemplar Global -AU (Auditor)

2.5 Quality assurance process

Checks of information received were conducted and included aspects such as veracity of information, coverage of the subject area being audited and document adequacy. Professional scepticism (as per ASAE 3100) was applied as part of the document review. The quality assurance approach to this audit involved independent peer review from a qualified auditor (Steven Contos) who was not part of the audit, and review by the lead auditor.

3 Audit plan

The audit is shown in Table 3-1 for Cooranbong Licence Plan audit. As a separate New Infrastructure Audit is being conducted field verification of infrastructure was not included as part of the audit scope.

Table 3-1 Stage 1 Cooranbong Scheme Management Plan licence plan audit plan

Task	Details	Timeline
Task 1 Audit Preparation	Develop audit proposal	21 August 2020
Task 2 Desktop Audit	Licence Plan provided to Auditor and IPART Information review and desktop audit	25 September 2020
Task 3 Audit Interviews	Video conference	1 October 2020
	Close out meeting	7 October 2020
Task 4 Reporting	Draft Report	9 October 2020
	Comments required by Flow Systems and IPART	29 October 2020*
	Final Report	3 November 2020*

*Note: Final report dates were revised in discussion with Flow Systems, with notifications to IPART

4 Audit findings

4.1 Water quality plan

A summary of the water quality plan audit requirements and the compliance grade is shown in Table 4-1.

Table 4-1. Drinking water quality plan audit requirements

Ref	Requirement	Compliance
WIC Regulation Schedule 1 clause 7(1)	**7 Water quality plans** (1) Before commencing to operate water infrastructure commercially, the licensed network operator for the infrastructure must prepare, and forward to IPART, a water quality plan, in relation to the water supplied from the infrastructure, that specifies: (a) if the water so supplied is drinking water, how the 12 elements of the framework for the management of drinking water quality, as detailed in the Australian Drinking Water Guidelines, have been addressed and will be implemented	Non-compliant non material

4.1.1 Summary of findings

Flow Systems have a Drinking Water Quality Plan (DWQP) that details the ADWG Framework elements, components and actions. In the DWQP a table is included for each ADWG component, that details how the requirement of each action is met (*Discussion* column). Evidence to meet the requirements is detailed for Documents, Records and Responsibility/Monitoring. The structure is simple yet comprehensively documents how Flow System meets the requirements of the ADWG Framework. Documents specific to individual sites are referenced in the Site-Specific Management Plan.

The Licence Plan as a whole is considered adequate, with a few deficiencies noted in relation to reporting and processes relating to the updating of documentation following scheme expansion. These are considered non-material and do not impact the commencement of the scheme. Recommendations have been included to address these shortcomings. It is recommended that these be assessed as part of the next scheduled DWQP licence plan audit (noting that this is scheduled for 2021).

4.1.2 Detailed findings

A summary of the adequacy of each ADWG Framework element is discussed in Table 4-2. A sample of documents referenced as evidence (in both the DWQP and Cooranbong Scheme Management Plan) were tested as part of the audit process.

A minor error was noted in the DWQP, where a reference is made instead to the RWQP (An opportunity for improvement is made to correct this.

A summary of audit evidence is included in Appendix A. We have marked whether a full audit of the document was completed or whether the document was sampled or sighted.

Table 4-2. Audit findings against the ADWG Framework

Element	Component	Audit findings	Evidence
Element 1 Commitment to drinking water quality management	Drinking water quality policy	The process for the drinking water quality policy as described in Section 1.1 of the DWQP is adequate. A drinking water quality policy is in place that documents Flow Systems commitment to drinking water quality. The policy is endorsed by Senior Management and reviewed annually. The Critical Document Review Calendar was sighted which noted a mechanism for monitoring compliance of the review requirement. Issues with the Critical Document Review Calendar are discussed under Element 10 Management of Documentation and Records.	DWQP Section 1.1 Recycled Water Quality Policy FS-WAT-AUS-PO-OPS-1310 Commitment to Safety, Environment and Quality FS-ALL-AUS-CO-GOV-121 Critical Document Review Calendar
	Regulatory and formal requirements	The process for regulatory and formal requirements as described in Section 1.1 of the DWQP is adequate. The process to identify relevant regulatory and formal requirements is documented in the Compliance Management Policy and Procedure. The Risk and Compliance Manager, General Counsel and Managers are responsible for keeping up to date with new requirements. The Network Operators Licence obligations register was provided which maps scheme licence obligations.	DWQP Section 1.2 Compliance Management Policy and Procedure FS-ALL-AUS-PO-R&C-1366 Network Operators Licence (NOL) Obligation Register FS-WAT-NSW-RG-OPS-3234

Element	Component	Audit findings	Evidence
	Engaging stakeholders	Stakeholders specific to the Cooranbong scheme are listed in the Scheme Specific Stakeholder and Emergency Contact List. Key stakeholders for Cooranbong relevant to the drinking water supply include IPART, NSW Health, NSW Department of Planning, Industry and Environment and Hunter Water. The stakeholders listed are appropriate to the scheme.	DWQP Section 1.3 Stakeholder and Emergency Contact List
Element 2 Assessment of the drinking water supply system	Water supply system analysis Assessment of water quality data	The process for water system analysis and assessment of water quality data is described in Section 2.1 and 2.2 of the DWQP document and is adequate in line with the ADWG requirements for this component. The responsibilities described (including both from workshop attendees and the team responsible for the DWQP) align with ADWG that states that the team should include management and operations staff as well as representatives from relevant agencies. A process flow diagram was provided for the drinking water scheme from source (Hunter Water) to customer consistent with requirements of the ADWG. Verifying the process flow diagram onsite was outside the scope of this audit. Pertinent system information and key characteristics are included in the Section 2.2.1 Cooranbong Scheme Management Plan and summarised for workshops in workshop briefing material. Assessment of water quality data was used to inform the risk assessment. The risk assessment workshop briefing pack was sighted as evidence and as adequate evidence of this requirement. The briefing pack included operational water quality data trends and observations.	DWQP Section 2.1 and 2.2 DWQP Attachment C DWQP and Scheme Management Team WICA Responsibilities and Authorities Matrix FS-WAT-AUS-FM-OPS-1316 Cooranbong Drinking Water System Process Flow Diagram CO-WAT-NSW-DR-OPS-2610 Outcomes Summary, Risk Assessment Workshop – land and Housing, 27 August 2020 Risk Assessment Briefing Pack FS-WAT-NSW-RE-OPS-3199
	Hazard identification and risk assessment	Hazard identification and risk assessment is covered under Section 2.3 of the DWQP and is in line with the ADWG requirements for this component. Risk assessment methodology is defined in the Risk Assessment Protocol for Water Products and Services document. This procedure clearly states	DWQP Section 2.3 Risk Assessment Protocol for Water Products and Services FS-WAT-NSW-PR-OPS-2466

Element	Component	Audit findings	Evidence
		that the risk assessment process for health risks on the drinking water register is to be undertaken in line with ADWG and key standards. Briefing material for the Cooranbong Risk Assessment was provided consistent with the Risk Assessment Protocol for Water Products and Services. The risk register is satisfactory in terms of risks considered, control measures and assessment of uncertainty.	Outcomes Summary, Risk Assessment Workshop – land and Housing, 27 August 2020 Cooranbong Scheme Risk Register CO-WAT-NSW-RG-OPS-2472
Element 3 Preventive measures for drinking water quality management	Preventive measures and multiple barriers	The process for identifying and documenting preventive measures and multiple barriers as described in Section 3.1 of the DWQP is in line with the ADWG requirements for this component. General controls are included in Attachment B of the DWQP and all controls included in the scheme risk register. The Cooranbong Scheme Risk Register was provided as evidence for this component. Controls are included from source to end use for each hazardous event and categorised as either preventative, detective or reactive controls. The sample of controls reviewed are consistent with the ADWG. Additional control measures were identified in the risk assessment and documented in the 'Specific actions and ALARP considerations' column of the risk register.	DWQP Section 3.1 Cooranbong Scheme Risk Register CO-WAT-NSW-RG-OPS-2472
	Critical control points	The process for identifying, establishing and implementing critical control points as described in Section 3.2 of the DWQP is adequate and in line with ADWG requirements for this component. Critical control points and quality control points are identified as part of the risk assessment process. Documentation of this assessment was confirmed in the Cooranbong Scheme Risk Register where CCPs and QCPs are recorded in the "CCP / QCP?" column. No critical control points have been identified for the drinking water supply system. A Quality Control Point was identified for the Potable Water Tank, detailed in the Cooranbong Control Points Table as low and high free chlorine. It is noted	DWQP Section 3.2 Cooranbong Scheme Risk Register CO-WAT-NSW-RG-OPS-2472 Cooranbong Control Points Table CO-WAT-NSW-PL-OPS-2832

Element	Component	Audit findings	Evidence
		that guidance provided by NSW Health on their website is the recommendation for integrity of reservoirs to be considered a control point. **OFI DW 3.1:** Consider the inclusion of reservoir integrity as part of the Potable Water Tank control point in line with NSW Health guidance.	
Element 4 Operational procedures and process control	Operational procedures	Process for operational procedures as described in Section 4.1of the DWQP is adequate and in line with the ADWG requirements for this component. The DWQP states that schemes will be operated in accordance with the scheme operations and maintenance manual. A finalised Operations and Maintenance (O&M) Manual – Cooranbong Potable Water Supply was provided as evidence (Version 1, dated 29 October 2020). A register of operational procedures was provided. The register lists all procedures, marking those relevant to all systems and specific to the Cooranbong system. Key operational procedures relevant to the drinking water supply include chemical delivery procedure, mains flushing, compliant water sampling, water quality complaints and water storage cleaning. Procedures are appropriate for the key process units. The status of these key procedures are marked as implemented.	DWQP Section 4.1 Operations and Maintenance (O&M) Manual – Cooranbong Potable Water Supply CO-WAT-NSW-MN-OPS-2763 Register of Operational Procedures FS-WAT-NSW-RG-OPS-2725 Cooranbong Control Points Table CO-WAT-NSW-PL-OPS-2832
	Operational monitoring	The process for operational monitoring and documentation as described in Section 4.2 of the DWQP is adequate and in line with the ADWG requirements for this component. Operational monitoring requirements are detailed in the Monitoring and Sampling Plan. The Cooranbong Monitoring and Sampling program was provided and sample items were cross checked against the sampling plan; the items checked were found to be consistent.	DWQP Section 4.2 Monitoring and sampling plan FS-WAT-AUS-PL-OPS-1288 Cooranbong Monitoring and Sampling Program CO-WAT-NSW-PL-OPS-3093

Element	Component	Audit findings	Evidence
			Water Storage Tank Inspection Checklist FS-WAT-AUS-FM-OPS-2562
	Corrective action	The process for corrective actions as described in Section 4.3 of the DWQP is adequate and in line with the ADWG requirements for this component. Discussion on adequacy is also include in Element 6 in the Incident and Emergency Response Protocols section. Quality control points summary corrective actions are included in the control point tables. Deviations for other operational monitoring activities are described in the Operational Monitoring Corrective Actions procedure.	DWQP Section 4.3 Drinking Water Post-treatment Out-of-Specification Policy and Procedure FS-WAT-NSW-PO-OPS-3176 Cooranbong Control Points Table CO-WAT-NSW-PL-OPS-2832 Operational Monitoring Corrective Actions Procedure FS-WAT-NSW-PR-OPS-2722
	Equipment capability and maintenance	The process for equipment capability and maintenance as described in Section 4.4 of the DWQP is adequate and in line with the ADWG requirements for this component. Equipment capability and maintenance is addressed by the Asset Management Plan. Weekly checklists are generated of operator's tasks from the computerised maintenance management system. The Cooranbong Operations and Maintenance Manual specifies maintenance requirements. Calibration requirements were checked, with quarterly calibration of online analysers is appropriate. The sampling monitoring program also references calibration and verification as identified in the checklist. An example checklist was provided as evidence of this process.	DWQP Section 4.4 Infrastructure Operating Plan (IOP) FS-WAT-AUS-PL-OPS-1279 Asset Management Plan (AMP) FS-WAT-AUS-PL-OPS-1219 RAMS Checklist (10/2/20 and JOB0002 Weekly Control Points Schemes TEST 21/09/2020) Operations and Maintenance (O&M) Manual – Cooranbong Potable Water Supply CO-WAT-NSW-MN-OPS-2763

Element	Component	Audit findings	Evidence
	Materials and chemicals	The process for materials and chemicals as described in Section 4.5 of the DWQP is adequate and in line with the ADWG requirements for this component. Flow Systems manages the process of ensuring only approved chemicals and materials are used through the Evaluating Products Materials and Chemicals Procedure. Chemical deliveries are managed through the Chemical Delivery Procedure. These procedures align with the requirements of the ADWG.	DWQP Section 4.5 Evaluating Products Materials and Chemicals Procedure FS-WAT-NSW-PR-OPS-2715 Chemical Delivery Procedure FS-WAT-NSW-PR-OP16S-2591
Element 5 Verification of drinking water quality	Drinking water quality monitoring	The process for drinking water quality monitoring as described in Section 5.1 of the DWQP is adequate and in line with the ADWG requirements for this component, with the exception of one non material deficiency. The deficiency noted was the process for identifying additional sample and monitoring locations following scheme expansion. A recommendation has been made to address the gap. This Element is considered adequate once this recommendation is addressed. Parameters, locations and frequency of sample sites are detailed in the Cooranbong Monitoring and Sampling Program. Verification sampling is conducted at the Point of Supply and Point of Use. Frequency of sampling is dependent on population being supplied. For Cooranbong 52 samples per year are required. A check was carried out of the verification requirements in the Monitoring and Sampling Plan against the Cooranbong Monitoring and Sampling Program - the documents were found to be consistent. It is expected that as the development progresses the number of sample and monitoring locations for the verification monitoring will increase. The documents reviewed were silent on the trigger or procedure to review the verification requirements. An area for improvement was identified for more consistent definitions and references for the term ‘critical limit’. This term is currently used in	DWQP Section 5.1 Monitoring and sampling plan FS-WAT-AUS-PL-OPS-1288 Cooranbong Monitoring and Sampling Program CO-WAT-NSW-PL-OPS-3093

Element	Component	Audit findings	Evidence
		reference to critical control points, quality control points and verification monitoring. **Recommendation DW 5.1**: Develop a process to ensure sample numbers and locations remain consistent with the requirements of the ADWG and the NSW Health Monitoring Program. **OFI DW 5.1**: Review the use of the term 'critical limit' and how it is referenced throughout the documentation.	
	Consumer satisfaction	The process for consumer satisfaction as described in Section 5.2 of the DWQP is adequate. The Complaints and Dispute Resolution Policy details the process for users of drinking water to make a complaint, and the escalation and dispute resolution process. The Work Instruction: How to manage customer complaints details the process for managing a received complaint. These documents are considered to be adequate in line with the ADWG requirements.	DWQP Section 5.2 Complaints and Dispute Resolution Policy Work Instruction How to manage customer complaints
	Short-term evaluation of results	The process for drinking quality monitoring and documentation as described in Section 5.3 of the DWQP is adequate. Short term monitoring is managed through the Laboratory Information Management System (LIMS). Flow Systems is notified of exceedances following which an investigation is undertaken by Flow Systems. We did not test the LIMS system or associated processes as the implementation of the licence plan is outside the scope of this audit.	DWQP Section 5.3
	Corrective action	The process for corrective action in the DWQP refers to Component 4.3, Element 6 and Component 8.2. Adequacy of these sections is discussed under those items. Reference to these sections in this is adequate for this component. Responsibilities for deviations are noted to be the scheme operator and managers which is appropriate.	DWQP Section 5.4

Element	Component	Audit findings	Evidence
Element 6 Management of incidents and emergencies	Communication	The communication process as described in Section 6.1 of the DWQP document is \ adequate. Figure 3 of the DWQP sets out how incidents and emergencies are generally managed. Key documents referenced were sighted as evidence (Incident Management Plan, Incident Notification Protocols with NSW Health, Water Operations Incident, Reporting and Investigation and Procedures). Flow Systems has a regulatory reporting obligation for incidents. The Water Operations Incident Management, Reporting and Investigation Procedure details the overarching incident notification process. Flow Systems notifies and reports to IPART in accordance with IPART's Network Operator Reporting Manual. Communication protocols with NSW Health are defined in the Incident Notification Protocols with NSW Health.	DWQP Section 6.1 Incident Management Plan FS-ALL-AUS-PL-INC-1266 Incident Notification Protocols with NSW Health (FS-ALL-NSW-PR-INC-1277) Water Operations Incident Management, Reporting and Investigation Procedure FS-WAT-NSW-PR-INC-2561
	Incident and emergency response protocols	The incident and emergency response process as described in Section 6.2 of the DWQP document is adequate and in line with ADWG requirements. Figure 3 of the DWQP sets out how incidents and emergencies are managed. Key documents referenced were sighted as evidence (Incident Management Plan, Incident Notification Protocols with NSW Health; Water Operations Incident Management, Reporting and Investigation Procedure; Drinking Water Post-Treatment Out-of-Specification Policy and Procedure; Drinking Water Out of Specification Corrective Action Work Instruction). The Drinking Water Post-Treatment Out of Specification Policy and Procedure (Rev 1.0, dated 6 October 2020) and the Drinking Water Out of Specification Corrective Actions Work Instruction (Rev 1.2, dated 22 October 2020) for Cooranbong were tested for adequacy. These documents were provided after the close out meeting and the adequacy of the document against onsite actions was not able to be assessed as	DWQP Section 6.2 Incident Management Plan FS-ALL-AUS-PL-INC-1266 Incident Notification Protocols with NSW Health (FS-ALL-NSW-PR-INC-1277) WICA Form A – Incident Initial Notification Cooranbong WICA Form B – Incident Initial Notification Cooranbong Water Operations Incident Management, Reporting and Investigation Procedure FS-WAT-NSW-PR-INC-2561

Element	Component	Audit findings	Evidence
		part of this audit. The Drinking Water Post-Treatment Out of Specification Policy and Procedure and the Drinking Water Out of Specification Corrective Actions Work Instruction are adequate. The Water Operations Incident and Reporting Training Package provided (27 October 2020) includes references to key incident documentation, including the Drinking Water Out of Specification Policy and Procedure and scheme specific corrective action procedures; Water Storage Tank Inspection Checklist and the Water Operations Incident Report Form.	Water Operations Incident Report Form and Investigation Form FS-WAT-NSW-PM-INC-2566 Drinking Water Post-treatment Out-of-Specification Policy and Procedure FS-WAT-NSW-PO-OPS-3176 Drinking Water Out of Specification Corrective Action Work Instruction - Cooranbong CO-WAT-AUS-WI-OPS-3339 Photo of Cooranbong Incident & Emergency Manual Table of Contents (CO-WAT-AUS-FM-INC-3228) Photo of cover of Cooranbong Incident & Emergency Management Manual Water Operations Incident Reporting and Investigation Training Package FS-ALL-AUS-TP-WHS-3020
Element 7 Employee awareness and training	Employee awareness and involvement Employee training	The process for operator, contractor and end user awareness and training as described in Section 7.1 and 7.2 of the DWQP document is adequate. The process for training and induction of employees is outlined in the Training Policy and Procedure. This document outlines the identification	DWQP Section 7 Training Policy and Procedure FS-ALL-AUS-PR-HRT-3168 Induction package: Drinking Water and Recycled Water Quality, and

Element	Component	Audit findings	Evidence
		of training requirements, inductions, training records, competency and employee requests for training. Evidence of the induction process provided included the New Starter Checklist and the Induction Package for Drinking Water and Recycled Water Quality and Sewerage Management. Flow Systems requires that operators have a Water Operations Training Competency matrix completed, an example was provided of evidence (new starter checklist) of the adequacy of the process to assess training requirements. The induction process for Contractors is adequately outlined in section 7.1.1 of the DWQP.	Sewerage Management at Flow – an overview (19 June 2019) New Starter Checklist
Element 8 Community involvement and awareness	Community consultation Communication	The process for community involvement and awareness is adequately covered in Section 8.1 and 8.2 of the DWQP. This section details Flow Systems communication program with customers. Links to communication provided on the Flow Systems website were checked: 'For Developers' and 'Homeowners Guide'. An opportunity for improvement is identified to include further information in DWQP Component 8.1 on the assessment requirements used in developing the customer communication program. **OFI DW 8.1**: Include further information in the DWQP documenting the assessment requirements for developing the community consultation program.	DWQP Section 8 https://askus.flowsystems.com.au/hc/en-us/sections/200077179-For-Developers https://www.flowsystems.com.au/askus/Land_Housing/Home_Owners_Guide.pdf
Element 9 Research and development	Investigative studies and research monitoring Validation of processes	The process for research and development is adequately described in Section 9.1, 9.2 and 9.3 of the DWQP. The DWQMP states that validation of process is not relevant as water is sourced from a reputable supplier and is not treated by Flow Systems. The process for revalidation of equipment occurs on system change. Processes to evaluate system change are assessed using the System	DWQP Section 9 WICA Change checklist FS-WAT-NSW-FM-GOV-2690 System change checklist FS-WAT-AUS-RG-OPS-3206

Element	Component	Audit findings	Evidence
	Design of equipment	Change Checklist and the WICA Change checklist. An observation was noted that the while the WICA Change checklist refers to change that would require significant change to a licence plan, referencing to requirements for revalidation could be more explicit. **OFI DW 9.1:** Include explicit requirements for when revalidation will need to occur.	
Element 10 Documentation and reporting	Management of documentation and records	The process for the management of documentation and records is adequate as described in Section 10.1 of the DWQP. The Document Control Procedure and Records Management Policy records the process for control of documents and records. The Records Management Policy details roles and responsibilities, identification of records, storage and retrieval of records and, protection and retrieval of records. These documents are adequate. The DWQP states that critical documents are reviewed as per the Critical Document Review Calendar 20-21. The Calendar provided (excel document) has no document control. Flow System advised that this was a live document, reviewed monthly and included in the monthly report, and as such was not a controlled document in the BMS. This approach is considered appropriate. A sample of document status and review dates were checked and found to be consistent with the source documents provided.	DWQP Section 10.1 Document Control Procedure and Records Management Policy Records Management Policy FS-ALL-AUS-PO-ADM-1309 Critical Document Review Calendar 20-21
	Reporting	The reporting process as described in Section 10.2 of the DWQP was assessed against the requirements of the ADWG for this component. Minor shortcomings were identified with the process of annual reporting to consumers. This component would be considered adequate following completion of the identified recommendation. The process includes internal reporting through HSEQ Monthly Reports and the R&C Monthly Report and annual external compliance reporting to IPART.	DWQP Section 10.2

Element	Component	Audit findings	Evidence
		A gap was noted against the ADWG which states that an annual report should be made available to consumers, regulatory authorities and stakeholders. The DWQP is silent on annual reporting to consumers. There is no procedure listed that describes the activities required to develop the reports. While there is no explicit requirement for this, we are unable to confirm that Annual report content would meet the requirements of this clause as the implementation of the licence plan is outside the scope of this audit. An area for improvement is to include further details on IPART compliance reporting regulations, such as reference to the Network Operator Reporting Manual. **Recommendation DW 10.2**: Detail the process for how reporting to the consumer is undertaken in the DWQP. **OFI DW 10.1:** Include reference to external reporting obligations.	
Element 11 Evaluation and audit	Long-term evaluation of results	The process for the long-term evaluation of results as described in Section 11.1 of the DWQP is not adequate to ADWG requirements for this component, as the DWQP is silent on the assessment of water quality performance as part of an annual review reporting process. This component would be considered adequate following completion of the identified recommendation. **Recommendation DW 11.1**: Detail the process for the annual review of water quality performance in the DWQP.	DWQP Section 11.1
	Audit of drinking water quality management	The process for the audit of drinking water quality management as described in Section 11.2 of the DWQP is adequate and in line with the ADWG requirements for this component. The process for internal auditing and responding to external audits is described in the Audit Procedure. Internal audits are conducted at a minimum annually, with drinking water quality audits assumed to fall	DWQP Section 11.2 Audit Procedure FS-ALL-AUS-PR-GOV-1364 Annual Internal Audit Programme 202-21

Element	Component	Audit findings	Evidence
		under a quality audit, though this is not explicitly stated. The Internal Audit Program for 2020-21 was provided as evidence of this process. External audits are conducted by IPART approved auditors according to operating licence conditions and regulatory requirements. **OFI DW 11.1.1**: Clarify that drinking water quality is covered under the audit objective for 'quality'.	
Element 12 Review and continual improvement	Review by senior executive	The process for review by senior managers as described in Section 12.1 of the DWQP is adequate and in line with the ADWG requirements for this component. Review of the management system by senior managers is adequately described in the Management Review Procedure as occurring through the annual management review meeting. Other mechanisms noted include leadership team meetings, HSEQ meeting and the Flow Systems Offsite business planning workshop.	DWQP Section 12.1 Management Review Procedure FS-ALL-AUS-PR-GOV-1430
	Drinking water quality management improvement plan	The process for a drinking water quality management improvement plan as described in Section 12.2 of the DWQP is adequate and in line with the ADWG requirements for this component. The process for continual improvement is documented in the Continual Improvement Procedure. The procedure was provided as evidence and describes the mechanisms that will generate improvement items and how issues can be logged. Water quality improvement items are tracked using the Water Quality Improvement Plan.	DWQP Section 12.2 Continual Improvement Procedure ALL-AUS-PR-GOV-1429

4.1.3 Summary of recommendations

A summary of recommendations for the Cooranbong drinking water quality plan is detailed below:

- Recommendation DW 5.1: Develop a process to ensure sample numbers and locations remain consistent with the requirements of the ADWG and the NSW Health Monitoring Program.
- Recommendation DW 10.2: Detail the process for how reporting to the consumer is undertaken in the DWQP
- Recommendation DW 11.1: Detail the process for the annual review of water quality performance in the DWQP.

4.1.4 Summary of opportunities for improvement

A summary of opportunities for improvement are detailed below:

- OFI DW Overarching: Correct error referencing RWQP (Figure 2) in the DWQP
- OFI DW 3.1: Consider the inclusion of reservoir integrity as part of the Potable Water Tank control point in line with NSW Health guidance
- OFI DW 5.1: Review the use of the term 'critical limit' and how it is referenced throughout the documentation
- OFI DW 8.1: Include further information in the DWQP documenting the assessment requirements for developing the community consultation program
- OFI DW 9.1: Include explicit requirements for when revalidation will need to occur
- OFI DW 10.1: Include reference to external reporting obligations
- OFI DW 11.1.1: Clarify that drinking water quality is covered under the audit objective for 'quality'.

4.2 Recycled water quality plan

A summary of the water quality plan audit requirements and the compliance grade is shown in Table 4-3.

Table 4-3. Recycled water quality plan audit requirements

Ref	Requirement	Compliance
WIC Regulation Schedule 1 clause 7(1)	**7 Water quality plans** (1) Before commencing to operate water infrastructure commercially, the licensed network operator for the infrastructure must prepare, and forward to IPART, a water quality plan, in relation to the water supplied from the infrastructure, that specifies: (b) if the water so supplied is non-potable water, how the 12 elements of the framework for the management of recycled water quality and use, as detailed in the Australian Guidelines for Water Recycling, have been addressed and will be implemented and, having regard to those guidelines, the purposes for which the water may be used and the purposes for which the water may not be used.	Non-compliant non material

4.2.1 Summary of findings

Flow Systems have a Recycled Water Quality Plan (RWQP) that details the AGWR Framework elements, components and actions. A table is included for each component, that details how the requirement of each action is met (*Discussion* column). Evidence to meet the requirements is detailed for Documents, Records and Responsibly/Monitoring. This approach clearly and comprehensively documents how Flow System meets the requirements of the AGWR Framework. Documents specific to individual sites are referenced in the Site-Specific Management Plan.

The Licence Plan as a whole is considered adequate, with a few deficiencies noted in relation to reporting and processes relating to the updating of documentation following scheme expansion. These are considered non-material and do not impact the commencement of the scheme. Recommendations have been included to address these shortcomings. It is recommended that these be assessed as part of the next scheduled RWQP licence plan audit (noting that this is scheduled for 2021).

4.2.2 Detailed findings

A summary of the adequacy of each AGWR Framework element is discussed in Table 4-2. A sample of documents referenced as evidence (in both the RWQP and Cooranbong Scheme Management Plan) were tested as part of the audit process.

A summary of audit evidence is included in Appendix A. We have marked whether a full audit of the document was completed or whether the document was sampled or sighted.

Table 4-4. Audit findings against the AGWR Framework

Element	Component	Audit findings	Evidence
Element 1 Commitment to responsible use and management of recycled water quality	Responsible use of recycled water	The process for stakeholder involvement as described in Section 1.1 of the RWQP is adequate. Stakeholders specific to the Cooranbong scheme are listed in the Scheme specific Stakeholder and Emergency Contact List. Public and environmental health stakeholders listed are appropriate and include IPART, NSW Health, NSW Department of Planning, Industry and Environment, NSW Environment Protection Authority. Involvement of stakeholders in the risk assessment is documented through the Risk Assessment Protocol for Water Products and Services. Involvement of environmental health stakeholders in the planning processes is documented in the Environmental Improvement Procedure. The design management process as described in the Design Management Procedure Design is to be adequate, documenting design requirements and roles and responsibilities.	RWQP Section 1.1 Scheme specific Stakeholder and Emergency Contact List – Cooranbong Risk Assessment Protocol for Water Products and Services 11FS-WAT-NSW-PR-OPS-2466 Environmental Approval Procedure (Document control) FS-WAT-NSW-PR-HSEQ-2206 Design Management Procedure FS-WAT-AUS-PR-PRD- 2949 Procurement Policy and Procedure FS-ALL-AUS-PO-PRO-1465 Water Scheme Operator Position Description
	Regulatory and formal requirements	The process for regulatory and formal requirements as described in Section 1.2 of the RWQP is adequate. The process to identify relevant regulatory and formal requirements is documented in the Compliance Management	RWQP Section 1.2 Compliance Management Policy and Procedure FS-ALL-AUS-PO-R&C-1366

Element	Component	Audit findings	Evidence
		Policy and Procedure and is adequate. The Risk and Compliance Manager, General Counsel and Managers are responsible for keeping up to date with new requirements. The Network Operators Licence obligations register was provided which maps scheme licence obligations. Scheme governance is documented in the WIC Responsibilities and Authorities matrix. Responsibilities appear to be appropriate to the included areas.	Network Operators Licence (NOL) Obligation Register FS-WAT-NSW-RG-OPS-3234 WICA Responsibilities and Authorities Matrix FS-WAT-AUS-FM-OPS-1316
	Partnerships and engagement of stakeholders	Partnerships and engagement of stakeholders as described in Section 1.3 of the RWQP is adequate. Identification of stakeholders is discussed in responsible use of recycled water component above. The RWQP states that Flow Systems "have ongoing communications with NSW Health and formal reporting requirements and licence performance oversight with IPART.	RWQP Section 1.3 Scheme specific Stakeholder and Emergency Contact List – Cooranbong
	Recycled water policy	The process for a recycled water policy as described in Section 1.4 of the RWQP is adequate. A recycled water quality policy is in place that adequately documents Flow Systems commitment to recycled water quality. The policy is endorsed by Senior Management and reviewed annually. The Recycled Water Policy document control states that the policy was reviewed on 21 July 2020 (Revision 2); consistent with the Critical Document Review Calendar which is noted as a mechanism for monitoring compliance.	RWQP Section 1.4 Recycled Water Policy FS-WAT-AUS-PO-OPS-131Commitment to Safety, Environment and Quality FS-ALL-AUS-CO-GOV-1211
Element 2 Assessment of the	Intended uses and source of recycled water	The process for identifying intended uses and sources of recycled water as described in Section 2.1 of the RWQP document is adequate in line with the AGWR requirements for this component.	RWQP Section 2.1 Cooranbong Scheme Management Plan CO-WAT-NSW-PL-OPS-1720

Element	Component	Audit findings	Evidence
recycled water system		Intended uses are documented in the authorised purposes matrix. The approved end uses for Cooranbong were consistent with the approved end users in the licence.	Flow WICA Licences - Authorised Purposes Matrix FS-WAT-NSW-RG-OPS-2918
	Recycled water system analysis Assessment of water quality data	The process for recycled water system analysis and assessment of water quality data is described in Sections 2.2 and 2.3 of the RWQP document and is adequate in line with the AGWR requirements for this component. Scheme characteristics are to be documented in the scheme management plan. Consistent with this requirement, scheme characteristics including connections, source, treatment processes and distribution are included in Table 2 Recycled Water system overview description in the Cooranbong Management Plan. The responsibilities described (including both from workshop attendees and the team responsible for the RWQP) align with AGWR requirements that state that the team should include management and operations staff as well as representatives from relevant agencies. A process flow diagram was provided for the recycled water scheme consistent with requirements of the AGWR to outline steps and processes from source to application. Verifying the process flow diagram onsite was outside the scope of this audit. Assessment of water quality data was used to inform the risk assessment. The risk assessment workshop briefing pack was sighted as evidence and considered adequate as evidence of this requirement. The briefing pack included water quality data trends and observations (microbial and physical verification monitoring exceedance summaries and operational monitoring data charts).	RWQP Section 2.2 and 2.3 WICA Responsibilities and Authorities Matrix FS-WAT-AUS-FM-OPS-1316 Risk Assessment Briefing Pack FS-WAT-NSW-RE-OPS-3199

Element	Component	Audit findings	Evidence
	Hazard identification and risk assessment	The process for hazard identification as described in Section 2.4 of the RWQP document is adequate in line with the AGWR requirements. The risk assessment methodology is defined in the Risk Assessment Protocol for Water Products and Services document. This procedure clearly states that the risk assessment process for health risks on the recycled water register is to be undertaken in line with AGWR and key standards. Briefing material for the Cooranbong Risk Assessment was provided consistent with the Risk Assessment Protocol for Water Products and Services. The risk register is satisfactory in terms of risks considered, control measures and assessment of uncertainty.	RWQP Section 2.4 Risk Assessment Protocol for Water Products and Services FS-WAT-NSW-PR-OPS-2466 Outcomes Summary, Risk Assessment Workshop – land and Housing, 27 August 2020 Cooranbong Scheme Risk Register CO-WAT-NSW-RG-OPS-2472
Element 3 Preventive measures for recycled water management	Preventive measures and multiple barriers	The process for identifying and documenting preventive measures and multiple barriers as described in Section 3.1 of the RWQP is adequate in line with the AGWR requirements for this component. General controls are included in Attachment B of the RWQP and all controls included in the scheme risk register. The Cooranbong Scheme Risk Register was provided as evidence for this component. Controls are included from source to end use for each hazardous event and categorised as either preventative, detective or reactive controls. The sample of controls reviewed are considered were consistent with the AGWR. Additional control measures were identified in the risk assessment and documented in the 'Specific actions and ALARP considerations' column of the risk register.	RWQP Section 3.1 Cooranbong Scheme Risk Register CO-WAT-NSW-RG-OPS-2472
	Critical control points	The process for identifying, establishing and implementing critical control points as described in Section 3.2 of the RWQP is in line with AGWR requirements for this component.	RWQP Section 3.2 Cooranbong Scheme Risk Register CO-WAT-NSW-RG-OPS-2472

Element	Component	Audit findings	Evidence
		Critical control points are identified as part of the risk assessment process. Documentation of this assessment was confirmed in the Cooranbong Scheme Risk Register where CCPs and QCPs are recorded in the "CCP / QCP?" column. Critical control points for Cooranbong are documented in the Cooranbong Control Points Table. Critical control points in these tables were consistent against those assessed in the risk register. The references used in the justification column are considered appropriate.	Cooranbong Control Points Table CO-WAT-NSW-PL-OPS-2832
Element 4 Operational procedures and process control	Operational procedures	Processes for operational procedures as described in Section 4.1of the RWQP are in line with the AGWR requirements for this component. The RWQP states that schemes will be operated in accordance with the scheme operations and maintenance manual. A finalised Cooranbong LWC Operations and Maintenance Manual was provided as evidence (Version 2, dated 28 October 2020). SOPs and Work Instructions are documented in the register of operational procedures. The procedures identified for Cooranbong in the register are appropriate. Onsite verification of these procedures was outside the scope of the audit. Weekly checklists are generated of operator's tasks from the computerised maintenance management system. Example checklists were provided as evidence of this process.	RWQP Section 4.1 Operations and Maintenance (O&M) Manual – Cooranbong Local Water Centre (LWC) CO-WAT-NSW-RE-OPS-3258 Register of Operational Procedures FS-WAT-NSW-RG-OPS-2725 RAMS Checklists (JOB0001 Weekly inspection schemes, 10/2/20 and JOB0002 Weekly Control Points Schemes TEST 21/09/2020)
	Operational monitoring	The process for operational monitoring and documentation as described in Section 4.2 of the RWQP is adequate and in line with the AGWR requirements for this component. Operational monitoring requirements are detailed in the Monitoring and Sampling Plan. The Cooranbong Monitoring and Sampling program was provided and sample items were cross	RWQP Section 4.2 Monitoring and sampling plan FS-WAT-AUS-PL-OPS-1288 Cooranbong Monitoring and Sampling Program CO-WAT-NSW-PL-OPS-3093

Element	Component	Audit findings	Evidence
		checked against the sampling plan; the items checked were found to be consistent.	Water Storage Tank Inspection Checklist FS-WAT-AUS-FM-OPS-2562
	Operational corrections	The process for operational corrections as described in Section 4.3 of the RWQP is adequate in line with the AGWR requirements for this component. Discussions on corrective actions are also included in Element 6 in the Incident and Emergency Response Protocols section. Critical control points summary corrective actions are included in the control point tables. The Cooranbong Control Points Table procedures for shutdown and off specification water diversion are appropriate. Deviations for other operational monitoring activities are described in the Operational Monitoring Corrective Actions Procedure.	RWQP Section 4.3 Recycled Water Post-treatment Out-of-Specification Policy and Procedure FS-WAT-NSW-PO-OPS-3177 Recycled Water Out of Specification Corrective Action Procedure - Cooranbong CO-WAT-AUS-WI-OPS-3321 Cooranbong Control Points Table CO-WAT-NSW-PL-OPS-2832 Operational Monitoring Corrective Actions Procedure FS-WAT-NSW-PR-OPS-2722
	Equipment capability and maintenance	The process for equipment capability and maintenance as described in Section 4.4 of the RWQP is adequate and in line with the AGWR requirements for this component. Equipment capability and maintenance is addressed by the Asset Management Plan. Weekly checklists are generated of operator's tasks from the computerised maintenance management system. The Cooranbong Operations and Maintenance Manual specifies maintenance requirements. Calibration requirements were checked, with quarterly calibration of online analysers considered appropriate. The sampling monitoring program also references calibration and verification as identified in RAMs checklist. Example checklists were provided as evidence of this process. As the system is not yet in operation a test checklist was provided to verify the adequacy.	RWQP Section 4.4 Infrastructure Operating Plan (IOP) FS-WAT-AUS-PL-OPS-1279 Asset Management Plan (AMP) FS-WAT-AUS-PL-OPS-1219 Operations and Maintenance (O&M) Manual – Cooranbong Local Water Centre (LWC) CO-WAT-NSW-RE-OPS-3258 RAMS Checklists (JOB0001 Weekly inspection schemes, 10/2/20 and JOB0002 Weekly Control Points Schemes TEST 21/09/2020)

Element	Component	Audit findings	Evidence
	Materials and chemicals	The process for materials and chemicals as described in Section 4.5 of the RWQP is adequate in line with the AGWR requirements for this component. Flow Systems manages the process of ensuring only approved chemicals and materials are used through the Evaluating Products Materials and Chemicals Procedure. Chemical deliveries are managed through the Chemical Delivery Procedure. These procedures align with the requirements of the AGWR.	RWQP Section 4.5 Evaluating Products Materials and Chemicals Procedure FS-WAT-NSW-PR-OPS-2715 Chemical Delivery Procedure FS-WAT-NSW-PR-OP16S-2591
Element 5 Verification of recycled water quality and environmental performance	Recycled water quality monitoring Documentation and reliability	The process for recycled water quality monitoring and documentation as described in Section 5.1 and 5.3 of the RWQP is adequate in line with the AGWR requirements for this component. Characteristics to be monitored are included within the overarching Monitoring and Sampling Plan. Parameters, locations and frequency of sampling at sample sites are detailed in the Cooranbong Monitoring and Sampling Program. Verification samples are taken at the outlet of the LWC, customer properties (on a rotating basis) and point of use. Frequencies are consistent with the recommendations of the AGWR for a high exposure scheme (Table 5.6). A check was carried out against the verification requirements in the Monitoring and Sampling Plan against the Cooranbong Monitoring and Sampling Program; with the documents found to be consistent. The Monitoring and Sampling Plan and Cooranbong Monitoring and Sampling Program are adequate for verification monitoring against the requirements of the AGWR. It was noted however that the date and version in the footer of the Monitoring and Sampling	RWQP Section 5.1 and 5.3 Monitoring and sampling plan FS-WAT-AUS-PL-OPS-1288 Cooranbong Monitoring and Sampling Program CO-WAT-NSW-PL-OPS-3093

Element	Component	Audit findings	Evidence
		Plan were different to the latest version in the document control table. OFI 5.1: Ensure date and version in footer of the Monitoring and Sampling plan are consistent with document control.	
	Application site and receiving environment	The process for application site and receiving environment monitoring as described in Section 5.2 of the RWQP document is adequate, with a non material deficiency noted in documenting the trigger process for updating the monitoring program following relevant scheme changes. The process states that where recycled water is used at the Designated Irrigation Zone the parameters are documented in the Monitoring and Sampling Program. The Irrigation management plan for Avondale College states that (section 6.3 DIZ Monitoring and Sampling) *For monitoring and sampling tasks for the DIZ systems, refer to the Cooranbong Monitoring and Sampling Programme (M&S Prog) CO-WAT-NSW-PL-OPS-3093*. Flow Systems advised that the Irrigation Management Plan that was submitted anticipates the eventual inclusion of the Avondale College DIZ within the operational infrastructure, that this infrastructure has not yet been installed or is operational and as such has not been included in the Monitoring and Sampling Program. This approach is appropriate. It is recommended that the RWQP be updated to document the trigger process for when the sampling program is to be updated following relevant scheme changes. **Recommendation RW 5.1**: Include in the RWQP the trigger process for updating the scheme specific monitoring programmes following relevant scheme changes.	RWQP Section 5.2 Recycled Water Irrigation Management Plan FS-WAT-NSW-PL-OPS-2299 Irrigation management plan for Avondale College CO-WAT-NSW-PL-OPS-3200

Element	Component	Audit findings	Evidence
	Satisfaction of users of recycled water	The process for recycled water quality monitoring and documentation as described in Section 5.4 of the RWQP is adequate. The Complaints and Dispute Resolution Policy details the process for users of recycled water to make a complaint, and the escalation and dispute resolution process. The Work Instruction: How to manage customer complaints details the process for managing a received complaint. These documents are adequate in line with the AGWR requirements.	RWQP Section 5.4 Customer Complaints and Dispute Resolution Policy FS-ALL-AUS-PO-RET-1249 Work Instruction: How to manage customer complaints 2334
	Short-evaluation of results	The process for recycled water quality monitoring and documentation as described in Section 5.5 of the RWQP is adequate. Short term monitoring is undertaken through the Laboratory Information Management System (LIMS). Flow Systems is notified of exceedances following which an investigation is undertaken by Flow Systems. We did not test the LIMS system or associated processes as the implementation of the licence plan is outside the scope of this audit.	RWQP Section 5.5
	Corrective response	The process for corrective action in the RWQP refers to Component 4.3, Element 6 and Component 8.2. Adequacy of these sections is discussed under those items. Reference to these sections is adequate for this component. Responsibilities for deviations are noted to be the LWC operator and managers which is considered appropriate.	RWQP Section 5.6
Element 6 Management of incidents and emergencies	Communication	The communication process as described in Section 6.1 of the RWQP document is adequate. Figure 3 of the RWQP sets out how incidents and emergencies are generally managed. Key documents referenced were sighted as evidence (Incident Management Plan; Incident Notification	RWQP Section 6.1 Incident Management Plan FS-ALL-AUS-PL-INC-1266 Incident Notification Protocols with NSW Health (FS-ALL-NSW-PR-INC-1277)

Element	Component	Audit findings	Evidence
		Protocols and Water Operations Incident Management Reporting and Investigation Procedure). Flow Systems has regulatory reporting obligation for incidents. The Water Operations Incident Management, reporting and Investigation Procedure details the overarching incident notification process. Flow Systems notifies and reports to IPART in accordance with IPART's Network Operator Reporting Manual. Communication protocols with NSW Health are defined in the Incident Notification Protocols with NSW Health document.	Water Operations Incident Management, Reporting and Investigation Procedure FS-WAT-NSW-PR-INC-2561
	Incident and emergency response protocols	The incident and emergency response process as described in Section 6.2 of the RWQP document is adequate. Figure 3 of the RWQP sets out how incidents and emergencies are managed. Key documents referenced were sighted as evidence. The Recycled Water Post-Treatment Out of Specification Policy and Procedure (Ver 1, dated 6 October 2020) and the Recycled Water Out of Specification Work Instruction for Cooranbong (Ver 1.1, dated 27 October 2020) were tested for adequacy. These documents were provided after the close out meeting and the adequacy of the document against the onsite actions could not be assessed as part of this audit. The Recycled Water Post-Treatment Out of Specification Policy and Procedure is adequate with minor inconsistencies noted; such as inconsistent units in Figure 2-1 of the document. The Recycled Water Out of Specification Work Instruction for Cooranbong is adequate. The Water Operations Incident and Reporting Training Package provided (27 October 2020) includes reference to the Recycled	RWQP Section 6.2 Incident Management Plan FS-ALL-AUS-PL-INC-1266 Incident Notification Protocols with NSW Health (FS-ALL-NSW-PR-INC-1277) Water Quality Incident Management, Reporting and Investigation Procedure FS-WAT-NSW-PR-INC-2561 WICA Form A – Incident Initial Notification Cooranbong WICA Form B – Incident Initial Notification Cooranbong Water Operations Incident Management, Reporting and Investigation Procedure FS-WAT-NSW-PR-INC-2561 Water Operations Incident Report Form and Investigation Form FS-WAT-NSW-PM-INC-2566

Element	Component	Audit findings	Evidence
		Water Out of Specification Policy and Procedure and scheme specific work instruction and the Water Operations Incident Report Form. Photos were provided of the Cooranbong Incident and Emergency Manual Table of Contents and document cover. A sample of revision and dates were checked and found to be consistent with the documents provided as part of this audit.	Recycled Water Post-treatment Out-of-Specification Policy and Procedure FS-WAT-NSW-PO-OPS-3177 Recycled Water Out of Specification Work Instruction - Cooranbong CO-WAT-AUS-WI-OPS-3321 Photo of Cooranbong Incident & Emergency Manual Table of Contents Photo of cover of Cooranbong Incident & Emergency Management Manual Water Operations Incident Reporting and Investigation Training Package FS-ALL-AUS-TP-WHS-3020
Element 7 Operator, contractor and end user awareness and training	Operator, contractor and end user awareness and involvement Operator, contractor and end user training	The process for operator, contractor and end user awareness and training as described in Section 7.1 and 7.2 of the RWQP document is adequate. The process for training and induction of employees is outlined in the Training Policy and Procedure. This document outlines the identification of training requirements, inductions, training records, competency and employee requests for training. Evidence of the induction process provided included the New Starter Checklist and the Induction Package for Drinking Water and Recycled Water Quality and Sewerage Management. Flow Systems requires that operators have a Water Operations Training Competency matrix completed, an example was provided as evidence of the adequacy of the process to assess training requirements.	RWQP Section 7.1 and 7.2 Training Policy and Procedure FS-ALL-AUS-PR-HRT-3168 Induction package: Drinking Water and Recycled Water Quality, and Sewerage Management at Flow – an overview (19 June 2019) New Starter Checklist

Element	Component	Audit findings	Evidence
		The induction process for Contractors is considered to be adequately outlined in section 7.1.1 of the RWQMP.	
Element 8 Community involvement and awareness	Consultation with users of recycled water and the community Communication and education	The process for community involvement and awareness is adequately covered in Section 8.1 and 8.2 of the RWQP. This section details Flow Systems' communication program with customers. Links to communication provided on the Flow Systems website were checked 'For Developers' and 'Homeowners Guide'. An opportunity for improvement is identified to include further information in RWQP Component 8.1 on the assessment process used in developing the customer communication program. **OFI RW 8.1**: Include further information in the RWQP documenting the assessment requirements for developing the consultation program	RWQP Section 8.1 and 8.2 https://askus.flowsystems.com.au/hc/en-us/sections/200077179-For-Developers https://www.flowsystems.com.au/askus/Land_Housing/Home_Owners_Guide.pdf
Element 9 Validation, research and development	Validation of processes Design of equipment Investigative studies and research monitoring	The process for validation, research and development is adequately described in Section 9.1, 9.2 and 9.3 of the RWQP. Requirements for the validation of processes are set out in the Monitoring and Sampling Plan. These requirements for Onsite Validation were compared to the Onsite Validation Plan (Influent/raw water, recycled water tables); the sampling parameters and frequencies were found to be consistent between documents. Adequacy of the frequency of parameters is consistent with the requirements of the AGWR. Recycled water validation information specific to the Cooranbong scheme is referenced in the Cooranbong Scheme Management Plan, including references to 'Offsite Validation Report' and the 'Onsite Validation Plan' and 'Onsite Validation Report' (noted to be issued upon completion of validation).. The process for revalidation of equipment occurs on system change. Processes to evaluate system change are assessed using	RWQP Section 9.1, 9.2 and 9.3 Cooranbong Off Site Validation Report CO-WAT-NSW-RE-OPS-3249 On-site validation plan (rev 1) CO-WAT-NSW-RE-OPS-3250 WICA Change checklist FS-WAT-NSW-FM-GOV-2690 System change checklist FS-WAT-AUS-RG-OPS-3206

Element	Component	Audit findings	Evidence
		the System Change Checklist and the WICA Change checklist. An observation was noted that the while the WICA Change checklist refers to change that would require significant change to a licence plan, referencing to requirements for revalidation could be more explicit. **OFI RW 9.1:** Inclusion of more explicit requirements for when revalidation will need to occur.	
Element 10 Documentation and reporting	Management of documentation and records	The process for the management of documentation and records is adequately described in Section 10.1 of the RWQP. The Document Control Procedure and Records Management Policy records the process for control of documents and records. The Records Management Policy details roles and responsibilities, identification of records, storage and retrieval of records and, protection and retrieval of records. These documents are adequate. The RWQP states that critical documents are reviewed as per the Critical Document Review Calendar 20-21. The Calendar provided (excel document) has no document control. Flow System advised that this was a live document, reviewed monthly and included in the monthly report, and was managed as a controlled document in the BMS. This approach is appropriate. A sample of document status and review dates were checked and found to be consistent with the source documents provided.	RWQP Section 10.1 Document Control Procedure and Records Management Policy Records Management Policy FS-ALL-AUS-PO-ADM-1309 Critical Document Review Calendar 20-21
	Reporting	The reporting process as described in Section 10.2 of the RWQP was assessed against the requirements of AGWR for this component. A non material deficiency was identified with the process of annual reporting to end users. This component would be considered adequate following completion of the identified recommendation.	RWQP Section 10.2

Element	Component	Audit findings	Evidence
		The process includes internal reporting through HSEQ Monthly Reports and the R&C Monthly Report and annual external compliance reporting to IPART. A gap was noted against the AGWR which states that an annual report should be made available to users of recycled water, regulatory authorities and stakeholders. The RWQP is silent on the annual reporting to end users. There is no procedure listed that describes the activities required to develop the reports. While there is no explicit requirement for this, we are unable to confirm that Annual report contents would meet the requirements of this clause as the implementation of the licence plan is outside the scope of this audit. An area for improvement is to include further details on IPART compliance reporting regulations, such as reference to the Network Operator Reporting Manual. **Recommendation RW 10.2**: Detail RWQP process on how reporting to end users is undertaken. **OFI RW 10.1:** Include reference to external reporting obligations.	
Element 11 Evaluation and audit	Long-term evaluation of results	The process for the long-term evaluation of results as described in Section 11.1 of the RWQP is not adequate and in line with the AGWR requirements for this component. This component would be considered adequate following completion of the identified recommendation. The RWQP is silent on the assessment of recycled water quality performance as part of an annual review reporting process. **Recommendation RW 11.1**: Include the process for the annual review of recycled water quality performance in the RWQP.	RWQP Section 11.1

Element	Component	Audit findings	Evidence
	Audit of recycled water quality management	The process for the audit of recycled water quality management as described in Section 11.2 of the RWQP is adequate and in line with the AGWR requirements for this component. The process for internal auditing and responding to external audits is described in the Audit Procedure. Internal audits are conducted at a minimum annually, with recycled water quality audits assumed to fall under a quality audit, though this is not explicitly stated. The Internal Audit Program for 2020-21 was provided as evidence of this process. External audits are conducted by IPART approved auditors according to operating licence conditions and regulatory requirements. **OFI RW 11.1.1**: Clarify that recycled water quality is covered under the audit objective for 'quality'	RWQP Section 11.2 Audit Procedure FS-ALL-AUS-PR-GOV-1364 Annual Internal Audit Programme 202-21
Element 12 Review and continuous improvement	Review by senior managers	The process for review by senior managers as described in Section 12.1 of the RWQP is adequate and in line with the AGWR requirements for this component. Review of the management system by senior managers is adequately described in the Management Review Procedure as occurring through the annual management review meeting. Other mechanisms noted include leadership team meetings, HSEQ meeting and the Flow Systems Offsite business planning workshop.	RWQP Section 12.1 Management Review Procedure FS-ALL-AUS-PR-GOV-1430
	Recycled water quality management improvement plan	The process for a recycled water quality management improvement plan as described in Section 12.2 of the RWQP is adequate and in line with the AGWR requirements for this component. The process for continual improvement is documented in the Continual Improvement Procedure. The procedure was provided as	RWQP Section 12.2 Continual Improvement Procedure ALL-AUS-PR-GOV-1429

Element	Component	Audit findings	Evidence
		evidence and describes the mechanisms that will generate improvement items and how issues can be logged. Water quality improvement items are tracked using the Water Quality Improvement Plan.	

4.2.3 Summary of recommendations

A summary of recommendations for the Cooranbong recycled water quality plan is detailed below:

- Recommendation RW 5.1: Include in the RWQP the trigger process for updating the scheme specific monitoring programmes following relevant scheme changes.
- Recommendation RW 10.2: Detail RWQP process on how reporting to the end users is undertaken.
- Recommendation RW 11.1: Include the process for the annual review of recycled water quality performance in the RWQP.

4.2.4 Summary of opportunities for improvement

A summary of opportunities for improvement for the Cooranbong recycled water quality plan are detailed below:

- OFI 5.1: Ensure date and version in footer of the Monitoring and Sampling plan are consistent with document control.
- OFI RW 8.1: Include further information in the RWQP documenting the assessment requirements for developing the consultation program
- OFI RW 9.1: Inclusion of more explicit requirements for when revalidation will need to occur
- OFI RW 10.1: Include reference to external reporting obligations
- OFI RW 11.1.1: Clarify that recycled water quality is covered under the audit objective for ‘quality’.

Appendix A Audit evidence

Document name and number	Version	Date	Full audit	Sampled	Sighted
Annual Internal Audit Programme 202-21		Not dated			✓
Asset Management Plan (AMP) FS-WAT-AUS-PL-OPS-1219	4	30-Dec-18		✓	
Audit Procedure FS-ALL-AUS-PR-GOV-1364	1	31-Jul-18			✓
Chemical Delivery Procedure FS-WAT-NSW-PR-OP16S-2591	1.1	13-Sep-19			✓
Commitment to Safety, Environment and Quality FS-ALL-AUS-CO-GOV-1211	4	21-Jul-20			✓
Compliance Management Policy and Procedure FS-ALL-AUS-PO-R&C-1366	3	29-Aug-17			✓
Continual Improvement Procedure ALL-AUS-PR-GOV-1429	3	18-Dec-18			✓
Cooranbong Control Points Table CO-WAT-NSW-PL-OPS-2832	1	14-Aug-20		✓	
Cooranbong Drinking Water System Process Flow Diagram CO-WAT-NSW-DR-OPS-2610	2	12-Jun-19		✓	
Cooranbong Functional Description CO-WAT-NSW-RE-OPS-3251	1	9-Dec-19			✓
Cooranbong Off Site Validation Report CO-WAT-NSW-RE-OPS-3249	1	21-Jan-20		✓	
Cooranbong Scheme Risk Register CO-WAT-NSW-RG-OPS-2472	7.3	27-Aug-20		✓	
Cooranbong Monitoring and Sampling Program CO-WAT-NSW-PL-OPS-3093	1.4	18-Sep-20		✓	
Cooranbong Scheme Specific Management Plan	9.2	21-Oct-20	✓		
Critical Document Review Calendar (SharePoint)	n/a	Oct-20		✓	
Customer Complaints and Dispute Resolution Policy FS-ALL-AUS-PO-RET-1249	5	24-Apr-19			✓
Design Management Procedure FS-WAT-AUS-PR-PRD-2949	1	9-Jun-20			✓
Document Control Procedure FS-ALL-AUS-PO-ADM-1234	4	21-Dec-18			✓
Drinking Water Out of Specification Work Instruction - Cooranbong CO-WAT-AUS-WI-OPS-3339	1.2	27-Oct-20		✓	
Drinking Water Policy FS-WAT-AUS-PO-OPS-1232	2	21-Jul-20			✓
Drinking Water Post-treatment Out-of-Specification Policy and Procedure FS-WAT-NSW-PO-OPS-3176	2	7-Oct-20		✓	
Drinking water quality plan	11.1	27-Oct-20	✓		
Emergency Response Plan (FS-ALL-AUS-PL-INC-2301)	2	22-Jan-20			
Environmental Approval Procedure (Document control) FS-WAT-NSW-PR-HSEQ-2206	1	4-May-20			✓

Document name and number	Version	Date	Full audit	Sampled	Sighted
Evaluating Products Materials and Chemicals Procedure FS-WAT-NSW-PR-OPS-2715	1	15-Jul-19			✓
Flow WICA Licences - Authorised Purposes Matrix FS-WAT-NSW-RG-OPS-2918	2	25-Aug-20		✓	
Incident Management Plan FS-ALL-AUS-PL-INC-1266	8	10-Jan-18			✓
Incident Notification Protocols with NSW Health (FS-ALL-NSW-PR-INC-1277)	3	10-May-19			✓
Induction Package (new employees)	1	10-Jun-20			✓
Infrastructure Operating Plan (IOP) FS-WAT-AUS-PL-OPS-1279	12.2	17-Dec-19		✓	
Irrigation Management Plan for Avondale College CO-WAT-NSW-PL-OPS-3200	1	13-Aug-20			✓
Management Review Procedure FS-ALL-AUS-PR-GOV-1430	2	21-Dec-18			✓
Monitoring and sampling plan FS-WAT-AUS-PL-OPS-1288	13	16-Sep-20		✓	
Network Operators Licence (NOL) Obligation Register FS-WAT-NSW-RG-OPS-3234	1	14-Sep-20			✓
On-site validation plan (rev 1) CO-WAT-NSW-RE-OPS-3250	2	2-Oct-20		✓	
Operational Monitoring Corrective Actions Procedure FS-WAT-NSW-PR-OPS-2722	1	18-Jul-19			✓
Operations and Maintenance (O&M) Manual – Cooranbong Local Water Centre (LWC) CO-WAT-NSW-RE-OPS-3258	2	28-Oct-20			✓
Operations and Maintenance (O&M) Manual – Cooranbong Potable Water Supply CO-WAT-NSW-MN-OPS-2763	1	29-Oct-2020			✓
Incident & Emergency Management Manual (Table of Contents and folder cover)	2	22-Oct-20			✓
Position Description Template FS-ALL-AUS-TE-HRT-1441	3	27-Nov-19	Yes		✓
Procurement Policy and Procedure FS-ALL-AUS-PO-PRO-1465	4.1	1-Nov-19	Yes		✓
Records Management Policy FS-ALL-AUS-PO-ADM-1309	1	17-Jul-15	Yes		
Recycled Water Irrigation Management Plan FS-WAT-NSW-PL-OPS-2299	4	18 Sept 202			✓
Recycled Water Post-treatment Out-of-Specification Policy and Procedure FS-WAT-NSW-PO-OPS-3177	2	6-Oct-20		✓	
Recycled Water Out of Specification Work Instruction - Cooranbong CO-WAT-AUS-WI-OPS-3321	1.1	27-Oct-20		✓	
Recycled water quality plan	14.2	21-Oct-20	✓		
Recycled Water Quality Policy FS-WAT-AUS-PO-OPS-1310	2	21-Jul-20			✓

Document name and number	Version	Date	Full audit	Sampled	Sighted
Register of Operational Procedures FS-WAT-NSW-RG-OPS-2725	3	1-Oct-20		✓	
Risk Assessment Briefing Pack FS-WAT-NSW-RE-OPS-3199		1-Jul-20			✓
Risk Assessment Protocol for Water Products and Services 11FS-WAT-NSW-PR-OPS-2466	3	16-Aug-20			✓
Scheme specific Stakeholder and Emergency Contact List – Cooranbong	1	25-Sep-20			✓
Supporting Document Matrix FS-WAT-AUS-RG-OPS-3206 -	1	17-Aug-20			✓
System Change Checklist FS-WAT-NSW-FM-OPS-3279	1	24-Sep-20	Yes		✓
Training Package: WICA Licence Plans and Compliance FS-ALL-AUS-TP-OPS-3018	2	24-Jun-20			✓
Training Policy and Procedure FS-ALL-AUS-PR-HRT-3168	2	24-Jun-20			✓
Water Operations Incident Management, Reporting and Investigation Procedure FS-WAT-NSW-PR-INC-2561	2	19-Mar-20			✓
Water Operations Incident Report Form and Investigation Form FS-WAT-NSW-PM-INC-2560	3	28-May-20			✓
Water Operations Incident Reporting and Investigation Training Package FS-ALL-AUS-TP-WHS-3020	1.1	27-Oct-20			✓
Water Operations Training Competency Matrix		Not dated			✓
Water Quality Incident Management, Reporting and Investigation Procedure FS-WAT-NSW-PR-INC-2561	2	19-Mar-20			✓
Water Scheme Operator Position Description		Not dated			✓
Water Storage Tank Inspection Checklist FS-WAT-AUS-FM-OPS-2562	1	17-Dec-18			✓
WICA Change Checklist FS-WAT-NSW-FM-GOV-2690	2	11-Jun-20			✓
WICA Form A – Incident Initial Notification Cooranbong	Ver 2 Revision 1	14-Sep-20			✓
WICA Form B – Incident Initial Notification Cooranbong	Ver 2 Revision 1	24-Sep-20			✓
WICA Responsibilities and Authorities Matrix FS-WAT-AUS-FM-OPS-1316	6.2	6-Oct-20		✓	
Work Instruction: How to manage customer complaints 2334	1	19-Nov-18			✓

Appendix B Addendum

Addendum

Cooranbong Water Licence Plan Audit

1 Introduction

The findings of the January 2021 licence plan audit for Cooranbong Water Pty Ltd, are presented in the licence plan audit report (Atom Consulting 2021). This audit was undertaken of the water quality plans in accordance with the requirements set out in IPART's *Audit Guideline, Water Industry Competition Act 2006 (NSW)* (July 2020).

Altogether Group have since proposed changes to critical control point and log reduction value documentation for Cooranbong and have requested that these documents be audited. The findings of the review of these documents are presented in this addendum to the 2021 Cooranbong Licence Plan Audit report.

2 Audit method

2.1 Audit scope

The overarching water quality plans (DWQP and RWQP) and scheme specific documentation were audited in November 2020 for the Cooranbong Licence plan.

The audit scope for this addendum was the adequacy of the updates to Critical Control Point and Log Reduction Value documentation referred to as part of the Cooranbong Water Licence Plans.

The licence plan documents considered in this audit addendum are:

- Cooranbong – Control Points
- Cooranbong LWC Log Reduction Values

3 Audit results

Evidence provided as part of the audit is included in Table 2-1

Table 2-1. Audit evidence

Document name and number	Version	Date
Cooranbong Control Points Table CO-WAT-NSW-PL-OPS-2832	2.0	12/4/2021
Cooranbong LWC Log Reduction Values CO-WAT-NSW-PL-OPS-2749	2.0	12/4/2021
Email to NSW Health 'Change Notice - CCP and Log Reduction'		13/04/2021
Change Notice Form: Revision of log reduction values and critical control points for Box Hill, Cooranbong, Huntlee and Pitt Town	1.0	13/04/2021

Author: Natalie Crawford
Reviewer: Annalisa Contos
Client: Altogether Group

M: 0414 533 369
E: annalisa@atomconsulting.com.au
W: atomconsulting.com.au

Critical control points for Cooranbong are documented in the Cooranbong Control Point table and referenced in the Scheme Management Plan. Justification for choice of log reduction guideline values and that able to be achieved for control point process steps is documented in the Cooranbong LWC Reduction Values document.

Critical limits and associated log reduction value documentation have been amended. Changes made and the adequacy of these changes is included in Table 2-1. Log reduction requirements for dual reticulation and municipal irrigation are achieved.

Table 2-2. Summary of amendments

Control point	Document	Amendment	Commentary
UV Disinfection (CCP2)	Cooranbong Control points	The critical limit for UVT, has decreased from < 55% to < 47% Target and adjustment limit changes.	Basis for change is adequately documented in the Table 2 Change Assessment of the Change Notice Form. Limit changes are appropriate to achieve the claimed 1.0 LRV reduction for viruses in accordance with the USEPA Ultraviolet Disinfection Guidance Manual (2006).
	Cooranbong Log Reduction Values	Log reduction values achieved have been reduced from 4 to 3.5 for protozoa and bacteria.	Basis for change is adequately documented in the Table 2 Change Assessment of the Change Notice Form. Log reduction values document does not have a summary of document control.

Critical control points values are consistent across the Control Point Tables and the Log Reduction Value document. It was not confirmed as part of this review if the updated CCP limits were consistent with those in SCADA.

Evidence was provided of consultation with NSW Health, in the form of an email where updated documentation and a change notice form was provided.

3.1 Summary of findings

Changes to the critical control point and log reduction value documentation for Cooranbong are adequate, with an opportunity for improvement identified for document control.

Opportunity for improvement: Include a document control table in the Cooranbong Log Reduction Values