



Hunter Water's compliance with its
operating licence 2021-22

Report to the Minister

June 2023

Water >>



Tribunal Members

The Tribunal members for this review are:

Carmel Donnelly PSM, Chair
Deborah Cope
Sandra Gamble

Enquiries regarding this document should be directed to a staff member:

Christine Allen	(02) 9290 8412
Mamata Titus	(02) 9113 7750
Gudny Palsdottir	(02) 9113 7709

The Independent Pricing and Regulatory Tribunal

IPART's independence is underpinned by an Act of Parliament. Further information on IPART can be obtained from [IPART's website](#).

Acknowledgment of Country

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders both past and present.

We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

Contents

Summary	4
1 Introduction	7
1.1 Annual statement of compliance	7
1.2 Audit scope	7
2 Audit findings and recommendations	9
2.1 Audit findings and recommendations summary	11
3 Progress on previous audit findings	19
A Compliance grades	24
B Hunter Water's statement of compliance	25
C Audit process	28
C.1 Audit programme	28
C.2 2022 audit scope	28
C.3 2022 audit plan	30
D 2022 audit scope	32
E Auditor's report	59
F IPART's 2022 checks of Hunter Water's compliance with its operating licence	175

Summary

Customers in NSW rely on safe and reliable water and wastewater services. Operating licences outline obligations imposed by the NSW Government on publicly owned monopoly suppliers of essential services such as Hunter Water Corporation (Hunter Water). We undertake annual operational audits to assess Hunter Water's compliance with the requirements of its operating licence.

This is our operational report to the Minister for Water on Hunter Water's compliance during 2021-22, with:

- the *Hunter Water Operating Licence 2017-2022* (2017-2022 Licence) from 1 November 2021 to 30 June 2022
- the *Hunter Water Operating Licence 2022-2027* (2022-2027 Licence) from 1 July 2022 to 31 October 2022.

Together, we refer to these two licences as the Licences. The period over which we audited Hunter Water's compliance (i.e. between 1 November 2021 to 31 October 2022) is the 2021-22 audit period.

We check compliance with the Licences by conducting an operational audit, as required by the *Hunter Water Act (1991)* (Act).¹ We engaged specialist consulting firm Stantec Australia Pty Ltd (Stantec), in association with Paradigm Digital Pty Ltd (trading as Atom Consulting) and Risk Edge Pty Ltd, to undertake the operational audit on our behalf.

Hunter Water's operational performance in 2021-2022

Hunter Water was forthcoming and cooperative throughout the audit process, demonstrating a strong culture and commitment to compliance. Hunter Water has continued to demonstrate a high level of compliance in the 2021-22 audit period, as in previous years, and has proactively maintained robust compliance systems.

The auditor noted several examples of sound water quality management governance practices and comprehensive documentation. The quality of water produced by Hunter Water continues to be of a high standard that meets public health requirements.

Hunter Water continues to provide services in a manner that protects the interests of its customers and the environment. For example, the auditor acknowledged Hunter Water's sound and appropriate asset management system and continued improvement over the past five years, and many areas of noteworthy practices across all business areas. The auditor was pleased to see that Hunter Water's initiatives to ensure climate risk resilience include a project climate risk screening guide and tool and a climate risk maturity health check.

In terms of protecting customers and their rights, the auditor noted that during the audit interview, Hunter Water demonstrated an understanding of the key challenges facing the awareness and uptake of payment assistance options by customers, such as a low level of awareness among specific marginalised groups. To this end, Hunter Water advised that it had engaged with the community through events such as Hunter Homeless Connect and Hunter Disability Expo.

The compliance issues identified by the auditor, discussed below, were minor in nature.

Key findings

Hunter Water was compliant with 18 out of the 20 conditions of the Licences^a that we audited for the 2021-22 audit period. For 6 of the compliant Licence conditions, we identified minor shortcomings. These shortcomings posed minimal risks to Hunter Water's ability to supply water and wastewater services and protect customers and the environment.

Hunter Water was non-compliant with one operating licence condition. However, this non-compliance was non-material in nature. The other condition was not triggered during the audit period.

Shortcomings with 6 Licence conditions

We have discussed the shortcomings below

- There were several shortcomings across currency and implementation of Hunter Water's Drinking Water Quality Management System, including discrepancies between documents, inconsistencies in terminology, and documents overdue for review.²
- Some of Hunter Water's recycled water quality management documentation used by the operations and maintenance contractor were overdue for review.³
- Reagents used to calibrate online instruments at Branxton Wastewater Treatment Works were past their use-by date.⁴
- There were inconsistencies in the terminology used in Hunter Water's asset management documentation related to managing risks as well as minor issues with not meeting scheduled review dates for business continuity planning documentation.⁵
- Hunter Water's key policy and procedural documentation for protecting customers facing payment difficulties were not consistently reviewed by their scheduled review dates.⁶
- Hunter Water did not develop a process to ensure that it reports significant changes to the Recycled Water Quality Management System to IPART and NSW Health, as recommended by IPART in the 2021 operational audit.⁷

^a The same 20 conditions were audited for each Licence, as in force during the audit period. There are no material differences in those conditions across the two Licences. See section 1.2 of this report for a description of the audit scope, including minor differences in corresponding conditions across the two Licences.

Non-compliance with one Licence condition

Hunter Water was non-compliant with one condition of both Licences because it did not distribute a summary of the Customer Contract to all customers within the audit period.

The Licences require Hunter Water to distribute this information to customers with their bills at least annually.⁸ This is a non-compliance because it is in direct breach of the Licences' requirements, which we consider apply on a rolling 12-month basis. That is, at any point in time it has been no longer than 12 months since Hunter Water provided the information to customers with their bills.

However, the non-compliance is non-material because the required information is still available on Hunter Water's website. Therefore, the risk of customers not being aware of their rights and obligations is low. The auditor has made 9 recommendations for Hunter Water to address the non-compliance and minor shortcomings identified in the audit.^b

One Licence condition was not triggered

The auditor found that one Licence condition in the audit scope, requiring Hunter Water to cooperate with private water utilities seeking to establish a code of conduct with Hunter Water, was not triggered in the audit period. This is because Hunter Water received no such requests in the audit period.^c

We discuss the audit findings and recommendations in detail in Chapter 2.

Previous audit findings

This audit also followed up on Hunter Water's progress in addressing 23 recommendations related to non-compliances or shortcomings identified in previous audits. Of these, 22 recommendations were required to be completed during this audit period and 1 in the (next) 2022-23 audit period.

Hunter Water has completed 20 of the 22 recommendations due this audit period. Two recommendations remain overdue. We consider the risk from these recommendations remaining outstanding to be low. They relate to previous non-compliant (non-material) and Compliant (minor shortcomings) findings and Hunter Water has made significant progress towards addressing them.

We will assess Hunter Water's progress with completing these 2 overdue recommendations, and the recommendation that is due for completion in the 2022-23 audit period, in the next audit.

We discuss Hunter Water's progress in addressing previous recommendations in Chapter 3.

^b Auditors are only required to make recommendations for grades other than Compliant grades – i.e. for Compliant (minor shortcomings), Non-compliant (non-material) and Non-compliant (material) grades. This is consistent with our audit guideline for public water utilities (*IPART, Audit Guideline – Public Water Utilities*, July 2019).

^c Clause 5.8.1 of the 2017-2022 Licence required Hunter Water to use reasonable endeavours to cooperate with any *Water Industry Competition Act 2006* (WIC Act) licensee that sought to establish with Hunter Water a code of conduct required under a licence under the WIC Act. Clause 37 of the 2022-2027 Licence imposes similar requirements.

1 Introduction

Hunter Water is a publicly owned monopoly supplier of essential water and wastewater services to customers in NSW. During the audit period, Hunter Water operated under 2 consecutive Licences as discussed in section 1.2 below. The Licences outline obligations and standards for the provision of safe and reliable services.

The 2022 audit is the fifth audit under the 2017-2022 Licence and the first under the 2022-2027 Licence.

This report summarises the audit findings and recommendations. We explain the compliance grades used in this report in Appendix A.

1.1 Annual statement of compliance

In preparing this report we have considered Hunter Water's annual Statement of Compliance (Appendix B). The Statement of Compliance is an exception-based report certified by Hunter Water's Managing Director and the Chair of the Board of Directors or a duly authorised Board member. It provides details of any identified non-compliances and explains any remedial action Hunter Water has taken, or is taking, to resolve outstanding non-compliances.

For the 2021-22 financial year Hunter Water reported that it had one non-compliance with the 2017-2022 Licence related to reporting in accordance with the Reporting Manual. This non-compliance occurred in August 2021, before the 2021-22 audit period commenced. We previously identified the same non-compliance in the 2020-21 operational audit. We made no recommendations at the time because Hunter Water had already rectified the non-compliance by the time of audit.

As this matter was previously closed out and it is not relevant to this audit period, no further action is required.

1.2 Audit scope

The 2021-22 audit covered the period from 1 November 2021 to 31 October 2022. Appendix C describes the audit process and Appendix D includes the detailed audit scope.

1.2.1 Hunter Water operated under 2 licences during the audit period

During the audit period, Hunter Water was subject to 2 operating licences:

1. 2017-2022 Licence for the period 1 November 2021 to 30 June 2022
2. 2022-2027 Licence for the period 1 July 2022 to 31 October 2022.

The 2017-2022 Licence was in effect for 8 months of the audit period and expired on 30 June 2022. The 2022-2027 licence came into effect on 1 July 2022 and was in effect for 4 months of the audit period.

There were no material changes to audited licence conditions under the 2022-2027 Licence, when compared to the 2017-2022 Licence. There were minor changes to the following conditions:

- Clauses 3.1.1 and 3.2.1 of the 2017-2022 Licence, which required Hunter Water to maintain water quality management systems consistent with the Australian Drinking Water Guidelines or the Australian Guidelines for Water Recycling (AGWR), except to the extent that NSW Health specifies otherwise in writing. The corresponding conditions in the 2022-2027 Licence, clauses 15(1) and 16(1) respectively, clarify that requirements specified by NSW Health must be health-based and reasonable. Clauses 15(2) and 16(2) also clarify that the NSW Health requirements take precedence over the Australian Drinking Water Guidelines and Australian Guidelines for Water Recycling, as the case may be, to the extent of any inconsistency.
- Clause 5.7.1 of the 2017-2022 Licence, which required Hunter Water to prepare pamphlets containing certain information specified in the Licence and provide it at least annually to customers with their bills. The corresponding conditions in the 2022-2027 Licence, clauses 25(1) and (3) requires Hunter Water to provide similar information, with some additional requirements.
- Changes made to the other audited conditions were minor editorial changes only.

1.2.2 We engaged auditors to undertake the audit

For 2021-22, we audited Hunter Water's compliance with 20 clauses of the Licences. We engaged Stantec (the auditor) to audit 9 clauses of the Licences, which are set out in the detailed audit scope in Appendix D. We audited the other 11 clauses.

2 Audit findings and recommendations

In this chapter, we discuss the auditor's findings only for those areas of Hunter Water's operating licence where the auditor did not assign a Compliant grade. That is, this chapter sets out the auditor's findings relating to the one non-compliance and compliance with minor shortcomings identified during the audit period. It also sets out the recommendations made by the auditor to address the non-compliance and shortcomings.

The auditor noted many areas of good practice in Hunter Water's operations. Particularly in the areas of water quality management, asset management, climate risk resilience and preparedness and customer protections. These are outlined in the auditor's operational audit report, provided in Appendix E. We have not discussed them here. The auditor has identified some opportunities for improvement in the auditor's operational report. These are non-mandatory suggestions for Hunter Water to generally improve its operations. They do not impact on the compliance findings in this report. Therefore, we have not discussed them here.

In our audit scope we identified several licence conditions that IPART would audit without the assistance of a specialist auditor. Our assessment of both the 2017-2022 and 2022-2027 Licence conditions that we audited is in Appendix F.

The current 2022-2027 Hunter Water Reporting Manual requires Hunter Water to report on its progress in implementing these recommendations by 30 June 2023 (or at a later date agreed to by IPART).^d

Table 2.1 compares non-compliant findings and identified shortcomings for each annual audit of the 2017-2022 Licence. Table 2.1 does not include audit results for licence conditions where Hunter Water was consistently compliant for the full 5-year term of the 2017-2022 Licence.

Table 2.1 Comparative record of non-compliant findings and identified shortcomings for the 2017-2022 Licence

Licence clause	Requirement	Compliance grade				
		2017-18	2018-19	2019-20	2020-21	2021-22 ^a
3.1.2	Supply services and performance Standards – Drinking water – implementation					
3.2.1	Supply services and performance Standards – Recycled water – consistent with AGWR and NSW Health requirements					
3.2.2	Supply services and performance Standards – Recycled water – implementation					

^d Hunter Water Reporting Manual 2022-2027, section 6.1.2. Two reporting manuals applied during the audit period: the *Hunter Water Reporting Manual – Operating Licence 2017-2022* from 1 November 2021 to 30 June 2022; and the *Hunter Water Reporting Manual 2022-2027* applied from 1 July 2022 to 31 October 2022.

Licence clause	Requirement	Compliance grade				
		2017-18	2018-19	2019-20	2020-21	2021-22 ^a
4.1.2	Organisational systems management – Asset management system - implementation					
5.3.1	Customer and stakeholder relations – Payment difficulties and actions for non-payment – Procedure for Payment Difficulties and Actions for Non-payment	-	-		-	
5.7.1	Customer and stakeholder relations – Provision of information to Customers and the general public – pamphlets at least annually with bills	-	-	-		
6.2.1	Performance monitoring and reporting – Reporting Manual – Reporting in accordance with Reporting Manual	-		-		

a. The audit period assessed compliance with the previous 2017-22 Licence from 1 November 2021 to 30 June 2022.

Note: This table does not include clauses of the Licence where Hunter Water has been fully compliant in the 2021-22 audit period.

Note: = Compliant; = Compliant (minor shortcomings); = Non-Compliant (non-material)

Table 2.2 summarises the non-compliant findings and identified shortcomings for the 2021-2022 annual audit of the 2022-2027 Licence.



Table 2.2 Comparative record of non-compliant findings and identified shortcomings for the 2022-2027 Licence

Licence clause	Requirement	Compliance grade				
		2022-23 ^a	2023-24	2024-25	2025-26	2026-27
15(3)	Performance standards for water quality – Drinking water – implementation					
16(1) and (2)	Performance standards for water quality – Recycled water – consistent with AGWR and NSW health requirements					
16(3)	Performance standards for water quality – Recycled water – implementation					
21(2)	Organisational systems management – Asset Management System – implementation					
27(1)	Customer and stakeholder relations – Assistance Options for Payment Difficulties and Actions for Non-Payment					
25(1) and (3)	Customer and stakeholder relations – Provision of information to Customers and the general public					

Licence clause	Requirement	Compliance grade				
		2022-23 ^a	2023-24	2024-25	2025-26	2026-27
39(2)	Performance monitoring and reporting – Reporting – Reporting in accordance with Reporting Manual					

a. The audit period assessed compliance with the current 2022-27 Licence from 1 July 2022 to 31 October 2022.


Note: This table does not include clauses of the Licence where Hunter Water has been fully compliant in the 2021-22 audit period.



Note:  = Compliant (minor shortcomings)  = Non-Compliant (non-material)


2.1 Audit findings and recommendations summary


Table 2.3 provides details of non-compliances and minor shortcomings identified in the audit. Recommendations to address the inadequacies are also detailed.


Table 2.3 2022 compliance with Hunter Water's operating licence – grades other than Compliant


Licence clause ^a	Requirement ^b	Compliance grade	Audit finding	Recommendations
3.1.2 2017-2022 Licence	Hunter Water must ensure that the Drinking Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the Drinking Water Quality Management System and to the satisfaction of NSW Health.		We have assigned Hunter Water a Compliant (minor shortcomings) grade for clause 3.1.2 of the 2017-2022 Licence and clause 15(3) of the 2022-2027 Licence. This agrees with the auditor's finding.	Recommendation 2022/3.1.2-1: By 31 October 2023, consolidate information on CCPs to, as far as possible, one reference point, to improve maintenance of currency and avoid discrepancies of information e.g. by adding a reference to a CCP document (as the point of truth) within the DWQMS or Drinking Water Quality Management Plan.
15(3) 2022-2027 Licence	Hunter Water must fully implement the Drinking Water Quality Management System and carry out all relevant activities in accordance with the Drinking Water Quality Management System, and to the reasonable satisfaction of NSW Health. [Note: Hunter Water is to apply the Drinking Water Quality Management System to the Drinking Water system under its control, having regard to the entire Drinking Water supply system – from water catchment to the Consumer.]		<p>Hunter Water has demonstrated that it implemented its Drinking Water Quality Management System (DWQMS) and all relevant activities were carried out in accordance with the DWQMS to the satisfaction of NSW Health, as required by the Licences, during the audit period.</p> <p>We observed minor shortcomings in the following areas that Hunter Water should resolve for full compliance with the Licence:</p> <ul style="list-style-type: none"> • There were several inconsistencies between documents for Critical Control Points (CCPs) for treatment plants. The risks associated with these inconsistencies were minimised during the audit period because the shutdown and critical alarm limits in place were consistent and effective. There were no impacts on the quality of water supplied during the audit period. We have made a recommendation to address this. • During the audit period the details for MidCoast Council were missing from documents used in incident and emergency management. We have made no recommendation for this shortcoming as Hunter Water provided evidence confirming that it had already included MidCoast Council's contact details by the time of the audit. No further action is required. • There were several document and currency implementation issues. We have made no recommendation to improve documentation as there is a process currently in place which will manage that shortcoming. However, we have made a recommendation to address a focus on currency expectations, through evidence-based performance indicators, bearing in mind that critical documents, such as CCP tables and emergency contact lists, should always be current. • Hunter Water had not completed one scheduled audit on its DWQMS audit program in the required timeframe. Specifically, Hunter Water had not finalised the scheduled audit report for the distribution network audit. We have made a recommendation to address this. <p>We understand that there were no impacts on the quality of drinking water supplied during the audit period due to these shortcomings.</p>	<p>Recommendation 2022/3.1.2-2: By 30 September 2023, given that 100% document currency compliance is unlikely to ever be achievable, set an evidence-based Key Performance Indicator (KPI) for currency at an achievable level (commensurate with document criticality) that does not compromise Hunter Water's ability to satisfy its licence and other obligations.</p> <p>Recommendation 2022/3.1.2-3: By 30 June 2023, ensure that the audit report for the Hunter Water Distribution Network has been completed and the audit finalised.</p>

Licence clause ^a	Requirement ^b	Compliance grade	Audit finding	Recommendations
3.2.1 2017-2022 Licence	<p>Hunter Water must maintain a Management System for Recycled Water that is consistent with the Australian Guidelines for Water Recycling, except to the extent that NSW Health specifies otherwise in writing (the Recycled Water Quality Management System).</p> <p>[Note: It is expected that the Recycled Water Quality Management System will be consistent with the Australian Guidelines for Water Recycling, including the Framework for Management of Recycled Water Quality and Use. However, where NSW Health considers it appropriate, the application of the Australian Guidelines for Water Recycling may be amended or added to, to take account of Hunter Water's circumstances and/ or Recycled Water quality policy and practices within New South Wales.]</p>		<p>We have assigned Hunter Water a Compliant (minor shortcomings) grade for clause 3.2.1 of the 2017-2022 Licence and clause 16(1) and (2) of the 2022-2027 Licence. This agrees with the auditor's finding.</p> <p>Hunter Water has demonstrated that it maintained a Recycled Water Quality Management System consistent with the AGWR), as required by the Licence, during the audit period.</p> <p>We observed a minor shortcoming that 2 documents were past their scheduled review date. While overdue for review, the contents of the documents were still adequate to meet the Licences' requirements. Therefore, the risk of this shortcoming was minor. We understand that there were minimal impacts on Hunter Water's ability to manage an adequate drinking water supply system during the audit period.</p> <p>We have made a recommendation to address the identified shortcoming. Hunter Water should resolve this shortcoming for full compliance with the Licence.</p>	Recommendation 2022/3.2.1-1: By 30 September 2023, set an evidence-based KPI for currency of Veolia documents used under the operations and maintenance contract. This KPI shall be set at an achievable level (commensurate with document criticality) that does not compromise Hunter Water or Veolia's ability to satisfy its licence and other obligations.
16(1) and (2) 2022-2027 Licence	<p>(1) Hunter Water must maintain a Management System that is consistent with the Australian Guidelines for Water Recycling and any additional health-based requirements relating to water recycling that NSW Health reasonably specifies, in writing (the Recycled Water Quality Management System).</p> <p>(2) In the event of inconsistency between the requirements specified by NSW Health in accordance with clause 16(1) and the Australian Guidelines for Water Recycling, the requirements specified by NSW Health prevail.</p>			
3.2.2 2017-2022 Licence	<p>Hunter Water must ensure that the Recycled Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the Recycled Water Quality Management System, and to the satisfaction of NSW Health.</p>		<p>We have assigned Hunter Water a Compliant (minor shortcomings) grade for clause 3.2.2 of the 2017-2022 Licence and clause 16(3) of the 2022-2027 Licence. This agrees with the auditor's finding.</p>	Recommendation 2022/3.2.2-1: By 30 September 2023, develop a system to ensure that reagents used for recycled water analysis have not passed their expiry date.

Licence clause ^a	Requirement ^b	Compliance grade	Audit finding	Recommendations
16(3) 2022-2027 Licence	Hunter Water must fully implement the Recycled Water Quality Management System and carry out all relevant activities in accordance with the Recycled Water Quality Management System, and to the reasonable satisfaction of NSW Health.		<p>Hunter Water has demonstrated that it implemented its Recycled Water Quality Management System, and all relevant activities were carried out in accordance with the Recycled Water Quality Management System, as required by the Licence, during the audit period.</p> <p>We observed a minor shortcoming where reagents used to check the calibration of online instruments were past their expiry date. The reagents or pH buffers are used to calibrate the bench (handheld) pH instrument which in turn is used to verify the online pH instrument that monitors the performance of the CCP. Expired pH buffer could cause the bench instrument to incorrectly calibrate which could in turn cause problems with the online instrument. However, the discrepancy between the online and laboratory pH results was not large enough to be above the CCP critical limit or compromise the quality of recycled water supplied to customers. Therefore, we consider the expired pH buffer to be a minor shortcoming only. We understand that there were no impacts on the quality of recycled water supplied during the audit period..</p> <p>We have made a recommendation to address the identified shortcoming. Hunter Water should resolve this shortcoming for full compliance with the Licence.</p>	
4.1.2 2017-2022 Licence	By 1 July 2018, Hunter Water must ensure that the Asset Management System is fully implemented and must, from that date, ensure that all relevant activities are carried out in accordance with the Asset Management System.		<p>We have assigned Hunter Water a Compliant (minor shortcomings) grade for clause 4.1.2 of the 2017-2022 Licence and clause 21(2) of the 2022-2027 Licence. This agrees with the auditor's finding.</p> <p>Hunter Water has demonstrated that it fully implemented and carried out all relevant activities in accordance with its Asset Management System, as required by the Licence, during the audit period.</p> <p>We observed minor shortcomings in the following areas that Hunter Water should resolve for full compliance with the Licence:</p> <ul style="list-style-type: none"> We observed inconsistencies in the terminology adopted for likelihood, consequence and risk in some tables in the draft Reservoir Asset Class Management Plan and the terminology adopted in the Enterprise Risk Management Standard. We have made a recommendation to address this shortcoming. 	<p>Recommendation 2022/4.1.2-1: By 30 September 2023, set up a system to ensure that its likelihood, criticality rating and risk rating scales, along with the terminology used, are aligned between its asset class management plans and its Enterprise Risk Management Standard.</p> <p>Recommendation 2022/4.1.2-2: By 30 September 2023, given that 100% document currency compliance is unlikely to ever be achievable, set an evidence-based KPI for currency at an achievable level (commensurate with document criticality) that does not compromise Hunter Water's ability to satisfy its operating licence and other obligations.</p>
21(2) 2022-2027 Licence	Hunter Water must fully implement, and carry out all relevant activities in accordance with, the Asset Management System.			

Licence clause ^a	Requirement ^b	Compliance grade	Audit finding	Recommendations
			<ul style="list-style-type: none"> Hunter Water has not been undertaking business continuity plan and work instruction reviews by the scheduled review date. Hunter Water provided a listing of outstanding maintenance work instructions for review which indicated that 19 of the 29 outstanding work instructions were already overdue for review in 2019, prior to COVID. Hunter Water is currently addressing weaknesses in the document control processes. We have made a recommendation to address the shortcoming. <p>We understand that there were no impacts on the Hunter Water's ability to manage its assets during the audit period due to these shortcomings.</p>	
5.3.1 2017-2022 Licence	<p>Hunter Water must maintain and fully implement the following:</p> <p>(a) a financial hardship policy that assists residential Customers and Consumers experiencing financial hardship to better manage their current and future bills;</p> <p>(b) procedures relating to a payment plan for residential Customers and Consumers who are responsible for paying their bills and who are, in Hunter Water's opinion, experiencing financial hardship;</p> <p>(c) procedures for identifying the circumstances under which Hunter Water may disconnect or restrict a supply of water in a manner that will affect a Customer or Consumer; and</p> <p>(d) provisions for self-identification, identification by community welfare organisations and identification by Hunter Water of residential Customers and Consumers experiencing financial hardship, (the Procedure for Payment Difficulties and Actions for Non-payment).</p>		<p>We have assigned Hunter Water a Compliant (minor shortcomings) grade for clause 5.3.1 of the 2017-2022 Licence and clause 27(1) of the 2022-2027 Licence. This agrees with the auditor's finding.</p> <p>Hunter Water has demonstrated that it maintained and implemented policy and procedural documentation that meet the underlying requirements, as required by the Licence, during the audit period.</p> <p>We observed minor shortcomings with the maintenance of the policy and procedures required by paragraphs (a), (b) and (c) of each of the Licence clauses that Hunter Water should resolve for full compliance. Hunter Water has reviewed the policy and procedures required by the licence, but these reviews were done past their scheduled dates. Although completed and new documents were created during the audit period, these new documents were not finalised. We have made a recommendation to address the shortcomings.</p> <p>The risks associated with these shortcomings to vulnerable customers have been minimised through effective training and implementation. The training ensures that Hunter Water is able to implement the policy and procedures in the way that they are intended, despite the shortcomings in the documentation.</p>	<p>Recommendation 2022/5.3.1-1: By 30 September 2023, ensure its key policies and standards for payment assistance and actions for non-payment are reviewed, approved and signed in line with its document review schedule.</p>
27(1) 2022-2027 Licence	<p>Hunter Water must maintain and fully implement:</p> <p>(a) a payment difficulty policy that assists residential Customers experiencing payment difficulties to better manage their current and future Bills;</p> <p>(b) procedures relating to a payment plan for residential Customers who are responsible for paying their Bills and who are, in Hunter Water's reasonable opinion, experiencing payment difficulties;</p>			




Licence clause ^a	Requirement ^b	Compliance grade	Audit finding	Recommendations
	<p>(c) procedures for identifying the circumstances under which Hunter Water may disconnect or restrict a supply of water to a Customer's Property; and</p> <p>(d) provisions for self-identification, identification by community welfare organisations and identification by Hunter Water of residential Customers experiencing payment difficulties,</p> <p>(Assistance Options for Payment Difficulties and Actions for Non-Payment).</p>			
<p>5.7.1 2017-2022 Licence</p>	<p>Hunter Water must prepare a pamphlet or pamphlets with the following information to Customers at least annually with their bills:</p> <p>a) a brief explanation of the Customer Contract and a summary of the key rights and obligations of Customers under the Customer Contract;</p> <p>b) a brief explanation of the Procedure for Payment Difficulties and Actions for Non-payment;</p> <p>c) a brief explanation of rights of Customers to claim a rebate and the conditions that apply to those rights;</p> <p>d) information about the General Enquiry Process;</p> <p>e) information about how to make a Complaint under the Internal Complaints Handling Procedure; and</p> <p>f) a brief explanation of the external dispute resolution service, how to access that service, and Customers rights to have a Complaint or dispute referred to Energy and Water Ombudsman NSW.</p>		<p>We have assigned Hunter Water a Non-compliant (Non-material) grade for clause 5.7.1 of the 2017-2022 Licence and clause 25(1) and (3) of the 2022-2027 Licence. This agrees with the auditor's finding.</p> <p>Hunter Water demonstrated that it provided the majority of information to Customers at least annually with their bills during the audit period, as required by the Licences. Hunter Water did not distribute a summary of the customer contract to all customers in the audit period (as required by clause 5.7.1(a) of the 2017-2022 Licence and clause 25(1)(a) and (b) and (3) of the 2022-2027 Licence).</p> <p>This is a breach of the Licences' requirements that creates a risk that Hunter Water's customers will not be aware of their rights and obligations. Consequently, they may not be protected when interacting with the monopoly supplier. However, we consider that this risk is minimal, and this non-compliance is non-material, because the customer contract is available on Hunter Water's website.</p>	<p>Recommendation 2022/5.7.1-1: By 30 June 2023, finalise, approve and implement the Standard Operating Procedure - Process-Communication of Regulated Information with Customer Bills.</p>
<p>25(1),(3) and (4) 2022-2027 Licence</p>	<p>(1) Hunter Water must prepare one or more communications that:</p> <p>(a) provide a brief explanation of the Customer Contract;</p> <p>(b) summarise the key rights and obligations of Customers under the Customer Contract;</p> <p>(c) refer to the types of account relief available for Customers experiencing payment difficulties;</p> <p>(d) outline the rights of Customers to claim a rebate and the conditions that apply to those rights;</p> <p>(e) contain information about how to contact Hunter Water by telephone, email or post, including the General Enquiry Process (or any replacement of it); and</p>		<p>Hunter Water self-identified this non-compliance and has drafted a new standard operating procedure for the process of communicating regulated information with customer bills to prevent the non-compliance from recurring. At the time of the audit, this procedure was awaiting approval. Our recommendation is to finalise and implement this procedure.</p>	

Licence clause ^a	Requirement ^b	Compliance grade	Audit finding	Recommendations
	<p>(f) contain information regarding the ability of a Customer to enter into agreements with Hunter Water separate to the Customer Contract for the provision of Services by Hunter Water to the Customer.</p> <p>(3) Hunter Water must provide the communication or communications and any updates, free of charge:</p> <p>(a) on its website;</p> <p>(b) to all residential Customers, at least annually with their Bills via the method chosen by the Customer to receive their Bill; and</p> <p>(c) to any person upon request made through the General Enquiry Process.</p> <p>(4) Hunter Water must publish on its website and advertise at least annually in a manner that Hunter Water is satisfied is likely to come to the attention of, and be accessible to, members of the public without being limited to digital platforms, information as to:</p> <p>(a) the types of account relief available for Customers experiencing payment difficulties; and</p> <p>(b) right of Customers to claim rebates and the conditions that apply to those rights.</p>			
6.2.1 2017-2022 Licence	<p>Hunter Water must comply with all of its reporting obligations set out in the Reporting Manual, including in relation to:</p> <p>a) water conservation;</p> <p>b) supply services and performance standards;</p> <p>c) organisational systems management;</p> <p>d) customer and stakeholder relations; and</p> <p>e) performance monitoring and reporting, including:</p> <p>i) IPART performance indicators; and</p> <p>ii) the National Water Initiative Performance Indicators.</p>		<p>We have assigned Hunter Water a Compliant (minor shortcomings) - grade for clause 6.2.1 of the 2017-2022 Licence and clause 39(2) of the 2022-2027 Licence. This agrees with the auditor's finding.</p>	
39(2) 2022-2027 Licence	<p>Hunter Water must comply with all of its reporting obligations set out in the Reporting Manual, including in relation to:</p> <p>(a) water conservation and planning;</p> <p>(b) performance standards for water quality;</p> <p>(c) performance standards for service interruptions;</p> <p>(d) organisational systems management;</p>		<p>Hunter Water has demonstrated that it complied with all of its reporting obligations, as required by the Licence, during the audit period.</p> <p>There is an ongoing shortcoming (that was first identified in 2021) in relation to the development of a process to ensure that IPART, as well as NSW Health, are advised of changes to the DWQMS and Recycled Water Quality Management System (RWQMS). Hunter Water has developed such a process for the DWQMS but has not yet developed one for reporting changes to the RWQMS to IPART.</p>	

Licence clause ^a	Requirement ^b	Compliance grade	Audit finding	Recommendations
	(e) customer and stakeholder relations; (f) information and services for competitors; and (g) performance monitoring and reporting, including: (i) IPART performance indicators; and (ii) the National Water Initiative Performance Indicators.		We have made no new recommendations to address this shortcoming. A previous recommendation related to this remains open (i.e recommendation 2021-21 discussed in Chapter 3 of this report).	

a. The audit period assessed compliance with the previous 2017-22 Licence from 1 November 2021 to 30 June 2022, and the current 2022-27 Operating Licence from 1 July 2022 to 31 October 2022.

b. IPART provided guidance to the auditor that there was no material change in obligations within scope of the 2017-22 and 2022-27 operating licences.

Note:  = Compliant;  = Compliant (minor shortcomings);  = Non-Compliant (non-material);

Source: Stantec *Operational audit report – Audit of Hunter Water*, February 2023.

3 Progress on previous audit findings

The previous operational audits identified areas where Hunter Water did not achieve compliance with its 2017-2022 Licence obligations. We made recommendations to address these issues.⁹

Table 3.1 outlines Hunter Water's progress in implementing 23 outstanding recommended actions. 22 of these were due to be completed in the 2021-22 audit period.

In summary, Hunter Water:



- completed 20 out of the 23 outstanding recommendations,
- made sufficient progress in addressing 2 of the outstanding recommendations for this audit period to significantly reduce any risk, but did not complete these by the target dates
- is not due to complete the last recommendation until the 2022-23 audit period.









We will assess Hunter Water's progress with completing the 3 outstanding recommendations at the next audit.










For the 2021 operational audit, the auditor incorrectly reported recommendation 2020-02 (relating to clause 5.1.2 of the 2017-2022 Licence) as ongoing. This was also incorrectly reflected in our report to the then Minister.¹⁰ In fact, Hunter Water completed this recommendation in the 2020-21 audit period. Therefore, we have not included recommendation 2020-02 in Table 3.1.


The auditor has marked recommendation 2020-02 as complete and clarified the error in the auditor's report (in Appendix E).

Table 3.1 Hunter Water's progress in 2022 to address previous recommendations

2017-2022 Licence condition	Prior compliance grade	Recommendation	Progress
3.11		2021-1: By 31 March 2023, Hunter Water must undertake a review and revise both the MidCoast Council and the Central Coast Council water supply agreements, with particular attention to quality, quantity, maintenance, operations and ownership aspects.	Ongoing The details of planned improvements to address the water quality component of the recommendation have been communicated to NSW Health. Hunter Water is linking the ongoing review of the Central Coast Council agreement with the outcomes of water transfer risk assessments. MidCoast Council is also involved in Hunter Water's risk assessment process. The progress of this recommendation is reviewed monthly, and the auditor found the approach sound.
3.11		2021-2: At the next Corporate Incident and Emergency Management Plan review, Hunter Water must review incident level categories and make clear which ones require a root cause analysis / incident investigation.	Complete
3.11		2021-3: By 30 June 2022, Hunter Water must communicate finalisation of its health complaints guideline to NSW Health.	Complete

2017-2022 Licence condition	Prior compliance grade	Recommendation	Progress
3.11		2021-4: By 1 November 2022, Hunter Water must improve documentation of the evidence base for CCP limits (e.g. through annotations in the CCP limits table).	Complete
3.12		2021-5: By 30 June 2022, Hunter Water must include MidCoast Council and Central Coast Council in the Key Emergency Services and Stakeholder Contact List of the Corporate Emergency Plan.	Complete
3.12		2021-6: At the next risk review, Hunter Water must ensure that the risk assessments capture a corresponding risk treatment for medium controlled risks and above, within the risk register itself.	Complete
3.12		2021-7: By 1 November 2022, Hunter Water must review the CCP Limit Tables and ensure that the limits and the logic are accurate and match SCADA.	Ongoing The auditor found that significant progress had been made to review and document limits and Supervisory Control and Data Acquisition (SCADA) system. Some inconsistencies remain between the SCADA information and the CCP Tables that need to be resolved to complete this recommendation.
3.12		2021-8: By 1 November 2022, Hunter Water must update the network chlorinators CCP information to include the currency information, according to the stated process.	Complete
3.12		2021-9: By 30 June 2022, Hunter Water must ensure that operators are trained to complete all components of the site checklists.	Complete
3.12		2021-10: By 30 September 2022, Hunter Water must strengthen existing reporting lines to the water quality committee to include comparison of the network verification sampling that has been completed with what was scheduled.	Complete
3.2.1		2021-11: By 31 March 2022, Hunter Water must update Table 2.1 of the Corporate Recycled Water Quality Management Plan to include residential use as an intended use for recycled water from the Morpeth and Farley Wastewater Treatment Works.	Complete
3.2.1		2021-12: By 30 June 2022, Hunter Water must document the process for providing annual reports on recycled water to end users and clearly communicate this process with each end user.	Complete
3.2.1		2021-13: By 31 March 2022, Hunter Water must update the Corporate Recycled Water Quality Management Plan to reflect changes to the process for scheduling internal audits of Recycled Water Quality Management Plans, including how the scope of the audits is determined and how the audit recommendations are actioned and tracked.	Complete

2017-2022 Licence condition	Prior compliance grade	Recommendation	Progress
3.2.2		2021-14: By 31 March 2022, Hunter Water must ensure that all recycled water customer agreements are not past their expiry date and it must develop procedures to ensure the agreements are extended or renewed before the expiry date.	Complete
3.2.2		2021-15: By 31 March 2022, Hunter Water must update the process flow diagram for Kurri Kurri Wastewater Treatment Works to accurately reflect the current number of clarifiers and chemical dosing.	Complete
3.2.2		2021-16: By 31 March 2022 Hunter Water must review, together with Veolia, the need for testing of every delivery of aluminium sulphate at wastewater treatment works and update the work instruction for delivery and testing to reflect the outcome of this review.	Complete
3.2.2		2021-17: By 30 June 2022, Hunter Water must include the basis for the 4 log reduction in helminths in the membrane bioreactor at Dungog Wastewater Treatment Works. Hunter Water must update the Validation Testing Program for Water Recycling Schemes to include the log reductions for the upgraded Dungog Wastewater Treatment Works. Hunter Water must also develop a process to ensure changes to log reduction values are reviewed and incorporated into the Validation Testing Program for Water Recycling Schemes.	Complete
3.2.2		2021-18: By 31 March 2022, Hunter Water must update the Disinfected Effluent Ultraviolet Transmission (UVT) limit to reflect the CCP limit in the spreadsheet used to present long term trends of Kurri Kurri recycled water quality and check all other recycled water trend spreadsheets for discrepancies in the limits.	Complete
3.2.2		2021-19: By 31 October 2022, Hunter Water should develop a plan for, and report on, its progress with implementing the proposed opportunities for improvement for its Integrated Management System document control.	Complete
5.7.1		2021-20: By 30 September 2022, Hunter Water should include a brief explanation of actions for non-payment in a pamphlet that is distributed with bills at least annually.	Complete
6.2.1		2021-21: By 30 September 2022, Hunter Water should set up a process to ensure that IPART, as well as NSW Health, are advised of any proposed significant changes to the Drinking Water and Recycled Water Quality Systems.	Ongoing The auditor found that Hunter Water completed the recommendation for drinking water, but had not completed the process to notify IPART for proposed significant changes for recycled water.
6.2.1		2021-22: By 30 September 2022, Hunter Water should review and update the Corporate Standard – Reporting and Monitoring Protocol, following completion of the Bureau of Meteorology (BOM) review of National Performance Reports (NPR) reporting in late February 2022.	Complete

2017-2022 Licence condition	Prior compliance grade	Recommendation	Progress
2.11, 2.1.2, 2.2.1, and 2.2.2 of 2012-2017 operating licence		<p>2013-14-03 2013-14-04 2013-14-06 2013-14-13</p> <p>Within 6 months, Hunter Water should review CCPs for each treatment plant, including:</p> <ul style="list-style-type: none"> a) review all CCP critical limits (including alarm delays), and monitoring points to ensure they reflect current practice, as agreed with NSW Health. <p><i>(Note: other elements of these recommendations had been fully addressed in previous audits)</i></p>	Complete






Sources: IPART, *Hunter Water Corporation Operational Audit 2013/14, Report to the Minister, Water – Compliance Report*, December 2014, IPART, *Hunter Water 2021 operational audit- Report to the Minister – Compliance Report*, March 2022 and Stantec, *Operational audit report – Audit of Hunter Water*, February 2023

Note:  - Compliant (minor shortcomings);  - Non-Compliant (non-material).

Appendices



A Compliance grades

Grades of compliance		Description
	Compliant	Sufficient evidence is available to confirm that the requirements have been met.
	Compliant (minor shortcomings)	Sufficient evidence is available to confirm that the requirements have been met apart from minor shortcomings which to date have not compromised the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
	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: IPART Audit Guideline Public Water Utilities, July 2019, Figure 2.1.

B Hunter Water's statement of compliance



Hunter Water Corporation
ABN 46 228 513 446

PO Box 5171
HRMC NSW 2310
36 Honeysuckle Drive
NEWCASTLE NSW 2300
1300 657 657 (T)
enquiries@hunterwater.com.au
hunterwater.com.au

26 August 2022

Our Ref: BP2022-8-02/1.002

The Chief Executive Officer
Independent Pricing and Regulatory Tribunal of NSW
Level 15, 2-24 Rawson Place
SYDNEY NSW 2000

Email: compliance@ipart.nsw.gov.au

Dear Ms Livingstone

**Statement of Compliance 2021-22
Submitted by Hunter Water Corporation (Hunter Water)**

Hunter Water reports as follows:

1. This statement documents compliance during 2021-22 with all obligations to which Hunter Water is subject by virtue of its Operating Licence.
2. Hunter Water prepared this report with all due care and skill to ensure that all information is true and correct, in full knowledge of conditions to which Hunter Water is subject under the *Hunter Water Act 1991* (NSW).
3. Schedule A provides information on all obligations with which Hunter Water did not comply during 2020-21.
4. Other than the information provided in Schedule A, Hunter Water has complied with all conditions to which it is subject.
5. This compliance report has been approved by the Managing Director and the Chair of the Board of Directors of Hunter Water.

Signed:

NAME: DARREN CLEARY
Title: **Managing Director**

Date: 26 August 2022

NAME: GREG MARTIN
Title: **Chair**

Date: 26 August 2022

Schedule A – Non-compliances identified during the reporting period

Table #	List of clauses breached, including a brief description of each licence clause	Describe:	
		I.	II.
		<p>I. Date or period of non-compliance</p> <p>II. Nature and extent of non-compliance (including whether and how many customers have been affected)</p> <p>III. Results of any monitoring (where applicable)</p> <p>IV. Reasons for non-compliance</p> <p>V. Remedial actions taken</p> <p>VI. Actual/anticipated date of full compliance</p>	
1	<p>Operating Licence clause 6.2.1 b)</p> <p>6.2.1 Hunter Water must comply with all of its reporting obligations set out in the Reporting Manual, including in relation to:</p> <p>b) supply services and performance standards;</p> <p>Hunter Water has not complied with the Reporting Manual Obligation:</p> <p>3.1.1 Monthly Water Quality Monitoring Report – Drinking Water</p> <p>Hunter Water must report publicly on the Monthly Water Quality Monitoring Report in accordance with section 3.3 of this Reporting Manual by the 14th day of the following month.</p>	<p>I. From 14 August 2021 to 25 August 2021.</p> <p>II. The July 2021 Monthly Water Quality Monitoring Report was not publicly reported on the fourteenth day of the following month, 14 August 2021.</p> <p>III. N/A</p> <p>IV. The Monthly Water Quality Monitoring Report was internally approved for upload onto the public website on 12 August 2021. However, due to an administrative error it was not uploaded until 25 August 2021.</p> <p>V. Additional administrative checks have been implemented to ensure the Monthly Water Quality Monitoring Report is available by fourteenth day of the following month.</p> <p>VI. 25 August 2021.</p>	

C Audit process

C.1 Audit programme

We apply our Compliance and Enforcement Policy in developing the annual audit scopes.¹¹ The policy explains our risk-based regulatory model. Under the policy, we can:

- focus on allocating resources to areas of higher risk
- increase our efficiency in undertaking audits
- tailor our enforcement response.

Our risk-based approach centres around evaluating the risk that each part of our regulatory function aims to reduce. We evaluate risks by considering the likelihood of harm occurring in the absence of our regulatory controls and the potential consequence of that harm. We then consider how likely it is that a regulated entity will not properly implement a regulatory control.

We identify and document historical, current and emerging risks. This allows us to allocate resources proportionately to the risk and complexity of a regulated entity and its behaviours.

The audit process involves receiving and reviewing reports, undertaking and attending audit interviews with Hunter Water staff, and undertaking field verification to investigate how effectively the requirements of the licence are met in practice. This year, we undertook these interviews at Hunter Water offices in Newcastle with some staff attending virtually, and field verification visits were undertaken by physical inspections.

C.2 2022 audit scope

We do not audit all licence clauses annually. Instead we adopt a risk-based audit approach, which means we audit 'high risk' clauses more frequently and 'low risk' clauses less frequently. We conduct audits in accordance with our Public Water Utility Audit Guideline.¹²

The audit scope for Hunter Water's 2021-22 audit included^e:

- Licence context and authorisation (Part 1) – licence availability and end of term review.
- Supply services and performance standards (Part 3) – supply of drinking and recycled water.
- Organisational system management (Part 4) – asset management system.
- Customers and stakeholder relations (Part 5) – customer and consumer provisions for payment difficulties and actions for non-payment, provision of information to customers and the general public, external dispute resolution, and cooperation with private water utility licensees.
- Performance monitoring and reporting (Part 6) – requirements on operational audits, information provision and reporting.

^e This refers to parts of the 2017-2022 operating licence.

The audit scope is in Appendix D.

We also consulted with NSW Health, Fire and Rescue NSW (FRNSW), and Department of Planning and Environment (DPE) and sought public submissions to determine the scope of the audit. We received submissions from NSW Health, FRNSW and DPE. We did not receive any public submissions.

We had regard to the following comments in finalising the audit scope:

- NSW Health suggested the following be considered:
 - Review the circumstances leading to an incident in which a hatch on a reservoir roof (accessible at ground level due to the reservoir construction being partially subsurface) remained open following a water quality sampling run. Review the adequacy of implemented changes in procedures to prevent such an incident from occurring again. NSW Health considered the risk to public health to be low and Hunter Water should implement changes in procedures to ensure such an incident does not reoccur.
 - Review the adequacy of catchment management promotion undertaken by Hunter Water with a view to ensuring timely notifications (by other entities) of incidents which have potential to impact drinking water quality. Hunter Water consulted with NSW Health in relation to an incident where raw water quality had potential to be contaminated with hydrocarbons associated with fuels and oils following a motor vehicle accident. In this incident a tanker was submerged in a rain swollen river and there was considerable delay by the local government authority in notifying Hunter Water of potential impact.
 - Explore further the commendable work that Hunter Water has done to validate the absence of cross connections in residential properties supplied with both drinking and recycled water (dual reticulation).
 - Explore the adequacy and appropriateness of the Hunter Water Corporate Risk Matrix framework for assessing public health risks associated with drinking water and recycled as opposed to the range of corporate risks that an organisation is faced with in operating a business.
 - Review the adequacy of agency and community consultation on the topic of purified recycled water for drinking. This topic was introduced by DPE and Hunter Water as a part of the Lower Hunter Water Strategy with the aim of constructing a demonstration plant to treat sewage to potable water standards.
 - Explore progress Hunter Water has made towards investigating potential water reserves within the Paleo Channel underlying the Hunter River in the Newcastle area.
 - Consider including the Dungog water treatment and Branxton recycled water plans as a part of the 2022 audit.
- DPE provided comments on Hunter Water's commitment and action in relation to their joint MOU and considers that Hunter Water has complied and performed well against its requirements. Hunter Water collaborated with DPE to develop the Lower Hunter Water Security Plan that was released in 2022, and actively participated in informing its content and engagement with the community and stakeholders.

- FRNSW provided comments on Hunter Water's commitment and actions in relation to their joint MOU, particularly that they are extremely satisfied and that objectives initially intended are being met. FRNSW wants to highlight that Hunter Water has provided pressure and flow performance data for all hydrants within their network and have allocated funding for a fire flow improvement program.

C.3 2022 audit plan

We engaged Stantec to undertake the 2022 Hunter Water audit.

We held a project start-up meeting with the auditor on 2 August 2022 to agree on the project milestones, audit timing, and outline our expectations. We participated in the audit inception meeting with Hunter Water and the auditor on the first day of the audit interviews, on 1 November 2022. At this meeting, we agreed on expectations and protocols for the conduct of the audit. All parties adhered to the agreed protocols throughout the audit.

We required the auditor to undertake the following tasks:

1. review stakeholder submissions
2. prepare an information request (questionnaire) setting out all the requirements for information and evidence, at least two weeks prior to the commencement of audit interviews (for this audit, the auditor issued the questionnaire 6 weeks before the audit interviews commenced)
3. review reports and documents provided by Hunter Water in response to the questionnaire
4. conduct interviews with Hunter Water staff as appropriate
5. conduct field verification to assess the implementation of Hunter Water's systems and procedures
6. assess the level of compliance (in line with our compliance grades) Hunter Water achieved for each of the identified Licence obligations, and provide supporting evidence for this assessment
7. assess and report on progress by Hunter Water in addressing any comments made by the relevant Minister and/or our recommendations from previous audits, providing supporting evidence for these assessments
8. verify the calculation of performance indicators associated with requirements of the relevant licence and assess trends in performance arising from these indicators
9. provide a preliminary audit findings overview and opportunity for Hunter Water and us to provide comments and additional evidence
10. provide draft audit reports to us and address comments from Hunter Water and us regarding draft audit findings
11. prepare and submit a final report outlining audit findings (Appendix D).

The auditor adopted a methodology consistent with IPART's *Audit Guideline Public Water Utilities* (July 2019). This guideline defines our requirements of an audit, ensuring that it is conducted in accordance with an established and recognised audit protocol. The auditor can make recommendations or suggest opportunities for improvement under the guideline.

Where appropriate, the auditor also sought guidance from *ASAE 3100 (2017) Compliance Engagements*, *AS/NZS ISO 19011:2019 Guidelines for Auditing Management Systems*, *AS/NZS ISO 9001:2016 Quality Management Systems – Requirements*, *AS/NZS ISO/IEC 17021.1:2015 Conformity assessment – Requirements for bodies providing audit and certification of management systems*, and *AS ISO 31000:2018 Risk management - Guidelines*.

Where we support an auditor's recommendation, we make a recommendation based on the auditor's recommendation. Our recommendations are summarised in Table 2.3 of this report.

Where the auditor suggests opportunities for improvement, Hunter Water can decide whether to implement these suggestions. This approach aims to balance improved performance with the investment required to achieve it, i.e. we want Hunter Water to first consider the pricing implications and value for money of continued improvement. Therefore, while we encourage Hunter Water to consider the auditor's suggestions, we do not follow these up. The auditor's suggested opportunities for improvement are included in the auditor's report in Appendix E.

The auditor conducted audit interviews from 1 November 2022 to 3 November 2022. On 2 November 2022, the auditor undertook an in-person site visit to the following locations and assets:

- Grahamstown Water Treatment Plant
- Catchment inspection for Grahamstown Dam
- Grahamstown Dam
- North Lambton 1 Reservoir (Drinking Water)
- North Lambton chlorinator
- Merewether 2 High Level Tank (*decommissioned reservoir*)
- Branxton Wastewater Treatment Works
- Water main construction at Willow Rd, Gateshead.

The auditor assessed Hunter Water's compliance with the relevant requirements of the Licence per the compliance grades outlined in Appendix A.

D 2022 audit scope

2022 operational audit scope Hunter Water Corporation

2022 audit scope

This document sets out the 2022 operational audit scope for Hunter Water Corporation (Hunter Water). Auditors should note any directions in the comments column of Table 2.

Audit period

The audit period is 1 November 2021 to 31 October 2022. We expect that interviews for the audit will be held in November 2022. However, this is subject to change depending on auditor availability.

We note the current Hunter Water Licence will expire on 30 June 2022, we anticipate a new licence will be in place on 1 July 2022. Any changes to the audit scope will be discussed with the appointed auditor.

Outstanding audit recommendations

Table 3 outlines outstanding audit recommendations. The auditor is required to review these recommendations to determine progress. We report on outstanding audit recommendations separately within IPART's operational audit report to the Minister.

Statement of compliance

The utility is required to provide a Statement of Compliance (SC), signed by the CEO and a Board Member, by 1 September. The SC is an exception based report that outlines any non-compliance with licence clauses during the previous financial year. It also identifies what remedial action has been, or is being taken, with respect to these non-compliances.

The SC covers all licence clauses regardless of whether they are scheduled to be audited in that year. The SC may cause a late variation to the audit scope to allow non-compliances to be reviewed if necessary.

Interpretation

In the case of any discrepancies between the *Hunter Water Operating Licence 2017-2022* (licence) and the audit scope, the licence will prevail.

Field verification locations

Table 4 lists the locations that we have visited in previous audits. Together with Hunter Water, we will determine the locations that we will visit in the 2022 audit and advise the auditor before the field verification visits are scheduled to commence.

Table 1 Key

Requirement	Meaning
Audit/Internal IPART check	Audit/check clause in 2022 audit
SC	Audit of this clause not required in the 2022 audit unless the utility's Statement of Compliance identifies a non-compliance, or we become aware of other reasons to audit the clause.
NR	No requirement for audit.

Table 2 2022 Audit scope for Hunter Water

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
1	Licence Context and authorisation		
1.1	Objectives of this Licence		
1.1.1	This licence aims to: <ul style="list-style-type: none"> (a) provide transparent and auditable terms and conditions for Hunter Water to lawfully undertake its activities at industry good-practice; (b) recognise the interests of stakeholders within its Area of Operations; and (c) impose the minimum regulatory burden on Hunter Water by avoiding duplication or conflict with other regulatory instruments. 	NR	Information clause – does not require audit.
1.2	Licence authorisation		
1.2.1	This Licence authorises and requires Hunter Water to provide, construct, operate, manage and maintain efficient, co-ordinated and commercially viable systems and services for supplying water, providing sewerage services, and disposing of Wastewater within its Area of Operations.	NR	Authorisation clause – does not require audit.
1.2.2	This Licence authorises Hunter Water to do all things necessary or convenient to achieve, and to promote the capability to achieve, the transfer of water between its Area of Operations and the local government area of the Central Coast Council in accordance with the Hunter/Central Coast Pipeline Agreement.	NR	Authorisation clause – does not require audit.
1.2.3	This Licence authorises and requires Hunter Water to provide, operate, manage and maintain a drainage service as described in section 13(1)(b) of the Act.	NR	Authorisation clause – does not require audit.
1.2.4	This Licence authorises (but does not require) Hunter Water to provide, construct, operate, manage and maintain a drainage service within the Area of Operations in excess of the drainage service it is required to provide, operate, manage and maintain under clause 1.2.3. For the avoidance of any doubt, this clause authorises (but does not require) Hunter Water to enhance, expand and add capacity to the drainage service described in section 13(1)(b) of the Act.	NR	Authorisation clause – does not require audit.

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
1.3	Term of Licence		
1.3.1	The term of this Licence is 5 years from the Commencement Date. [Note: This Licence starts on 1 July 2017, which means that it will end on 30 June 2022.]	NR	Licence term clause – does not require audit.
1.4	Licence amendment		
1.4.1	Subject to the Act and clause 1.4.2, this Licence may be amended by the Governor by notice in the New South Wales Government Gazette. The amendment takes effect on the date the notice is published in the New South Wales Government Gazette, or on such other date specified in the notice.	NR	Information clause – does not require audit.
1.4.2	Before any notice of an amendment to this Licence is published in the New South Wales Government Gazette, the Minister must give Hunter Water reasonable notice of the proposed amendment to enable it to comply with the amended Licence (if relevant) upon its commencement.	NR	Information clause – does not require audit.
1.5	Obligation to make Services available		
1.5.1	Subject to Hunter Water continuing to comply with any applicable law, Hunter Water must provide the Services on request to any Property situated in the Area of Operations which is connected to, or for which a connection is available to: <ul style="list-style-type: none"> (a) in the case of supplying water, the Water Supply System; and (b) in the case of providing sewerage services and/or disposing of Wastewater, the Sewerage System. 	SC	We audited this clause in 2021 and 2018. We assigned Compliant grades in those audits.
1.5.2	Subject to Hunter Water continuing to comply with any applicable law, Hunter Water must provide the Services on request to any WIC Act Licensee for ultimate end-use within the Area of Operations, where that WIC Act Licensee is connected to, or where a connection is available in respect of that WIC Act Licensee to: <ul style="list-style-type: none"> (a) in the case of supplying water, the Water Supply System; and (b) in the case of providing sewerage services and/or disposing of Wastewater, the Sewerage System. 	SC	We audited this clause in 2021 and 2018. We assigned Compliant grades in those audits.
1.5.3	Hunter Water may impose any lawful conditions it sees fit on the making available of Services under clause 1.5.1 or clause 1.5.2, to ensure the safe, reliable and financially viable supply of the Services in accordance with this Licence.	NR	Information clause – does not require audit.
1.6	Non-exclusive Licence		
1.6.1	This Licence does not prohibit another person from providing Services in the Area of Operations that are the same as, or similar to, the Services, if the person is lawfully entitled to do so.	NR	Information clause – does not require audit.
1.7	Making copies of this Licence available		
1.7.1	Hunter Water must make a copy of this Licence available to any person, free of charge: <ul style="list-style-type: none"> (a) on its website for downloading; and (b) upon request made through the General Enquiry Process. 	Internal IPART check	This clause is not included in the auditor's scope.

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor				
1.8	Pricing						
1.8.1	Subject to the terms of this Licence, the Act and the IPART Act, Hunter Water must set the level of fees, charges and other amounts payable for its Services in accordance with any applicable determination or determinations under the IPART Act.	SC	We audited this clause in 2021, 2020, 2019 and 2018. We assigned a Compliant grade in the 2021 audit, but Hunter Water was Non-Compliant (non-material) in the other audits.				
1.9	End of term review						
1.9.1	It is anticipated that a review of this Licence will commence in the first quarter of 2021 to investigate: <ul style="list-style-type: none"> (a) whether this Licence is fulfilling its objectives; and (b) any issues which have arisen during the term of this Licence, which may affect the effectiveness of this Licence, (End of Term Review)	NR	Information clause – does not require audit.				
1.9.2	Hunter Water must provide to the person undertaking the End of Term Review such information as is reasonably required to enable the person to undertake the End of Term Review.	Internal IPART check	This clause is not included in the auditor's scope.				
1.10	Notices						
1.10.1	Any notice or other communication given under this Licence must be made in writing addressed to the intended recipient at the address shown below or the last address notified by the recipient.	NR	Information clause – does not require audit.				
	<table border="1"> <thead> <tr> <th>Hunter Water</th> <th>IPART</th> </tr> </thead> <tbody> <tr> <td>The Managing Director Hunter Water Corporation 36 Honeysuckle Drive Newcastle West NSW 2302</td> <td>The Chief Executive Officer Independent Pricing and Regulatory Tribunal Level 15, 2-24 Rawson Place Sydney NSW 2000</td> </tr> </tbody> </table>	Hunter Water	IPART	The Managing Director Hunter Water Corporation 36 Honeysuckle Drive Newcastle West NSW 2302	The Chief Executive Officer Independent Pricing and Regulatory Tribunal Level 15, 2-24 Rawson Place Sydney NSW 2000		
Hunter Water	IPART						
The Managing Director Hunter Water Corporation 36 Honeysuckle Drive Newcastle West NSW 2302	The Chief Executive Officer Independent Pricing and Regulatory Tribunal Level 15, 2-24 Rawson Place Sydney NSW 2000						
2	Water Conservation						
2.1	Catchment to water treatment plants						
2.1.1	Hunter Water must calculate the System Yield either: <ul style="list-style-type: none"> (a) in accordance with the memorandum of understanding with the Department of Primary Industries Water referred to in clause 5.10.1(a); or (b) if no such memorandum of understanding is in effect, in accordance with a reasonable methodology that Hunter Water considers suitable. 	SC	We audited this clause in 2018. We assigned a Compliant grade in that audit.				
2.1.2	By 1 November 2018, or by a later date as approved by IPART, Hunter Water must submit to IPART a report outlining Hunter Water's water conservation strategy in relation to its system operating arrangements for Water Storage and Transmission (Water Conservation Strategy).	NR	Fixed deadline requirement (only required to be audited in year of deadline).				
2.1.3	The Water Conservation Strategy must include: <ul style="list-style-type: none"> (a) identification and documentation of the existing water conservation activities; (b) a process for identifying additional options for conserving water; (c) a process for comparing these options; and 	SC	We audited this clause in 2019. We assigned a Compliant grade in that audit.				

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
	(d) a process for selecting options for implementation.		
2.14	By 1 September 2019, or by a later date as approved by IPART, Hunter Water must develop and submit to IPART a water conservation work program using the process set out in the Water Conservation Strategy.	NR	Fixed deadline requirement (only required to be audited in year of deadline).
2.2	Water treatment plants to tap		
2.21	<p>Hunter Water must ensure that the 5 year rolling average for annual residential water consumption calculated for each financial year is equal to or less than 215 kilolitres for each Property used for residential purposes which is connected to the Water Supply System (Water Conservation Target), until Hunter Water has obtained IPART's approval for the Economic Level of Water Conservation Methodology (in accordance with clauses 2.2.2 and 2.2.3), and developed a program of water conservation activities using the approved Economic Level of Water Conservation Methodology (in accordance with 2.2.4).</p> <p><i>[Note: Clause 2.2.1 requires Hunter Water to maintain the Water Conservation Target that was in the immediate predecessor to this Licence while the Economic Level of Water Conservation Methodology is being approved and applied.]</i></p>	NR	
2.22	<p>By 1 November 2017, Hunter Water must submit to IPART for IPART's approval a report outlining Hunter Water's proposed approach to, and principles for, developing a methodology for determining its economic level of water conservation in relation to (at a minimum) the following elements:</p> <ul style="list-style-type: none"> (a) water leakage (within and downstream of its water treatment plants); (b) water recycling; and (c) water efficiency (including demand management). 	NR	Fixed deadline requirement (only required to be audited in year of deadline).
2.23	By 1 November 2018, or by a later date as approved by IPART, Hunter Water must submit to IPART for IPART's approval the proposed methodology for determining its economic level of water conservation in accordance with the approach and principles approved by IPART (Economic Level of Water Conservation Methodology). IPART may refuse approval of the methodology and require Hunter Water to resubmit it by a specified date after making changes requested by IPART, or approve the methodology unconditionally, or approve the methodology subject to conditions. Hunter Water must comply with any such conditions.	NR	Fixed deadline requirement (only required to be audited in year of deadline).
2.24	By 1 September 2019, or by a later date as approved by IPART, Hunter Water must develop and submit a water conservation work program using the Economic Level of Water Conservation Methodology.	NR	Fixed deadline requirement (only required to be audited in year of deadline).
2.25	Hunter Water must obtain IPART's written consent to make any changes to the Economic Level of Water Conservation Methodology (other than changes to correct minor grammatical or typographical errors).	SC	This clause has not been triggered in the Licence period.

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
3	Supply services and performance standards		
3.1	Drinking Water		
3.1.1	<p>Hunter Water must maintain a Management System for Drinking Water that is consistent with the Australian Drinking Water Guidelines, except to the extent that NSW Health specifies otherwise in writing (the Drinking Water Quality Management System).</p> <p><i>[Note: It is expected that the Drinking Water Quality Management System will be consistent with the Framework for Management of Drinking Water Quality. However, where NSW Health considers it appropriate, the application of Australian Drinking Water Guidelines may be amended or added to, to take account of Hunter Water's circumstances and/ or Drinking Water quality policy and practices within New South Wales.</i></p> <p><i>The Australian Drinking Water Guidelines has provisions relating to the prevention of use of non-potable water for potable purposes.]</i></p>	Audit	<p>We audited this clause in 2018, 2019, 2020 and 2021. We assigned Compliant (minor shortcomings) grades in the 2021 and 2018 audits and a Compliant grade in the 2020 and 2019 audits.</p> <p>This year, we will audit elements 1, 3, 4, 5, 6, 7, 9, 10, 11 and 12 of the Framework for Management of Drinking Water Quality.</p> <p>We have sought NSW Health's comments on Hunter Water's performance against this clause. Auditor to consider the comments in NSW Health's submission.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3):</p> <ul style="list-style-type: none"> - 2021-1 - 2021-2 - 2021-3 - 2021-4.
3.1.2	Hunter Water must ensure that the Drinking Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the Drinking Water Quality Management System, and to the satisfaction of NSW Health.	Audit	<p>We audited this clause in 2018, 2019, 2020 and 2021. We assigned Compliant (minor shortcomings) grades in the 2021 and 2020 audits and a Compliant grade in the 2019 and 2018 audits.</p> <p>This year, we will audit Hunter Water's implementation of its Drinking Water Quality Management System consistent with elements 1, 3, 4, 5, 6, 7, 9, 10, 11 and 12 of the Framework for Management of Drinking Water Quality only.</p>

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
			<p>We have sought NSW Health's comments on Hunter Water's performance against this clause. Auditor to consider the comments in NSW Health's submission.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3):</p> <ul style="list-style-type: none"> - 2021-5 - 2021-6 - 2021-7 - 2021-8 - 2021-9 - 2021-10.
3.2	Recycled Water		
3.2.1	<p>Hunter Water must maintain a Management System for Recycled Water that is consistent with the Australian Guidelines for Water Recycling, except to the extent that NSW Health specifies otherwise in writing (the Recycled Water Quality Management System).</p> <p>[Note: It is expected that the Recycled Water Quality Management System will be consistent with the Australian Guidelines for Water Recycling, including the Framework for Management of Recycled Water Quality and Use. However, where NSW Health considers it appropriate, the application of the Australian Guidelines for Water Recycling may be amended or added to, to take account of Hunter Water's circumstances and/ or Recycled Water quality policy and practices within New South Wales.]</p>	Audit	<p>We audited this clause in 2018, 2019, 2020 and 2021. We assigned Compliant (minor shortcomings) grades in the 2021, 2020 and 2018 audits and a Non-Compliant (non-material) grade in the 2019 audit.</p> <p>This year, we will audit elements 1, 2, 4, 5, 6, 7, 9, 10, 11 and 12 of the Framework for Management of Recycled Water Quality and Use.</p> <p>We have sought NSW Health's comments on Hunter Water's performance against this clause. Auditor to consider the comments in NSW Health's submission.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3):</p> <ul style="list-style-type: none"> - 2021-11 - 2021-12 - 2021-13 - 2020-02 - 2013-14-03 - 2013-14-04 - 2013-14-06 - 2013-14-13.

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
3.2.2	Hunter Water must ensure that the Recycled Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the Recycled Water Quality Management System, and to the satisfaction of NSW Health.	Audit	<p>We audited this clause in 2018, 2019, 2020 and 2021. We assigned Compliant (minor shortcomings) grades in the 2021 and 2020 audits and a Compliant grade in the 2019 and 2018 audits.</p> <p>This year, we will audit Hunter Water's implementation of its Recycled Water Quality Management System consistent with elements 1, 2, 4, 5, 6, 7, 9, 10, 11 and 12 of the Framework for Management of Recycled Water Quality and Use.</p> <p>We have sought NSW Health's comments on Hunter Water's performance against this clause. Auditor to consider the comments in NSW Health's submission.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3):</p> <ul style="list-style-type: none"> - 2021-14 - 2021-15 - 2021-16 - 2021-17 - 2021-18 - 2013-14-03 - 2013-14-04 - 2013-14-06 - 2013-14-13.
3.3	System Performance Standards		
3.3.1	<p>Water Pressure Standard</p> <p>(a) Hunter Water must ensure that no more than 4,800 Properties experience a Water Pressure Failure in a financial year (Water Pressure Standard).</p> <p>(b) A Property is taken to have experienced a Water Pressure Failure at each of the following times:</p> <p>i. when a person notifies Hunter Water that the Property has experienced a Water Pressure Failure and that Water Pressure Failure is confirmed by Hunter Water; or</p> <p>ii. when Hunter Water's systems identify that the Property has experienced a Water Pressure Failure.</p>	SC	We audited this clause in 2021, 2020 and 2018. We assigned Compliant grades in those audits.

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
	<p>(c) Despite clause 3.3.1(b), a Property will not be taken to have experienced a Water Pressure Failure if that Water Pressure Failure occurred only because of:</p> <ul style="list-style-type: none"> i. a Planned Water Interruption or Unplanned Water Interruption; ii. water usage by authorised fire authorities in the case of a fire; or iii. iii) a short term or temporary operational problem (such as a main break) which is remedied within four days of its occurrence. 		
3.3.2	<p>Water Continuity Standard</p> <p>(a) Hunter Water must ensure that in a financial year:</p> <ul style="list-style-type: none"> i. no more than 10,000 Properties experience an Unplanned Water Interruption that lasts more than five continuous hours; and ii. no more than 5,000 Properties experience three or more Unplanned Water Interruptions that each last more than one hour. <p>(Water Continuity Standard).</p> <p>(b) For the purposes of clause 3.3.2(a), Hunter Water must use the best available data (taking account of water pressure data where that data is available) to determine of:</p> <ul style="list-style-type: none"> i. whether a Property has experienced an Unplanned Water Interruption; and ii. the duration of the Unplanned Water <p>(c) If a Property experiences an Unplanned Water Interruption that was caused by a third party, that Property is taken not to have experienced an Unplanned Water Interruption for the purposes of clause 3.3.2(a).</p>	SC	We audited this clause in 2021, 2020 and 2018. We assigned Compliant grades in those audits.
3.3.3	<p>Wastewater Overflow Standard</p> <p>(a) Hunter Water must ensure that in a financial year:</p> <ul style="list-style-type: none"> i. no more than 5,000 Properties experience an Uncontrolled Wastewater Overflow in dry weather; and ii. no more than 45 Properties experience three or more Uncontrolled Wastewater Overflow in dry weather. <p>(Wastewater overflow Standard).</p>	SC	We audited this clause in 2021, 2020 and 2018. We assigned Compliant grades in those audits.
3.3.4	<p>Hunter Water must survey its Customers by 30 June 2020 for the purpose of informing a review of System Performance Standards and rebates.</p> <p>[Note: Clause 3.3.4 is not intended to prevent Hunter Water:</p> <ul style="list-style-type: none"> (a) surveying its Customers and Consumers for any lawful purpose at such times as it sees fit; or (b) using the survey required by that clause to survey its Customers and Consumers on topics additional to the topic referred to in that clause.] 	NR	We last audited this clause in 2020. We assigned a Compliant grade in that audit.
3.3.5	<p>Interpretation of standards</p> <p>(a) For the purposes of the Water Pressure Standard and Water Continuity Standard, each separately billed part of a Multiple Occupancy Property is to be counted as a separate Property.</p>	NR	Information clause – does not require audit.

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
	<p>[Note: For example, a complex of five townhouses where each townhouse receives a separate bill from Hunter Water is to be counted as five separate Properties. However, a block of flats that only receives one bill from Hunter Water is to be counted as one Property.]</p> <p>(b) For the purposes of the Wastewater Overflow Standard, a Multiple Occupancy Property is considered to be one Property.</p> <p>[Note: For example, a complex of five townhouses where each townhouse receives a separate bill from Hunter Water is to be counted as one Property.]</p> <p>(c) the case of any ambiguity in the interpretation or application of any of the standards set out in this clause 3.3, IPART's interpretation of the relevant standard or assessment of its application will prevail.</p>		
4	Organisational Systems Management		
4.1	Asset Management System		
4.1.1	By 31 December 2017, Hunter Water must develop a Management System for carrying out the functions authorised under this Licence that is consistent with the Australian Standard AS ISO 55001:2014 Asset management - Management systems - Requirements, or other standard approved by IPART on request by Hunter Water (the Asset Management System).	NR	Fixed deadline requirement (only required to be audited in year of deadline).
4.1.2	By 1 July 2018, Hunter Water must ensure that the Asset Management System is fully implemented and must, from that date, ensure that all relevant activities are carried out in accordance with the Asset Management System.	Audit	<p>We audited this clause in 2021, 2020, 2019 and 2018. We assigned Compliant grades in those audits.</p> <p>Auditor to check that the Asset Management System (AMS) is fully implemented, noting that Hunter Water achieved certification of its AMS on 11 July 2018.</p>
4.1.3	<p>Until the Asset Management System has been implemented in accordance with clause 4.1.2, Hunter Water must ensure that all relevant activities are carried out in accordance with the previous asset management system that was required under the operating licence held by Hunter Water which commenced in 2012.</p> <p>[Note: This clause permits Hunter Water to transition its previous asset management system based on the Water Services Association of Australia's Aquamark benchmarking tool to the Australian Standard AS ISO 55001:2014 Asset management - Management systems - Requirements.]</p>	NR	Fixed deadline requirement (only required to be audited in year of deadline).

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
4.2	Environmental management system		
4.2.1	Hunter Water must at all times maintain a Management System for carrying out the functions authorised under this Licence that is consistent with the Australian/New Zealand Standard AS/NZS ISO 14001:2016 Environmental management systems – Requirements with guidance for use, or other standard approved by IPART on request by Hunter Water (the Environmental Management System).	SC	We audited this clause in 2021 and 2018. We assigned Compliant grades in those audits.
4.2.2	Hunter Water must fully implement, and carry out all relevant activities in accordance with, the Environmental Management System.	SC	We audited this clause in 2021 and 2018. We assigned a Compliant grade in 2021 and a Compliant (minor shortcomings) grade in the 2018 audit.
4.3	Quality Management System		
4.3.1	Hunter Water must at all times maintain a Management System for carrying out the functions authorised under this Licence that is consistent with the Australian/New Zealand Standard AS/NZS ISO 9001:2016 Quality management systems – Requirements, or other standard as approved by IPART on request by Hunter Water (the Quality Management System).	SC	We last audited this clause in 2021. We assigned a Compliant (minor shortcomings) grade in that audit. Auditor should refer to recommendation 2021-19 relevant to this clause (see Table 3).
4.3.2	Hunter Water must fully implement, and carry out all relevant activities in accordance with, the Quality Management System.	SC	We last audited this clause in 2021. We assigned a Compliant grade in that audit.
5	Customers and stakeholder relations		
5.1	Customer Contract		
5.1.1	The terms and conditions of the Customer Contract are as set out in Schedule B of this Licence. [Note: Section 38 of the Act makes provision for the amendment of the Customer Contract.].	NR	Information clause – does not require audit
5.1.2	Before publishing a notice under section 38 of the Act for the purpose of varying the terms and conditions of the Customer Contract, Hunter Water must provide IPART with a copy of the notice.	SC	We last audited this clause in 2021. We assigned a Compliant grade in that audit.
5.2	Consumers		
5.2.1	Hunter Water's obligations under the Customer Contract relating to: <ul style="list-style-type: none"> (a) Complaint handling and Complaint resolution procedures; and (b) redress (clause 16.3 of the Customer Contract) and claims for damages (clause 16.4 of the Customer Contract) are extended to those Consumers who are not parties to the Customer Contract.	NR	Information clause – does not require audit.

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
5.3	Payment difficulties and actions for non-payment		
5.3.1	<p>Hunter Water must maintain and fully implement the following:</p> <ul style="list-style-type: none"> (a) a financial hardship policy that assists residential Customers and Consumers experiencing financial hardship to better manage their current and future bills; (b) procedures relating to a payment plan for residential Customers and Consumers who are responsible for paying their bills and who are, in Hunter Water's opinion, experiencing financial hardship; (c) procedures for identifying the circumstances under which Hunter Water may disconnect or restrict a supply of water in a manner that will affect a Customer or Consumer; and (d) provisions for self-identification, identification by community welfare organisations and identification by Hunter Water of residential Customers and Consumers experiencing financial hardship. <p>(the Procedure for Payment Difficulties and Actions for Non-payment).</p>	Audit	We last audited this clause in 2020. We assigned a Compliant grade in that audit.
5.4	Customer advisory group		
5.4.1	Hunter Water must maintain and regularly consult with its Customers through a customer advisory group.	SC	We last audited this clause in 2020. We assigned a Compliant grade in that audit.
5.4.2	Hunter Water must utilise the customer advisory group to, among other things, obtain advice on the interests of Hunter Water's Customers, the Customer Contract and such other key issues related to Hunter Water's planning and operations as Hunter Water may determine, including the matters set out in section 12(1) of the Act, consistent with the Customer Advisory Group Charter.	SC	We last audited this clause in 2020. We assigned a Compliant grade in that audit.
5.4.3	<p>Hunter Water:</p> <ul style="list-style-type: none"> (a) must ensure that, at all times, the membership of the customer advisory group is appointed and determined by Hunter Water in accordance with the Customer Advisory Group Charter; (b) must use its best endeavours to include, as members of the customer advisory group, at least one Customer representing each of the following categories: <ul style="list-style-type: none"> i. business; ii. organisations representing low income iii. Customers living in rural and urban fringe areas; iv. residential; v. local government; vi. pensioners; vii. Customers with disabilities; viii. Indigenous Australians; and ix. Customers from culturally and linguistically diverse backgrounds; and 	SC	We last audited this clause in 2020. We assigned a Compliant grade in that audit.

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
	<ul style="list-style-type: none"> (c) may include, as members of the customer advisory group, at least one person representing each of the following categories: <ul style="list-style-type: none"> i. business Consumers; ii. residential Consumers; and iii. environmental groups 		
5.4.4	<p>Hunter Water and members of the customer advisory group must, for the term of this Licence, maintain a charter that addresses all of the following issues.</p> <ul style="list-style-type: none"> (a) the role of the customer advisory group; (b) how members and the Chair of the customer advisory group will be appointed (c) the term for which members are appointed (d) information on how the customer advisory group will operate; (e) a description of the type of matters that will be referred to the customer advisory group and how those matters may be referred; (f) procedures for communicating the outcomes of the customer advisory group's work to the public; (g) procedures for monitoring issues raised at meetings of the customer advisory group and ensuring appropriate follow-up of those issues; (h) procedures for amending the charter; and (i) funding and resourcing of the customer advisory group by Hunter Water, <p>(Customer Advisory Group Charter).</p> 	SC	We last audited this clause in 2020. We assigned a Compliant grade in that audit.
5.4.5	Hunter Water must provide the customer advisory group with information in Hunter Water's possession or under its control necessary to enable the customer advisory group to discharge the tasks assigned to it, other than information or documents that are confidential.	SC	We last audited this clause in 2020. We assigned a Compliant grade in that audit.
5.5	Internal complaints handling		
5.5.1	Hunter Water must maintain a procedure for receiving, responding to and resolving Complaints, which is consistent with the Australian/New Zealand Standard AS/NZS 10002:2014 – Guidelines for complaint management in organizations (the Internal Complaints Handling Procedure).	SC	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
5.5.2	Hunter Water must ensure that the Internal Complaints Handling Procedure is fully implemented and that all relevant activities are carried out in accordance with the Internal Complaints Handling Procedure.	SC	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
5.6	External Dispute Resolution scheme		
5.6.1	Hunter Water must be a member of the Energy and Water Ombudsman NSW to facilitate the resolution, by a dispute resolution body, of disputes between Hunter Water and its Customers or Consumers.	Internal IPART check	This clause is not included in the auditor's scope.

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
5.7	Provision of information to Customers and the general public		
5.7.1	<p>Hunter Water must prepare a pamphlet or pamphlets with the following information to Customers at least annually with their bills:</p> <ul style="list-style-type: none"> (a) a brief explanation of the Customer Contract and a summary of the key rights and obligations of Customers under the Customer Contract; (b) a brief explanation of the Procedure for Payment Difficulties and Actions for Non-payment; (c) a brief explanation of rights of Customers to claim a rebate and the conditions that apply to those rights; (d) information about the General Enquiry Process; (e) information about how to make a Complaint under the Internal Complaints Handling Procedure; and (f) a brief explanation of the external dispute resolution service, how to access that service, and Customers rights to have a Complaint or dispute referred to Energy and Water Ombudsman NSW. 	Audit	<p>We last audited this clause in 2021. We assigned a Non-Compliant (non-material) grade in that audit.</p> <p>Auditor should refer to recommendation 2021-20 relevant to this clause (see Table 2).</p>
5.7.2	<p>Hunter Water must make a copy of the following documents available to any person, free of charge on its website for downloading and upon request through the General Enquiry Process:</p> <ul style="list-style-type: none"> (a) the Customer Contract; (b) a pamphlet or pamphlets (as referred to in clause 5.7.1); (c) the Procedure for Payment Difficulties and Actions for Non-payment; (d) the Customer Advisory Group Charter; (e) customer advisory group minutes; (f) the Internal Complaints Handling Procedure; (g) information about the dispute resolution scheme provided by Energy and Water Ombudsman NSW; and (h) a map of the Area of Operations. 	Internal IPART check	This clause is not included in the auditor's scope.
5.7.3	Hunter Water must update the pamphlet or pamphlets prepared under clause 5.7.1 and documents on its website under clause 5.7.2 to reflect any variations made to the information within 60 days of the commencement of the variations.	SC	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
5.8	Code of Conduct with WIC Act Licensee		
5.8.1	Hunter Water must use reasonable endeavours to cooperate with any WIC Act Licensee that seeks to establish with Hunter Water a code of conduct required under a licence under the WIC Act.	Audit	We audited this clause in 2020 and 2018. We assigned a Compliant grade in 2018 and not required grade in 2020.
5.8.2	Where the Minister administering the WIC Act has established a code of conduct under clause 25 of the WIC Regulation, Hunter Water will be taken to have satisfied its obligation under clause 5.8.1 by applying the water industry code of conduct established by the Minister to the relevant WIC Act Licensee.	NR	Information clause – does not require audit.

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
5.9	Memorandum of Understanding with NSW Health		
5.9.1	<p>Hunter Water must use its best endeavours to:</p> <ul style="list-style-type: none"> (a) maintain a memorandum of understanding with NSW Health; and (b) comply with the memorandum of understanding maintained under clause 5.9.1(a). <p>[Note: Clause 5.9.1 does not limit the persons with whom Hunter Water may enter into a memorandum of understanding.]</p>	SC	<p>We last audited this clause in 2020. We assigned a Compliant grade in that audit.</p> <p>We will seek NSW Health's comments on Hunter Water's performance with this clause.</p>
5.9.2	<p>The purpose of the memorandum of understanding referred to in clause 5.9.1(a) is to form the basis for co-operative relationships between the parties to the memorandum of understanding. In particular, the purpose of the memorandum of understanding referred to in clause 5.9.1(a) is to recognise the role of NSW Health in providing advice to the NSW Government in relation to Drinking Water quality standards and the supply of water that is safe to drink.</p>	NR	Information clause – no audit required.
5.9.3	<p>The memorandum of understanding referred to in clause 5.9.1(a) must include arrangements for Hunter Water to report to NSW Health information on any events in relation to Hunter Water's systems or Services that might pose a risk to public health.</p>	SC	<p>We last audited this clause in 2020. We assigned a Compliant grade in that audit.</p> <p>We will seek NSW Health's comments on Hunter Water's performance with this clause.</p>
5.9.4	<p>Hunter Water must provide NSW Health with information relating to water quality in the manner and form specified by NSW Health within a reasonable period of time of receiving NSW Health's request.</p> <p>[Note: The obligation in clause 5.9.4 is in addition to Hunter Water's obligation to comply with any information requests made under section 19 of the Public Health Act 2010 (NSW) by the Secretary of the NSW Ministry of Health.]</p>	SC	We will seek NSW Health's comments on Hunter Water's performance with this clause.
5.10	Memorandum of Understanding with Department of Primary Industries - Water		
5.10.1	<p>Hunter Water must use its best endeavours to:</p> <ul style="list-style-type: none"> (a) maintain a memorandum of understanding (which may be referred to as a roles and responsibilities protocol) with the Department of Primary Industries Water in relation to: <ul style="list-style-type: none"> i. the roles and responsibilities for the Department of Primary Industries Water and Hunter Water in respect of the review and implementation of the Lower Hunter Water Plan; and ii. calculation and reporting of System Yield; and (b) comply with the memorandum of understanding maintained under clause 5.10.1(a). <p>[Note: Clause 5.10.1 does not limit the persons with whom Hunter Water may enter into a memorandum of understanding or a roles and responsibilities protocol.]</p>	SC	<p>We last audited this clause in 2018. We assigned a Compliant grade in that audit.</p> <p>We will seek the Department of Planning, and Environment's comments on Hunter Water's performance with this clause.</p>

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
5.10.2	The purpose of the memorandum of understanding referred to in clause 5.10.1(a) is to form the basis for a co-operative relationship between the parties to the memorandum of understanding. In particular, the purpose of the memorandum of understanding referred to in clause 5.10.1(a) is to recognise the role of Department of Primary Industries Water in assessing options to address water supply security in the lower Hunter region.	NR	Information clause – does not require audit.
5.11	Memorandum of understanding with Fire and Rescue NSW (FRNSW)		
5.11.1	<p>Hunter Water must use its best endeavours to:</p> <ul style="list-style-type: none"> a) develop and enter into a memorandum of understanding with FRNSW by 31 December 2017; and b) once the memorandum of understanding referred to in clause 5.11.1(a) is developed and entered into, comply with the memorandum of understanding. <p>[Note: Clause 5.11.1 does not limit the persons with whom Hunter Water may enter into a memorandum of understanding.]</p>	SC	<p>We audited this clause in 2019 and 2018. We assigned a Compliant grade in 2019 and a Compliant (minor shortcomings) grade in the 2018 audit.</p> <p>We will seek Fire and Rescue NSW's (FRNSW) comments on Hunter Water's performance with this clause.</p>
5.11.2	<p>The purpose of the memorandum of understanding referred to in clause 5.11.1 is to form the basis for co-operative relationships between the parties to the memorandum of understanding. In particular, the purpose of clause 5.11.1 is to:</p> <ul style="list-style-type: none"> (a) develop the roles and responsibilities of the parties to the memorandum of understanding as they relate to each other; (b) identify the needs and constraints of the parties to the memorandum of understanding as they relate to each other; and (c) identify and develop strategies for efficient and effective provision of firefighting water consistent with the goals of each party to the memorandum of understanding. 	NR	Information clause – does not require audit.
5.11.3	<p>The memorandum of understanding referred to in clause 5.11.1 must require:</p> <ul style="list-style-type: none"> (a) the establishment of a working group, comprised of representatives from Hunter Water and FRNSW; and (b) the working group to consider the following matters (at a minimum): <ul style="list-style-type: none"> i. arrangements regarding information sharing between Hunter Water and FRNSW; ii. agreed timelines and a format for Hunter Water to provide a report to FRNSW detailing the network performance with regard to availability of water for firefighting (taking into account the minimum available flow and pressure in localised areas of the network); iii. arrangements for Hunter Water to consult with FRNSW in the design of new assets and planning of system maintenance, where modelling indicates that minimum available flow and pressure may unduly affect firefighting in the network section under consideration; and 	NR	Information clause – does not require audit.

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
	iv. other matters as agreed by both parties to the memorandum of understanding.		
6	Performance monitoring and reporting		
6.1	Operational audits		
6.1.1	IPART may annually, or from time to time as occasion requires, undertake, or may appoint an Auditor to undertake, an audit on Hunter Water's compliance with: <ul style="list-style-type: none"> (a) this Licence; (b) the Reporting Manual; and (c) any matters required by the Minister, (Operational Audit). 	NR	Information clause – does not require audit.
6.1.2	Hunter Water must provide to IPART or the Auditor all information in Hunter Water's possession, or under Hunter Water's custody or control, which is necessary or convenient for the conduct of the Operational Audit.	Internal IPART check	This clause is not included in the auditor's scope.
6.1.3	Without limiting clause 6.1.2, Hunter Water must provide to IPART or the Auditor any information necessary or convenient for the conduct of the Operational Audit which IPART or the Auditor requests in writing, within any reasonable period of time specified by IPART or the Auditor in writing.	Internal IPART check	This clause is not included in the auditor's scope.
6.1.4	For the purposes of any Operational Audit or verifying a report on an Operational Audit, Hunter Water must, within a reasonable period of time from receiving a request from IPART or an Auditor, permit IPART or the Auditor to: <ul style="list-style-type: none"> (a) access any works, premises or offices occupied by Hunter Water; (b) carry out inspections, measurements and tests on, or in relation to, any such works, premises or offices; (c) take on to any such premises or offices, any person or equipment necessary for the purposes of performing the Operational Audit or verifying any report on the Operational Audit; (d) inspect and make copies of, and take extracts from, any books and records of Hunter Water that are maintained in relation to the performance of Hunter Water's obligations under this Licence (including obligations under the Reporting Manual); and (e) discuss matters relevant to the Operational Audit or any report on the Operational Audit with Hunter Water, including Hunter Water's officers and employees. 	Internal IPART check	This clause is not included in the auditor's scope.
6.2	Reporting Manual		
6.2.1	Hunter Water must comply with all of its reporting obligations set out in the Reporting Manual, including in relation to: <ul style="list-style-type: none"> (a) water conservation; (b) supply services and performance standards; (c) organisational systems management; (d) customer and stakeholder relations; and (e) performance monitoring and reporting, including: <ul style="list-style-type: none"> i. IPART performance indicators; and ii. the National Water Initiative Performance Indicators 	Audit	We audited this clause in 2021 and 2019. We assigned a Non-Compliant (non-material) grade in 2021 and a Compliant grade in the 2019 audit. Auditor should refer to the following recommendations relevant to this clause (see Table 2):

Licence clause	Operating Licence obligation	2022 audit requirement	Comments for the auditor
			- 2021-21 - 2021-22.
6.2.2	Hunter Water must maintain sufficient record systems to enable Hunter Water to report accurately in accordance with clause 6.2.1.	SC	We audited this clause in 2021 and 2019. We assigned Compliant grades in those audits.
6.2.3	In the case of any ambiguity in the interpretation or application of any requirements in the Reporting Manual, IPART's interpretation or assessment will prevail. [Note: The Reporting Manual identifies the details of when, what, to whom and how Hunter Water must report to IPART and NSW Health. The Reporting Manual also specifies what and how reports and other information must be made publicly available.]	NR	Information clause – does not require audit.
6.3	Provision of Information to IPART and Auditor		
6.3.1	Hunter Water must provide IPART or an Auditor with information relating to the performance of any of Hunter Water's obligations under clause 6.2 (including providing IPART with physical and electronic access to the records required to be kept under clause 6.2) within a reasonable period of time from Hunter Water receiving a request from IPART or an Auditor for that information	Internal IPART check	This clause is not included in the auditor's scope.
6.3.2	Hunter Water must provide IPART or an Auditor with such information as is reasonably required to enable IPART or an Auditor to conduct any review or investigation of Hunter Water's obligations under this Licence within a reasonable period of time from Hunter Water receiving a request from IPART or an Auditor for that information.	Internal IPART check	This clause is not included in the auditor's scope.
6.3.3	If Hunter Water contracts out any of its activities to any person (including a subsidiary) it must take all reasonable steps to ensure that, if required by IPART or an Auditor, any such persons provide information and do the things specified in this clause 6 as if that person were Hunter Water.	Internal IPART check	This clause is not included in the auditor's scope.
6.3.4	Where this Licence requires Hunter Water to provide information to IPART or an Auditor that is information to which: <ul style="list-style-type: none"> (a) Section 24FF of the IPART Act applies; or (b) Section 24FF of the IPART Act does not apply but IPART or the Auditor has agreed to treat the information as though section 24FF of the IPART Act applies to that information Hunter Water must, to the maximum extent permitted by the law, provide that information even if it is confidential.	Internal IPART check	This clause is not included in the auditor's scope.

Source: IPART, Hunter Water Operational Audit 2021 - Report to the Minister – Compliance Report, March 2022.

Table 3 Recommendations / outstanding items from previous audits

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings (Status will be reported by Hunter Water in audit recommendations update on 30 June 2022 ^a)	Guidance for 2022 audit
2021-1	Drinking water clause 3.1.1	By 31 March 2023, Hunter Water must undertake a review and revise both the MidCoast Council and the Central Coast Council water supply agreements, with particular attention to quality, quantity, maintenance, operations and ownership aspects.	New recommendation from the 2021 operational audit.	Auditor to check for progress
2021-2	Drinking water clause 3.1.1	At the next Corporate Incident and Emergency Management Plan review, Hunter Water must review incident level categories and make clear which ones require a root cause analysis / incident investigation	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-3	Drinking water clause 3.1.1	By 30 June 2022, Hunter Water must communicate finalisation of its health complaints guideline to NSW Health.	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-4	Drinking water clause 3.1.1	By 1 November 2022, Hunter Water must improve documentation of the evidence base for Critical Control Point (CCP) limits (e.g. through annotations in the CCP limits table).	New recommendation from the 2021 operational audit.	Auditor to check for progress during audit period and completion at audit interview (recommendation due outside of the audit period but audit interviews will occur after recommendation due date)
2021-5	Drinking water clause 3.1.2	By 30 June 2022, Hunter Water must include MidCoast Council and Central Coast Council in the Key Emergency Services and Stakeholder Contact List of the Corporate Emergency Plan.	New recommendation from the 2021 operational audit.	New recommendation from the 2021 operational audit.
2021-6	Drinking water clause 3.1.2	At the next risk review, Hunter Water must ensure that the risk assessments capture a corresponding risk treatment for medium controlled risks and above, within the risk register itself.	New recommendation from the 2021 operational audit.	New recommendation from the 2021 operational audit.
2021-7	Drinking water clause 3.1.2	By 1 November 2022, Hunter Water must review the CCP Limit Tables and ensure that the limits and the logic are accurate and match SCADA	New recommendation from the 2021 operational audit.	New recommendation from the 2021 operational audit.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings (Status will be reported by Hunter Water in audit recommendations update on 30 June 2022^a)	Guidance for 2022 audit
2021-8	Drinking water clause 3.1.2	By 1 November 2022, Hunter Water must update the network chlorinators CCP information to include the currency information, according to the stated process	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-9	Drinking water clause 3.1.2	By 30 June 2022, Hunter Water must ensure that operators are trained to complete all components of the site checklists	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-10	Drinking water clause 3.1.2	By 30 September 2022, Hunter Water must strengthen existing reporting lines to the water quality committee to include comparison of the network verification sampling that has been completed with what was scheduled.	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-11	Recycled water clause 3.2.1	By 31 March 2022, Hunter Water must update Table 2.1 of the Corporate Recycled Water Quality Management Plan to include residential use as an intended use for recycled water from the Morpeth and Farley Wastewater Treatment Works.	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-12	Recycled water clause 3.2.1	By 30 June 2022, Hunter Water must document the process for providing annual reports on recycled water to end users and clearly communicate this process with each end user	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-13	Recycled water clause 3.2.1	By 31 March 2022, Hunter Water must update the Corporate Recycled Water Quality Management Plan to reflect changes to the process for scheduling internal audits of Recycled Water Quality Management Plans, including how the scope of the audits is determined and how the audit recommendations are actioned and tracked	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-14	Recycled water clause 3.2.2	By 31 March 2022, Hunter Water must ensure that all recycled water customer agreements are not past their expiry date and it must develop procedures to ensure the agreements are extended or renewed before the expiry date	New recommendation from the 2021 operational audit.	Auditor to check for completion

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings (Status will be reported by Hunter Water in audit recommendations update on 30 June 2022^a)	Guidance for 2022 audit
2021-15	Recycled water clause 3.2.2	By 31 March 2022, Hunter Water must update the process flow diagram for Kurri Kurri Wastewater Treatment Works to accurately reflect the current number of clarifiers and chemical dosing.	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-16	Recycled water clause 3.2.2	By 31 March 2022 Hunter Water must review, together with Veolia, the need for testing of every delivery of aluminium sulphate at wastewater treatment works and update the work instruction for delivery and testing to reflect the outcome of this review.	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-17	Recycled water clause 3.2.2	By 30 June 2022, Hunter Water must include the basis for the 4 log reduction in helminths in the membrane bioreactor at Dungog Wastewater Treatment Works. Hunter Water must update the Validation Testing Program for Water Recycling Schemes to include the log reductions for the upgraded Dungog Wastewater Treatment Works. Hunter Water must also develop a process to ensure changes to log reduction values are reviewed and incorporated into the Validation Testing Program for Water Recycling Schemes.	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-18	Recycled water clause 3.2.2	By 31 March 2022, Hunter Water must update the Disinfected Effluent UVT limit to reflect the CCP limit in the spreadsheet used to present long term trends of Kurri Kurri recycled water quality and check all other recycled water trend spreadsheets for discrepancies in the limits.	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-19	Quality Management System clause 4.3.1	By 31 October 2022, Hunter Water should develop a plan for, and report on, its progress with implementing the proposed opportunities for improvement for its Integrated Management System document control).	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-20	Customer communication pamphlets clause 5.7.1	By 30 September 2022, Hunter Water should include a brief explanation of actions for non-payment in a pamphlet that is distributed with bills at least annually	New recommendation from the 2021 operational audit.	Auditor to check for completion

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings (Status will be reported by Hunter Water in audit recommendations update on 30 June 2022 ^a)	Guidance for 2022 audit
2021-21	Reporting requirements clause 6.2.1	By 30 September 2022, Hunter Water should set up a process to ensure that IPART, as well as NSW Health, are advised of any proposed significant changes to the Drinking Water and Recycled Water Quality Systems.	New recommendation from the 2021 operational audit.	Auditor to check for completion
2021-22	Reporting requirements clause 6.2.1	By 30 September 2022, Hunter Water should review and update the Corporate Standard – Reporting and Monitoring Protocol, following completion of the BOM review of NPR reporting in late February 2022.	New recommendation from the 2021 operational audit.	Auditor to check for completion
2020-02	Recycled water Clause 3.2.1	By 31 October 2021, Hunter Water should ensure that the quality assurance and validation procedures for sampling are documented in its recycled water quality monitoring plan. The Australian Guidelines for Water Recycling (Box 2.10) requires that quality assurance details are in a monitoring plan.	Hunter Water's laboratory services provider, ALS, undertake the sampling for Hunter Water. ALS document references were to be included in the Recycled Water Quality Monitoring Plan. The audit found, however, the requirement for QA/QC on analysis is not included in the Corporate Recycled Water Quality Management System.	Auditor to check for completion.
2013-14-03 2013-14-04 2013-14-06 2013-14-13	Recycled Water Clauses 3.2.1 & 3.2.2	<p>Within 6 months, Hunter Water should review CCPs for each treatment plant, including:</p> <p>a) review all CCP critical limits (including alarm delays), and monitoring points to ensure they reflect current practice, as agreed with NSW Health.</p> <p>(Note: other elements of these recommendations had been fully addressed in previous audits)</p>	Hunter Water's laboratory services provider, ALS, undertake the sampling for Hunter Water. ALS document references were to be included in the Recycled Water Quality Monitoring Plan. The audit found, however, the requirement for QA/QC on Recycled Water Quality Management System is not included in the Corporate RWQMS.	Auditor to check for completion.

a Hunter Water is required to provide a report on progress by 31 March 2022^a or a later date agreed by IPART. Due to the timing of the audit, the Tribunal has agreed to a later date of 30 June 2022 for Hunter Water to report on its progress with the audit recommendations

Note: Licence references are to the Hunter Water Operating Licence 2017-2022 unless otherwise stated.

Source: IPART, Hunter Water Operational Audit 2021 – Report to the Minister, March 2022.

Table 4 Previous field verification locations for Hunter Water

Audit year	Location	Facility
2021	Gresford and Lemon Tree Passage water treatment plants	Water treatment plant
	Edgeworth, Cessnock and Kurri Kurri recycled water schemes	Recycled water scheme
2020	Farley recycled water scheme	Wastewater treatment plant Recycled water treatment plant Gillieston Heights recycled water network
	Tomago sandbeds	Borefield
	Tomago	Grahamstown water treatment plant
	George Schroder pumping station	Schroder PAC dosing facility
	Anna Bay	Water treatment plant
	Nelson Bay	Water treatment plant
	2019	Morpeth
	Chisholm	Recycled water network in urban development
	Chisholm	Chisholm No. 2 re-chlorination facility
	Adamstown Heights	No. 1 & No. 2 reservoirs
	Fern Bay	Chemical dosing facility for sewerage network (an environmental improvement site)
2018	North Lambton	Maintenance depot Reservoir
	Lambton	Observed planned maintenance activity (faulty valve replacement works)
	Morpeth	Wastewater treatment works (including recycled water)
	Dungog	Water treatment plant
2017	Kurri Kurri	Wastewater Treatment Plant
	Gresford	Water Treatment Plant and Water Pump Station
	North Lambton	Maintenance Depot and Planned Maintenance repair
	Wallsend	Water Pump Station
	Elermore Vale	Reservoir
2016	Tomago Sandbeds	Borefields
	Lemon Tree Passage	Water Treatment Plant
	Karuah	Wastewater Treatment Plant and the reuse enterprise
	Boulder Bay	Wastewater Treatment Plant
2015	Edgeworth	Wastewater Treatment works
	KIWS (Kooragang Industrial Water Scheme), incl. Mayfield West plant	Advanced Water Treatment Plant (recycled water)
	Grahamstown	Spillway
	Grahamstown	Water Treatment Plant
	Campvale	Pumping station
2014	Chichester	Dam
	Dungog	Water Treatment Plant
	Clarence	Sewage Treatment Plant
	Boags Hill	Inlet
	Seaham	Weir

Audit year	Location	Facility
2013	Branxton	Recycled Water Treatment Plant
	Grahamstown	Water treatment plant
2012	Port Stephens	Lemon Tree Passage Water Treatment Plant
	Grahamstown	Dam
	Campvale	Pumping station
	Between Newcastle and Port Stephens	Tomago Sandbeds
	Karuah	Sewage Treatment Plant
2011	Dungog	Water Treatment Plant
	Grahamstown	Water Treatment Plant
	n/a	Service reservoirs and storages
	n/a	Work sites – mains replacement and burst mains repair

E Auditor's report

Operational audit report

Audit of Hunter Water

304900789



Prepared for
Independent Pricing and Regulatory Tribunal

27 February 2023

Contact information

Stantec Australia Pty Ltd

ABN 17 007 820 322

Level 11

515 St Paul's Terrace

Fortitude Valley QLD 4006

Australia

www.stantec.com

Phone +61 7 3369 9822

Fax +61 7 3369 9722

Author(s):

Aneurin Hughes, Stantec

Annette Davison, Risk Edge

David Bartley, Atom Consulting

Ella Hingston, Stantec

Approved by:

Aneurin Hughes, Stantec

Document information

Prepared for Independent Pricing and
Regulatory Tribunal

Project name Audit of Hunter Water

File reference 304900789-REPT -
Operational audit report_03-
00.docx

Job reference 304900789

Date 27 February 2023

Version number 3

Effective date 27/02/2023

Date approved 27/02/2023

Document history

Version	Effective date	Description of revision	Prepared by	Reviewed by
1	3/02/2023	Draft for IPART review	Aneurin Hughes Annette Davison David Bartley Ella Hingston	Aneurin Hughes Ella Hingston
2	10/02/2023	Draft for Hunter Water review	Aneurin Hughes Annette Davison David Bartley Ella Hingston	Aneurin Hughes Ella Hingston
3	27/02/2023	Final	Aneurin Hughes Annette Davison David Bartley Ella Hingston	Aneurin Hughes Ella Hingston

Executive summary

Auditor's declaration

This report presents the findings of the audit of the operations of the Hunter Water Corporation (Hunter Water) against the Hunter Water Operating Licence 2017-2022 and Hunter Water Operating Licence 2022-2027, consistent with the audit requirements set out in the Audit Guideline Public Water Utilities (July 2019) published by the Independent Pricing and Regulatory Tribunal (IPART) for the period 1 November 2021 to 31 October 2022.

The auditors confirm that:

- > We have seen sufficient evidence on which to base our conclusions
- > Our audit findings accurately reflect the professional opinions of the auditors
- > We have conducted the audit, determined audit findings and prepared the report consistent with the audit requirements set out in IPART's Audit Guideline Public Water Utilities (July 2019) and IPART's Request for Quote
- > Our audit findings have not been unduly influenced by the utility and/or any of its associates.

Major findings

A summary of major audit findings for the 2021-22 audit period is shown below.

Summary of audit findings against audited licence obligations

Section	Clause	Sub clause	Audit grade	Summary of audit findings where less than fully compliant
3 Supply services and performance standards	3.1 – Drinking water	3.1.1	Compliant	N/A
		3.1.2	Compliant (minor shortcomings)	Several minor shortcomings were noted across currency and implementation of the water quality management system including inconsistencies for the treatment plant critical control points (CCPs) between documents, a key stakeholder's contact details being missing from one section of the emergency management documentation, and a scheduled audit not being completed on time. These findings are considered shortcomings rather than deficiencies as they are understood by Hunter Water, did not compromise its ability to meet its obligations, and are being or have been addressed (outside of the audit period).
	3.2 – Recycled water	3.2.1	Compliant (minor shortcomings)	A minor shortcoming was noted that some of the documents used by the operations and maintenance contractor (Veolia) were overdue for review. This shortcoming did not compromise Hunter Water's ability to meet its obligations or compromise the preventative measures to control risks associated with recycled water.
		3.2.2	Compliant (minor shortcomings)	A minor shortcoming was noted during the site visit to Branxton Wastewater Treatment Works where reagents used to check the calibration of online instruments were past their expiry date. A review of the online results and laboratory results showed the discrepancy was not large enough to have compromised the supply of

Section	Clause	Sub clause	Audit grade	Summary of audit findings where less than fully compliant
				recycled water to customers. This shortcoming therefore did not compromise Hunter Water's ability to meet its obligations or compromise the preventative measures to control risks associated with recycled water.
4 Organisational systems management	4.1 – Asset management system	4.1.2	Compliant (minor shortcomings)	<p>Inconsistencies were observed in the terminology adopted for likelihood, consequence and risk in a few tables in the draft Reservoir Asset Class Management Plan and the terminology adopted in the Enterprise Risk Management Standard. As the Asset Class Management Plan was a draft, this inconsistency is considered to be a shortcoming.</p> <p>Business continuity plan and work instruction reviews are not being undertaken by the due date. The risk of delayed review would depend on the document. As Hunter Water are currently addressing this weakness and it was partially caused by COVID-19 we consider this matter to be a shortcoming.</p>
5 Customer and stakeholder relations	5.3 – Payment difficulties and actions for non-payment	5.3.1	Compliant (minor shortcomings)	We identified several shortcomings with the maintenance of the document currency of the policy and procedures required by sub-clauses (a), (b) and (c). However, the risks associated with these shortcomings have been minimised through effective training and implementation. Therefore, we consider these shortcomings to be shortcomings only and not deficiencies.
	5.7 – Provision of information to customers and the general public	5.7.1	Non-compliant (non-material)	Hunter Water has self-identified a deficiency where it did not distribute a summary of the customer contract to all customers in the audit period. This is a deficiency and not a shortcoming because it is a breach of the licence requirement leading to a risk that Hunter Water's customers will not be aware of their rights and obligations and not being protected when interacting with the monopoly supplier. However, we consider that this risk is minimal, and this deficiency is non-material, because the required information is available on Hunter Water's website.
	5.8 – Code of Conduct with WIC Act Licensee	5.8.1	Not required	In 2016, Hunter Water entered into two Utility Services Agreements with Flow Systems Pty Ltd for Cooranbong Water and Huntlee Water. Hunter Water advised that it has not received any further requests from Private Network Operators to establish a code of conduct under the <i>Water Industry Competition Act 2006</i> with Hunter Water. Therefore, Hunter Water has not been required to comply with this clause during the audit period.
6 Performance monitoring and reporting	6.2 – Reporting manual	6.2.1	Compliant (minor shortcomings)	There is an ongoing shortcoming in relation to the development of a process to ensure that IPART, as well as New South Wales (NSW) Health, are advised of changes to the Drinking Water and Recycled Water

Section	Clause	Sub clause	Audit grade	Summary of audit findings where less than fully compliant
				Quality Systems. A process is yet to be developed for recycled water. This is considered a shortcoming as there have been no events noted in the audit period where Hunter Water has not informed IPART, as required in the Operating Licence.

Operational audit 2021-22 recommendations and risks of non-compliance

Sub-clause	Risk of non-compliance	Recommendations
3 Supply services and performance standards		
3.1.1 Drinking water	If Hunter Water does not maintain a Drinking Water Quality Management System (DWQMS) that is consistent with the licence requirements, there is a very high risk that water supplied to customers will not meet quality standards for drinking, leading to significant public health impacts.	None.
3.1.2 Drinking water	If Hunter Water does not carry out activities in accordance with its own DWQMS, there is a very high risk that the water supplied to customers will not meet quality standards for drinking, leading to significant public health impacts.	<p>Recommendation 2022/3.1.2-1: By 31 October 2023, consolidate information on CCPs to, as far as possible, one reference point, to improve maintenance of currency and avoid discrepancies of information e.g. by adding a reference to a CCP document (as the point of truth) within the Drinking Water Quality Management System or Drinking Water Quality Management Plan.</p> <p>Recommendation 2022/3.1.2-2: By 30 September 2023, given that 100% document currency compliance is unlikely to ever be achievable, set an evidence-based key performance indicator (KPI) for currency at an achievable level (commensurate with document criticality) that does not compromise HWC's ability to satisfy its licence and other obligations.</p> <p>Recommendation 2022/3.1.2-3: By 31 March 2023, ensure that the audit report for the Hunter Water Distribution Network has been completed and the audit finalised.</p>
3.2.1 Recycled water	If Hunter Water does not maintain a Recycled Water Quality Management System (RWQMS) that is consistent with the licence requirements, there is a very high risk that the quality of water supplied to customers will not meet quality standards for recycled water, leading to significant public health impacts.	Recommendation 2022/3.2.1-1: By 30 September 2023, set an evidence-based KPI for currency of Veolia documents used under the operations and maintenance contract. This KPI shall be set at an achievable level (commensurate with document criticality), that does not compromise HWC or Veolia's ability to satisfy its licence and other obligations
3.2.2 Recycled water	If Hunter Water does not carry out activities in accordance with its own RWQMS, there is a very high risk that the water supplied to customers will not meet quality standards for recycled water, leading to significant public health impacts.	Recommendation 2022/3.2.2-1: By 30 September 2023, develop a system to ensure that reagents used for recycled water analysis have not passed their expiry date.
4 Organisational systems management		
4.1.2 Asset management system	If Hunter Water does not carry out activities in accordance with its own Asset Management System (AMS), there is a very high risk that Hunter Water will manage its assets poorly leading to higher costs and	Recommendation 2022/4.1.2-1: By 30 September 2023, develop a system to ensure that likelihood, criticality rating and risk rating scales, along with the terminology used, are

Sub-clause	Risk of non-compliance	Recommendations
	failure to meet the required service levels, including supplying water at the required quality, ensuring water continuity, protecting public health and safety and protecting the environment.	aligned between asset class management plans and the Enterprise Risk Management Standard. Recommendation 2022/4.1.2-2: By 30 September 2023, given that 100% document currency compliance is unlikely to ever be achievable, set an evidence-based KPI for currency at an achievable level (commensurate with document criticality) that does not compromise Hunter Water's ability to satisfy its licence and other obligations.
5 Customer and stakeholder relations		
5.3.1 Payment difficulties and actions for non-payment	If Hunter Water does not maintain and implement its policies, procedures and provisions for payment difficulties and actions for non-payment, there is a moderate risk that Hunter Water's vulnerable customers and consumers facing payment difficulties may not be aware of their rights and obligations leading to these customers not being protected when interacting with the monopoly supplier.	Recommendation 2022/5.3.1-1: By 31 September 2023, ensure its key policies and standards for payment assistance and actions for non-payment are reviewed, approved and signed in line with its document review schedule.
5.7.1 Provision of information to customers and the general public	If Hunter Water does not provide the information required by this licence condition, there is a low risk that Hunter Water's customers may not be aware of their rights and obligations leading to customers not being protected when interacting with the monopoly supplier.	Recommendation 2022/5.7.1-1: By 30 June 2023, finalise, approve and implement the <i>Standard Operating Procedure – Process-Communication of Regulated Information with Customer Bills</i> .
5.8.1 Code of Conduct with WIC Act Licensee	If Hunter Water does not cooperate with WIC Act licensees seeking to establish codes of conduct, there is a moderate risk that the utilities' respective responsibilities for provision of services will not be made clear, leading to possible impacts on the quality and availability of services to end-users.	None.
6 Performance monitoring and reporting		
6.2.1 Reporting manual	If Hunter Water does not comply with its reporting obligations as set out in the Reporting Manual, there is a moderate risk that Hunter Water's performance of against its operating licence requirements will not be known leading to IPART being unable to effectively undertake its regulatory function to monitor Hunter Water's compliance with its operating licence.	None

Operational audit 2021-22 opportunities for improvement

Sub-clause	Opportunities for improvement
3 Supply services and performance standards	
3.1.1 Drinking water	OFI 2022/3.1.1-1: Address noted document history and typographical errors and disconnect between procedure and register (Procedure HW2012-441 has a disconnect between the required information for recording document version and the footer information (Footer: Version 5 11/22/2019 vs Doc History Table: Version 5, November 2021)) (noted in 2020/21 audit). OFI 2022/3.1.1-2: Although HW2015-1303 6.002 Catchment to Tap Water Quality Risk Assessment Guideline currently details the process for the evaluation, documentation and reporting of long-term water quality data, consider formally documenting the responsibility for this process (previously identified at the 2020/21 audit and noted as currently under development, therefore, left in for completeness).

Sub-clause	Opportunities for improvement
	<p>OFI 2022/3.1.1-3: At the next revision of Standard-STS-408-Water-Quality-Acceptance-Testing (HW2009-2368/2/43.001 Version 2 12/05/2019), consider adding in a specific requirement to meet the standard AS/NZS 4020 for materials used in contact with drinking water (noted in 2020/21 audit).</p> <p>OFI 2022/3.1.1-4: Consider reviewing the algal monitoring framework for clarity of the flowchart (currently does not include biovolume) and naming currency of the cyanobacteria trigger list.</p> <p>OFI 2022/3.1.1-5: Consider adding Element 9 validation and investigative monitoring to Table 2.1 of the monitoring plan (p4).</p> <p>OFI 2022/3.1.1-6: Consider clearly stating the expected minimum number of annual samples for each parameter and scheme, within the monitoring and sampling plan.</p>
3.1.2 Drinking water	OFI 2022/3.1.2-1: Consider assigning a criticality rating to documents (e.g., critical control point and emergency management documentation – Category 1).
3.2.1 Recycled water	<p>OFI 2022/3.2.1-1: Clarify in the site-specific Recycled Water Quality Management Plans (RWQMPs) that the verification monitoring summaries represent the minimum requirements and additional monitoring may be included in the Recycled Water Quality Monitoring Plan.</p> <p>OFI 2022/3.2.1-2: Correct minor documentation errors described under Element 10</p>
3.2.2 Recycled water	<p>OFI 2022/3.2.2-1: Develop a system to review recommendations from internal audits of recycled water and drinking water to determine if any should be implemented at other sites including between recycled water and drinking water sites.</p> <p>OFI 2022/3.2.2-2: Add target ranges from RWQMP and customer agreements to annual recycled water quality data sent to recycled water customers.</p> <p>OFI 2022/3.2.2-3: Schedule water quality desktop incident exercises every 6 to 12 months attended by key stakeholders and operations staff directly involved in producing recycled water.</p>
4 Organisational systems management	
4.1.2 Asset management system	<p>OFI 2022/4.1.2-1: There may be merit in investigating the potential of the Environmental Management System (EMS) to become Hunter Water’s Natural Asset Management System.</p> <p>OFI 2022/4.1.2-2: Critical items in STS 409 Potable Water Reservoirs (version 1.0) could be included as a separate section in the reservoir inspection checklist. This assessment may highlight areas where upgrading of some reservoir features/ components may be warranted, if cost-effective, to minimise risk (e.g., water quality, workplace health and safety) or improve operational efficiency/effectiveness.</p> <p>OFI 2022/4.1.2-3: There would be value in analysing the performance (e.g., number and types of failures by materials, age, costs) of the water service connections over time from maintenance records to determine whether there are any trends of concern.</p> <p>OFI 2022/4.1.2-4: The merit of testing of a sample of exhumed rubber rings from failed water mains may be worthy of consideration, as the information may allow insights into their deterioration and enable a better understanding of the likely useful lives of these important components.</p> <p>OFI 2022/4.1.2-5: Consideration should be given in future budgets for further development of the competency framework and asset management awareness initiatives.</p>
5 Customer and stakeholder relations	
5.3.1 Payment difficulties and actions for non-payment	No opportunities for improvement were identified.
5.7.1 Provision of information to customers and the general public	No opportunities for improvement were identified.
5.8.1 Code of Conduct with WIC Act Licensee	No opportunities for improvement were identified.
6 Performance monitoring and reporting	
6.2.1 Reporting manual	No opportunities for improvement were identified.

Acronyms and abbreviations

Acronym/abbreviation	Description
2LOD	Second Line of Defence
ACF	Asset Creation Framework
ADWG	Australian Drinking Water Guidelines (2011)
AGWR	Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) (2006)
ALARP	As Low As Reasonably Practicable
ALS	Australian Laboratory Services
AMCV	Asset Management Customer value
AMS	Asset Management System
AOMS	Asset Operation and Maintenance System
ARC	Audit and Risk Committee
AS	Australian Standard
AS ISO 55001:2014	Asset management – Management systems - Requirements
AS/NZS ISO 9001:2016	Quality management systems - Requirements
AS/NZS ISO 14001:2015	Environmental management systems – Requirements with guidance for use
BOM	Bureau of Meteorology
CCP	Critical Control Point
CTGM	Chichester Trunk Gravity Main
DN	Nominal Diameter
DWQIP	Drinking Water Quality Improvement Plan
DWQMP	Drinking Water Quality Management Plan
DWQMS	Drinking Water Quality Management System
DWQMSM	Drinking Water Quality Management System Manual
ELSA	Employee Learning System Application
ELT	Executive Leadership Team
EMS	Environmental Management System
EMT	Executive Management Team
EPA	Environment Protection Authority
GFMAM	Global Forum on Maintenance and Asset Management
GIS	Geographical Information System
HACCP	Hazard and Critical Control Point
HBT	Health-Based Targets
ICT	Information and Communication Technology
IMS	Integrated Management System
IPART	Independent Pricing and Regulatory Tribunal of NSW
ISO	International Organization for Standardization
KPI	Key Performance Indicator
LRV	Log ₁₀ Reduction Value

Acronym/abbreviation	Description
MOU	Memorandum of Understanding
MPN	Most Probable Number
NATA	National Association of Testing Authorities
NPR	National Performance Reporting
NSW	New South Wales
NSW Health	NSW Ministry of Health
NWI	National Water Initiative
OFI	Opportunity for Improvement
PD	Position Description
PDP	Project Development Plan
PVC	Polyvinyl Chloride
RCA	Root Cause Analysis
RCM	Reliability Centred Maintenance
Reservoir	Hunter Water's SharePoint System
RWQMP	Recycled Water Quality Management Plan
SAMP	Strategic Asset Management Plan
SCADA	Supervisory Control and Data Acquisition
SDS	Safety Data Sheet
UVT	Ultraviolet Transmission
UX	User Experience
VAMS	Veolia Asset Management System
VWO	Veolia Water Operations
WQMS	Water quality management system
WSAA	Water Services Association of Australia
WTP	Water Treatment Plant
WWTW	Wastewater Treatment Works

Table of contents

Executive summary	iii
Auditor's declaration	iii
Major findings	iii
Acronyms and abbreviations	viii
1 Introduction	1
1.1 Objectives	1
1.2 Audit method	1
1.3 Regulatory regime	3
1.4 Quality assurance process	4
2 Site visit report	5
2.1 Grahamstown Water Treatment Plant	5
2.2 Catchment inspection for Grahamstown Dam	6
2.3 Grahamstown Dam	6
2.4 North Lambton 1 Reservoir	6
2.5 North Lambton chlorinator	7
2.6 Merewether 2 High Level Tank (decommissioned reservoir)	8
2.7 Branxton Wastewater Treatment Works	8
2.8 Water main construction	9
3 Audit of individual clauses	10
Clause 3.1 – Drinking water	10
Clause 3.1.1	10
Clause 3.1.2	21
Clause 3.2 – Recycled water	30
Clause 3.2.1	30
Clause 3.2.2	41
Clause 4.1 – Asset management system	52
Clause 4.1.2	52
Clause 5.3 – Payment difficulties and actions for non-payment	62
Clause 5.3.1	62
Clause 5.7 – Provision of information to customers and the general public	65
Clause 5.7.1	65
Clause 5.8 – Code of Conduct with WIC Act Licensee	69
Clause 5.8.1	69
Clause 6.2 – Reporting manual	71
Clause 6.2.1	71
4 Previous recommendations	73
4.1 Recommendation 2021-1 (Clause 3.1.1) Drinking water	73
4.2 Recommendation 2021-2 (Clause 3.1.1) Drinking water	73
4.3 Recommendation 2021-3 (Clause 3.1.1) Drinking water	74

4.4	Recommendation 2021-4 (Clause 3.1.1) Drinking water	74
4.5	Recommendation 2021-5 (Clause 3.1.2) Drinking water	74
4.6	Recommendation 2021-6 (Clause 3.1.2) Drinking water	75
4.7	Recommendation 2021-7 (Clause 3.1.2) Drinking water	76
4.8	Recommendation 2021-8 (Clause 3.1.2) Drinking water	76
4.9	Recommendation 2021-9 (Clause 3.1.2) Drinking water	76
4.10	Recommendation 2021-10 (Clause 3.1.2) Drinking water	77
4.11	Recommendation 2021-11 (Clause 3.2.1) Recycled water	77
4.12	Recommendation 2021-12 (Clause 3.2.1) Recycled water	78
4.13	Recommendation 2021-13 (Clause 3.2.1) Recycled water	78
4.14	Recommendation 2021-14 (Clause 3.2.2) Recycled water	78
4.15	Recommendation 2021-15 (Clause 3.2.2) Recycled water	79
4.16	Recommendation 2021-16 (Clause 3.2.2) Recycled water	79
4.17	Recommendation 2021-17 (Clause 3.2.2) Recycled water	80
4.18	Recommendation 2021-18 (Clause 3.2.2) Recycled water	80
4.19	Recommendation 2020-02 (Clause 3.2.1) Recycled water	80
4.20	Recommendation 2013-14-03, 2013-14-04, 2013-14-06, 2013-14-13 (Clause 3.2.1 and 3.2.2) Recycled water	81
4.21	Recommendation 2021-19 (Clause 4.3.1) Quality management system	81
4.22	Recommendation 2021-20 (Clause 5.7.1) Provision of information to Customers and the general public	82
4.23	Recommendation 2021-21 (Clause 6.2.1) Reporting manual	83
4.24	Recommendation 2021-22 (Clause 6.2.1) Reporting manual	83
5	Appendix A – Evidence sighted	84
	Clause 3.1 – Drinking water	84
	Clause 3.2 – Recycled water	92
	Clause 4.1 – Asset management system	98
	Clause 5.3 – Payment difficulties and actions for non-payment	102
	Clause 5.7 – Provision of information to customers and the general public	102
	Clause 5.8 – Code of Conduct with WIC Act Licensee	102
	Clause 6.2 – Reporting manual	103

Tables

Table 1-1	Licence sections within the 2021-22 audit scope	1
Table 1-2	Audit team members and their qualifications	2
Table 1-3	Audit grades	3
Table 1-4	Key legal and regulatory instruments relevant to Hunter Water's operating licence	3
Table 3-1	Clause 3.1.1 compliance grade	10
Table 3-2	Clause 3.1.2 compliance grade	21
Table 3-3	Clause 3.2.1 compliance grade	30

Table 3-4	Clause 3.2.2 compliance grade	41
Table 3-5	Clause 4.1.2 compliance grade	52
Table 3-6	State of the Assets Report summary	57
Table 3-7	Clause 5.3.1 compliance grade	62
Table 3-8	Clause 5.7.1 compliance grade	65
Table 3-9	Clause 5.8.1 compliance grade	69
Table 3-10	Clause 6.2.1 compliance grade	71
Table 4-1	Recommendation 2021-1 (Clause 3.1.1) Drinking water	73
Table 4-2	Recommendation 2021-2 (Clause 3.1.1) Drinking water	73
Table 4-3	Recommendation 2021-3 (Clause 3.1.1) Drinking water	74
Table 4-4	Recommendation 2021-4 (Clause 3.1.1) Drinking water	74
Table 4-5	Recommendation 2021-5 (Clause 3.1.2) Drinking water	74
Table 4-6	Recommendation 2021-6 (Clause 3.1.2) Drinking water	75
Table 4-7	Recommendation 2021-7 (Clause 3.1.2) Drinking water	76
Table 4-8	Recommendation 2021-8 (Clause 3.1.2) Drinking water	76
Table 4-9	Recommendation 2021-9 (Clause 3.1.2) Drinking water	76
Table 4-10	Recommendation 2021-10 (Clause 3.1.2) Drinking water	77
Table 4-11	Recommendation 2021-11 (Clause 3.2.1) Recycled water	77
Table 4-12	Recommendation 2021-12 (Clause 3.2.1) Recycled water	78
Table 4-13	Recommendation 2021-13 (Clause 3.2.1) Recycled water	78
Table 4-14	Recommendation 2021-14 (Clause 3.2.2) Recycled water	78
Table 4-15	Recommendation 2021-14 (Clause 3.2.2) Recycled water	79
Table 4-16	Recommendation 2021-14 (Clause 3.2.2) Recycled water	79
Table 4-17	Recommendation 2021-14 (Clause 3.2.2) Recycled water	80
Table 4-18	Recommendation 2021-14 (Clause 3.2.2) Recycled water	80
Table 4-19	Recommendation 2020-02 (Clause 3.2.1) Recycled water	80
Table 4-20	Recommendation 2013-14-03, 2013-14-04, 2013-14-06, 2013-14-13 (Clause 3.2.1 and 3.2.2) Recycled water	81
Table 4-21	Recommendation 2021-19 (Clause 4.3.1) Quality management system	81
Table 4-22	Recommendation 2021-20 (Clause 5.7.1) Provision of information to Customers and the general public	82
Table 4-23	Recommendation 2021-21 (Clause 6.2.1) Reporting manual	83
Table 4-24	Recommendation 2021-22 (Clause 6.2.1) Reporting manual	83

1 Introduction

1.1 Objectives

Stantec, in association with Risk Edge and Atom Consulting, was engaged by the Independent Pricing and Regulatory Tribunal (IPART) to conduct an operational audit of Hunter Water Corporation (Hunter Water).

The objective of this engagement was to conduct an audit of Hunter Water's performance against the terms and conditions (as defined in the audit scope) of its operating licence and any other Ministerially-imposed requirements for the period from 1 November 2021 to 31 October 2022, including:

- > Hunter Water Operating Licence 2017-2022 (for the part of the audit period from 1 November 2021 to 30 June 2022)
- > Hunter Water Operating Licence 2022-2027 (for the part of the audit period from 1 July 2022 to 31 October 2022)
- > Hunter Water Reporting Manual 2017-2022
- > Hunter Water Reporting Manual 2022-2027
- > IPART's Audit Guideline Public Water Utilities (July 2019)
- > IPART's Hunter Water 2021 Operational Audit - Report to the Minister (March 2022).

We note that Hunter Water's previous operating licence expired on 30 June 2022, with the current licence coming into effect on 1 July 2022.

The audit team also audited recommendations outstanding from previous audits and expressed an opinion on the progress to meeting or closing out these recommendations.

1.2 Audit method

1.2.1 Audit scope

The scope of the audit comprised:

- > The operational licence clauses listed in Table 1-1. These clauses have been selected by IPART on a risk basis.
- > The following recommendations:
 - o Recommendations 2021-1 – 2021-22
 - o Recommendation 2020-02
 - o Recommendation 2013-14-03
 - o Recommendation 2013-14-04
 - o Recommendation 2013-14-06
 - o Recommendation 2013-14-13.

The operational audit covers the period from 1 November 2021 to 31 October 2022.

Table 1-1 Licence sections within the 2021-22 audit scope

Section	Clause	Sub clause
3 Supply services and performance standards	3.1 – Drinking water	3.1.1
		3.1.2
	3.2 – Recycled water	3.2.1
		3.2.2
4 Organisational systems management	4.1 – Asset management system	4.1.2
	5.3 – Payment difficulties and actions for non-payment	5.3.1

Section	Clause	Sub clause
5 Customer and stakeholder relations	5.7 – Provision of information to customers and the general public	5.7.1
	5.8 – Code of Conduct with WIC Act Licensee	5.8.1
6 Performance monitoring and reporting	6.2 – Reporting manual	6.2.1

1.2.2 Audit standard

In conducting the audit, the auditors followed IPART's Audit Guideline Public Water Utilities (July 2019).

Regard was also given to the following standards and codes, especially where these provided specific detail appropriate to the audit:

- > ASAE 3100 (2017) Compliance Engagements, issued by the Auditing and Assurance Standards Board
- > ISO 19011:2018 Guidelines for auditing management systems
- > AS/NZS ISO 9001:2016 Quality management systems – Requirements
- > ISO 17021:2015 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)
- > ISO 31000:2018 Risk management.

1.2.3 Audit steps

The audit process was conducted as described in IPART's Audit Guideline Public Water Utilities (July 2019).

1.2.4 Audit team

The audit team and audit qualifications are provided in Table 1-2.

Table 1-2 Audit team members and their qualifications

Team member	Details
Aneurin Hughes Stantec Lead Auditor	Aneurin Hughes (BSc (Hons), Grad Dip Bus, MIEAust, RPEQ) holds the following auditor qualifications: <ul style="list-style-type: none"> ▪ World Partners in Asset Management Certified Asset Management Assessor No. 57 (www.wpiam.com). This accreditation demonstrates compliance with ISO 17021-5 Competence requirements for auditing and certification of asset management systems. ▪ A registered Exemplar Global lead auditor: <ul style="list-style-type: none"> – Exemplar Global TL-AU (Lead Auditor) (No. 201103859) – Exemplar Global-DW (Drinking Water) (No. 638036)
Annette Davison Risk Edge Pty Ltd Auditor	Dr Annette Davison (BSc (Hons), MEnvLGovLaw, PhD, GAICD, PMAWA) holds the following auditor qualifications: <ul style="list-style-type: none"> ▪ Moderating Auditor, registered by the Water Services Association of Australia (WSAA) with skills to use the WSAA 'Aquality' benchmarking tool ▪ A registered Exemplar Global lead auditor or competency in one or more of the following specialisations: <ul style="list-style-type: none"> – Exemplar Global-DW (Drinking Water) (No. No. 12454) – Exemplar Global-RW (Recycled Water) (No. 12454) – Certified ISO 22000 competency from NCSI (Food Safety Management Systems) – RABQSA-TL (Leading Management Systems Audit Teams) (No. ENR-00193500)
David Bartley Atom Consulting Auditor	David Bartley (BE (Chem), Dip Man) holds the following auditor qualifications: <ul style="list-style-type: none"> ▪ A registered Exemplar Global lead auditor (No. 206802): <ul style="list-style-type: none"> – Exemplar Global-DW (Drinking Water) – Exemplar Global-RW (Recycled Water) – Exemplar Global TL-AU (Lead Auditor)
Ella Hingston Stantec	Ella Hingston holds the following qualifications: <ul style="list-style-type: none"> ▪ BE (Civil) (Hons)

Team member	Details
Assistant Auditor/ Quality Assurance	<ul style="list-style-type: none"> ▪ CPEng (Asset Management) ▪ NER (Asset Management, Civil Engineering)

1.2.5 Audit grades

The audit grade definitions used in assessing the auditee's performance against the requirements are set out in Table 1-3.

Table 1-3 Audit grades

Audit finding	Description
Compliant	Sufficient evidence is available to confirm that the requirements have been met.
Compliant (minor shortcomings)	Sufficient evidence is available to confirm that the requirements have been met apart from minor shortcomings which to date have not compromised the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes
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 utility 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 utility to achieve defined objectives or assure controlled processes, products or outcomes.
No requirement	There is no requirement for the utility to meet this criterion within the audit period

Source: Audit Guideline Public Water Utilities (July 2019)

1.3 Regulatory regime

Hunter Water operates largely in a New South Wales context but must also have regard to matters outside of that jurisdiction, where those matters may affect how it does business. A summary of the key legal and regulatory instruments for Hunter Water is provided in Table 1-4. It should be noted that this listing is intended to be illustrative, and not exhaustive, for the purposes of this report.

Table 1-4 Key legal and regulatory instruments relevant to Hunter Water's operating licence¹

Instrument	Relevance
<i>Competition and Consumer Act 2010 (Cth)</i>	An Act for the promotion of competition and fair trading and provision for consumer protection. Could apply to the 'fitness for purpose' of any product or service supplied.
<i>Current version of the Australian Drinking Water Guidelines</i>	These guidelines are called up under Hunter Water's operating licence obligations.
<i>Current version of the Australian Guidelines for Water Recycling</i>	These guidelines are called up under Hunter Water's operating licence obligations.
<i>Government Information (Public Access) Act 2009 (NSW) No 52</i>	Information may be requested from Hunter Water, which relates to aspects of the licence.
<i>Hunter Water Act 1991 (NSW) No 53</i>	An Act which establishes Hunter Water Corporation (Hunter Water), defining the functions and objectives of the corporation.
<i>Hunter Water Operating Licence 2017-2022</i>	A licence issued by the Governor under Part 5 of the Hunter Water Act 1991 which enables Hunter Water to provide relevant services within its area of operations. This licence also gives effect to the operational audits (this audit) to which Hunter Water is subjected. This licence expired on 30 June 2022.
<i>Hunter Water Operating Licence 2022-2027</i>	A licence issued by the Governor under Part 5 of the Hunter Water Act 1991 which enables Hunter Water to provide relevant services

¹ Where legislation is identified in this table, a reference to that legislation should be taken to include any Regulation/s made pursuant to it

Instrument	Relevance
	within its area of operations. This licence also gives effect to the operational audits (this audit) to which Hunter Water is subjected. This licence came into effect on 1 July 2022.
<i>Independent Pricing and Regulatory Tribunal Act 1992 (NSW) No 39</i>	Allows for the regulation of utilities such as Hunter Water including the administration and auditing of licences and pricing functions.
<i>Memorandum of Understanding with NSW Health</i>	Sets out the working relationship between NSW Health and Hunter Water.
<i>Memorandum of Understanding with the Environment Protection Authority</i>	Sets out the working relationship between the Environment Protection Authority and Hunter Water.
<i>Public Health Act 2010 (NSW) No 127</i>	The objectives of this Act are to protect and promote public health, control risks to public health, promote the control and prevent the spread of infectious diseases, and recognise the role of local governments in protecting public health. Supporting Regulations are intended to support the smooth operation of the Act. Hunter Water has obligations under this Act including notifying the Minister of any situation that is likely to be a risk to public health.

1.4 Quality assurance process

Checks of information received were conducted and included aspects such as dates for audit scope compliance, veracity of information, coverage of the subject area being audited and depth of implementation. Professional scepticism (as per ASAE 3100) was applied as part of the document review and on-site audit. Auditors liaised frequently with each other. Support auditors were used for clauses where the audit load was heavy.

The audit report was proof-read and cross-checked by the audit team members. An overall quality assurance review was conducted by the audit team leader.

2 Site visit report

2.1 Grahamstown Water Treatment Plant

A site visit to Grahamstown Water Treatment Plant was undertaken on 2/11/2022. From a water quality perspective, the following were the focus:

- > Critical control points (CCPs) (understanding and alignment with the supervisory control and data acquisition (SCADA) system and operator awareness).
- > Operator awareness of procedures and site checklists.
- > Evidence to support use of checklists and filling out of records in practice.
- > Presence and currency of safety data sheets (SDSs) for all treatment chemicals, at the location of chemical use.
- > Appropriate and defined filling/delivery points for treatment chemicals.
- > Appropriate storage of chemicals.
- > Currency and appropriate storage of laboratory chemicals.
- > Presence of current emergency management documentation.
- > Presence of current drinking water quality policies.

To avoid duplication, outcomes of the above are documented in detail within the justification and observations for each clause, on an element-by-element basis.

As an observation, the site and laboratory were tidy, and staff were courteous. The road on site was not in sound condition; however, the treatment operations contractor confirmed that it only has responsibility to fill in potholes whereas the road itself could benefit from complete resurfacing (not the treatment operations contractor's responsibility). This is added as an observation only and is not a water quality concern.

Site staff advised that the main entrance gate is locked outside of business hours. During business hours, the main entrance gate is unlocked. However, the site is staffed during business hours, and there is a clear line of sight from the main office building to the main access road. The site is clearly signed at the main entrance. Signage is also present at reception within the main office building, instructing visitors to report to the operator and advising visitors of asbestos-containing material being present on site.

The sample of water treatment assets viewed as part of the site walkaround appeared to be in fair to good visual condition, with visual defects generally limited to surface discolouration and surface corrosion. The sample of building assets viewed as part of the site walkaround appeared to be in fair condition, demonstrating signs of age. As alluded to earlier, the sample of internal road assets viewed as part of the site walkaround appeared to be in poor condition, with significant depressions and loss of surfacing evident. Although renewal of the internal road assets is recommended, the poor condition of the road assets does not prohibit the delivery of the core services and functions of the treatment plant (that of water treatment).

Based on discussions held with site staff, site staff demonstrated a sound working knowledge of operating and maintaining the assets and using a supervisory control and data acquisition (SCADA) system to monitor the assets. The SCADA system is contained within Hunter Water's systems but is accessible by Veolia's staff.

Veolia uses its computerised maintenance management system, VAMS (Veolia Asset Management System) to record information such as corrective maintenance work orders, predictive maintenance work orders, and routine maintenance work orders for activities that are undertaken at frequencies less frequent than monthly (e.g., annual activities). These activities are recorded against a structured hierarchy of assets in VAMS, which covers all assets present on site. Routine activities that are undertaken at frequencies more frequent than monthly (e.g., the completion of weekly task sheets) are recorded on paper forms. Site staff advised that predictive maintenance activities such as vibration analysis and oil sampling are undertaken on site.

Hunter Water provided the following work orders as evidence of routine, corrective and predictive maintenance undertaken in the audit period:

- > Monthly exercising of scour valves on a clarifier. A leaking valve was identified as part of completing this work order.
- > Corrective maintenance work order to inspect and repair the above leaking valve
- > Biennial inspection of the impeller and scraper within a clarifier. The need for wheel replacement was identified as part of completing this work order.
- > Corrective maintenance work order to replace the above wheels
- > Monthly compliance inspections of the self-contained breathing apparatus for a chemical dosing system
- > Quarterly vibration and thermography analysis of a backwash pump, including the accompanying condition monitoring report. This work is undertaken by Bureau Veritas.

We also reviewed the inspection tag for an example safety shower on site and confirmed that it had been inspected in the past year and that it was not overdue for inspection.

Each month, Veolia submits a monthly contract report, in support of its monthly invoice, that covers all water treatment plants and wastewater treatment works. The monthly contract report summarises information such as treated water volumes, raw water quality parameters, chemical dose rates, compliance with critical control point limits, and operational updates. Hunter Water provided to us an example monthly contract report for July 2022. We confirmed that no non-compliances were reported for this site in the July 2022 monthly contract report.

To gain assurance that its treatment plants are being operated and maintained to its expectations, Hunter Water undertakes periodic maintenance audits. Hunter Water provided the audit report for the most recent maintenance audit performed on the Grahamstown Water Treatment Plant (TRIM number HW2012-1042/31, last revised on 12 August 2021). The audit report set out the number of work orders completed on time by work order type, an assessment of whether the general housekeeping and condition of the treatment plant meets expectations, an overview of the plant status, and a detailed list of defects and required remedial actions.

2.2 Catchment inspection for Grahamstown Dam

Parts of the borefield catchment and the surrounding catchment of the dam were observed as part of a site visit undertaken on 2/11/2022. Staff noted the problems Hunter Water is having with preventing dumping of rubbish in the catchment, and several instances of dumping were noted at the site inspection.

Of interest from a water quality perspective was the fencing, which is one of Hunter Water's preventive measures for access to the dam. Staff noted issues with fencing having been installed and then removed by members of the public, likely because of the resale value of the materials. A learning from this event has been to review the method of fencing, likely to include more expensive, but more sustainable types with more robust installation methods.

Another barrier in use is large sandstone blocks that are placed to prevent vehicle entry into the catchment. On the day of inspection, the team observed how blocks had been forcibly moved, to allow vehicle entry. Staff noted this as an ongoing issue for remedy.

2.3 Grahamstown Dam

A site visit to Grahamstown Dam was undertaken on 2/11/2022. The dam is a Hunter Water owned, operated and maintained asset. Currently, there is only one allowable activity on the dam, which is boating from a private site (Madden Park Aquatic Site; observed at the site inspection). Only members who have approval are allowed to use the site. Staff also noted continued pressures for opening up the dam to recreational access. Principle 1 of the Australian Drinking Water Guidelines states, "The greatest risks to consumers of drinking water are pathogenic microorganisms. Protection of water sources and treatment are of paramount importance and must never be compromised."

The audit team therefore supports Hunter Water in maintaining strict access controls to the dam for the purpose of protecting drinking water quality.

2.4 North Lambton 1 Reservoir

A site visit to North Lambton 1 Reservoir was undertaken on 2/11/2022. This reservoir is a Hunter Water owned, operated and maintained asset. From a water quality perspective, a focus was placed on inspection

of the condition of the roof and exterior of the reservoir. Three areas were assessed – security, vermin proofing and water tightness.

The one reservoir hatch inspected was secure and locked. The site is perimeter fenced with security management. The site is also staffed during business hours. Entrance to the reservoir and roof was secure. The reservoir was free of graffiti and generally clear of vandalism although one beer bottle top was observed on the roof (which was not unsurprising given the proximity of the reservoir to residences). Given the number of controls in place to prevent access to the roof, it is possible that the member of the public threw the bottle cap onto the roof from ground level rather than gaining access to the roof itself.

Site staff advised that the main entrance gate is locked outside of business hours. The sample of fencing viewed as part of the site walkaround appeared to be intact. The sample of grass viewed as part of the site walkaround appeared to be well maintained. The roof was observed to be generally clear of overhanging branches.

Access to the roof is via a small building. The building is locked at all hours and has an alarm system installed. An automated message is played upon access to the roof, stating that the police have been notified. The sample of hatches viewed as part of the site walkaround appeared to be robust and locked with confined space signs affixed.

For the most part, vermin proofing appeared to be intact. Occasional spaces were noted where it was not fully possible to confirm integrity. End ridges sighted from the road appeared to have meshing wedged in as a barrier to vermin ingress. For the parts of the reservoir inspected, no bird faeces, feathers or nesting were noted. There were some cobwebs and some mud wasp nesting evident on the outside of the reservoir under the overhang, although these are considered minor and are mentioned as observations only.

There were some trees in the vicinity that are close, but not yet overhanging the reservoir roof. Grass had recently been mowed. Of potential concern is the build-up of leaf matter under the walkways and other areas that may eventually cause corrosion if not managed or a source of contamination in the event of an integrity breach.

No unsecured or damaged sheets were noted. Some remedial patching work was observed. The roof was generally in sound condition. No valving was sighted and therefore observation for leaks could not be tested. As well as the leaf build-up noted above, the only other potential area of concern noted for the reservoir was water pooling on the concrete part of the reservoir. Pooling at this point is less likely to create a source of concern but should be reviewed from a standpoint of impact on exposure pathway and corrosion potential.

Hunter Water has in place an *Asset Class Management Plan – Reservoirs* (approved on 29/04/2022) that guides the management of its reservoirs. We observed that a high-level reservoir condition assessment program had been set out in this plan, specifying the frequency of work to be undertaken at each reservoir or reservoir component based on criticality. We queried Hunter Water as to whether these condition assessment tasks had been scheduled in Ellipse for North Lambton 1 Reservoir at the specified frequencies. In response, Hunter Water advised that the maintenance schedule was yet to be entered into Ellipse and will be revised and approved once the criticality levels of the assets are confirmed.

We also queried Hunter Water as to the rationale for assessing the criticality of North Lambton 1 Reservoir as “extreme”, the criticality of the roof as “high”, and the criticality of the north and west embankments as “high”. In response, Hunter Water provided commentary supporting its assessment with reference to its *Standard – Enterprise Risk Management* (TRIM number HW2008-704/17.004, version 7.0, approved on 25/10/2018). However, we note that the terminology of “criticality” and “risk” may be conflated in Table 7-2 and Appendix E of the asset class management plan, as the consequence rating scale (which criticality is a proxy for) set out in the enterprise risk management standard uses terminology such as “major” and “critical”, while the asset class management plan refers to terminology such as “high” and “extreme” for criticality. “Extreme” and “high” are risk ratings and not criticality ratings.

Hunter Water advised that it undertakes two-monthly visual inspections of the reservoir, comprising an inspection of safety, water quality, asset condition, and security and grounds. As evidence, Hunter Water provided the inspection report for an inspection undertaken in the audit period (21/09/2022). No issues were identified as a result of this inspection.

2.5 North Lambton chlorinator

A site visit to the North Lambton chlorinator was undertaken on 2/11/2022. The North Lambton chlorinator is a Hunter Water owned, operated and maintained asset and resides on the same site as the reservoir. Hypochlorite is used as the disinfectant. A current SDS at the appropriate location (i.e., point of use) was

tested. Hunter Water uses quick response (QR) codes for SDSs within the SDS box at the site. The QR code was tested and the appropriate and current SDS was obtained (IXOM, Version 12, 18/09/2019).

2.6 Merewether 2 High Level Tank (decommissioned reservoir)

A site visit to the decommissioned Merewether 2 High Level Tank was undertaken on 2/11/2022. We observed that the high-level tank had been removed. The removal of the tank was supported by a memorandum (sent on 1/07/2019) summarising the problem (condition and compliance issues), options development and assessment, and the recommended option. The memorandum was accompanied by a technical change request (dated 26/02/2019). We reviewed the as-constructed drawing (drawing number 16350, approved on 17/08/2022) for the decommissioning of the tank and confirmed that the valve immediately upstream of the tank (valve 12) had been removed and the 150-millimetre main to the tank had been abandoned and filled with slurry.

2.7 Branxton Wastewater Treatment Works

A site visit to Branxton Wastewater Treatment Works (WWTW) was undertaken on the morning of 2/11/2022. The Branxton WWTW is a membrane bioreactor (MBR) process with chlorine disinfection. Aluminium sulphate is dosed for phosphorus removal and sodium hydroxide for alkalinity adjustment. Sodium bisulphite is dosed to remove residual chlorine for discharges to the environment.

Veolia Water Operations (VVO) staff provided a walkthrough of the plant to confirm the process flow diagrams, including the location of chemical dosing points and monitoring points. The staff were able to demonstrate an understanding of the treatment process from inlet to supply to recycled water customers. Staff were also able to explain preventative measures including critical control points used to ensure recycled water is safe for the intended use. During the site visit the incorrect chlorine analyser was labelled as the monitoring point for CCP2. This labelling error was corrected by Veolia during the site visit.

Staff were able to access SCADA and demonstrate that there had been no CCP exceedances during the audit period.

Staff were able to access the Hunter Water/Veolia Portal and could access operation and maintenance manuals and other procedures from the site.

A tour of the laboratory was also undertaken and there were no calibration stickers on handheld and benchtop instruments. Calibration records of these instruments were provided after the site visit. The pH 10 buffer solution in use and other unopened bottles all expired in January 2022. All other chemical reagents were within their expiry dates.

All CCP limits and delays matched the tables in the Branxton Recycled Water Quality Management Plan (RWQMP). It was confirmed that unauthorised or accidental changes to the CCP critical limit setpoints or delays on SCADA were not possible. Changes to these setpoints required following Hunter Water's change management processes and needed to be made by specialist control technicians.

The Recycled Water Quality Policy located inside the main entrance to the administration building was dated 10 November 2020 which is the same version provided as evidence and on Hunter Water's website.

The plant is attended from 7:00am to 3:30pm from Monday to Friday. Outside these hours alarms are directed to Hunter Water's operations centre who notify the on-call operator when Priority 1 alarms are triggered. The on-call operator determines the appropriate response to the alarm. This response will depend on the criticality of the asset and level of redundancy.

The treatment plant assets appeared to be in a good condition with the grounds neatly maintained. A significant amount of vegetation growth was observed in one channel section in the floating roof over the recycled water storage tank. We were advised that the excess vegetation would be removed within two weeks. Appropriate signage was evident, and the chemical storage area was observed to be secure. Access ways provided safe access, clear of any hindrances.

Hunter Water undertake regular maintenance audits of each of the treatment plants. We were provided with the most recent maintenance audit undertaken by Hunter Water for the Branxton WWTW.

The diffusers in the bioreactor are 12 years old, programmed to be renewed in the short-term. The air profile at the bioreactor surface suggested that the diffusers are approaching the end of their useful life. We were provided with a Project Development Plan dated 3 June 2022 which recommended full diffuser replacement.

We were advised that the membranes had recently been renewed. The original design life for the membranes had been 7 years but their operation had been extended out to 12 years. The above examples

provide an example of how Hunter Water is seeking to maximise value from its assets through optimising performance, cost and risk.

Operators undertake approximately 50% of maintenance activities including inspections, lubrication and pump tests. We were shown daily and weekly operator checklists which were signed off. Veolia have a team of fitters and electricians (also trained in instrumentation) who service each of the treatment plants. Planned, corrective and breakdown maintenance activities are managed through VAMS (Veolia Asset Management System) using Infor software.

We were shown a range of hardcopy work orders. We also viewed the work orders on the computer which are also accessible to field staff through tablets. The wastewater supervisor demonstrated various features of VAMS and explained processes for maintenance management. It was explained that training is 'hands-on' with the lead operator training new staff in the use of VAMS. For reactive works the operator initially assigns a priority which is then reviewed by the supervisor. We viewed planned maintenance work orders which also included checklists/prompts which would then automatically generate a corrective maintenance work order where appropriate. The supervisor manually assigns a priority to the corrective maintenance task. We also viewed a critical spare parts listing which forms the spare parts management module within VAMS.

We noted that the safety shower safety tags inspected were up to date.

Predictive maintenance (e.g., vibration monitoring, thermography) is undertaken on a few critical assets. It was explained that at the start of the treatment plant operations contract, Hunter Water's maintenance data was transferred to Veolia. Over time the maintenance strategies had been optimised through use of RCM (reliability centred maintenance) techniques and operational experience.

Based on our discussions and information provided we noted that Veolia staff had a sound understanding of good asset management practice to support ongoing compliance with contractual obligations, particularly environmental legislation. We also observed the cordial relationship between Hunter Water and Veolia staff which is a key element in maintaining a collaborative contractual environment.

2.8 Water main construction

A site visit was undertaken to a recently completed water trunk main construction site at Willow Road Gateshead on 2/11/2022. The project involved the replacement of 175 metres (m) of DN300 (300 mm nominal diameter) cast iron main, installed in 1956, with a DN300 polyvinyl chloride (PVC) main. We were provided with a geographical information system (GIS) plan showing that there had been at least four failures recorded in this short length of main. This was evidenced by the lengths of PVC mains in a pile of exhumed pipes awaiting transport to landfill. Observation of the exhumed cast iron mains showed that the level of pitting along and across the pipe varied significantly with some sections being heavily pitted and others being relatively unaffected. This indicates the difficulty of predicting where failures are likely to occur with water utilities relying mainly on historical failure records to guide future likely main performance and renewals. Opportunistic condition assessment opportunities were discussed. It is considered that testing of a sample of exhumed rubber rings may be worthy of consideration as the information may allow insights into their deterioration and enable a better understanding of the likely useful lives of these important components.

No customers were directly impacted by the construction as this was a trunk main feeding a reservoir and a parallel trunk main existed. Nevertheless, the project manager followed the steps outlined in Hunter Water's procedures for shut-down planning and recommissioning. The project manager confirmed that procedures such as STS903 Work As-Constructed Information Standard and STS408 Water Quality Acceptance Testing were being followed. We were provided with a copy of a Certificate of Testing from an independent laboratory which showed that three samples had been tested with the results showing <1 MPN/100mL Total Coliforms and <1 MPN/100mL *E. coli*. which met water quality criteria for re-connecting the new main.


The construction activity had mainly concluded at the time of the site visit, which limited the scope of the audit. However, discussions with the project manager and the contractor's site supervisor, as well as on-site observations and document review, indicated that the mains renewal practices were being undertaken in a competent manner and at minimal risk to customers.

3 Audit of individual clauses

Clause 3.1 – Drinking water

Clause 3.1.1

Table 3-1 Clause 3.1.1 compliance grade

Subclause	Requirement	Compliance grade
Clause from 2017-2022 operating licence (1 November 2021 to 30 June 2022)		
3.1.1	<p>Hunter Water must maintain a Management System for Drinking Water that is consistent with the Australian Drinking Water Guidelines, except to the extent that NSW Health specifies otherwise in writing (the Drinking Water Quality Management System).</p> <p>[Note: It is expected that the Drinking Water Quality Management System will be consistent with the Framework for Management of Drinking Water Quality. However, where NSW Health considers it appropriate, the application of Australian Drinking Water Guidelines may be amended or added to, to take account of Hunter Water’s circumstances and/or Drinking Water quality policy and practices within New South Wales.</p> <p>The Australian Drinking Water Guidelines has provisions relating to the prevention of use of non-potable water for potable purposes.</p>	 Compliant
Clause from 2022-2027 operating licence (1 July 2022 to 31 October 2022)		
15(1) and 15(2)	<p>(1) Hunter Water must maintain a Management System that is consistent with the Australian Drinking Water Guidelines and any additional health-based requirements relating to drinking water that NSW Health reasonably specifies, in writing (the Drinking Water Quality Management System).</p> <p>(2) In the event of inconsistency between the requirements specified by NSW Health in accordance with clause 15(1) and the Australian Drinking Water Guidelines, the requirements specified by NSW Health prevail.</p>	
Risk	<p>If Hunter Water does not maintain a Drinking Water Quality Management System (DWQMS) that is consistent with the licence requirements, there is a very high risk that water supplied to customers will not meet quality standards for drinking, leading to significant public health impacts.</p>	<p>Target for full compliance</p> <p>Hunter Water must provide evidence that it maintained and kept up-to-date a DWQMS that is consistent with the ADWG, throughout the audit period.</p> <p>Hunter Water must provide evidence that it met any additional requirements specified by NSW Health during the audit period.</p>

Summary of reasons for grade

Elements 1, 3, 4, 5, 6, 7, 9, 10, 11 and 12 of the Framework for Management of Drinking Water Quality were within scope for this audit. Processes in place for both Hunter Water and the treatment operations contractor demonstrate high consistency with the Framework for Management of Drinking Water Quality and ADWG and are maintained. Many areas of noteworthy practices were also identified in 2020-2021, and are captured again for completeness, along with additional observations:

- > Element 3: The process for recording CCP validation evidence is comprehensive and considered an exemplar.
- > Element 4/5: Reasons for Hunter Water’s monitoring approach are provided in the monitoring plan which provides evidence to confirm discussion with New South Wales (NSW) Health on implemented changes (an approach considered good practice from a water quality governance perspective) (also noted in 2020/21).

- > Element 4: The Reservoir portal is considered worthy of note not just from an ease of retrieval of documentation but also in the UX (user experience) thought given to the layout (also noted in 2020/21).
- > Element 4: Hunter Water's process for managing materials and approved products and manufacturers on the web portal, and the quality of the documentation, is considered noteworthy (also noted in 2020/21).
- > Element 5: As well as being comprehensive, the monitoring plan contains a table mapping the monitoring types in the plan, against the Framework element requirements – an approach considered noteworthy (also noted in 2020/21).
- > Element 5: The process of updating the monitoring program after the annual risk review is a good example of a sound water quality management governance practice (also noted in 2020/21).
- > Element 9: The design validation guideline is comprehensive and is a sound example of integrating water quality outcomes with fit for purpose asset creation (also noted in 2020/21).

An existing shortcoming was noted but was excluded from the assessment of this clause, as this shortcoming is already under an existing recommendation:

- > Element 4: Both the MidCoast Council and Central Coast Council agreements are old (19 years and 15 years respectively). The documents would benefit from review to ensure ongoing fitness for purpose and currency. (This is currently the subject of an ongoing recommendation from the 2020/21 audit, and we note that significant progress has been made to address the recommendation.)

Because this shortcoming is the subject of a current recommendation, no further recommendation is necessary.

This clause is graded Compliant.

Discussion and notes

Element 1 Commitment to drinking water quality management

C 1.1: Drinking water quality policy

A Drinking Water Quality Management System Manual (DWQMSM), supported by a treatment operations contractor Drinking Water Quality Management Plan (DWQMP), is in place and current. Both are constructed around the 12 elements of the Framework, which meets the requirement of the clause.

A drinking water policy is in place, meets the requirements of the ADWG Framework (in that it covers commitment, contractors as well as staff and catchment to consumer) and is current as stated in the DWQMSM. The managing director has signed the policy, a position considered appropriate as a signatory for this type and hierarchy of document (as the position meets the 'senior executive' requirement of the Framework). A requirement for visibility of policy is covered in Table 4-1 of the DWQMSM. The treatment operations contractor also has a current and adequate water quality policy.

C 1.2: Regulatory and formal requirements

A process is in place for identifying and documenting the regulatory and formal requirements relevant to drinking water quality, as required by the Framework. The process is described in Table 4-2 (p17) of the DWQMS Manual. Footer information for document HW2013-421/22/002 is incorrect but as noted under the recommendation for Clause 4.3.1 2021-19, a different document control system has now been implemented and should address this issue. Therefore, no OFI or recommendation is necessary.

Procedure HW2012-441 still contains a slight disconnect between the required information for recording document version (i.e. as per document Integrated Management System Document Management TRIM: HW2013-421/22/002, "show the current revision status of the document, and a summary of the most recent changes since last version") and the footer information (Footer: Version 5 11/22/2019 vs Doc History Table: Version 5, November 2021) (OFI 2022/3.1.1-1), otherwise, the procedure includes a requirement to consider quality, and is sound.

Outputs from the process include the Legal and Other Requirements register which covers expected items. A small, but immaterial, typographical error exists in Column A on the Quality Tab (TRIM Nuber instead of Number).

A process is in place for ensuring that all employees involved in drinking water quality management understand their role and responsibility in delivering compliant drinking water.

The DWQMS Manual (Table 4-2, p18) states that legal and formal responsibilities are written into position descriptions (PDs) which are required for all staff in water quality positions. Responsibilities for treatment operations are documented in the Treatment Operations DWQMP. A clear description of grades (from 1 to 6) clearly outlines the responsibilities of operators. This part of the component is considered compliant.

C 1.3: Engaging stakeholders

A process is in place for determining both the identity and the role of stakeholders who could affect, or be affected by, Hunter Water's decisions or activities in relation to drinking water quality, as required by the Framework. Table 4-3 of the DWQMSM details a comprehensive approach to identification of stakeholders in terms of customers, emergency management, public affairs and other key stakeholders. The mode of communication with stakeholders is documented. Table 4-3 of the DWQMSM documents the mode of communication.

Section 15.3 of the Corporate Emergency Management Plan confirms that the Framework requirement for Stakeholder Identification and Notifications is met, and text in this document confirms a requirement for key messages and suggested frequency of communication. The service provider contact list for emergencies, sighted via the Treatment Operations Contract web interface, is appropriate to meet the Framework requirements and is current (TEM-2802 24/03/2022, 1 year review cycle). The currency and review cycle of this document demonstrate that it has been maintained, which meets the clause requirement.

Element 3 Preventive measures for drinking water quality management

C 3.1 Preventive measures and multiple barriers

The processes described under Element 2 (not audited this year but reviewed to support audit of this element) include a requirement to identify controls and multiple barriers. The risk assessment methodology includes a step for identifying and assessing residual risk (with the controls in place), as required by the Framework. The Framework requirement to assess residual risk is covered by Hunter Water as 'Controlled' risk in HW2008-704 17.004. The risk assessment process is used to capture the Framework requirements of preventive measures and multiple barriers (DWQMS Manual, Table 4-7).

A process is in place to capture additional controls where the residual risk is considered unacceptable (HW2008-704 17.004 (Section 4.5.2)), as required by the Framework. HW2008-704 17.004 includes a requirement to specify the methodology for assessing and monitoring treatment effectiveness (Section 4.6.4), as required by the Framework. Additional control effectiveness once implemented, is reviewed at the next risk review. The Enterprise Risk Management framework was due for review in December 2021 and while past its review cycle, was current for the audit. Further, evidence was sighted to show that the review process is in train. Processes are therefore considered Framework-adequate and maintained.

Preventive measures are captured in the risk register and align with the system descriptions and risks identified.

The catchment to tap risk assessment guideline (HW2015-1303/6.002) is current (therefore it is maintained) and supports the risk assessment process for drinking water. It clearly states a need to review residual risk (with controls in place) and ensure a corresponding risk treatment for all out of appetite residual risks, which means it meets the Framework requirements.

C 3.2 Critical Control Points

As required by the Framework, Hunter Water has a process in place to identify and document critical control points across the water supply system (under the organisation's responsibility).

The DWQMSM states the process for identifying CCPs at Table 4-8, p25 and in detail in HW2015-1444 3.001 Procedure - Establishing and Reviewing Drinking Water Critical Control Points (28/10/2020) – responsibilities for CCP change management are clearly identified.

Hunter Water also now supports the CCP process through a comprehensive CCP validation evidence register (covered further under recommendation 2021-4).

The DWQMP includes a section on CCPs (Section 2.3.2). The DWQMSM refers to both CCPs and 'critical operating points' or COPs. The DWQMP refers to 'Control Operational Points'. A disconnect exists between the two documents - this observation was noted in the 2020/2021 audit and is picked up under Element 10 to avoid double-counting. As the DWQMP is currently undergoing review, the Treatment Operations Contractor noted the change would be made at that review and therefore, no opportunity for improvement is necessary.

A detailed process is included for establishing and reviewing CCPs (HW2015-1444/3.001). The DWQMP states that the ADWG decision tree is used to help identify CCPs.

As required by the Framework, a process exists requiring operational procedures to be in place for CCPs and documented within the CCP tables.

Further discussion on the improvements in CCP management is provided in recommendation 2021-4 and 2021-7.

Noteworthy Observation: The process for recording CCP validation evidence is comprehensive and considered an exemplar.

Element 4 Operational procedures and process control

C 4.1 Operational Procedures and Process Control

As required by the Framework, Table 4-9 (p27) of the DWQMS and Section 2.4.1 (p20) of the DWQMP cover the process for identifying the required procedures for processes and activities from catchment to consumer. The Hunter Water portal ('Reservoir' - viewed at the interviews) is used to store documents related to the water management framework including procedures. Folder HW2014-1563/3/1 is the repository of operating manuals. The operating manuals for Dungog and Grahamstown Water Treatment Plants (WTPs) were sighted and are current. The process is considered Framework-adequate and maintained.

Noteworthy Observation: As noted in 2020/2021, the Reservoir portal is considered worthy of note not just from an ease of retrieval of documentation but also in the user-friendliness of the layout.

C 4.2 Operational Monitoring

As required by the Framework, Table 4-10 (p27) of the DWQMSM and Section 2.4.2 (p20) of the DWQMP describe the process for operational monitoring including for CCPs. Both the DWQMSM and the DWQMP state that online monitoring is in place for critical operational parameters and controlled through SCADA. Both the DWQMSM and the DWQMP state that other monitoring is undertaken to support the online monitoring. The ADWG note that monitoring frequency should be in line with the speed with which the barrier can fail. The monitoring in place meets these requirements.

Review of data and formal responses to out of threshold results are required by the Framework. A process is in place, and current, to ensure monitoring results can be trended and acted on if a deviation is noted. A practice note (PN111 HW2014-778/23/1.053) sets out the requirements that need to be met and the actions the treatment contractor is required to take (point 3 in particular).

A process is in place to ensure adverse monitoring results are communicated to the relevant personnel in a timely fashion. Checklists and response flow diagrams exist for CCP exceedances, covering notification requirements, and are considered to be adequate.

The Framework requires suppliers to understand (including monitoring) how other parties may impact on their supply systems. Hunter Water has a process in place for accessing and understanding the operational monitoring undertaken by other parties. At the previous audit (2021/2022), it was found that the supply agreements in place with Central Coast Council (previously Gosford City Council) and MidCoast Council, are reasonably old with several shortcomings identified. A recommendation for review was made and the outcomes of this process are captured in the recommendations section of this report.

The water quality monitoring plan (HW2006-2906 2 6.006) is current, and as well as the expected parameters (to provide confidence in drinking water quality, according to the ADWG), also includes a section on monitoring of water quality at handover points with other parties (Section 2.5, p5). A misspelling of one of the parties was noted but is considered immaterial (Cooronbong instead of Cooranbong) as the parties understand who this is meant to be.

It is noted that Hunter Water is currently developing a notification protocol between itself and Central Coast Council, but this is not yet finalised and implemented. At the interview it was confirmed that feedback on the protocol has now been received from Central Coast Council. Hunter Water maintains online water quality monitoring at the handover point (Bushells Ridge). Monitoring involving laboratory analysis commenced from September 2021. Although the water supply agreements do not reflect current status, in practice, operational monitoring is being undertaken and there is a process in place for review and revision of the agreement, therefore the shortcoming is considered minor. As the shortcoming is already being addressed by recommendation 2021-1, this shortcoming is excluded from the assessment and no further recommendation is necessary.

The ADWG and Framework cover a range of monitoring types, to provide information on different risk states including verification (did the system perform as planned), operational (is the system performing as planned) and validation (will the system perform as planned). A monitoring plan is in place which covers many different types of monitoring across all of Hunter Water's operations including audit monitoring of the

treatment contractor's operations and DWQMP. The treatment contractor has monitoring in place for its obligations under the contract. Reasons for Hunter Water's monitoring approach are provided in the monitoring plan including in Section 8 (p37) which provides evidence to confirm discussion with NSW Health on implemented changes (an approach considered good practice from a water quality governance perspective).

The water quality monitoring plan is current (Version 2, September 2021), updated with results of review and from the annual risk assessment update. The plan is reviewed as part of the NSW Health liaison process and during the external operating licence audits. The efficacy of the program is also reviewed as part of the annual risk assessment process. Monitoring is considered sound and maintained.

Source waters at Chichester, Gresford and Grahamstown are subject to a current, algal monitoring framework (HW2006-2906 4 6.009, last updated June 2022). The framework sets out alert levels and responses. The blue-green algae (cyanobacteria) monitoring approach is covered in HW2006-2906 4 6.012 and is current (last updated 6 June 2022). The framework limit of ≥ 500 cells/mL is broader than a requirement for *Microcystis* cells only and is considered acceptable as it is more conservative. It would be advantageous to review the framework for clarity as biovolume is missing from the flowchart but is included in the table accompanying the flowchart. Furthermore, the cyanobacteria trigger list would benefit from updating as the names do not match current literature (e.g. *Cylindrospermopsis* is now *Raphidiopsis* - https://www.adelaide.edu.au/directory/friedrich.recknagel?dsn=directory_file;field=data;id=42277;m=view). The identified gaps are considered immaterial as they do not impact on Hunter Water's ability to deliver fit for purpose water and, therefore, an opportunity for improvement has been captured for these observations (OFI 2022/3.1.1-4).

C 4.3 Corrective Action

The framework requires formalised procedures to be in place for responding to deviations in process. Documented procedures are in place for immediate corrective actions required to re-establish process control following failure to meet target criteria or critical limits. A process is in place to identify the cause of any loss of control and if necessary, to modify the process (see Element 3). A process exists to record and internally report any loss of control at a critical control point (see Element 3 and Element 6). A process is available for timely management of unexpected events. The process is considered Framework-sound and is maintained.

C 4.4 Equipment capability and maintenance

As required by the Framework, a process exists for selecting equipment which can meet the required water quality objectives (reliability, accuracy, sensitivity). As required by the Framework, a process is in place for verifying the accurate and reliable operation of equipment. This is further discussed under Elements 2,9 and 12).

Inspection and maintenance of equipment, especially that related to CCP operation and monitoring, is required by the Framework. Table 4-12 (p29) of the DWQMSM and Section 2.4.4 (p23) of the DWQMP describe the process in place for inspection and maintenance of all critical equipment. For the treatment plants, this includes planned maintenance and breakdown, asset condition, an asset management system and instrument calibration. For the distribution system preventative maintenance practices are facilitated through the Asset Operation and Maintenance System AOMS (civil assets) and Ellipse (electrical/mechanical assets) for managing work orders. The process is considered Framework-sound and supported in the findings on Clause 4.1 Asset management system.

C 4.5 Materials and chemicals

The Framework requires formalisation of procedures for managing materials and chemicals in contact with drinking water, to ensure no adverse impact on the end product. The ADWG cover maximum allowable contaminant levels for chemicals used in the production of drinking water.

Table 4-13 of the DWQMSM (p30) and Section 2.4.5 of the DWQMP (p23) cover the processes in place for selecting appropriate suppliers to ensure the use of approved drinking water treatment chemicals and set specifications for the chemicals. The processes are sound and include the required items for consideration.

A process is in place to ensure that materials that come into contact with drinking water meet appropriate requirements and are from approved suppliers (as per ADWG (2022, version 3.8, p41) materials and chemicals requirements). The process is considered comprehensive.

The Standard-STS-408-Water-Quality-Acceptance-Testing (HW2009-2368/2/43.001 Version 2 12/5/2019) is very comprehensive but would benefit from re-iterating a requirement to ensure materials in contact with drinking water must be AS/NZS 4020 compliant. This identified issue was also noted at the previous audit

(2020/2021) where it was considered an opportunity for improvement because of the comprehensive nature of the process overall. This position still stands (OFI 2022/3.1.1-3).

Chemical requirements are managed through the treatment operations contract. Section 2.4.5 (p23) of the DWQMP covers the process for chemical handling. The process is considered adequate. The process has a requirement for the provider to include a certificate of analysis. Management of test results is conducted by the laboratory technician who enters these into the bulk chemical spreadsheet. The process is considered adequate. A quality assurance and quality control system are in place with bulk water suppliers (Central Coast Council). It was noted at the previous audit (2020/2021) that the process for management, while not considered adequate, was being addressed, and for this audit, it is covered through the previous recommendation 2021-1 (see further commentary in the recommendations section).

Noteworthy Observation: As noted at the previous audit (2020/2021) Hunter Water's process for managing materials and approved products and manufacturers remains comprehensive and well set out on the website.

Element 5 Verification of drinking water quality

C 5.1 Drinking water quality monitoring

Verification monitoring is required by the Framework to provide information on whether a system did perform as planned. Guidance on what constitutes fit for purpose monitoring outcomes (health and aesthetic levels, by parameter) is covered in detail in the ADWG. Table 4-14 (p31) of the DWQMSM and Section 2.5.1 (p25) of the DWQMP cover the requirements for verification monitoring. Hunter Water's Water Quality Monitoring Plan covers overarching monitoring including verification and the treatment operations contractor's verification monitoring is covered further in the Practice Note (PN111). All information is considered sound and meets expected requirements and considerations for appropriate water quality verification monitoring.

Population served is used as the basis for establishing the representativeness of the monitoring plan (for both microbiological and chemical parameters (confirmed verbally and via SE-077 RFI). This approach is in line with ADWG and NSW Health guidance. The monitoring plan also contains a table mapping the monitoring types against the Framework element requirements although as an observation, Element 9 validation and investigative monitoring are not included as monitoring types (OFI 2022/3.1.1-5).

The process of updating the monitoring program after the annual risk review is considered noteworthy. In addition, Hunter Water noted it is considering adding a formal five-year review to the verification monitoring to ensure it remains fit for purpose. A review of the current verification monitoring approach commenced in the audit date scope and is currently being finalised.

While the monitoring and sampling plan contains tables listing frequencies and locations for parameters monitored at locations, it is not clear whether the locations refer to individual sample points for each scheme, or for all schemes, and therefore it is not clear how many samples are expected for each parameter. There are some explanatory notes included which provide some elucidation. This observation is considered an opportunity for improvement, because although the required information exists, clarity could be improved.

Because there is a review of the current verification monitoring approach underway, to avoid confusion, it would be helpful to include a requirement in the review, to clearly state the expected minimum number of annual samples for each parameter and scheme (OFI 2022/3.1.1-6).

The monitoring plan is based on version 3.6 of the ADWG, and version 3.8 is now current. Version 3.8 now includes health-based targets (HBT), the impact of which will need to be considered in the monitoring plan. At the interview, it was noted that HBT and their impact are being considered in terms of potential changes to the monitoring plan, therefore, no opportunity for improvement is necessary.

Reliability of monitoring is ensured through use of a NATA accredited laboratory for both sampling and analysis. EnviroSys is used to collate and analyse data.

Hunter Water has a process in place whereby it audits its sampling and analysis provider to ensure appropriate implementation of the program. ALS undertakes auditing as part of its own systems, which also includes ensuring staff are trained appropriately.

Noteworthy Observations: As noted in 2020/2021, and confirmed for this audit, the approach for monitoring is considered well executed. As well as being comprehensive, the monitoring plan contains a table mapping the monitoring types in the plan, against the Framework element requirements - an approach considered noteworthy practice. The process of updating the monitoring program after the annual risk review is also considered noteworthy.

C 5.2 Consumer Satisfaction

The Framework requires that consumer complaints and enquiries are included in the monitoring approach. Table 4-15 (p31) of the DWQMSM and Section 2.5.2 (p25) of the DWQMP cover the process for recording all consumer water quality complaints. The process also requires training of employees. A process is also in place for recording the actions taken to address the customer response. The process is considered Framework-sound. Further discussion is provided under Element 4 in relation to monitoring.

C 5.3 Short-term evaluation of results

The Framework requires review of water quality and other data to enable trends to be identified, which might impact on water quality or show where certain controls are managing risk well. Table 4-16 (p31) of the DWQMSM and Section 2.5.3 (p25) of the DWQMP cover the process for regular review of water quality monitoring and customer water quality complaints. The process is considered sound as it covers both daily drinking water quality data review and daily consumer satisfaction review. There is also now an increased focus on CCP performance trends. Hunter Water currently uses 'dirty water' as a customer complaint metric and is looking to move to 'discoloured water', which is in line with industry practice.

Procedures in place for the evaluation and reporting of water quality results to external agencies (NSW Health) are covered under Element 10. Quarterly NSW Health joint meetings are also undertaken and are used to evaluate water quality results. The process is considered Framework-sound and is maintained.

C 5.4 Corrective actions

The Framework requires formalised processes to be in place to enable a response to adverse customer requests or water quality monitoring outcomes.

Table 4-17 (p34) of the DWQMSM and Section 2.5.4 (p26) of the DWQMP cover the process for corrective action in response to water quality monitoring non-conformances or consumer feedback. Evidence reviewed as part of assessing Elements 3, 4 and 6 confirms the process is sound and is maintained.

Element 6 Management of incidents and emergencies

C 6.1 Communication

The Framework requires formalised processes to be in place for managing, communicating and responding to drinking water quality incidents and emergencies, and that appropriate regulators and other stakeholders have been involved in their development.

Clearly defined protocols are in place including internal and external communications during incidents and emergencies. Table 4-18 of the DWQMSM (p35) and Section 2.6.1 (p27) of the DWQMP cover the process. There are various incident and emergency management protocols in place that make up the overall incident and emergency response framework. The process is considered appropriate from a defined protocol perspective.

The Practice Note PN 201 (HW2014-778/23/1.051, Version 2, September 2022) has been reviewed since the 2020-2021 audit where the version in place at the time was from 2013. The main changes included removal of redundant information and administrative changes – no change to the operational intent of the document.

Table 4-18 of the DWQMSM (p35) notes that NSW Health has been involved in the development of the notification protocol (see also comments in Recommendations' section).

Table 4-18 (p35) of the DWQMSM and Section 2.6.1 of the DWQMP (p27) cover the process for public and media communication templates and notifications.

Section 10.5 (p25) of the Corporate Emergency Management Plan provides information on the Operations Coordinator Role and Responsibilities, which include a requirement for several relevant responsibilities including:

- > being responsible for identifying and resolving all immediate operational aspects of an incident or emergency
- > being the primary and ongoing primary point of contact for field resources
- > providing technical advice, operational and solution options to field resources
- > identifying critical issues, immediate threats and keeping the Incident Controller aware of any changing circumstances as well as preparation of SitReps (Situation Reports).
- > Section 9.3 (p9) of PRO-2803-1 covers a requirement for the treatment operations contractor to liaise with Hunter Water with liaison procedures covered in the Incident and Emergency Management manual.

As an observation, *Naegleria fowleri* was misspelt in the indicator list however, Hunter Water confirmed that the indicator list is currently being rationalised, so no opportunity for improvement is necessary.

C 6.2 Incident and emergency response protocols

The Framework requires formalised processes to be in place for identifying incident levels, managing, communicating and responding to drinking water quality incidents and emergencies, and that appropriate regulators and other stakeholders have been involved in their development.

Table 4-19 (p36) of the DWQMSM and Section 2.6.2 of the DWQMP (p27) cover incident and emergency response protocols.

Section 2.6.2 of the DWMP has a slight typographical error (Incident and Emergence Response Protocols) but at the time of the interview, it was noted that a review was being undertaken and the observation would be addressed (no opportunity for improvement required).

Section 4 (p14) and Section 7 (p20) of the Corporate Incident and Emergency Management Plan define levels of water quality incidents and emergencies and how they are escalated (including specific reference to TRIM HW2006-2906/4/6.008 for NSW Health notification criteria. The currency for the audit date scope was confirmed (01/11/2019) with a three-year review cycle stated. The treatment operations contractor aligns with the incident levels of Hunter Water but also has its own process for classifying incidents (sighted at the Grahamstown WTP site visit). Procedures to support the correct assignment of categories and notification were also sighted and confirm the process. The levels of incident requiring an investigation and root cause analysis are covered under Recommendation 2021-2 and have been adequately addressed.

Table 4-18 of the DWQMSM (p35) includes a statement that the incident management process was developed with the involvement of NSW Health. The treatment operations contractor is involved in the water quality incident response plans. For this 2021/2022 audit, ongoing liaison with NSW Health was confirmed though review of finalisation of the Guideline – Water Quality Health Complaints which is covered in more detail in Recommendation 2021-3 and has been adequately addressed.

Table 4-19 (p36) of the DWQMSM and Section 2.6.2.1 of the DWQMP (p27) cover the process for training in incident and emergency response procedures. The content of the process is sound.

Table 4-19 (p36) of the DWQMSM and Section 6.2.1 of the DWQMP (p27/8) cover Element 6.2.3 (*Investigate any incidents or emergencies and revise protocols as necessary*) but do not specifically state a requirement to revise procedures as necessary following an incident or mock scenario.

Further evidence was reviewed to confirm the requirement was explicitly stated elsewhere. The Corporate Emergency Management Plan or PRO-2803-1 do not specifically state a need to update procedures following an incident although a debrief requirement is stated. PN201 WQ Incident Procedure contains a requirement to undertake a root cause analysis and outline actions required to prevent or minimise recurrence of an incident. The Integrum reports do not contain a prompting field for the need to undertake a debrief or any notations on areas for improvement of procedures and processes. Staff observed that Integrum does not provide reminders for actions entered. The new risk software package will be used to manage updating of procedures in the future, which should improve implementation and reminders for actions. The need to revise procedures, however, is covered in the document control standard (sighted at interview, section 4.6). Overall, the process is considered sound.

Element 7 Employee awareness and training

C7.1: Employee awareness and involvement

The Framework requires that all involved in the supply of drinking water understand their roles and responsibilities and have an involvement in overall drinking water risk management.

A process is in place to ensure new employees and contractors are made aware of the importance of water quality management, and the role they play in it. Table 4-20 of the DWQMSM (p38) and Section 2.7.1 (p29) of the DWQMP cover the process for training in water quality awareness. All staff and contractors are required to complete the Drinking Water Quality Training and Awareness Program which is accessed through the Employee Learning System Application (ELSA). An induction process is also covered. The process is considered sound and is maintained. The audit team was also required to undertake the induction training, confirming the process is in place and current.

C7.2: Employee training

The Framework requires that all involved in the supply of drinking water are appropriately trained to ensure they can carry out their roles and responsibilities.

Table 4-21 (p38) of the DWQMSM and Section 2.7.2 (p29) of the DWQMP cover the process for training for the purposes of this component and induction is also covered as noted in C7.1. Regular contractors to the treatment operations contractor are required to undertake detailed training on specific aspects (process confirmed through interviews, undertaking the induction training, and sighting of records at the site visit). Both Hunter Water and the treatment operations contractor include a requirement to understand and record training needs through a matrix. Members of the audit team undertook the online course: STS 408 Water Quality Acceptance Testing for New Water Mains. The process considered sound.

Table 4-21 (p38) of the DWQMSM and Section 2.72 (p29) of the DWQMP cover the process of competency. As an example, operators must achieve appropriate certificate level qualification and the laboratory services provider is NATA certified which requires staff to be trained and competent. The currency of NATA certification was confirmed.

Table 4-21 (p38) of the DWQMSM and Section 2.72 (p29) of the DWQMP cover the process of identifying training needs and resources.

Training is covered in further detail in recommendation 2021-9.

Element 9 Research and development

C 9.1 Investigative studies and research monitoring

The Framework requires investigation and research monitoring to be planned for and undertaken, to help identify system improvements.

Table 4-24 (p42) of the DWQMSM describes Hunter Water's research and development process and Section 2.9.1 (p31) of the treatment contractor's DWQMP does the same. The process meets the requirements of a sound investigative process.

The process described in the relevant sections of the DWQMSM and the DWQMP describe active partnerships with external bodies as well as with each other. The process described is comprehensive.

A specific Innovation Committee has been set up for the treatment operations contract and its purpose is to evaluate innovations and organise fellowships to study new technologies.

C9.2 Validation of Processes

The Framework requires that processes (including the limits chosen) are designed to enable fit for purpose outcomes, and that they are tested to ensure that they were designed correctly and are delivering fit for purpose outcomes.

Table 4-25 (p42) of the DWQMSM and Section 2.9.2 of the DWQMP (p31) describe the process of setting critical limits including the use of national (ADWG) and international (USEPA) guidance, in consultation with NSW Health. A specific document exists for establishing and reviewing CCPs, and documentation of the evidence base for limits is now undertaken (the subject of recommendation 2021-4).

Table 4-25 (p42) of the DWQMSM and Section 2.9.2 of the DWQMP (p31) detail the validation process including review of WTP performance against contractual, critical and other limits. It was noted that the new CCP register will be added in as a reference to the DWQMS and as a reference in the CCP Tables. The future process for managing the register will involve control of the document by Hunter Water, with provision for Veolia to change (triggers for this will be captured in the document control system).

Table 4-25 (p42/43) of the DWQMSM and Section 2.9.2 of the DWQMP (p31) detail the re-validation process.

C9.3 Design of Equipment

The Framework requires that assets are designed to enable fit for purpose outcomes, and that they are tested to ensure they are delivering fit for purpose outcomes.

Table 4-26 (p43) of the DWQMSM and Section 2.9.3 (p32) of the DWQMP cover design of equipment. Hunter Water has a specific internal design validation guideline. The guideline covers many aspects of Hunter Water's business including public health and is considered comprehensive and ties in with the asset creation framework. The guideline addresses commissioning and other methods to ensure delivery of water quality outcomes. The treatment operations contractor also has the ability to access pilot infrastructure, if required.

Noteworthy Observation: As noted in 2020/2021, the design validation guideline is comprehensive and is a noteworthy practice for integrating water quality outcomes with fit for purpose asset creation.

Element 10 Documentation and reporting

C10.1 Management of documentation and records

The Framework requires that a system is in place for managing documents and records and that people are trained to use the system.

A process is in place for documenting, recording and allowing ready retrieval of information relevant to all aspects of drinking water quality management. Overarching requirements are covered in the DWQMSM (Table 4-27, p44) and the treatment operations contractor's DWQMP (Section 2.10.1, p33). Hunter Water uses the DWQMS intranet and Asset Operation Framework intranet pages for documenting, recording and retrieval of water quality pertinent information. Hunter Water also has certification to ISO 9001. The treatment operations contractor has a documented information procedure as well as being required to adhere to Hunter Water's records management procedure. Other databases are used generally for recording water quality information including EnviroSys, SCADA and customer relationship information.

Hunter Water is continuing to improve ways to integrate systems across the business (see further commentary within Recommendation 2021-19). TRIM is used for document and records management.

A control process is in place to ensure that all documentation in use is current and not obsolete (see further commentary within Recommendation 2021-19 on planned improvements for document hierarchy and naming conventions). Table 4-27 (p44) of the DWQMSM and Section 2.10.1 of the DWQMP cover the process for documentation control. The requirements and expectations for document control are set out specifically in HW2013-421 22.002. The treatment operations contractor is also certified to ISO 9001 and uses CMMS for handling of records. The process is considered Framework-sound.

C10.2 Reporting

The Framework requires that processes for drinking water quality reporting, to the right people, at the right time, in the right format, are in place.

The DWQMSM describes the process for reporting at Table 4-28 (p45) and in the DWQMP at Section 2.10.2 (p33). The processes described cover internal and external reporting and are comprehensive including drinking water management and operational reporting from overarching statutory and corporate requirements through to operational issues. The treatment operations contractor reports internally and externally to Hunter Water via a monthly contract report. 2LOD covers the report sign-off and responsibilities for communication.

Hunter Water produces an annual report which is publicly available on its website. The treatment operations contractor DWQMP is silent on the production of an annual drinking water quality report, however, detailed water quality information is reported to Hunter Water on a monthly basis. In the 2020-2021 audit an opportunity for improvement was identified of the possibility of the treatment contractor producing an annual report for Hunter Water. The treatment contractor confirmed that this opportunity for improvement had been considered and is to be achieved through a rolling 12-month review of filtered water quality.

Element 11 Evaluation and audit

C11.1 Long-term evaluation of results

The Framework requires that long term trending of all monitoring results is undertaken.

The DWQMSM covers the process for collecting and evaluating water quality data to test for trends, associations and non-conformances at Table 4-29 (p47). The treatment contractor covers this same process at DWQMP Section 2.11.1, p34. The data are used to help inform the risk assessment and the improvement process.

Evidence sighted in reviewing Element 10 reports, confirms that customer feedback data and outcomes are reviewed and used to improve the system, Element 5 (Table 4-15, p31/32) also covers the process for evaluating customer satisfaction.

Hunter Water uses EnviroSys for collating the results of manual samples and uses SCADA for online monitoring data. Other contextual data are included in the DWQMSM and DWQMP in various sections and appendices. The system assessment and risk assessment process are also used to store and review data for the currency of the risk review period.

The DWQMSM states (Table 4-29, p47) that the process for documentation and reporting of results includes the Annual Compliance and Performance Report to IPART.

HW2015-1303 6.002 (Section 6, p7) covers historical water data analysis, documentation and reporting as part of the risk assessment process. Verbal confirmation was provided that the responsibility for evaluation,

documentation and reporting of long-term water quality data sits across several teams e.g., science team, catchments team and water quality team. In the 2020-2021 audit, an opportunity for improvement was identified for formalisation of the responsibility for evaluation, documentation and reporting of long-term water quality data. The Catchment to Tap guideline has now been updated with the responsibility for risk assessment preparation and the Science and Research team has default responsibility for this action. An action was sighted in the Water Quality Committee meeting minutes (HW 2006-1417 37 4.008) for the Water Quality Manager to confirm responsibility (OFI 2022/3.1.1-2). The process is considered thorough.

C11.2 Audit of drinking water quality management

Auditing is another form of verification monitoring, required by the Framework, to check that the overall system performed as planned.

The DWQMSM covers the process for internal and external audits at Table 4-30, p47 and in the DWQMP, at Section 2.11.2, p34. Tools and documentation to support the audits include an auditing programme (HW2013-421 9.00, 2022 Year) and procedure (HW2013-421 11.00).

Hunter Water is subject to external review of its systems through the IPART operational licence audits and through certification, surveillance and re-certification audits. The treatment operations contractor is subject to the same scrutiny as well as being required to have an external Exemplar Global-certified audit of its DWQMS. The treatment operations contractor also undertakes site-based inspections.

The DWQMSM covers the process of documenting and communicating audit results at Table 4-30 (p48) and the DWQMP in Section 2.11.2 (p34). The process is considered sound and is maintained.

Element 12 Review and continual improvement

C12.1 Review by senior executives

Review by top management is required by the Framework, to help demonstrate commitment and ensure fit for purpose system performance.

The DWQMSM covers the process of review at Table 4-31 (p49) and the DWQMP in Section 2.12.1 (p35). Hunter Water's process includes the programming of capital, operational and procedural improvements. The IMS includes a requirement to review documents on a range of triggers including changes in the external operating environment.

Hunter Water has an Enterprise Risk Management Framework in place and anything out of appetite is flagged in the risk assessment process, a change to definition of As Low As Reasonably Practicable (ALARP) has been implemented during the audit date scope and this is covered within the following clause. There is an asset management framework which addresses identified out of appetite items, via gateways through the Management Investment Committee. The Asset Creation Framework has an investment management page which covers decision-making processes. The process is considered Framework-sound and is maintained.

C12.2 Drinking water quality management improvement plan

The Framework requires improvement actions to be captured and implemented.

The DWQMSM covers the process for managing improvements at Table 4-32 (p50) and in the DWQMP at Section 2.12.2 (p35). The treatment operations contractor conducts performance improvements under procedure PRO-151 and through taking part in the risk assessments (at which improvements are identified). The process for tracking progress of the DWQIP is documented.

The Drinking Water Quality Improvement Plan exists, is current and considered Framework-sound.

Recommendations

The identified shortcoming for the currency of the water supply agreements is already covered by an existing recommendation (Recommendation 2021-1), and therefore no further recommendation is required.

Opportunities for improvement

OFI 2022/3.1.1-1: Address noted document history and typographical errors and disconnect between procedure and register (Procedure HW2012-441 has a disconnect between the required information for recording document version and the footer information (Footer: Version 5 11/22/2019 vs Doc History Table: Version 5, November 2021)) (noted in 2020/21 audit).

OFI 2022/3.1.1-2: Although HW2015-1303 6.002 Catchment to Tap Water Quality Risk Assessment Guideline currently details the process for the evaluation, documentation and reporting of long-term water

quality data, consider formally documenting the responsibility for this process (previously identified at the 2020/21 audit and noted as currently under development, therefore, left in for completeness).

OFI 2022/3.1.1-3: At the next revision of Standard-STS-408-Water-Quality-Acceptance-Testing (HW2009-2368/2/43.001 Version 2 12/05/2019), consider adding in a specific requirement to meet the standard AS/NZS 4020 for materials used in contact with drinking water (noted in 2020/21 audit).


OFI 2022/3.1.1-4: Consider reviewing the algal monitoring framework for clarity of the flowchart (currently does not include biovolume) and naming currency of the cyanobacteria trigger list.

OFI 2022/3.1.1-5: Consider adding Element 9 validation and investigative monitoring to Table 2.1 of the monitoring plan (p4).

OFI 2022/3.1.1-6: Consider clearly stating the expected minimum number of annual samples for each parameter and scheme, within the monitoring and sampling plan.

Clause 3.1.2

Table 3-2 Clause 3.1.2 compliance grade

Subclause	Requirement	Compliance grade
Clause from 2017-2022 operating licence (1 November 2021 to 30 June 2022)		
3.1.2	Hunter Water must ensure that the Drinking Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the Drinking Water Quality Management System and to the satisfaction of NSW Health.	 Compliant (minor shortcomings)
Clause from 2022-2027 operating licence (1 July 2022 to 31 October 2022)		
15(3)	Hunter Water must fully implement the Drinking Water Quality Management System and carry out all relevant activities in accordance with the Drinking Water Quality Management System, and to the reasonable satisfaction of NSW Health. [Note: Hunter Water is to apply the Drinking Water Quality Management System to the Drinking Water system under its control, having regard to the entire Drinking Water supply system – from water catchment to the Consumer.]	
Risk	If Hunter Water does not carry out activities in accordance with its own DWQMS, there is a very high risk that the water supplied to customers will not meet quality standards for drinking, leading to significant public health impacts.	Target for full compliance Hunter Water must provide evidence that it fully implemented its DWQMS throughout the audit period and that all relevant activities were carried out in accordance with its DWQMS. Hunter Water must provide evidence to show that NSW Health was satisfied with Hunter Water's implementation of the DWQMS during the audit period.

Summary of reasons for grade

Elements 1, 3, 4, 5, 6, 7, 9, 10, 11 and 12 of the Framework for Management of Drinking Water Quality were within scope for this audit. Evidence to support implementation of the stated processes in place for both Hunter Water and the treatment operations contractor was largely available but some minor shortcomings were identified. Many areas of noteworthy practices were also identified in 2020-2021, and are captured again for completeness, along with additional observations:

- > Element 3: The risk assessment briefing and summary papers are considered exemplary in terms of the quality of input and output from the risk assessments (also noted 2020-2021).
- > Element 3: The completed CCP validation register is comprehensive and considered an exemplar. The initiative of the CCP table review is highly supported as it will improve awareness and implementation.
- > Element 4: The process of using the risk review to update the monitoring plan and having documentation to support that it occurred in practice, is an exemplary process from a water quality governance and documentation perspective (also noted 2020-2021).

- > Element 5: The process now implemented for confirming sample count, is considered noteworthy in terms of the information captured, the simple layout and thought that went into designing the fitness for purpose of the overall process and outputs.

Shortcomings driving the grade include:

- > Element 3: Several inconsistencies for the treatment plant CCPs were noted between documents. As an example, Drinking Water Quality Management Plan.pdf (MAN-2813-3, page 40) states that the CCP is the Chlorination – Clear Water Tank (CWT) 1 outlet, while TEM-3039-10 HW - Dungog WTP CCP Limit Table.pdf includes a COP for CWT1 Outlet and the Primary Disinfection CCP is CWT2 Outlet. It is understood that these issues have been picked up through the CCP review and have been addressed. It is likely that the discrepancy is due to difficulties in maintaining currency of information in more than one place and a recommendation is provided to this effect. While there were discrepancies between the documented CCPs, the risks associated with these discrepancies were minimised because the shutdown and critical alarm limits in place were consistent and effective. There were no impacts on the quality of water supplied during the audit period. Therefore, the inconsistency in documentation is considered a minor shortcoming (Recommendation 2022/3.1.2-1).
- > Element 6: During the audit date scope, MidCoast Council was missing from the Operations Contact Directory (HW-2007-900 27 23.013) and the Regional Contacts List (both these documents are used in incident and emergency management), and this is identified as a shortcoming. This matter is covered by an existing recommendation (Recommendation 2021-5) and additional evidence was provided which confirms that MidCoast Council's contact details have now been included. However, no recommendation has been made as Hunter Water provided evidence that the shortcoming was resolved after the audit period ended.
- > Element 10: Section 4.10 of the DWQMSM and Section 2.10.1 of the DWQMP describe a requirement for the management of documents and records, including currency. A number of document and other currency implementation issues were identified. A recommendation to improve document management is not warranted as there is a process currently in place (as detailed under Recommendation 2021-19) which will manage that shortcoming. However, a recommendation has been provided to address a focus on currency expectations, through evidence-based KPIs, bearing in mind that critical documents, such as CCP tables and emergency contact lists, should always be current (Recommendation 2022/3.1.2-2).
- > Element 11: Section 4.11 of the DWQMS includes a requirement for auditing the water quality management system. As part of that requirement, an audit program has been developed but had a shortcoming with implementation. The scheduled audit report for the distribution network audit, had not been finalised in the required timeframe. A recommendation has been provided to address this shortcoming (Recommendation 2022/3.1.2-3).

This clause is graded Compliant (minor shortcomings).

Discussion and notes

Element 1 Commitment to drinking water quality management

C 1.1 Drinking water quality policy

As per the stated process in the DWQMSM and the DWQMP for visibility of the policy, current drinking water policies were sighted at the Grahamstown water treatment plant (via QR code for treatment contractor policies and print out for the Hunter Water policy) during the site visit. Photographs and a screenshot were provided as evidence for Dungog.

C 1.2 Regulatory and formal requirements

The process requirement for periodic identification and communication of changes in regulatory and formal requirements is implemented in practice.

The date of last review of the register was 25/6/20 (in the Change History tab), but this is not consistent with the ADWG version added which is stated as V3.6 March 2021. In the audit date scope, the appropriate ADWG version to reference in the register is V3.7, January 2022 (released in the audit date scope) – an older version of the ADWG is contained in the register. The review cycle, and updates on the register are unclear (also observed at the previous operating licence audit), as there is no identification of the source of the change or whether a review was undertaken, but no change was required. As previously noted, this should be addressed with the new document control system and therefore, no recommendation has been made.

Interviews with both the water treatment operations contractor and Hunter Water staff confirm that responsibilities are understood, and other evidence sighted for policy and training confirms this criterion is met in practice. The position description (PD) sighted for the Grade 6 position contains responsibilities for drinking water quality protection. Two other PDs were sighted (Customer Care – Case Officer and Engineer, Water Resource Planning) and confirm that the DWQMS and DWQMP statements are implemented in practice.

C 1.3 Engaging stakeholders

The current stakeholder register was tested for implementation of the requirement to communicate with stakeholders.

Records were available to show that communication with stakeholders occurs in practice.

Table 4-3 of the DWQMSM documents the communication mode and frequency for external and internal stakeholders and NSW Health specifically. A sample of records confirmed that communication occurred in practice within the audit date scope (see Element 10 for details).

The Have Your Say page on Hunter Water's website confirmed stakeholder communication during the audit period (Customer and Community Advisory Group). For this audit, a focus was placed on emergency services contacts, as at the previous audit a shortcoming was identified for key stakeholder, MidCoast Council. This shortcoming is managed through existing Recommendation 2021-5 and therefore, no additional recommendation is required.

Element 3 Preventive measures for drinking water quality management

C 3.1 Preventive measures and multiple barriers

As a focus for this audit, the latest risk assessment was reviewed to confirm whether the previous audit's finding, that all medium and above controlled risks should have a corresponding risk treatment (as per the stated process), had been addressed. Documentation of preventive measures and adequate capture of risk treatment was confirmed as implemented in practice. The risk review (network) has also been conducted in the required timeframe. Further commentary on this aspect is covered under Recommendation 2021-6.

C 3.2 Critical Control Points

The accuracy of implementation of the CCPs, as described in the CCP tables, was tested at the Grahamstown water treatment plant site visit (2 November 2022). The SCADA interface was sighted for CCP limits. CCPs have been identified from catchment to consumer. Network CCPs are managed by Hunter Water and the treatment CCPs by the treatment operations contractor. The Grahamstown water treatment plant, Dungog water treatment plant and network chlorinators CCP limit tables were sampled as evidence. The treatment operations contractor has assigned a CCP for coagulation and pH adjustment, but this is not counted as a Hunter Water CCP.

The limits are defined in the CCP Limits tables for all CCPs as Target Value, Alert Limit, Action Limit, Auto Shutdown, Contractual / Critical Requirement and Hunter Water Critical Limit. It should be noted that for the network chlorinator CCP, there is intentionally no value in the Contractual / Critical Requirement column as the CCP is the responsibility of Hunter Water. Checks were conducted to assess whether the following are in place:

- Operators are aware of the CCPs.
- CCP limits are identified and include other relevant information such as time delays.
- Operational procedures exist for business as usual and exception states.
- An evidence base is set for each critical limit and is appropriate.
- Information is current.
- Information in the CCP table aligns with SCADA.
- Exceptions have been reported to NSW Health.
- Operational monitoring is undertaken in practice.

The treatment operations contractor's Senior Operator Grade 6 and Water Treatment Manager and Hunter Water's Manager Water Treatment Operations and DWQMS Technical Lead were interviewed. Their knowledge of CCPs was confirmed and CCP Tables were sighted on wall at plant.

The limits for Grahamstown were the focus of the site visit. The CCPs for, filtration, fluoridation and primary disinfection (chlorination), were reviewed. SCADA information for all three CCPs matched the evidence documented within their respective CCP tables (noting that Filters 1 and 7 were checked as a sample of the operating filter bank).

Two of the network chlorinators (Four Mile Creek and Toronto) were checked as a sample and compared against HW2015-1303/10.003 (8/10/21 and 28/10/22). The evidence matched, confirming implementation in practice.

For Dungog, an inconsistency was noted in the chlorination CCP description location:

- Plan - Drinking Water Quality Management Plan.pdf (MAN-2813-3, page 40) states that the CCP is Chlorination – CWT 1 outlet while TEM-3039-10 HW - Dungog WTP CCP Limit Table.pdf includes a COP for CWT1 Outlet while the Primary Disinfection CCP is CWT2 Outlet.
- Inconsistency was noted in the control point type: Plan - Drinking Water Quality Management Plan.pdf (MAN-2813-3, page 40) states that CWT2 Outlet pH is a CCP whereas TEM-3039-10 HW - Dungog WTP CCP Limit Table.pdf states that CWT2 Outlet pH is a COP.
Nonetheless, shutdown and critical alarm limits appear to be consistent.
- Inconsistency was noted in the control point type: Plan - Drinking Water Quality Management Plan.pdf (MAN-2813-3, page 40) states that CWT Turbidity is a CCP whereas TEM-3039-10 HW - Dungog WTP CCP Limit Table.pdf states that CWT Outlet Turbidity is a COP.

It is understood that these issues have been picked up through the review and have been addressed. It is likely that this discrepancy is also due to difficulties in maintaining currency of information in more than one place and a recommendation is provided to this effect (Recommendation 2022/3.1.2-1).

The CCP Tables were current, and an email was provided to confirm provision of updated CCP information to NSW Health (the email dated 1 November 2022 was just outside the audit date scope but was accepted as evidence of a process commencing within the audit date scope. This matter is covered further in Recommendations 2021-4, 2021-7 and 2021-8). Other contextual information such as time delays, was documented. CCP procedures are recorded under the field 'preventive measures' and 'corrective actions' (including document numbers). The evidence bases for each CCP were recorded and relevant. Exceptions have been reported to NSW Health and information to support this is covered in Element 10. Operational monitoring is undertaken as directed in the daily water quality plant spreadsheets (for Grahamstown, SE-011a, for Dungog, SE-011b). Evidence of completion for Grahamstown was viewed on screen as evidence of data capture and review.

In liaison with NSW Health, Hunter Water is reviewing the format of its CCPs. The initiative of CCP table review is highly supported as it will improve awareness and implementation of CCP requirements and obligations.

Noteworthy Observation: The completed CCP validation register is comprehensive and considered an exemplar. The initiative of the CCP table review is highly supported as it will improve awareness and implementation.

Element 4 Operational procedures and process control

C 4.1 Operational Procedures and Process Control

The use of Reservoir (Hunter Water's SharePoint site) and access to the manual for Grahamstown water treatment plant MAN-2963-5 28/09/2022) and other requested procedures, was demonstrated at interview. All information requested could be easily found and accessed. The Dungog plant manual (Folder HW2014-1563/3/1) was cited as the repository of operating manuals. This was checked at interview and found in existence and containing the stated documentation.

Operational staff are involved in production of the procedures, and training evidence was provided to confirm that staff are made aware of and trained in the procedures, as required by the process. Further evidence to support the implementation of training is provided under Recommendation 2021-9. Awareness of a newly implemented site checklist and process was also checked and confirmed at the Grahamstown site visit.

C 4.2 Operational Monitoring

The stated practice of operational monitoring was sighted and confirmed at the Grahamstown site visit (see comments for Element 3). The other monitoring practices in place to support CCP operation and operation in

general, as described in both the DWQMSM and the DWQMP, were confirmed at the site visit (see Element 3).

SCADA and other records were in place to confirm daily review of water quality monitoring results. Sufficient equipment is in place to adequately monitor critical limit parameters.

Supplementary evidence confirmed that stated processes within the monitoring plan (for pesticide monitoring) were implemented in the documented timeframe.

Noteworthy Observation: The process of using the risk review to update the monitoring plan and having documentation to support that it occurred in practice, is considered noteworthy from a water quality governance perspective.

C 4.3 Corrective Action

Outputs from the processes identified under C4.1, Element 3 and Element 6 were confirmed at the Grahamstown site visit.

C 4.4 Equipment capability and maintenance

Implementation of equipment capability and maintenance requires completion of forms, to demonstrate that tasks have been completed appropriately (e.g., Section 2.4.4, DWQMP states “Plant performance is monitored via the on-line SCADA system and routine operator checking and monitoring processes). A sample of records from SCADA, calibration and site checks was reviewed for February, June and September 2022. These records, along with additional information, confirmed implementation of the required outcomes.

C 4.5 Materials and chemicals

Compliance for this part of Hunter Water’s interpretation of the Framework was checked by sampling chemical handling documentation and processes by the treatment operations contractor. The following sampling was undertaken for this assessment:

- Delivery records and certificates of analysis for each chemical for January, March and August (or closest available).
- Three laboratory chemicals chosen at random at the Grahamstown site visit.
- Eight other laboratory chemicals provided as other evidence.
- All treatment chemicals at the site visit.
- Hypochlorite at the North Lambton chlorinator.

Several tests were applied including:

- A Certificate of Analysis is available.
- The chemical was stored to maintain fitness for purpose.
- The chemical was purchased from an appropriate vendor.
- The chemical was determined to meet specifications.
- The chemical was delivered and handled according to the receipt procedure.
- The chemical has an identified/ defined delivery point.
- The use by date is clearly visible and the chemical was within date.
- A current Safety Data Sheet (SDS) (5-year currency) was to be found in the expected location.

All treatment chemicals checked had certificates of analysis available.

Three out of three laboratory chemicals checked at random in the Grahamstown WTP laboratory were within date and stored appropriately. Eight out of eight additional laboratory chemicals were within date.

Evidence was provided to confirm that the process for chemical receipt (Chemical Delivery Work Permit) is adhered to in practice.

All chemicals checked at the site visit were stored appropriately. Chemicals were from reputable suppliers. All treatment / re-chlorination chemicals at the site visit had defined delivery points. All treatment / re-chlorination chemicals had a current SDS located at the point of storage.

Element 5 Verification of drinking water quality

C 5.1 Drinking water quality monitoring

The process states that monitoring reliability is partly assured through use of a NATA accredited laboratory. The use of a NATA accredited laboratory was confirmed to be in place through evidence provided on the currency of the laboratory's status. The implementation of the stated practice of using EnviroSys for collation and analysis of data was sighted at interview and in the data requested as part of the sampling and testing process in this audit. Currency of certification of the provider was also taken as evidence of implementation of assurance of appropriate training and competency of personnel.

The Monitoring and Sampling Plans states: "The revised pesticide monitoring program will be implemented in 2021-2022 following development of appropriate laboratory methods by ALS for a limited number of the shortlisted pesticides for which commercial testing is not currently offered." A file note was provided as evidence confirming the statement and attesting that implementation occurred in the audit period (August 2022). A certificate of analysis (for work order WN2210306) confirmed the implementation with samples received for analysis for the pesticide suite (among other parameters), dated 30 August 2022.

At the 2020-21 audit, Hunter Water volunteered several missed samples (3 from one service provider relating to amoebae tests for Allyn River, Paterson River and Gresford CWT and a raw water pesticide data upload from another provider). Hunter Water has now addressed the gaps previously raised, with information to support this outcome, presented in Recommendation 2021-10.

Noteworthy Observation: The process now implemented for confirming sample count, is considered noteworthy in terms of the information captured, the simple layout and thought that went into designing the fitness for purpose of the overall process and outputs (Element 5).

C 5.2 Consumer Satisfaction

Records reviewed of the Water Quality Committee meeting minutes and network operations water quality reports, confirmed that customer complaints are recorded and followed up in terms of water quality outcomes. Further discussion on this aspect is provided in Element 10.

C 5.3 Short-term evaluation of results

Records of operational review of operational monitoring results were confirmed at the Grahamstown water treatment plant site visit (2 November 2022). Customer satisfaction review was confirmed through sighting of data dashboards (AOMS). Evidence sighted and commented on in other elements, relating to the review by the Water Quality Committee, also confirmed that short-term evaluation of water quality and customer complaints occurs in practice. Implementation of required processes is considered sound.

Evidence gathered under Element 10 confirms that reporting of water quality results to external agencies occurs in practice.

C 5.4 Corrective responses

Evidence reviewed under Elements 4, 6, 10 and Recommendation 2021-10 confirm that the processes for corrective responses in relation to customer feedback are undertaken in practice.

Element 6 Management of incidents and emergencies

C 6.1 Communication

In 2020/21, it was noted that while the information on key stakeholders, agencies and businesses is comprehensive, two key stakeholders, MidCoast Council and Central Coast Council, are not included in the Key Emergency Services and Stakeholder Contact List in the Corporate Emergency Plan (p42) but are covered as stakeholders in Table 1-2 of the DWQMSM (p6). This shortcoming was the subject of a recommendation (Recommendation 2021-5), which is now closed. Meeting minutes sighted confirmed that the NSW Health liaison process continues to be implemented.

At the Grahamstown site visit, the Incident and Emergency Management Manual MAN-2799 and PRO-2803-1, were confirmed as in place and therefore, implemented as stated in the process.

C 6.2 Incident and emergency response protocols (Compliant)

To support the review of implementation, records for all incidents occurring for Dungog and Grahamstown WTPs and in the network, were requested, as well as evidence to support updating of documentation in response to any of the above incidents. An Integrum extract was provided as evidence of recording incidents according to the stated process. Actions were sighted to support implementation of update of procedures (SCADA changes for the case of incident number ASNN-77354E). Records were also available to support

implementation of training in incident and emergency management procedures, during the audit date scope. Considered compliant.

Crisis report 02/09/2022 and RIVO actions were provided as evidence from Veolia.

Evidence (Annual Emergency Exercise report 10 January 2022 HW2019-620/24.003 for exercise undertaken 9 November 2021) was provided to confirm that updating of procedures following an event or mock scenario training is undertaken in practice, with actions added to Integrum.

Element 7 Employee awareness and training

C7.1 Employee awareness and involvement

From a review of records associated with meeting minutes, observation of procedures (see comments under site visit), awareness of the drinking water quality policies at site, position descriptions and discussion during the interviews and site visits, sound evidence is available to confirm that employees (Hunter Water and the treatment operations contractor) are aware of their responsibilities and are highly engaged. This sentiment was also echoed by discussion with NSW Health.

C7.2 Employee training

Records were available to confirm that awareness training is undertaken in practice (ELSA extract). Of particular focus for this audit, was the training undertaken for completion of Recommendation 2021-9, and further commentary is provided within this recommendation.

Element 9 Research and development

C 9.1 Investigative studies and research monitoring

Information sighted in other elements (including Element 12) confirms that improvements and innovations, as described in the process, are captured and implemented in practice. An observation was made that COVID had delayed implementation of the fellowships process. Given the circumstances and uncertainty with COVID, the reason for the delayed implementation is considered acceptable, as the outcome did not impact on Hunter Water's ability to meet its drinking water quality obligations.

C9.2 Validation of Processes

As required, monthly results are reviewed at the water quality committee meetings and actions identified where further analysis / validation is required. Information reviewed for Element 3 confirm that performance of process trains is also reviewed through that process. Further validation of veracity of CCPs was undertaken within this audit period as part requirement for addressing Recommendation 2021-4. Implementation of the process is considered sound.

C9.3 Design of Equipment

The process described in Clause 3.1.1 C9.3 was reviewed for implementation. A building and development web page (as part of the Hunter Water web framework includes building and asset information requirements for external parties. Information reviewed for Element 3 confirms that performance of process trains is also reviewed through that process. The process is considered satisfactory.

Element 10 Documentation and reporting

C10.1 Management of documentation and records

Storage and retrieval of information was confirmed at interview by requesting random samples from many of the systems claimed as meeting the requirements of this component (e.g., intranet and TRIM). Employees responsible for the specific information were able to easily and quickly locate information, even from areas with which they were not as familiar.

Management of documentation is covered further under Recommendation 2021-19. This recommendation includes overall implementation of document currency management.

Given the number of document currency exceptions sighted in this audit (and still remaining after identification in the previous audit) and/or mismatch exceptions (e.g., CCP details/ a shortcoming still exists. A recommendation to improve document management is not warranted as the process currently in place (as detailed under Recommendation 2021-19), will manage that shortcoming. However, a recommendation (Recommendation 2022/3.1.2-2) has been provided to address a focus on currency expectations, through evidence-based KPIs, bearing in mind that critical documents, such as CCP tables and emergency contact lists, should always be current. Consideration should be given to assigning a criticality rating to documents (OFI 2022/3.1.2-1).

C10.2 Reporting

Reports, requested as samples, confirmed that the reporting process occurs in practice (see also commentary under Clause 6.2.1). Evidence sighted confirmed that required reporting was undertaken in practice, (e.g., quarterly reporting to NSW Health over the period 1 July 2021 to 30 June 2022 and September 2022 SE-063a, intermittent reporting with NSW Health on system or other change (SE-075, CCP review 31 Oct 2022)).

Element 11 Evaluation and audit

C11.1 Long-term evaluation of results

Reports reviewed under Element 10 and documentation used as evidence for Element 3, confirm the process is implemented in practice.

Required site-based inspection records were sighted as in use at the Grahamstown WTP inspection.

The Annual Compliance and Performance Report to IPART was reviewed and confirms the inclusion of water quality management system performance. Confirmation that the responsibility for evaluation, documentation and reporting of long-term water quality data is implemented in practice was provided through the risk assessment briefing and summary reports reviewed in Element 3 and is considered sound.

C11.2 Audit of drinking water quality management

A check was made for completion of the water quality audit (Hunter Water Distribution Network), scheduled (HW2013-421 9.001) for September 2022. At the audit interviews, Hunter Water confirmed the audit outcomes report was still not available although the site component of the audit was undertaken, September 2022. This gap is considered a minor shortcoming for implementation, as the site component and draft audit report have been completed. The treatment operations contractor had fully implemented its scheduled audit obligations. Other records were sighted to confirm site inspections had been implemented. A recommendation (Recommendation 2022/3.1.2-3) is provided for completion of the audit report for the distribution network audit.

Element 12 Review and continual improvement

C12.1 Review by senior executives

Evidence was provided to confirm that processes of review are implemented and communicated in practice. As a significant example, Hunter Water is currently undergoing changes in its definition of ALARP, and review of its risk appetite statements, with these embedded in reporting and review documents (Sustainability Committee Paper, 22 September 2021; communication of ALARP to both IPART (29 October 2021) and NSW Health (December 2021 liaison meeting). Reporting on progress to implementation of drinking water quality improvements was sighted as evidence of implementation against this component (Drinking Water Quality Improvement Plan report, progress to July 2022).

C12.2 Drinking water quality management improvement plan

Implementation of the process for drinking water quality improvements was confirmed through review of evidence showing open actions for Dungog and Grahamstown as the sample, and the Drinking Water Quality Management Improvement Plan Report HW2006-1417 37 1.012. Actions are identified, clearly articulated, mapped against their risk ratings and assigned an owner and a due date. Minutes of Water Quality Committee meetings from the audit date scope confirm that actions are reviewed periodically.

Recommendations

Recommendation 2022/3.1.2-1: By 31 October 2023, consolidate information on CCPs to, as far as possible, one reference point, to improve maintenance of currency and avoid discrepancies of information e.g., by adding a reference to a CCP document (as the point of truth) within the DWQMS or DWQMP.

Recommendation 2022/3.1.2-2: By 30 September 2023, given that 100% document currency compliance is unlikely to ever be achievable, set an evidence-based KPI for currency at an achievable level (commensurate with document criticality) that does not compromise Hunter Water's ability to satisfy its licence and other obligations.

Recommendation 2022/3.1.2-3: By 30 June 2023, ensure that the audit report for the Hunter Water Distribution Network has been completed and the audit finalised.


Opportunities for improvement

OFI 2022/3.1.2-1: Consider assigning a criticality rating to documents (e.g., critical control point and emergency management documentation – Category 1).

Clause 3.2 – Recycled water

Clause 3.2.1

Table 3-3 Clause 3.2.1 compliance grade

Subclause	Requirement	Compliance grade
Clause from 2017-2022 operating licence (1 November 2021 to 30 June 2022)		
3.2.1	<p>Hunter Water must maintain a Management System for Recycled Water that is consistent with the Australian Guidelines for Water Recycling, except to the extent that NSW Health specifies otherwise in writing (the Recycled Water Quality Management System).</p> <p>[Note: It is expected that the Recycled Water Quality Management System will be consistent with the Australian Guidelines for Water Recycling, including the Framework for Management of Recycled Water Quality and Use. However, where NSW Health considers it appropriate, the application of the Australian Guidelines for Water Recycling may be amended or added to, to take account of Hunter Water’s circumstances and/ or Recycled Water quality policy and practices within New South Wales.]</p>	 Compliant (minor shortcomings)
Clause from 2022-2027 operating licence (1 July 2022 to 31 October 2022)		
16(1) and 16(2)	<p>(1) Hunter Water must maintain a Management System that is consistent with the Australian Guidelines for Water Recycling and any additional health-based requirements relating to water recycling that NSW Health reasonably specifies, in writing (the Recycled Water Quality Management System).</p> <p>(2) In the event of inconsistency between the requirements specified by NSW Health in accordance with clause 16(1) and the Australian Guidelines for Water Recycling, the requirements specified by NSW Health prevail.</p>	
Risk	Target for full compliance	
If Hunter Water does not maintain a Recycled Water Quality Management System (RWQMS) that is consistent with the licence requirements, there is a very high risk that the quality of water supplied to customers will not meet quality standards for recycled water, leading to significant public health impacts.	Hunter Water must provide evidence that it maintained and kept up-to-date a RWQMS that is consistent with the AGWR, throughout the audit period. Hunter Water must provide evidence that it met any additional requirements specified by NSW Health during the audit period.	

Summary of reasons for grade

Hunter Water has demonstrated that it has maintained a Recycled Water Quality Management System consistent with the AGWR, apart from a minor shortcoming that two documents at Branxton WWTW were past their review date. While overdue for review the contents of the documents were still adequate to meet the requirements of this clause.

This clause is graded Compliant (minor shortcomings).

Discussion and notes

Hunter Water manages its recycled water through a hierarchy of documents supported by its integrated management system (IMS). The Recycled Water Quality Management Plan - Corporate (HW2008-1592/20/22.001, v14, dated 1/9/22) is a roadmap for their recycled water management system and provides the overall corporate management framework relevant to Hunter Water’s operational recycled water schemes. The Corporate Recycled Water Quality Management Plan (RWQMP) is structured according to the elements, components and actions set out in the Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) (AGWR) ‘Framework for management of recycled water quality and use’ (AGWR Framework). The Corporate RWQMP is supported by scheme specific RWQMPs. During the audit, we focused on documentation for Branxton and Dungog Wastewater Treatment Works (WWTW); with the Recycled Water Quality Management Plan – Branxton WWTW (HW2013-421/22.002, v10, dated

September 2022) and the Recycled Water Quality Management Plan – Dungog WWTW (HW2013-421/22.002, v8, dated September 2022) provided as evidence.

In considering the 'maintain' requirement of this clause, we have audited the water quality management system against the requirements of the AGWR Framework. The audit scope was for Elements 1,2, 4 to 7 and 9 to 12 of the Framework.

Element 1: Commitment to responsible use and management of recycled water quality

Responsible use of recycled water

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to maintain a system to involve agencies (i.e., stakeholders) with responsibilities and expertise in protection of public and environmental health and ensure that design, management and regulation of recycled water schemes is undertaken by agencies and operators with sufficient expertise.

Table 1-1 of the RWQMP lists stakeholders common to all recycled water schemes. Section 1.3.1 of the Branxton and Dungog RWQMPs describe additional stakeholders specific to those schemes. These stakeholders are considered appropriate.

Stakeholders are reviewed and updated during review of the RWQMPs.

Hunter Water engages with these stakeholders on recycled water through the following:

- > Annual recycled water customer site visits
- > Regular communication with recycled water customers
- > Recycled water agreements with end users
- > Quarterly liaison meetings with NSW Health
- > Review of significant changes by relevant agencies where required
- > Minor changes communicated through the annual report
- > Four yearly review and update of the RWQMP.

Hunter Water ensures key staff involved in the operation of recycled water schemes have the required skills by including recycled water requirements in their position descriptions. Position descriptions for Manger Water Network Operations, Manager Wastewater Treatment Operations and Team Leader Alternative Water were provided as evidence and considered appropriate.

PN102 Operator Competency (HW2013-215-11, v1.0, dated September 2013) requires Veolia Water Operations (treatment operations contractor) to ensure operators are trained and competent.

Regulatory and formal requirements

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to identify and document all relevant regulatory and formal requirements, identify governance of recycled water schemes for individual agencies, designers, installers, operators, maintainers, owners and users of recycled water, ensure that responsibilities are understood and communicated to designers, installers, maintainers, operations employees, contractors and end users and review requirements periodically, to reflect any changes.

Table 1-3 of the RWQMP lists regulatory and formal requirements common to all recycled water schemes. Table 1-1 of the Branxton and Dungog RWQMPs have requirements that are specific to that scheme.

The RWQMP references the *Procedure – Managing Legal and Other Requirements* (HW2012-441/23/1.029 version 5 dated 22/11/2019) which was provided and included information on accessing legislative requirements, ensuring changes are reported to key staff, updating the register and determining how changes affect Hunter Water

The RWQMP references the *Quality Register – Legal and Other Requirements* which was provided and identifies legislation and standards related to recycled water.

Position descriptions for key staff involved in recycled water include requirements to comply with legislation and guidelines including AGWR and the RWQMPs. Position descriptions were provided for:

- > Manager Network Operations
- > Manager Wastewater Treatment Operations

> Team Leader Alternative Water

Partnerships and engagement of stakeholders

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to identify all agencies with responsibilities for water resources and use of recycled water; regularly update the list of relevant agencies, establish partnerships with agencies or organisations as necessary or where this will support the effective management of recycled water schemes, identify all stakeholders (including the public) affecting, or affected by, decisions or activities related to the use of recycled water, engage users of recycled water; ensure responsibilities are identified and understood, develop appropriate mechanisms and documentation for stakeholder commitment and involvement.

Hunter Water have the following in place to engage and establish partners with stakeholders:

- > Key stakeholders are identified in Hunter Water's Corporate, Branxton and Dungog RWQMPs
- > Hunter Water have customer agreements with each recycled water end user and hold annual site meetings with each customer as well as informal and formal communications as required (customer agreements for Branxton and Dungog provided as evidence)
- > Hunter Water engage with NSW Health through the quarterly liaison meetings. Minutes of Liaison Meeting held on 1/06/2022 was provided as evidence.
- > Hunter Water review each RWQMP every 5-years

Position descriptions for key staff involved in recycled water include requirements to engage and develop relationships with key stakeholders including regulators and recycled water customers.

Recycled water policy

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to develop a recycled water policy, endorsed by senior managers, to be implemented within an organisation and ensure that the policy is visible and is communicated, understood and implemented by employees and contractors.

Hunter Water's Recycled Water Policy (v4.0, dated 10/11/2020) outlines the strategic intent relating to recycled water and the obligations of all managers and employees. The policy was updated on 10/11/2020. It is implemented through the Corporate RWQMP which requires the Policy to be available on Hunter Water's internet and intranet sites. The Policy could be easily found on the internet and during the interviews staff were able to quickly locate on the intranet. The policy meets the requirements of the AGWR. There is a minor error in the Corporate RWQMP as the link to the Policy on Hunter Water's webpage is incorrect. This is not considered a shortcoming as the same versions of the Policy were available on the internet, intranet and at Branxton WWTW during the site visit. This minor document error is discussed further under Element 10.

Element 2: Assessment of the recycled water system

Intended uses and source of recycled water

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to identify sources of water, identify intended uses, routes of exposure, receiving environments, endpoints and effects and consider inadvertent or unauthorised uses.

Section 2.2.1 of the Branxton and Dungog RWQMPs identify sources of wastewater for each scheme. Trade waste is limited to small commercial customers and there are no major trade waste customers. Individual trade waste customers are therefore not identified which is considered appropriate. The Branxton and Dungog risk assessment reports provide more detail on trade waste volumes.

Table 2-1 of the Branxton and Dungog RWQMPs describe the intended, and potential non-intended, uses of recycled water at each customer site. Table 2-1 of the Corporate RWQMP shows end uses for all recycled water schemes. These end users were consistent with those in the risk assessment.

The Branxton and Dungog risk assessment reports also identify routes of exposure and different groups that could be exposed as well as the health and environmental hazards and causes of inadvertent or unauthorised uses.

Target log reduction values have been developed based on the routes of exposure and the AGWR and are provided in Table 2-1 of the Branxton and Dungog RWQMPs. Log reduction values are based on the AGWR or validation by the equipment supplier.

Recycled water system analysis

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to assemble pertinent information and document key characteristics of the recycled water system to be considered, assemble a team with appropriate knowledge and expertise, construct a flow diagram of the recycled water system from the source to the application or receiving environments and periodically review the recycled water system analysis.

Table 2-3 of the Branxton and Dungog RWQMPs includes the team involved in the risk assessments. The team is also provided in the risk registers. The team included representatives of NSW Health, NSW EPA, Hunter Water and Veolia.

The Branxton and Dungog RWQMP include an overall block flow diagram from catchment to end user prepared by Hunter Water (Figure 2-1 in each RWQMP). A more detailed flow diagram of the treatment process is also included (Figure 2-2 in each RWQMP). The Branxton flow diagram was reviewed during the site visit and was consistent with the current treatment process.

Assessment of water quality data

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to assemble historical data about sewage, greywater or stormwater quality, as well as data from treatment plants and of recycled water supplied to users; identify gaps and assess reliability of data; and assess data (using tools such as control charts and trends analysis) to identify trends and potential problems.

A summary of recycled water quality at the point of supply to each customer is provided in Table 2-5 of the Branxton and Dungog RWQMPs.

An internal memo titled Recycled Water – Water Quality Data Analysis Methodology, for Recycled Water Quality Risk Assessments (HW2008-1595.067, dated 24/9/2020) provides a data analysis methodology to be undertaken as part of recycled water risk assessments. The requirements for data analysis included in the memo are appropriate.

Hazard identification and risk assessment

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to:

- > Define the approach to hazard identification and risk assessment, considering both public and ecological health
- > Periodically review and update the hazard identification and risk assessment to incorporate any changes
- > Identify and document hazards and hazardous events for each component of the recycled water system
- > Estimate the level of risk for each identified hazard or hazardous event
- > Consider inadvertent and unauthorised use or discharge
- > Determine significant risks and document priorities for risk management
- > Evaluate the major sources of uncertainty associated with each hazard and hazardous event and consider actions to reduce uncertainty, apart from minor shortcomings identified with inconsistencies across risk documentation.

Hunter Water schedules risk reviews based on a risk assessment review calendar agreed with NSW Health at the quarterly meetings. Each site is reviewed approximately every 5 years or when there is change to the preventative measures or intended use. A screenshot of the risk assessment calendar was provided as evidence of the schedule and shows the calendar that covers the audit period was sent to NSW Health on 19/5/2021. Minutes of the Hunter Water-NSW Health quarterly liaison meetings on 1/6/2022, show discussion on the risk assessments for Branxton, Clarence Town and Cessnock.

The Corporate RWQMP defines the methodology for identifying hazards and quantifying risks using the Enterprise Risk Management (ERM) framework.

Element 4: Operational procedures and process control

Operational procedures

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to identify procedures required for all processes and activities applied within the whole recycled water system (source to use) and document all procedures and compile them into an operations manual.

Operational procedures are documented in TRIM and Veolia's Hunter Water Portal,

Procedures relevant to the treatment plants and product water tanks located within the treatment boundary are prepared and managed by Veolia. The procedures are located within the plant operating manuals. The Plant Operating Manual - Branxton WWTW (MAN-2954-1), dated 19/6/2018) and the Plant Operating Manual -Dungog WWTW (MAN-2960-2), dated 4/3/2022) were provided as evidence. The Branxton Plant Operating Manual is overdue for review which was due on 19/6/21. This is discussed further under Clause 3.22. Element 10.

The Plant Operating Manuals included procedures existed for operation of each process unit, isolations for maintenance, plant start-up/shutdown, sampling equipment inspection, monitoring and maintenance of online instruments.

The procedures were considered adequate to cover all aspects of the Branxton and Dungog WWTWs.

Operational monitoring

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to develop monitoring protocols for operational performance of the recycled water supply system, including the selection of operational parameters and criteria, and the routine analysis of results and document monitoring protocols into an operational monitoring plan.

The Branxton WWTW Sampling Guide Sheet (TEM-2908, dated 12/6/2018) and Dungog WWTW Sampling Guide Sheet (TEM-2916, dated 22/2/2021) include process and compliance monitoring. The sampling calendars for each plant show the dates for collection of weekly, monthly and quarterly samples during the audit period. Weekly operator duties sheets for Dungog (TEM-3124-2, dated 20/9/2021)) and Branxton (TEM-3148-2, dated 4/11/2021) were also provided and visual observations and instrument checks to be undertaken each day. The Branxton WWTW Sampling Guide Sheet provided as evidence was overdue for review which was due on 12/6/21. This is discussed further under Clause 3.2. Element 10.

The Branxton WWTW SCADA scheme continuously monitors online analytical instrumentation including CCPs and position of valves.

Operational corrections

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to establish and document procedures for corrective action where operational parameters are not met and establish rapid communication systems to deal with unexpected events.

The Procedure – Recycled Water Quality Incident Notification & Response (WR5271, v8, dated 19/9/2022) is applicable to both Hunter Water's Treatment Operations Contractor and laboratory contractor. This plan also includes a table of notifiable events and responses.

The Standard - Recycled Water Quality Monitoring and Communication (HW2008-1592/6/1.019, V5.0 dated 21/9/2022) provides communication protocols between the Treatment Operations Contractor and Hunter Water. Triggers for recycled water quality and actions are provided for each recycled water scheme.

Equipment capability and maintenance

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to maintain a system to ensure that equipment performs adequately and provides sufficient flexibility and process control and establish a program for regular inspection and maintenance of all equipment, including monitoring equipment.

Schedules for calibrations are accessed through VAMS, the Treatment Operations Contractors asset management systems. The status of monthly schedules for Branxton and Dungog WWTWs were provided as evidence.

Plant Operating Manual – Branxton WWTW (MAN- 2954-1) and Plant Operating Manual – Dungog WWTW (MAN-2960-2) provide instructions for inspections, cleaning and calibration of online instruments for each plant.

Asset management is audited in Clause 4.1.

Materials and chemicals

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to maintain a system to ensure that only approved materials and chemicals are used and establish documented procedures for evaluating chemicals, materials and suppliers.

An approved products list based on the Water Services Association of Australia (WSAA) guidelines for materials and protective coatings for water and sewer is linked from Hunter Water's website.

The Treatment Operations Contractor has work instructions from ordering, delivery and testing of each chemical used at the WWTWs. Work instructions for aluminium sulphate, ferrous chloride, sodium hydroxide and polymer were provided as evidence.

Veolia have specifications for quality of bulk chemicals used at WWTWs and recycled water plants.

Element 5: Verification of recycled water quality and environmental performance

Recycled water quality monitoring

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to establish and document a sampling plan for each characteristic in the distribution system and water as supplied to the customer (including the location and frequency of sampling) and ensure monitoring data are representative and reliable.

The recycled water monitoring plan is provided within each RWQMP and repeated in the Recycled Water Quality Monitoring and Communication (HW2008-1592/30/4.004, v5.0, dated September 2022). The monitoring tables in the Monitoring Plan and the Branxton RWQMPs were reviewed, weekly monitoring of *Enterococci* was in the Monitoring Plan but not in the RWQMP. Weekly *Enterococci* analysis was included in the Branxton WWTW schedule from the laboratory contract. During the audit interviews, Hunter Water explained that the monitoring summary in the Branxton RWQMP is the minimum required in the AGWR. There is an opportunity for improvement to make it clear that the monitoring in the RWQMPs is the minimum and additional monitoring may be included in the monitoring plan (OFI 2022/3.2.1-1).

Samples are collected by either Veolia or the laboratory contractor. Veolia manage their sampling through a guide sheet which defines the frequency and location of each sample and a sampling calendar which defines the date that weekly, monthly and quarterly samples are collected. The Guide Sheet 13 – Branxton WWTW Sample Monitoring (TEM-2908-1, dated 12/6/2018) and the Branxton WWTW Sampling Calendar (TEM-2883-4) were reviewed and were consistent with the monitoring plan in the Branxton RWQMP. The Guide Sheet – Dungog WWTW Sample Monitoring (TEM-2913-2, dated 22/02/2021) and the Dungog WWTW Sampling Calendar (TEM-2885-4) were also reviewed and were consistent with the monitoring plan in the Dungog RWQMP.

It was noted that the sampling guide sheet states it is to be reviewed 3-yearly and the Branxton guide sheets was therefore due for review on 12/6/2021. This is discussed further under Element 10.

Samples are analysed by Hunter Water's laboratory contractor (currently ALS). Results that are outside the required limits are automatically emailed to an email group within Hunter Water and Veolia. Veolia record monitoring data in spreadsheets used for creating trends of each parameter. A weekly report is also provided to Hunter Water with tables of each recycled water site analysis highlighting results that are outside the required limits.

Application site and receiving environment monitoring

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to determine the characteristics to be monitored and the points at which monitoring will be undertaken.

Hunter Water manage the required monitoring at external application sites through the recycled water customer agreements. The requirements in the agreements for the customers at Branxton and Dungog include:

- > An initial site survey of soil characteristics and potentially affected ground water and local water ways in close proximity to the site
- > Ongoing monitoring of the sites' soil, groundwater and potentially affected local waterways
- > Nutrient, hydraulic and organic load calculations
- > Preparation of a site management plan

Hunter Water undertake annual site visits to each recycled water customer including discussion on monitoring.

Documentation and reliability

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to establish and document a sampling plan for each characteristic, including the location and frequency of sampling, ensuring that monitoring data is representative and reliable as discussed in the Recycled Water Quality Monitoring component above.

Satisfaction of users of recycled water

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to establish an inquiry and response program for users of recycled water, including appropriate training of people responsible for the program.

The Corporate RWQMP stated that Hunter Water reviews recycled water customer satisfaction annually through the annual site visits. Reports are prepared following these visits. The customer agreements also include a Hunter Water contact. During the audit interviews, Hunter Water advised that the customers have been provided with a group email to contact operations staff.

Hunter Water has established an email group by which customers can contact personnel directly involved in recycled water scheme operation.

Hunter Water's call centre can also receive enquiries or complaints about recycled water. Staff in the call centre are trained in recycled water.

The Hunter Water Customer Contract includes descriptions of recycled water and provides contacts for complaints and enquiries.

Short-term evaluation of results

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to establish procedures for the short-term review of monitoring data and satisfaction of users of recycled water and develop reporting mechanisms internally and externally, where required.

The laboratory contractor (ALS) provides immediate notification of any microbiological monitoring exceedances and Veolia provide weekly reports on recycled water quality.

Corrective responses

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to establish procedures for the short-term review of monitoring data and satisfaction of users of recycled water and develop reporting mechanisms internally and externally, where required.

The corrective responses are described in the Corporate RWQMP and the Internal Standard - Recycled Water Quality Monitoring and Communication (HW2008-1592/6/1.019 v5.0 dated 21/9/2022) and the Recycled Water Quality Incident Notification and Response Procedure (HW2008-1592/8/2.002, v8.0 dated 19/9/2022). The requirements of these three documents are consistent.

Following any confirmation of exceedances of any trigger values, immediate resampling is required. Depending on the nature of the breach and median results the supply of recycled water may cease and may only recommence with water is back within specification. Notifiable incidents are described in Table 2 of the Recycled Water Quality Incident Notification and Response Procedure.

For notifications that do not trigger a formal incident, these are notified to Hunter Water by Veolia as Early Warnings. These are notified to the relevant stakeholders via the recycled water notification group email.

Element 6. Management of incidents and emergencies

Communication

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to define communication protocols with the involvement of relevant agencies and prepare a contact list of key people, agencies and stakeholders and develop a public and media communications strategy.

Communication during incidents and emergencies is described in the Internal Standard - Recycled Water Quality Monitoring and Communication (HW2008-1592/6/1.019 v5.0 dated 21/9/2022) and the Recycled Water Quality Incident Notification and Response Procedure (HW2008-1592/8/2.002, v8.0 dated 19/9/2022). These documents describe internal communication and notification to external agencies and end users. All incidents (including those that are not notifiable to NSW Health) are to be logged in Integrum. The

requirements of both these documents are consistent. They are consistent with the overarching Emergency Communication Plan (v5 dated October 2021) that covers all incidents and emergencies.

The treatment operations contractor also has an Incident Notification Protocol (TEM-2800-3, v3 dated 28/2/2022) and an Emergency Contact List (TEM-2802-9, v9 dated 24/3/2022). These documents cover the contractor's internal communications and reporting to Hunter Water.

Incident and emergency response protocols

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to develop incident and emergency response protocols including:

- > defining potential incidents and emergencies and document procedures and response plans with the involvement of relevant agencies.
- > train employees and regularly test emergency response plans.
- > investigate any incidents or emergencies and revise protocols as necessary

Hunter Water have a Corporate Emergency Management Plan (HW2007-900/27/19, v10 dated September 2022). This Plan defines the following:

- > Incident category definitions
- > Emergency management team roles
- > Incident escalation and de-escalation
- > Incident management process
- > Key contact lists
- > Incident recording
- > Communication with the public and media

More specific emergency management is described in the Recycled Water Quality Incident Response Procedure (HW2008-1592/8/2.002, v7 dated 16/9/2022) which includes definitions for an incident and a notifiable event as well as detailed procedure to following during an incident.

Hunter Water also has a Pollution Incident Response Management Plan (PIRMP) for each WWTW with an Environment Protection Licence.

The Corporate RWQMP notes that incident response training and exercises are undertaken and while they may not be specifically focused on recycled water, they train staff on the incident response procedures.

Element 7. Operator, contractor and end user awareness and training

Operator, contractor and end user awareness and involvement

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to develop mechanisms and communication procedures to increase operator, contractor and end user awareness of, and participation in, recycled water quality management and environmental protection.

Section 7 of the Corporate RWQMP states that Hunter Water will provide training to relevant staff to raise awareness of:

- > Recycled Water Policy
- > Principles of risk management
- > The recycled water supply system
- > Regulatory and legislative requirements
- > The roles and responsibilities of employees and departments; and
- > Their involvement in recycled water quality

The following methods described in the RWQMP are appropriate:

- > Induction programs
- > Risk workshops

- > Guidelines and manuals
- > Divisional updates
- > SOPs
- > RWQMPs
- > Meetings
- > Committees.

Contractors including Veolia are included in this training and provide scheme specific training on operation of the treatment plants for their own staff.

End users are made aware of recycled water restrictions and requirements through the customer agreements and annual site visits.

Information and fact sheets on recycled water including dual reticulation are available on Hunter Water's website.

Operator, contractor and end user training

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to:

- > Ensure that operators, contractors and end users maintain the appropriate experience and qualifications.
- > Identify training needs and ensure resources are available to support training programs.
- > Document training and maintain records of all training sessions

Section 7.2.1 of the Corporate RWQMP states that as a minimum all staff undertake an induction which includes where necessary a site-specific induction. All recycled water operators are required to undertake training on recycled water quality, the recycled water policy, procedures and the RWQMPs.

Contractors including the treatment operations contractor (Veolia) are selected based on their qualifications and experience for the work to be carried out. Practice Note PN102 Operator Competency (HW2013-215/11, v1.0 dated September 2013) which requires Veolia to ensure operators hold or are working towards Certificate III in Water Industry Operations. Veolia also provide training on:

- > Hunter Water Operating Licence
- > Contractor's responsibilities under the contract with Hunter Water
- > Recycled Water Awareness
- > CCPs
- > Critical limits
- > Operational monitoring
- > Corrective action
- > Notification (customer, health, Hunter Water, EPA); and
- > How to find CCPs and limits at each site.

Veolia determine training needs and maintain records of operator training which is included in the monthly report to Hunter Water. The training provided by Veolia for operation of the recycled water schemes is considered appropriate.

Training for recycled water end users is outlined in the customer agreements. The customer agreements for The Vintage, Branxton Golf Club and Cooreei Farm were provided as evidence and included:

- > Requirement for a recycled water management plan approved by Hunter Water
- > Prepare a recycled water safety information sheet and provide to all employees and contractors

Element 9: Validation, research and development

Validation of processes

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to validate processes to ensure they control hazards effectively and revalidate processes when variations in conditions occur.

Validation of procedures are documented in the scheme specific RWQMPs and the Validation Testing Program for Water Recycling Schemes (v1.4, dated October 2020).

The validation testing program was undertaken for all processes that could not be validated based on pre-validated processes including traditional wastewater treatment technologies (activated sludge, trickling filters etc.) and package treatment units that were not pre-validated. The testing used somatic coliphage for viral pathogens, *C. perfringens* for protozoan pathogens and *E. coli* for bacterial pathogens as surrogates which will provide more log reduction than the target pathogens. The methodology for calculating log reduction values is consistent with the AGWR.

Validation for Branxton WWTW is described in the site specific RWQMP and the Branxton WWTW Reuse Validation Report (BX-RT-PT-011, v0 dated 4/10/2011) prepared during design and construction of the plant. This describes the overall validation of the plant including process units validated from literature or from vendor certification.

Section 9.1 of the Corporate RWQMP states that new systems are subject to a period of validation monitoring during the commissioning stage and validation monitoring will be repeated when new equipment, controls or procedures are introduced. In the 2020/21 audit report there was opportunity for improvement to repeat the validation testing program at frequencies for each process and scheme based on the risk of changes to the LRV over time (OFI 2021/3.2.1-1). This OFI is still incomplete and is still valid.

Design of equipment

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to validate the design of new equipment and infrastructure to ensure continuing reliability.

Section 9.2 of the Corporate RWQMP states that new equipment or infrastructure is validated prior to implementation and is then documented in the scheme RWQMPs. The Branxton and Dungog RWQMPs did not have any new equipment in the reporting period.

Investigative studies and research monitoring

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to establish programs to increase understanding of the recycled water supply system and use this information to improve management of the recycled water supply system.

Section 9.3 of the Corporate RWQMP states that Hunter Water stays aware of broader recycled water issues by maintaining membership of industry bodies including Water Research Australia and the Water Services Association of Australia as well as maintaining connections with other water utilities.

Hunter Water also holds a Quarterly Liaison Meeting with NSW Health where there is a new or emerging issues standing agenda item. Minutes of Liaison Meeting held on 1/6/2022 was provided as evidence.

As knowledge gaps are identified Hunter Water reviews their priority to ensure future research is focused on public health and the environment.

Element 10: Documentation and reporting

Management of documentation and records

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to document information pertinent to all aspects of recycled water quality management, develop a document-control system to ensure current versions are in use, establish a records-management system, ensure that employees are trained to complete records and periodically review documentation and revise as necessary.

Hunter Water uses Content Manager (formerly TRIM) for the management of records related to recycled water. The RWQMP requires that all staff are trained in record keeping.

RWQMPs are reviewed regularly, and the next review date is recorded in the Integrated Management System (IMS) Standard. RWQMPs are reviewed as part of major scheme changes and at least once

throughout the term of the Operating Licence (every 5 years). The Corporate, Branxton and Dungog RWQMPs were all reviewed in September 2022.

Veolia manage all documents in an electronic document control system. All documents are reviewed every three years. Critical documents related to the Hunter Water treatment operations contract are provided as links on Veolia's Hunter Water Portal.

As noted under Clause 3.2.1 Element 5 there is a minor shortcoming that the following documents provided as evidence were past their review date (Recommendation 2022/3.2.1-1):

- > Guide Sheet – Branxton WWTW Sample Monitoring was due for its three yearly review on 12/6/2021. While overdue for review, the content was still consistent with the monitoring plan and the RWQMP.
- > The Plant Operating Manual – Branxton WWTW Sample Monitoring was due for its three yearly review on 19/6/2021. While it was overdue the procedures were still considered adequate.

The following minor errors were noted in the documents provided:

- > RWQ incident response procedure and Internal Standard RWQ Monitoring and Communication (HW2008-1592/6/1.019. v5.0) have different date in the document control table and the page footers
- > The following minor errors in the Corporate RWQMP (OFI 2022/3.2.1-2)
 - o Link to Recycled Water Policy in Section 1.4.1 does not link to the correct internet page
 - o Cover page is dated August 2022 and document control table is 1 September 2022

Reporting

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to establish procedures for effective internal and external reporting, and produce an annual report aimed at users of recycled water, regulatory authorities and stakeholders.

Veolia have a requirement to produce weekly Recycled Water Summary Reports that are circulated to key Hunter Water and Veolia staff and flags results that require further action. Reviews and audits of management systems are stored in Content Manager and circulated to key staff within Hunter Water.

Hunter Water undertakes the following external communication on recycled water:

- > Quarterly Liaison Meetings with NSW Health
- > Quarterly Drinking Water and Recycled Water Quarterly Exceptions report to NSW Health
- > Annual Compliance and Performance Report (water quality) for IPART and NSW Health
- > National Performance Report (NPR) to IPART and,
- > Annual Information Return to IPART
- > Annual site visit meetings with each recycled water end user.
- > Recycled water quality summaries to end users

Element 11: Evaluation and audit

Long-term evaluation of results

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to collect and evaluate long-term data to assess performance and identify problems and document and report results.

Historical recycled water quality results were reviewed as part of the risk assessments for each scheme and are provided in the briefing documents for each scheme. The Corporate RWQMP states that Hunter Water also review the scheme RWQMPs every five years which includes review of emerging issues and trends identified through monitoring results.

As part of the monthly operations meetings between Hunter Water and Veolia, long term data is reviewed and discussed.

Audit of recycled water quality management

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements to establish a process for internal and external audits and document and communicate audit results.

Section 11.2.1 of the Corporate RWQMP states that internal audits are scheduled as part of the Second Line of Defence (2LOD) in the IMS. Once scheduled, the audits are entered into the Recycled Water Improvement Plan for tracking. The 2LOD audit program for the audit period was provided as evidence and showed RWQMS audits of Branxton and Clarence Town scheduled for April 2022.

The RWQMS is also subject to the operational licence audit (this report).

Element 12: Review and continuous improvement

Review by senior management

Hunter Water has provided sufficient evidence to demonstrate it has met the AGWR requirements for senior managers review of the effectiveness of the management system and evaluate the need for change.

Section 12.1.1 of the Corporate RWQMP states that the ongoing improvement and review is facilitated through a number of processes including quarterly Hunter Water and NSW Health Liaison Committee Meetings and monthly operational meeting with Veolia

A quarterly Integrated Management System Review Meeting is held with the Executive Management Team (EMT) to report on the performance of all management systems including recycled water.

Hunter Water have monthly Collaborative Management Group meetings with Veolia on the treatment operations contract. Recycled water quality management improvement plan. Hunter Water also have annual Executive Leadership Group meetings with Veolia.

Recommendations

Recommendation 2022/3.2.1-1: By 30 September 2023, set an evidence-based KPI for currency of Veolia documents used under the operations and maintenance contract. This KPI shall be set at an achievable level (commensurate with document criticality) that does not compromise Hunter Water or Veolia’s ability to satisfy its licence and other obligations.


Opportunities for improvement

OFI 2022/3.2.1-1. Clarify in the site specific RWQMPs that the verification monitoring summaries represent the minimum requirements and additional monitoring may be included in the Recycled Water Quality Monitoring Plan.

OFI 2022/3.2.1-2: Correct minor documentation errors described under Element 10.

Clause 3.2.2

Table 3-4 Clause 3.2.2 compliance grade

Subclause	Requirement	Compliance grade
Clause from 2017-2022 operating licence (1 November 2021 to 30 June 2022)		
3.2.2	Hunter Water must ensure that the Recycled Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the Recycled Water Quality Management System, and to the satisfaction of NSW Health.	 Compliant (minor shortcomings)
Clause from 2022-2027 operating licence (1 July 2022 to 31 October 2022)		
16(3)	Hunter Water must fully implement the Recycled Water Quality Management System and carry out all relevant activities in accordance with the Recycled Water Quality Management System, and to the reasonable satisfaction of NSW Health.	
Risk	Target for full compliance	
If Hunter Water does not carry out activities in accordance with its own RWQMS, there is a very high risk that the water supplied to customers will not meet quality standards for	Hunter Water must provide evidence that it fully implemented its RWQMS throughout the audit period and that all relevant activities were carried out in accordance with its RWQMS.	

recycled water, leading to significant public health impacts.

Hunter Water must provide evidence to show that NSW Health was satisfied with Hunter Water's implementation of the RWQMS.

Summary of reasons for grade

Hunter Water has demonstrated that it has implemented its Recycled Water Quality Management System, apart from a minor shortcoming as the pH buffers at Branxton WWTW were passed their expiry dates. These buffers are used to calibrate the bench pH instrument which in turn is used to verify the online pH instrument that monitors the performance of the critical control point (CCP). The discrepancy between the online and laboratory pH results was not large enough to be above the CCP critical limit and was therefore only considered a minor shortcoming.

This clause is graded Compliant (minor shortcomings).

Discussion and notes

Hunter Water implements the RWQMP through a combination of Hunter Water operations and maintenance teams and contractors. Veolia Water Operations (VVO) are contracted to operate and maintain the treatment sites generally from the wastewater treatment works inlet to the point of supply to the recycled water customers. Hunter Water retain responsibility for the wastewater collection network (including trade waste) and formal relationships with regulators, customers and other stakeholders. Hunter Water are also responsible for capital upgrades of the treatment assets for increased capacity, asset replacement and to comply with changing standards.

Element 1: Commitment to responsible use and management of recycled water quality

Responsible use of recycled water

Hunter Water has provided sufficient evidence to demonstrate implementation of the RWQMPs requirements to involve agencies (i.e., stakeholders) with responsibilities and expertise in protection of public and environmental health and ensure that design, management and regulation of recycled water schemes is undertaken by agencies and operators with sufficient expertise.

Hunter Water provided the following evidence of engagement with these stakeholders on recycled water:

- > Audit of Corrie Farm recycled water management on 8/9/2022
- > Audit of Vintage Golf Course recycled water management on 10/3/2022
- > Audit of Vintage Golf Course recycled water management on 8/9/2022
- > Attendance sheet for Branxton recycled water risk assessment on 6/4/2022 which included representatives from NSW Health, EPA, Branxton Golf Club, Vintage Golf Club and Veolia
- > Attendance sheet for Clarence Town recycled water risk assessment on 6/4/2022 which included representatives from NSW Health, EPA and Veolia
- > Quarterly meetings between Hunter Water and the NSW Health Liaison Committee on 1/6/2022 accordance with the RWQMP.

A screen shot of end user communication spreadsheet showing phone conversations and formal communication with Branxton Golf Club, The Vintage and Cooreei Farm during the audit period.

Hunter Water has position descriptions for all key staff involved in the operation of recycled water schemes that include training requirements specific to recycled water and requirements to comply with the RWQMP. Position descriptions for Manger Water Network Operations, Manager Wastewater Treatment Operations and Team Leader Alternative Water were provided as evidence and considered appropriate.

Hunter Water also provided the following from VVO specific to the Hunter Water treatment operations contract:

- > Skills and competency matrix for WWTW operators
- > Extract from the July 2022 monthly report showing progress on training and qualifications
- > Recycled water training register
- > Presentation for training in Branxton CCPs.
- > Training records for Branxton and Dungog WWTWs

Regulatory and formal requirements

Hunter Water has provided sufficient evidence to demonstrate implementation of the RWQMPs requirements to identify and document all relevant regulatory and formal requirements, identify governance of recycled water schemes for individual agencies, designers, installers, operators, maintainers, owners and users of recycled water, ensure that responsibilities are understood and communicated to designers, installers, maintainers, operations employees, contractors and end users and review requirements periodically, to reflect any changes.

Minutes of quarterly meetings between Hunter Water and the NSW Health Liaison Committee on 1/6/2022 was provided.

Position descriptions for key staff involved in recycled water were provided and include requirements to comply with legislation and guidelines including AGWR and the RWQMP.

Partnerships and engagement of stakeholders

Hunter Water has provided sufficient evidence to demonstrate implementation of the RWQMPs requirements to identify all agencies with responsibilities for water resources and use of recycled water; regularly update the list of relevant agencies, establish partnerships with agencies or organisations as necessary or where this will support the effective management of recycled water schemes, identify all stakeholders (including the public) affecting, or affected by, decisions or activities related to the use of recycled water, engage users of recycled water; ensure responsibilities are identified and understood and develop appropriate mechanisms and documentation for stakeholder commitment and involvement.

Site visits and audits were conducted with the end user (Cooreei Farm) on 10/3/2022 and 8/9/2022. The attendance sheet and notes from this meeting was provided and representatives of NSW Health, EPA and Cooreei Farm were present.

End user agreements were provided for Branxton Golf Course, The Vintage Golf Club and Cooreei Farm. While the agreements for Branxton Golf Course and Cooreei Farm had expired, letters from Hunter Water to each end user to extend these agreements until a new agreement is executed were provided as evidence.

Letters to Branxton Golf Club, Vintage Golf Club and Cooreei Farm on 30/6/2022 were provided as evidence that Hunter Water had sent each end advising of new annual reporting to provide results of recycled water quality for the year. A copy of the spreadsheet of the Branxton annual recycled water quality was also provided.

A screen shot of the recycled water customer communication spreadsheet showed phone conversations and formal communication with Branxton Golf Club, The Vintage and Cooreei Farm during the audit period. The spreadsheet also records of site inspections of Branxton Golf Club on 10/3/2022 and The Vintage on 8/9/2022.

Minutes of the quarterly meetings with NSW Health on 1/6/2022 were provided and included discussion on recycled water quality exceptions and upcoming activities on recycled water systems.

Recycled water policy

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs requirements to develop a recycled water policy, endorsed by senior managers, to be implemented within an organisation and ensure that the policy is visible and is communicated, understood and implemented by employees and contractors.

Hunter Water's Recycled Water Policy outlines the strategic intent relating to recycled water and the obligations of all employees and contractors. The policy was updated on 20/11/2020 and uploaded to Content Manager. It is implemented through the Corporate RWQMP.

Hunter Water makes the policy available to all staff via Content Manager and is also provided to the treatment operations contractor to distribute to the recycled water sites. During the site visit to Branxton WWTW, the latest version of the policy was displayed inside the main entrance to the administration building. During the audit interviews, Hunter Water staff were able to locate the current version of the policy

It is also publicly available on the Hunter Water [website](#). The version of the policy on the website was the same as the copy provided as evidence.

Element 2: Assessment of the recycled water system

Intended uses and source of recycled water

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs to identify the sources of water, intended uses, routes of exposure, receiving environments, endpoints and effects and consider inadvertent or unauthorised uses.

Review of intended uses and sources of recycled water is undertaken as part of the RWQMP review process. During 2021/22 the RWQMPs for Branxton and Clarence Town were scheduled for review. The following evidence was provided that these reviews were undertaken during the audit period:

- > Branxton WWTW Recycled Water Quality Risk Assessment Update (dated April 2022)
- > Clarence Town WWTW Recycled Water Quality Risk Assessment Update (dated June 2022)

These documents included a description of the intended uses, routes of exposure, environment and inadvertent uses.

Due to an upgrade to Cessnock WWTW and proposed new end use of recycled water from Edgeworth WWTW, risk assessments for both these sites have been added to the review calendar for 2021/22 which is earlier than the minimum 5 yearly review. During the interviews, Hunter Water advised that the risk assessments for these two schemes are rescheduled to be completed in late 2022 outside the audit period.

Recycled water system analysis

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs to:

- > Assemble pertinent information and document key characteristics of the recycled water system to be considered
- > Assemble a team with appropriate knowledge and expertise
- > Construct a flow diagram of the recycled water system from the source to the application or receiving environments
- > Periodically review the recycled water system analysis.

Risk registers and briefing papers for the Branxton, Cessnock and Clarence Town schemes reviewed in the audit period were provided, which recorded the review attendees. This included representatives from the end users, NSW Health and Veolia.

During the site visit to Branxton WWTW, the process flow diagram (Figure 2-3 in the Branxton RWQMP) was reviewed, and the treatment process was consistent with the diagram.

Assessment of water quality data

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs to assemble historical data about sewage, greywater or stormwater quality, as well as data from treatment plants and of recycled water supplied to users; identify gaps and assess reliability of data and assess data (using tools such as control charts and trends analysis), to identify trends and potential problems.

Veolia maintains a spreadsheet for each recycled water scheme. These spreadsheets were provided for Branxton and Dungog and include automated exceptions for parameters outside operational or critical limits. These spreadsheets are used to produce 12 month rolling trends and each site is reviewed annually in the monthly report between Hunter Water and Veolia on the treatment operations contract. Minutes of the monthly meeting held on 12 April 2022 was provided and showed review of the long-term trends for the Karuah recycled water scheme.

The Branxton Recycled Water Risk Workshop Briefing (dated April 2022) included trends of total suspended solids, *E. coli* biochemical oxygen demand, pH, ammonia, total nitrogen, total phosphorus, chlorophyll-a and total dissolved solids. The methodology was consistent with the internal memo titled Recycled Water – Water Quality Data Analysis Methodology, for Recycled Water Quality Risk Assessments.

Hazard identification and risk assessment

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs to:

- > Define the approach to hazard identification and risk assessment, considering both public and ecological health

- > Periodically review and update the hazard identification and risk assessment to incorporate any changes
- > Identify and document hazards and hazardous events for each component of the recycled water system
- > Estimate the level of risk for each identified hazard or hazardous event
- > Consider inadvertent and unauthorised use or discharge
- > Determine significant risks and document priorities for risk management
- > Evaluate the major sources of uncertainty associated with each hazard and hazardous event and consider actions to reduce uncertainty, apart from minor shortcomings identified with inconsistencies across risk documentation.

The following evidence was provided of implementation of risk assessments:

- > Branxton WWTW Recycled Water Quality Risk Assessment Update (dated April 2022)
- > Clarence Town WWTW Recycled Water Quality Risk Assessment Update (dated June 2022)
- > Branxton and Dungog risk registers
- > Risk Driver Analysis Summary – Inability to manage recycled water (reviewed September 2021)

The risk assessment methodology and risk matrix used in this risk assessment is consistent with the methodology in the Corporate RWQMP.

Element 4: Operational procedures and process control

Operational procedures

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs to identify procedures required for all processes and activities applied within the whole recycled water system (source to use) and document all procedures and compile into an operations manual.

The process units covered in the Treatment Operations Contractors Plant Operating Manual – Branxton WWTW (MAN- 2954-1) were consistent with those viewed during the site inspection.

Operational monitoring

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs to develop monitoring protocols for operational performance of the recycled water supply system, including the selection of operational parameters and criteria, and the routine analysis of results and document monitoring protocols into an operational monitoring plan.

Completed inspection forms were viewed during the Branxton WWTW site visit and were completed to the date of the visit.

Completed Reservoir Inspection Forms using the latest version of the form were provided for the Morpeth product water tank for each month in the audit period and for Farley produce water tank on 8/9/2022. All sections of the forms were completed and comments entered where applicable.

Operational corrections

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs to establish and document procedures for corrective action where operational parameters are not met and establish rapid communication systems to deal with unexpected events.

Hunter Water advised that there were no CCP exceedances in the audit period for recycled water. Trends of CCPs for Branxton SCADA were viewed during the site visit and no exceedances were confirmed for the audit period. The Monthly Recycled Water Effluent Meeting agenda for 6/9/2022 was provided and includes items for discussion on recycled water exceedances (CCPs and/or quality).

An example of early warnings and incidents from Branxton on 3/11/21 and 26/3/2022 and Dungog on 3/4/2022 were provided. The incidents were related to compliance with the Environment Protection Licence and not recycled water and therefore did require compliance with Procedure – Recycled Water Quality Incident Notification & Response.

Equipment capability and maintenance

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs to ensure that equipment performs adequately and provides sufficient flexibility and process control and establish a program for regular inspection and maintenance of all equipment, including monitoring equipment.

Preventative maintenance schedules and completed work orders for instruments at Branxton and Dungog were provided as evidence. This showed work orders all work orders were completed to the schedule in the audit period including instruments used to monitor CCPs (e.g., turbidity, chlorine and UV intensity)

Completed work orders were also provided for product water tanks at Farley and Morpeth WWTWs.

During the site inspection, the benchtop and handheld instruments in the laboratory did not have stickers showing when they were last serviced. Following the site visit calibration certificates dated 9/11/21 were provided for all the instruments at Branxton WWTW.

During the site visit the pH 10 buffer used for calibration of the handheld pH meter was found to have expired in January 2022. Unopened bottles of the same buffer had the same expiry date. This pH meter is used for verification of online instruments including for CCP2. Expired pH buffer could cause the handheld instrument to incorrectly calibrate and potential problems with the online instrument may not be noticed. A review of online pH results and the effluent diversion chamber online instrument and results from the laboratory contractor showed that the discrepancy was not large enough to be above the CCP critical limit. The expired pH buffer is therefore considered to be a minor shortcoming (recommendation 2022/3.2.2-1).

More discussion on maintenance is included in Clause 4.1 Asset management system.

Materials and chemicals

Hunter Water has provided sufficient evidence to demonstrate implementation of its Recycled Water Quality Management System to ensure that only approved materials and chemicals are used and establish documented procedures for evaluating chemicals, materials and suppliers.

A certificate of analysis was provided for sodium bisulphite (3/8/2022). This was consistent with the requirement set in the technical specification for sodium bisulphite.

Hunter Water advised that no recycled water assets were constructed during the audit period and there are therefore no records of inspections.

Element 5: Verification of recycled water quality and environmental performance

Recycled water quality monitoring

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements of their Recycled Water Quality Management Plan to establish and document a sampling plan for each characteristic in the distribution system and water as supplied to the customer (including the location and frequency of sampling) and ensure monitoring data are representative and reliable.

All sampling results are recorded by Veolia in the recycled water quality trends spreadsheets. The spreadsheets and trend graphs for Branxton and Dungog WWTW were reviewed the analysis required by the recycled water monitoring plan was recorded.

Hunter Water an email from the laboratory contractor (ALS) to inform Hunter Water that the *Clostridium perfringens* result on 7/9/2022 was above the upper limit in the contract.

Application site and receiving environment monitoring

Hunter Water has provided sufficient evidence to demonstrate implementation of its Recycled Water Quality Management Plan to determine the characteristics to be monitored and the points at which monitoring will be undertaken.

Site visits were conducted with the all-end users at Branxton and Dungog during the audit as shown below.

- > Cooreei Farm (Dungog) on 10/3/2022 and 8/9/2022
- > The Vintage Golf Club (Branxton) on 8/9/2022
- > Branxton Golf Club (Branxton) on 10/3/2022

Documentation and reliability

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs (establish and document a sampling plan for each characteristic, including the location and frequency of sampling, ensuring that monitoring data is representative and reliable) as discussed under Element 5, Recycled Water Monitoring section above.

Satisfaction of users of recycled water

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs to establish an inquiry and response program for users of recycled water, including appropriate training of people responsible for the program.

Short-term evaluation of results

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs to establish procedures for the short-term review of monitoring data and satisfaction of users of recycled water and develop reporting mechanisms internally and externally, where required.

An example of an email from ALS for exceedance of a trigger was provided during the audit interviews.

Copies of Veolia's recycled water quality trends for Dungog and Branxton WWTWs were provided as evidence and included data up to 10/11/2022. The trends show the Environment Protection Licence and recycled water limits. The limits used in this report are consistent with the trigger levels in the monitoring plan in the Branxton and Dungog RWQMP and the Recycled Water Incident Notification and Response procedure. Review of the trends spreadsheet did not show any exceedance of trigger values during the audit period.

Corrective responses

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs to establish and document procedures for corrective responses to nonconformance or feedback from users of recycled water and establish rapid communication systems to deal with unexpected events.

Refer to discussion above in Short-term evaluation of results and Element 3 Preventative Measures.

Hunter Water provided Early Warning reports from Veolia to Hunter Water for pH below the CCP target limit upstream of the chlorine contact tank at Branxton WWTW on 3/11/21. This report included initial response, root cause analysis and corrective actions.

Element 6. Management of incidents and emergencies

Communication

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs on communication protocols with the involvement of relevant agencies and prepare a contact list of key people, agencies and stakeholders and develop a public and media communications strategy.

There were three incident reports submitted by Veolia for Branxton and Dungog WWTWs. Two of these were for non-compliances with the Environment Protection Licence and there was an early warning notification for pH below the CCP target range at Branxton WWTW.

Hunter Water also provided an Integrum report for a *Clostridium* detection at the Morpeth recycled water treatment plant from samples collected on 7/9/2022. Analysis of the samples were received on 15/9/2022 and NSW Health were contacted on the same day. A follow up email to NSW Health on 16/9/2022 which included the Integrum report was also provided as evidence. The Integrum report was created on the same day the sample results were received and shows notification to internal stakeholders and NSW Health.

Incident and emergency response protocols

Hunter Water has provided sufficient evidence to demonstrate implementation of its RWQMPs on incident and emergency response protocols.

The incidents described above under Communication were managed and documented according to the process described in the Corporate Emergency Management Plan and the Recycled Water Quality Incident Response Procedure. All incident reports included a review of the incident to identify root causes and corrective actions to reduce the likelihood of future incidents.

Hunter Water provided the following evidence of training in incident management:

- > Completed competency assessment records for a call centre operator which included recycled water leaks, cross contamination
- > Training attendance sheet for call centre staff in recycled water dual reticulation
- > Training presentation of recycled water dual reticulation awareness

Hunter Water undertook an emergency exercise on 9/11/2021 which involved 35 staff. While this incident did not specifically include a recycled water scenario, the scenario involved multiple simultaneous events that could impact drinking water quality which would require similar reporting to NSW Health and other stakeholders. This exercise included staff involved in the delivery of recycled water.

While the corporate wide emergency exercise is effective at testing the response of multiple groups in the organisation, there is an opportunity for improvement (OFI 2022/3.2.2-3) to undertake more frequent desktop incidents specific to recycled water quality involving operators and managers directly involved in delivering recycled water.

Hunter Water also provided the Business Resilience – Yearly Commitments and Events Calendar. This calendar includes the due dates, responsibilities and tracking for all business resilience actions including the following:

- > Six monthly checks of Integrum integrity (incident categories, email lists etc.)
- > Annual review of critical asset contingency plans
- > Annual desktop exercise of major contingency plan

Element 7. Operator, contractor and end user awareness and training

Operator, contractor and end user awareness and involvement

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements of its RWQMPs to on mechanisms and communication procedures to increase operator, contractor and end user awareness of, and participation in, recycled water quality management and environmental protection.

Hunter Water provided a screenshot of the completion of recycled water awareness training which shows that 101 staff were trained during the audit period and there are currently 15 who are overdue for completion of the training. The number overdue is a small number with the number of Hunter Water staff and its contactors and is therefore considered acceptable.

Hunter Water also provided a copy of the training presentation for dual reticulation awareness training and list of TRIM records showing training for groups involved in operation and maintenance of the dual reticulation network.

Records of toolbox meetings of Veolia wastewater treatment staff on 2/2/2022, 31/3/2022, 31/8/2022 and 1/9/2022 which include discussion on recycled water performance.

Site visits and audits of end use sites were conducted at Branxton Golf Club on 10/3/2022, at The Vintage on 8/9/2022 and Cooreei Farm on 30/6/2022.

A copy of the recycled water induction register for Branxton Golf Club was provided and includes all staff that have received the induction including one person trained on 18/7/2022

Operator, contractor and end user training

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements of its RWQMPs to:

- > Ensure that operators, contractors and end users maintain the appropriate experience and qualifications.
- > Identify training needs and ensure resources are available to support training programs.
- > Document training and maintain records of all training sessions

A screenshot of Hunter Water's training matrix was provided which includes key asset and operations staff and shows the requirement for them to complete Integrum training, risk management training and recycled water awareness training.

Veolia's training matrix was also provided and shows all staff are required to undertake contract familiarisation policy and permit to work training. It also shows that plant operators must complete Certificate II and III in Water Operations and be trained in standard operating procedures.

The commissioning training plan for the new Dungog WWTW was provided though this training was undertaken outside the audit period. It shows training for Veolia operators, maintainers and supervision in the operation and maintenance of the new plant.

During the site visit to Branxton WWTW, the plant operators showed an excellent understanding of the plant including process control, operational challenges, CCPs and sample locations. During the site visit the daily duties sheet was completed and a completed permits to work were also provided including completion of the assessment of water quality risk.

Element 9: Validation, research and development

Validation of processes

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements of its RWQMPs to validate processes to ensure they control hazards effectively and revalidate processes when variations in conditions occur.

The Branxton RWQMP had log reduction values (LRVs) lower than in the Branxton WWTW Reuse Scheme Validation Report. During the interviews Hunter Water explained that the validation report claimed LRVs for the MBR consistent with current research which is described in the Branxton RWQMP.

Design of equipment

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements of its RWQMPs to validate the design of new equipment and infrastructure to ensure continuing reliability.

During the site visit of Branxton WWTW, the treatment process was consistent with the process flow diagram in the RWQMP, and no new equipment or infrastructure had been installed.

Investigative studies and research monitoring

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements of its RWQMPs to establish programs to increase understanding of the recycled water supply system and use this information to improve management of the recycled water supply system.

Evidence was provided as the minutes from the Quarterly Liaison Meeting with NSW Health on 21/6/2022, which had an agenda item on emerging issues though no issues were discussed at this meeting.

Evidence was also provided of Hunter Water's contribution to the following research studies undertaken by Water Research Australia:

- > Augmenting Water Bodies with Highly Treated Recycled Water (Project 3053/22). Initiation letter dated 15/2/2022 provided as evidence.
- > Assigning and Maintaining Appropriate Pathogen LRVs in MBRs (Project 3050/21). Initiation letter dated 20/9/2021 provided as evidence.

Element 10: Documentation and reporting

Management of documentation and records

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements of its RWQMPs to document information pertinent to all aspects of recycled water quality management and develop a document-control system to ensure current versions are in use, establish a records-management system and ensure that employees are trained to complete records and periodically review documentation and revise as necessary.

During the interviews, Hunter Water Staff were able to access Content Manger and link to documents related to recycled water. As evidence of training in record keeping, Hunter Water provided evidence list of 150 staff who completed TRIM training in the audit period of TRIM training records showing completion of Part 1 (29/3/2022) and Part 2 (5/8/2022) TRIM training.

During the site visit to Branxton WWTW, Veolia staff were able to access the Hunter Water Portal and demonstrate that the links opened the correct documents.

Reporting

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements of its RWQMPs to establish procedures for effective internal and external reporting and produce an annual report aimed at users of recycled water, regulatory authorities and stakeholders.

Evidence was provided that Hunter Water produced the reports required under their RWQMS and the IPART Reporting Manual.

Evidence was provided of minutes of quarterly Liaison meetings with NSW Health on 1/6/2022 which show discussion on presentation of recycled water.

Evidence was also provided of a recycled water quality report attached to letter to Branxton Golf Club on 30/6/2022 with the water quality from Branxton WWTW. This report water quality data from the last 12 months as well but no trends and commentary on whether water quality had exceeded trigger values (OFI 2022/3.2.2-2).

Weekly reports from Veolia dated 1/12/2021 to 29/12/2021 and 6/4/2022 to 27/4/2022 and Veolia monthly report from July 2022 were provided as evidence of internal reporting.

Element 11: Evaluation and audit

Long-term evaluation of results

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements of its RWQMPs to collect and evaluate long-term data to assess performance and identify problems and document and report results.

The Branxton RWQMP includes a summary of recycled water quality from 1/1/2018 to 23/3/2022.

Risk assessments for Branxton and Clarence Town RWQMPs were undertaken in April 2022. The briefing papers for these risk assessments included trends of water quality from October 2014 to December 2021.

The Branxton quality trend spreadsheets provided as evidence included data up to the end of September 2022. These spreadsheets included trends from October 2014 to September 2022 for each quality parameter with control lines for the limits where applicable.

The spreadsheets of long-term trends for Branxton and Dungog recycled water were provided as evidence. These spreadsheets included data from October 2014 to November 2022 and trends of this data were included. These trends showed critical limits and trendlines to show if the parameter was increasing or decreasing over time.

Audit of recycled water quality management

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements in its RWQMPs to establish a process for internal and external audits and document and communicate audit results.

Hunter Water provided the 2LOD IMS Audit Programme for 2021 and 2022 which shows all the management system audits under the Integrated Management System. This included audits of Branxton and Clarence Town in April 2022. A copy of the audit report both audits undertaken on 24/4/2022 was provided and shows the audit was undertaken to the scope in the audit schedule. Recommendations and opportunities were entered into the recycled water quality improvement plan where responsibility and due dates were assigned.

Element 12: Review and continuous improvement

Reviewed by senior management

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements of its RWQMPs for senior managers' review of the effectiveness of the management system and evaluate the need for change.

Minutes of the Hunter Water and NSW Health Liaison Committee Meetings on 1/6/2022 shows attendance by group managers and executive managers from Hunter Water. Reports on the recycled water improvement plan to the committee meetings on 1/12/2021, 2/3/2022 and 7/9/2022 were also provided.

Hunter Water have monthly Collaborative Management Group meetings with Veolia on the treatment operations contract. The agenda for the Collaborative Management Group meeting with Veolia on 13 October 2022 was provided as evidence and showed senior management from both Hunter Water and

Veolia on the invitation list. The agenda included items for review of operational performance, risk registers and strategic initiatives/continuous improvement.

The minutes of the IMS management meeting on 2/5/2022 were provided as evidence and show attendance of the managing director and group managers across different sections of Hunter Water including recycled water compliance. A presentation to the April IMS meeting shows review of the audit program, legal and other obligations procedure and Integrum closeout.

Recycled water quality management improvement plan

Hunter Water has provided sufficient evidence to demonstrate implementation of the requirements of its RWQMPs to develop a recycled water quality management improvement plan and ensure that the plan is communicated and implemented, and that improvements are monitored for effectiveness.

A screenshot of the improvement plan actions for Branxton and Dungog was provided as evidence. There were no items due in the audit period. The dashboard was viewed during the audit interviews.

A presentation on the recycled water improvement plan to the Hunter Water and NSW Health Liaison Committee Meeting on 1/12/2021, 2/3/2022 and 7/9/2022 was provided as evidence.

The agenda of the Recycled Water Quality Steering Committee meeting on 6/9/2022 showed items for discussion on upcoming and overdue items on the improvement plan.

Recommendations

Recommendation 2022/3.2.2-1: By 30 September 2023, develop a system to ensure that reagents used for recycled water analysis have not passed their expiry date.

Opportunities for improvement

OFI 2022/3.2.2-1: Develop a system to review recommendations from internal audits of recycled water and drinking water to determine if any should be implemented at other sites including between recycled water and drinking water sites.


OFI 2022/3.2.2-2: Add target ranges from RWQMP and customer agreements to annual recycled water quality data sent to recycled water customers.

OFI 2022/3.2.2-3: Schedule water quality desktop incident exercises every 6 to 12 months attended by key stakeholders and operations staff directly involved in producing recycled water.

Clause 4.1 – Asset management system

Clause 4.1.2

Table 3-5 Clause 4.1.2 compliance grade

Subclause	Requirement	Compliance grade
Clause from 2017-2022 operating licence (1 November 2021 to 30 June 2022)		
4.1.2	By 1 July 2018, Hunter Water must ensure that the Asset Management System is fully implemented and must, from that date, ensure that all relevant activities are carried out in accordance with the Asset Management System.	 Compliant (minor shortcomings)
Clause from 2022-2027 operating licence (1 July 2022 to 31 October 2022)		
21(2)	Hunter Water must fully implement, and carry out all relevant activities in accordance with, the Asset Management System.	
Risk	Target for full compliance	
If Hunter Water does not carry out activities in accordance with its own Asset Management System (AMS), there is a very high risk that Hunter Water will manage its assets poorly leading to higher costs and failure to meet the required service levels, including supplying water at the required quality, ensuring water continuity, protecting public health and safety and protecting the environment.	Hunter Water must provide evidence that it fully implemented its AMS throughout the audit period. That is, all of Hunter Water's activities that rely on or interact with the AMS (e.g., maintenance, risk management, training, etc.) were carried out in accordance with the AMS.	

Summary of reasons for grade

We found that Hunter Water had a sound and appropriate asset management system in place which is being continually improved. We noted that a number of improvements had been implemented since the 2021 audit which included a comprehensive facility asset condition assessment program with outputs being presented through dashboards. These will form part of the digital asset class asset management plans that are being developed.

The Compliance and Performance Report, September 2022 indicates continued improvement over the past five years against the Operating Licence system performance standards with performance well within standards. There were no non-conformances for the ISO 55001 audit noted in this year's surveillance audit. Minor shortcomings were observed during the ISO 55001 audit at the Kurri WWTW bulk chemical enclosures.

Hunter Water continues to develop its asset class management plans with efforts progressing to have real-time digital information. During the audit Hunter Water advised that they were proposing to make the asset class plans to be more interactive and up to date through developing digital plans where relevant. As an example, they provided a demonstration of their condition data dashboard.

We noted that there has been greater investment in preventative maintenance at the treatment plants from 2015 to 2021 which have decreased the level of breakdowns.

A comprehensive facility condition assessment program was undertaken during the audit period. Condition assessment of critical network mains is planned for this financial year. Information gained from these condition assessments will form the supporting evidence for the renewals program proposed in the 2024 Price Review.

It was pleasing to note the initiatives that Hunter Water has initiated to ensure climate resilience of its services in the future. These initiatives included:

- > Project Climate Risk Screening Guideline and spreadsheet-based Risk Screening Tool
- > Lower Hunter Water Security Plan
- > Climate risk vulnerability mapping pilot study

> Climate Health Maturity Health Check

The Asset Management Competency Framework consisting of an Asset Management System (AMS) Competencies and Asset Technical Competencies has been partially developed and is considered leading practice. During the audit interview we were advised that implementation of the Asset Management Competence Requirements Framework had been deferred due to operational budgetary constraints.

The following minor shortcomings were noted during the audit. They are not considered to materially impact on Hunter Water achieving its licence objectives.

- > Inconsistencies were observed in the terminology adopted for likelihood, consequence and risk and in some tables in the draft Reservoir Asset Class Management Plan and the terminology adopted in the Enterprise Risk Management Standard
- > Business continuity plan and work instruction reviews are not being undertaken by the due date. A listing of outstanding maintenance work instructions for review was provided which indicated that 19 of the 29 outstanding work instructions were already overdue for review in 2019, prior to COVID. Hunter Water are currently addressing weaknesses in the document control processes.

This clause is graded Compliant (minor shortcomings).

Discussion and notes

In assessing the level of compliance of Hunter Water's asset management system with the requirements of the Operating Licence, we evaluated:

- > Service performance including historical trends
- > Leadership and management commitment to asset management
- > Alignment of the asset management system with organisational objectives
- > The documentation hierarchy including the Strategic Asset Management Plan (SAMP), asset class and other plans/ procedures
- > Management of all phases of the asset lifecycle including asset decommissioning
- > Application of risk management to asset management decision making
- > Level of knowledge of the condition of the asset portfolio and actions to address and prioritise asset renewal to maintain service levels
- > Asset management awareness and competencies across the organisation
- > Asset management monitoring and review processes
- > Confirmation, through site visits, that the Asset Management System was being implemented in the field.

Hunter Water has a certified asset management system to ISO 55001. The original certification was issued on 11 July 2018 and is valid until 9 July 2023. Hunter Water successfully completed an ISO 55001:2014 surveillance audit of its certified asset management system in May 2022. The auditor commented that the Integrated Management System is maturing and is effective in consolidating contextual issues through a risk framework. Monitoring and measurement activities are embedded into operational functions. There were no non-conformances for the ISO 55001 audit noted in this year's surveillance audit. Minor shortcomings were observed during the ISO 55001 audit at the Kurri WWTW bulk chemical enclosures. Improvement opportunities identified during the ISO 55001 audit related to reporting to top management on contractor performance from audits and inspections and visibility of internal audits. During the audit interview, Hunter Water staff commented that seeking the optimal level of reporting to top management was an ongoing challenge as there was a risk of information overload.

We were provided with the WSAA Asset Management Customer Value (AMCV) 2020 Benchmark Report which benchmarked asset management practices across 19 Australian Water Utilities based on the 39 subject areas and guidance within the Asset Management Landscape, Global Forum on Maintenance and Asset Management (GFMAM). The project compared Hunter Water with other medium sized retailer water utilities which showed that Hunter Water is achieving the 75th percentile score (best performing quartile) for five out of the six subject groups.

Service performance

The Compliance and Performance Report, September 2022 indicates continued improvement over the past five years against the Operating Licence system performance standards with performance well within

standards. An increase from 940 properties in 2020-21 to 1,957 properties in 2021-22 (returning to the 2019-20 level) was reported for multiple unplanned water supply interruptions, but this was well within the licence standard of 5,000 properties.

Policy

Hunter Water's Asset Management Policy outlines the approach to managing the physical assets needed to provide services to customers and the community. The Asset Management Policy was approved on 9 October 2021 with the next review scheduled for October 2025.

These physical assets include raw water assets, treatment plants, water network assets, wastewater network assets, recycled water assets, stormwater assets, high and low voltage assets, telemetry and operational communication assets.

Assets managed under separate frameworks and excluded from the scope of the asset management system are information and communication technology (ICT) (not involved with telemetry and operational communication), fleet, depots, customer meters and property. Hunter Water is considering expanding the scope of the asset management system to incorporate ICT, fleet, water meters and property.

Asset Management System Steering Committee

The Asset Management System (AMS) Steering Committee meets every quarter and comprises senior management (generally at group or section manager level) from across the business. We were provided with the Terms of Reference for the Asset Management Steering Committee and the minutes of the May and August 2022 meetings which demonstrated that the committee has senior management involvement and a whole-of business and continual improvement approach to the implementation of the asset management system.

Strategic Asset Management Plan

The Strategic Asset Management Plan (SAMP) is an overarching document describing how services are to be provided through continual planning, delivery and management of assets. The SAMP has been reviewed and updated since the last audit with the main changes being a few changes to the objectives to better align with the Towards 2024 Business Plan and a listing of stakeholders and their requirements.

We found that the SAMP was a well written document of an optimal length and clearly and concisely meets the requirements set out in ISO 55001. The most recent version of the SAMP was approved on 14 November 2022.

Section 7 of the SAMP discusses integration with other management systems with section 7.4 outlining the role of the Environmental Management System (EMS). A review of Section 4.2 Environmental Management System in the Compliance and Performance Report 2022 indicates that there is some overlap between the asset and environmental management systems. Hunter Water could investigate the potential of the EMS to become Hunter Water's Natural Asset Management System (OFI 2022/4.1.2-1). Over the next few years, it is likely that sustainability will have an increased focus within Hunter Water and also within its asset management system.

Asset Class Management Plans

Hunter Water manages the asset lifecycle through Asset Class Management Plans, in which the assets are segregated into asset class categories based on both service requirements (water and wastewater), asset disciplines (mechanical, electrical and civil) and asset types (e.g., pipes, structures, pumps, transformers). Development of asset class plans is guided by the Standard – Asset Class Management.

We were provided with the draft Asset Class Management Plan – Reservoirs, April 2022 which was informative and outlined how Hunter Water manages its water supply reservoir portfolio to meet its objectives. Table 2-1 showed how the objectives of this asset class plan aligned with the Towards 2024 and SAMP objectives.

We noted a shortcoming during the site visit to North Lambton 1 Reservoir that the consequence rating scale (which criticality is a proxy for) set out in the Enterprise Risk Management Standard uses terminology such as "major" and "critical", while the draft Asset Class Management Plan in Table 7-2 and Appendix E refers to terminology such as "high" and "extreme" for criticality. "Extreme" and "high" are risk ratings and not criticality ratings. As such, the terminology of "criticality" and "risk" appears to be conflated in Table 7-2 and Appendix E of the draft Asset Class Management Plan. Table 5-3 and Appendix D of the Asset Class Management Plan list likelihood from A to E, while the Enterprise Risk Management Standard uses only the full titles. As the Asset Class Management Plan was a draft, this inconsistency is considered to be a shortcoming. Hunter Water should ensure that its likelihood, criticality rating and risk rating scales, along with the terminology

used, are aligned between its asset class management plans and its Enterprise Risk Management Standard (Recommendation 2022/4.1.2-1).

During the audit, Hunter Water advised that they were proposing to make the asset class plans to be more interactive and up to date through developing digital management plans where relevant. As an example, they provided a demonstration of their condition data dashboard. It was explained that the draft Asset Class Management Plan – Reservoirs would be finalised as a digital document.

Service planning and investment decision making

The Towards 2024 Business Plan sets the direction for Hunter Water and identifies the outcomes that will define its success, as well as the measures and targets which will evaluate progress towards those outcomes. During the audit we noted how Hunter Water was ensuring alignment of the asset management system with the Towards 2024 Business Plan as shown in the updated SAMP and the draft Asset Class Management Plan – Reservoirs.

Hunter Water undertakes planning at various levels, from strategic through to detailed planning, for infrastructure and non-infrastructure investment to achieve the strategic priorities and objectives outlined in the Towards 2024 Business Plan. This planning includes service and growth plans (5 - 25-year horizon), asset and compliance plans (5 - 25-year horizon) and network and facility specific plans. Strategic Cases using Investment Logic Maps are prepared to demonstrate the case for change and associated future investment objectives and benefits. The Strategic Case for Safe and Reliable Water Services, the Hunter Water Growth Plan 2021 and draft Asset Class Plan - Reservoirs were provided as examples of the planning undertaken.

Hunter Water implements planning through Service and Asset Planning, where the organisational objectives are assessed, and investment programs or projects are identified to implement the outcome. Asset planning includes service and growth plans for capacity upgrades and performance upgrades, and asset and compliance plans for in-service asset management planning functions

Example business cases were provided for the Brookfield to Burni CTGM Replacement and the Donald St Sewer Main (E64/E65). These documents were found to be comprehensive and provided clear justification for investment.

Hunter Water governs and prioritises the capital portfolio through a gateway approval process (modified version of the NSW Treasury process) within the Asset Creation Framework (ACF) which follows once the asset planning process has identified an asset solution, and the investment decision-making process (business case) has determined the optimal means of meeting a current or future service standard at the lowest lifecycle cost. Intranet download images for the Asset Creation Framework (ACF) and Gateway Approval Process were provided.

Example project development plans were provided for a range of projects including the Branxton WWTW diffuser replacement, Rail Lining Package and the North Lambton Reservoir Roof Structural Defects Rectification.

During this audit we queried Hunter Water on their decision processes for asset decommissioning and disposal processes. A number of documents were provided including the Standard – Asset Disposal and a Technical Change Request for Decommissioning Dora Creek 1 Reservoir. We also inspected the Mereweather High Level Tank (HLT) 2 site which had recently been decommissioned and demolished (refer to section 2.6 for further details).

We also discussed the benefits realisation process. Hunter Water provided a range of documents to demonstrate their approach. These documents included the Benefits Identification and Realisation Guideline, Benefits Realisation Procedure, Benefits Realisation Management Standard, along with a project example of application of the process. The evidence demonstrated a sound benefits realisation process.

Risk management

We noted the key role that risk management played in Hunter Water's decision-making process through review of the documentation provided and audit interviews. The enterprise risk management (ERM) framework includes risk appetite statements and are defined for specific business risks associated with elements of the asset management system. Asset-related risks are managed in accordance with the updated Standard – Enterprise Risk Management. These risks are monitored within the service and regulatory requirements through annual risk reviews. Copies of the Standard - Enterprise Risk Management, Risk Appetite Statements Summary and Risk Driver Analysis Critical Asset Failure were provided as evidence.

As an example of business continuity planning, we were provided with the following:

- > Business Continuity Plan for the Grahamstown Water Treatment Plant v5, dated March 2019, scheduled for review in March 2020. No dates of last exercising were noted.
- > Business Contingency (Continuity Plan) – Water Supply Network v5, dated February 2019, scheduled for review in February 2020. The dates of last exercising were noted as 2018-19.

The documents were found to be well-developed although issues relating to document review were noted and are discussed later in this section.

To answer our query regarding field testing of emergency and incident response procedures, Hunter Water provided copies of the following as evidence:

- Incident and Emergency Response Procedures for Hunter Water Treatment Operations Contract CSO341
- Reports relating to the 2021 Annual Emergency Exercise.

Critical assets

Hunter Water's approach to asset criticality is documented in the Standard – Critical Assets. Throughout the audit we found that criticality ranking was consistently a key element in Hunter Water's decision-making process. An example provided was the Risk Driver Analysis for Critical Asset Failure which lists the risk driver, current and future controlled risk rating and how the risk rating was planned to be achieved,

Regular monitoring of the approach to critical assets is undertaken. The Minutes of the Critical Asset Monitoring – Review Meeting on 18 March 2022 were provided as evidence. Appendix A of the minutes indicated that virtually all of the 2019 Deloitte critical assets audit improvement actions had been completed.

During the audit interview we viewed the asset class dashboard for sewer rising mains which shows the criteria to be applied for criticality. At present, each of these mains has the same criticality grading. We were advised that Hunter Water's consultant is developing criticality gradings at nodal level with individual rising main lengths, based on the criteria outlined in the asset class dashboard.

Climate change

Hunter Water's Board has defined, in its corporate risk framework, a low appetite for "inability to manage the impacts of climate change" in the short to medium term. Hunter Water recognises that climate change is likely to result in significant impacts on its people, infrastructure and business activities. Some assets, such as low-lying wastewater infrastructure around Lake Macquarie, are likely to be the first infrastructure to be affected by the impacts of climate change. Hunter Water provided a range of documents to demonstrate its approach to addressing climate change impacts. Examples noted by Hunter Water included the Lower Hunter Water Security Plan, climate related studies relating to the Belmont WWET and desalination plant, and collaboration with local government (e.g., Lake Macquarie City Council). Hunter Water have a climate change Adaptation Plan in place which addresses climate change under a number of themes.

A Project Climate Risk Screening Guideline and spreadsheet-based Risk Screening Tool (both provided as evidence) have been developed to assist in the planning phase in identifying climate risks/ opportunities that will impact on service delivery.

During the audit period a climate risk vulnerability mapping pilot was undertaken. We were shown GIS outputs of areas within the pilot area that were most vulnerable to bushfire, flooding and sea level rise. Based on the pilot study, Hunter Water is continuing to evaluate vulnerability mapping tools.

Hunter Water undertook a Climate Health Maturity Health Check during the audit period. We were provided a copy of a briefing paper to the Executive Management Team (EMT) which indicated that that Hunter Water is currently meeting the NSW Government's climate risk maturity level of at least Systematic for three out of four stages of implementation identified in the tool.

It was pleasing to note the initiatives that Hunter Water has initiated to ensure climate resilience of its services in the future.

Asset standards

Asset standards have been developed by Hunter Water to ensure that assets are designed and constructed to ensure that assets achieve the desired outcomes at the lowest lifecycle cost. Implementation of the standards is facilitated through appropriate training accreditation of internal and external designers undertaking work for Hunter Water.

These standards are available on Hunter Water's website. We were provided with a copy of STS 409 Potable Water Reservoirs (version 1.0) which had been approved in April 2022 and is available on Hunter

Water’s internet site. It is suggested that critical items in this document are included as a separate section in the reservoir inspection checklist. This assessment may highlight areas where upgrading of some reservoir features/ components may be warranted, if cost-effective, to minimise risk (e.g., water quality, workplace health and safety) or improve operational efficiency/effectiveness (OFI 2022/4.1.2-2).

Maintenance

Maintenance is split into two main disciplines:

- > Civil maintenance which is managed through AOMS. Civil maintenance practices are predominantly corrective maintenance – planned and unplanned (breakdown).
- > Electrical-mechanical maintenance which is managed through Ellipse. Electrical-mechanical maintenance is predominately preventive with some corrective. Some predictive maintenance is undertaken through condition monitoring of some equipment.

We were advised at the audit interview that Hunter Water were in the process of integrating civil asset data and maintenance records from AOMS into Ellipse.

We were provided with maintenance work instructions for:

- > Work Instruction 001 – Working on Potable Water Mains and Fittings
- > Work Instruction 006 – Conduct First Response Including Diagnostics.

We found both documents to be clear and well written with ample use of photographs to aid understanding. We noted that in recent times that the review process had been overlooked. Both work instructions were scheduled for review in May 2021, but this had not occurred. Document management is further discussed later in this section of the report.

Hunter Water undertake regular maintenance audits of each of the treatment plants. It was explained that the schedule had been impacted by COVID-19, but it was intended that all scheduled audits would be completed before conclusion of the contract. We were provided with the most recent audit reports of the Dungog WTP, WWTW, and the Branxton WWTW which were the treatment plants that were either inspected or desktop assessed.

Operation and maintenance of the water and wastewater treatment plants is contracted out to Veolia. Veolia submits monthly reports to Hunter Water which include reporting on maintenance performance against target KPIs for preventive, breakdown and corrective maintenance, as well as performance and operations. A sample monthly contract report for July 2022, along with supporting information, was provided as evidence.

We were provided with a Veolia memorandum which provided high level statistics on the number of work orders in comparison to the number of assets over the period 2015/16 to 2020/21. The memorandum noted that in the period between June 2015 and July 2021:

- > Assets have increased from 5,880 to 9,915 (+69%)
- > Preventative maintenance schedules have increased from 11,840 to 22,460 (+89%)
- > Breakdown work orders have decreased from 638 to 516 (-19%).

We found that Hunter Water’s approach to maintenance was well developed. The management of all maintenance activities through one system should result in favourable outcomes.

Condition assessment

We were provided the State of the Assets Report which had been presented to the Executive Leadership Teams (ELT) in October 2022. The report includes an asset health rating for each of the asset classes based on a combination of overall asset performance, condition, controls and risk. It also summarises asset vulnerabilities and action and planned capital investment in 2020-25. We found this report to be very informative with critical information being clearly and succinctly presented to management. Table 3-6 summarises the results.

Table 3-6 State of the Assets Report summary

Asset class	Asset health 2022
Raw water	Good
Water treatment	Good
Water network	Good

Asset class	Asset health 2022
Wastewater network	Fair
Wastewater treatment	Fair
Recycled water	Good
Stormwater assets	Fair
Electrical assets	Fair
Mechanical assets	Fair

Condition assessments are undertaken based on criticality, risk and maintenance events and in accordance with the Institute of Public Works Engineering Australasia (IPWEA) Practice Note 7 (1 to 5 rating scale).

Programs for some assets are based on criticality (i.e., dams, reservoirs, sewer, stormwater) whilst others are based on events, closed circuit television (CCTV) inspections of sewers, and water main performance. Significant condition assessment has been undertaken during the audit period. All facilities within the water and wastewater networks have been condition assessed. We were provided with a comprehensive draft report on the work undertaken. Each facility had been condition assessed by a team of electrical, mechanical and civil engineers. The report included a multi-criteria-based condition grading, commentary and photographs. Treatment plants have also been fully condition assessed. We viewed the wastewater treatment plant condition assessment dashboard which is currently being fully populated with renewal cost forecasts for the next 10 years based on conservative, balanced and aggressive renewal interventions. We were also provided with a copy of a service request for a consultant to undertake a critical mains condition assessment program (i.e., water mains >DN375 and all ferrous sewer rising mains). The response to this request is currently under review. Hunter Water explained that the outputs from the condition assessments would form the evidence for the renewals program proposed in the 2024 Price Review.

We were provided with a Project Development Plan for the condition assessment of critical valves (DN500 and above – 821 no.) which will also include survey accurate locations of these valves. The resulting Critical Valve Review and Asset Condition Plan will help to determine the performance and reliability of the valves, and any valves with defects can be identified and will be placed in the maintenance/repair programs. It is proposed to extend the program to DN300 to DN500 valves (888 no.) should the initial program be successful. These valves are essential for effective and timely isolation of trunk mains in the event of failure or any maintenance activity.

We were also provided with a recent report (June 2022) on the cathodic protection systems applied to pipelines, steel and concrete reservoirs which included recommendations to address identified deficiencies.

During the audit interview, we discussed the performance of water service connections. While wastewater connection blockages and failures are reported as part of National Performance Reporting, no corresponding reporting exists on water main connections. There would be value in analysing the performance (e.g., number and type of failures by materials, age, costs) of the service connections over time from maintenance records to determine whether there are any trends of concern (OFI 2022/4.1.2-3).

During the site inspection, discussions were held on the merit of testing of a sample of exhumed rubber rings from water mains. This may be worthy of consideration as the information may allow insights into their deterioration and enable a better understanding of the likely useful lives of these important components (OFI 2022/4.1.2-4).

Asset renewals

Asset renewals are prioritised based on risk identified through the outcomes of condition assessment programs and asset performance. Renewals programs are justified through business cases, and later in the project lifecycle through project development plans. We were provided with a range of examples.

Under the Treatment Operations Contract, Veolia submits a minor capital works Project Development Plan (PDP) to Hunter Water for renewals, which is then assessed by internal stakeholders and prioritised using the following risk-based approach:

- > Step 1 – PDPs are initially risk assessed by Veolia (from A to E). Each PDP includes Veolia's inherent, controlled and post-project risk assessments.
- > Step 2 – Hunter Water prioritises PDPs based on risk and available capital funding, converting to Hunter Water's risk heat map as required. Hunter Water reviews all PDPs with respect to Veolia A-E rankings,

associated risk levels (High, Medium, Low) and determines if each project is either Non-Discretionary (ND), Recommended (R), or Discretionary (D).

- > Step 3 - Prioritised PDPs are approved and implemented. Two PDPs are provided as examples.

Asset decommissioning and disposal

We queried Hunter Water on their asset decommissioning and disposal processes. We were provided with their Standard – Asset Disposal and Technical Change Requests for the Decommissioning of the Dora Creek Reservoir 1 and Mereweather 2 High Level Tank. We inspected the Mereweather site during the site visit; details of our findings are discussed in Section 2.6. From our review of documentation, site visit and discussions we are satisfied that Hunter Water has sound asset decommissioning and disposal processes in place.

Communication and awareness

Hunter Water has a mandatory Online Asset Management Induction Training course for all new employees up and contractors up to executive level. A total of 533 employees (up from 485 at the last audit) at various levels of the organisation have completed the asset management system awareness course.

Hunter Water had proposed to develop an awareness video on asset management, similar to that prepared by Essential Energy, which had been successful in communicating the reasons for and importance of asset management to service delivery. Unfortunately, due to budgetary constraints this initiative had been deferred.

Asset management competence

Hunter Water's Learning Strategy aims to develop its people to create the right culture and environment for individuals to learn and grow

Hunter Water has developed its Asset Management Competency Framework comprising two key themes and will be integrated with Hunter Water's Learning Strategy. These themes include:

- > Asset Management System (AMS) Competencies. This involves mapping the Institute of Asset Management (IAM) Asset Management Competence Requirements Framework to Hunter Water's asset management system roles and responsibilities throughout its asset lifecycle via the adoption of Asset Management job families derived from the 39 elements within the Global Forum on Maintenance and Asset Management (GFMAM) Landscape. The GFMAM Landscape is a framework to enable asset management knowledge and practices to be compared, contrasted and aligned around a common understanding of the discipline of asset management. We were provided with a copy of the Asset Management Competencies Model v5.08 which has been set up to record the asset management competency levels of staff and identify gaps and required training.
- > Asset Management Technical Competencies which consider inputs such as the WSAA Design Codes, Australian Qualification Framework (AQF) qualifications (e.g., trade qualifications), work practice competencies, and nominated 70:20:10 Learning and Development (L&D) outcomes.

As an example of Hunter Water's initiatives in competency development we were provided with:

- > A list of 11 employees that had undertaken an Asset Management Council Asset Management Fundamentals course during the year
- > A listing of staff and service providers who had attended and passed the training courses for water supply and sewerage network design since 2018. Hunter Water provides design assurance training for water and wastewater network assets which is a mandatory requirement for internal staff and external service providers undertaking infrastructure design for Hunter Water network assets.

From the information provided, we consider that the competency framework proposed by Hunter Water is a leading asset management practice. During the audit interview we were advised that implementation of the Asset Management Competence Requirements Framework had been deferred due to operational budgetary constraints. 'Softer' initiatives such as competency development and asset management awareness are often the first items to be culled in the budget prioritisation process. However, they add value and contribute to business resilience through developing the human capital within the organisation which can often take many years. Consideration should be given in future budgets for further development of the competency framework and asset management awareness initiatives (OFI 2022/4.1.2–5).

Monitoring and review

Hunter Water has a range of asset management monitoring and reporting processes across the business including:

- > System performance dashboards (e.g., AOMS, Operating Licence)
- > Monthly performance reporting
- > Risk Driver Analysis Summaries
- > Business Performance Report
- > State of the Assets Report
- > Compliance and Performance Report which provides an overview of completed improvement actions in the financial year and proposed activities and programs.

We were provided with a sample of the above reports and screen shots of dashboards. During the audit interviews we sighted various dashboards relating to asset condition.

The asset management system management review is aligned with the Integrated Management System review by senior management.

Ongoing monitoring and improvement of the asset management system is managed through the Asset Management System Steering Committee.

Document management

Several minor shortcomings were noted relating to document and other currency issues. These included:

- > Business Continuity Plans were provided for Grahamstown WTP and the Water Supply Network. These documents were scheduled for review in March 2020 and February 2020 respectively, but these reviews had not been undertaken. No date of last exercising was provided for the Grahamstown WTP plan while the date of last exercise for the Water Supply Network was noted as 2018-19.
- > Work Instruction 001 – Working on Potable Water Mains and Fittings and Work Instruction 006 – Conduct First Response Including Diagnostics were provided as evidence. We noted that in recent times that the review process had been overlooked. Both work instructions were scheduled for review in May 2021, but this had not occurred

ISO 55001 Clause 7.6 addresses document management. Clause 7.6.2 Creating and updating requires documentation review and approval for suitability and adequacy. Hunter Water explained that COVID-19 and operational issues have impacted on workloads in various business areas, hampering their ability to complete the document reviews by the due date. A listing of outstanding maintenance work instructions for review (email dated 26 April 2022) was provided which indicated that 19 of the 29 outstanding work instructions were already overdue for review in 2019, prior to COVID-19. Hunter Water are currently addressing weaknesses in the document control processes.

The INTEGRUM Document Control module has been discontinued and replaced with the IMS Interim Document Control System (DCS) until the Protecht system is implemented. We were advised that 155 overdue documents had been addressed but a further 165 were outstanding (as at September 2022).

The risk of delayed review would depend on the document. As there are a large number of asset management system documents it is recommended that Hunter Water consider assigning a criticality to each of the documents with the review frequency reduced for less critical documents (Recommendation 2022/4.1.2-2).

Recommendations

Recommendation 2022/4.1.2-1: By 30 September 2023 Hunter Water should set up a system to ensure that its likelihood, criticality rating and risk rating scales, along with the terminology used, are aligned between its asset class management plans and its Enterprise Risk Management Standard

Recommendation 2022/4.1.2-2: By 30 September 2023, given that 100% document currency compliance is unlikely to ever be achievable, set an evidence-based KPI for currency at an achievable level (commensurate with document criticality) that does not compromise Hunter Water's ability to satisfy its licence and other obligations.

Opportunities for improvement

OFI 2022/4.1.2-1: There may be merit in investigating the potential of the Environmental Management System (EMS) to become Hunter Water's Natural Asset Management System.

OFI 2022/4.1.2-2: Critical items in STS 409 Potable Water Reservoirs (version 1.0) could be included as a separate section in the reservoir inspection checklist. This assessment may highlight areas where upgrading of some reservoir features/ components may be warranted, if cost-effective, to minimise risk (e.g., water quality, workplace health and safety) or improve operational efficiency/effectiveness.

OFI 2022/4.1.2-3: There would be value in analysing the performance (e.g., number and types of failures by materials, age, costs) of the water service connections over time from maintenance records to determine whether there are any trends of concern.


OFI 2022/4.1.2-4: The merit of testing of a sample of exhumed rubber rings from failed water mains may be worthy of consideration, as the information may allow insights into their deterioration and enable a better understanding of the likely useful lives of these important components.

OFI 2022/4.1.2-5: Consideration should be given in future budgets for further development of the competency framework and asset management awareness initiatives.

Clause 5.3 – Payment difficulties and actions for non-payment

Clause 5.3.1

Table 3-7 Clause 5.3.1 compliance grade

Subclause	Requirement	Compliance grade
Clause from 2017-2022 operating licence (1 November 2021 to 30 June 2022)		
5.3.1	<p>Hunter Water must maintain and fully implement the following:</p> <p>(a) a financial hardship policy that assists residential Customers and Consumers experiencing financial hardship to better manage their current and future bills;</p> <p>(b) procedures relating to a payment plan for residential Customers and Consumers who are responsible for paying their bills and who are, in Hunter Water's opinion, experiencing financial hardship;</p> <p>(c) procedures for identifying the circumstances under which Hunter Water may disconnect or restrict a supply of water in a manner that will affect a Customer or Consumer; and</p> <p>(d) provisions for self-identification, identification by community welfare organisations and identification by Hunter Water of residential Customers and Consumers experiencing financial hardship, (the Procedure for Payment Difficulties and Actions for Non-payment).</p>	 Compliant (minor shortcomings)
Clause from 2022-2027 operating licence (1 July 2022 to 31 October 2022)		
27(1)	<p>Hunter Water must maintain and fully implement:</p> <p>(a) a payment difficulty policy that assists residential Customers experiencing payment difficulties to better manage their current and future Bills;</p> <p>(b) procedures relating to a payment plan for residential Customers who are responsible for paying their Bills and who are, in Hunter Water's reasonable opinion, experiencing payment difficulties;</p> <p>(c) procedures for identifying the circumstances under which Hunter Water may disconnect or restrict a supply of water to a Customer's Property; and</p> <p>(d) provisions for self-identification, identification by community welfare organisations and identification by Hunter Water of residential Customers experiencing payment difficulties, (Assistance Options for Payment Difficulties and Actions for Non-Payment).</p>	
Risk	<p>If Hunter Water does not maintain and implement its policies, procedures and provisions for payment difficulties and actions for non-payment, there is a moderate risk that Hunter Water's vulnerable customers and consumers facing payment difficulties may not be aware of their rights and obligations leading to these customers not being protected when interacting with the monopoly supplier.</p>	<p>Target for full compliance</p> <p>Between 1 November 2021 and 30 June 2022:</p> <p>Hunter Water must provide evidence that it maintained the policy, procedures and provisions required in clause 5.3.1 (a) to (d) of the 2017-2022 operating licence throughout the audit period.</p> <p>Hunter Water must provide evidence that it fully implemented the policy, procedures and provisions required in clause 5.3.1 (a) to (d) of the 2017-2022 operating licence throughout the audit period and that all relevant activities were carried out in accordance with these policies, procedures and provisions.</p> <p>Between 1 July 2022 and 31 October 2022:</p> <p>Hunter Water must provide evidence that it maintained the policy, procedures and provisions required in clause 27(1) (a) to (d) of the 2022-2027 operating licence throughout the audit period.</p> <p>Hunter Water must provide evidence that it fully implemented the policy, procedures and provisions required in clause 27(1) (a) to (d) of the 2022-2027 operating licence throughout the audit period</p>

and that all relevant activities were carried out in accordance with these policies, procedures and provisions.

Summary of reasons for grade

Hunter Water has maintained and implemented policy and procedural documentation that meet the underlying requirements of this clause. We identified several shortcomings with the maintenance of the policy and procedures required by sub-clauses (a), (b) and (c). However, the risks associated with these shortcomings have been minimised through effective training and implementation. Therefore, we consider these shortcomings to be shortcomings only and not deficiencies.

This clause is graded Compliant (minor shortcomings).

Discussion and notes

This clause requires that Hunter Water maintain and fully implement the following:

- > A financial hardship policy that assists residential Customers and Consumers experiencing financial hardship to better manage their current and future bills
- > Procedures relating to a payment plan for residential Customers and Consumers who are responsible for paying their bills and who are, in Hunter Water's opinion, experiencing financial hardship
- > Procedures for identifying the circumstances under which Hunter Water may disconnect or restrict a supply of water in a manner that will affect a Customer or Consumer
- > Provisions for self-identification, identification by community welfare organisations and identification by Hunter Water of residential Customers and Consumers experiencing financial hardship.

Hunter Water has prepared the following documents to meet the above requirements:

- > Hunter Water has developed a *Customer Support Policy: Supporting customers who may be experiencing vulnerability* (TRIM number HW2022-737.002, version 2, approved on 28/09/2022) that defines "vulnerability" (and, therefore, assists in identifying customers who may be experiencing financial hardship) and summarises the support available from Hunter Water to residential and small business customers experiencing financial difficulty. The support options available include an EasyPay payment option that supports regular payments over a 12-month period, an Account Assistance Program, and a Payment Assistance Scheme.
- > Hunter Water advised that it has developed a set of procedures for establishing payment plans, identifying circumstances under which Hunter Water may disconnect or restrict a supply of water, and identifying customers experiencing financial hardship. Hunter Water advised that these procedures are used by its Customer Assistance team to manage collection and account assistance functions. The *Standard – Non-Payment Collections* (TRIM number HW2022-737) developed by Hunter Water provides further detail on the principles underlying flexible payment plans and the actions for debt recovery (including restriction and legal action). The first version of this standard was approved in September 2022, with the next review scheduled for September 2025.

We note that both the *Customer Support Policy: Supporting customers who may be experiencing vulnerability* and *Standard – Non-Payment Collections* appeared to be developed late in the audit period. Prior to the development of these documents, Hunter Water advised that it had in place a *Debt Recovery and Hardship Policy* (HW2015-1469/1/1.001). This policy was approved in September 2017, with the next review scheduled for September 2020. We note that the approval of the subsequent documents (the *Customer Support Policy: Supporting customers who may be experiencing vulnerability* and *Standard – Non-Payment Collections*) occurred two years after the scheduled review date for the preceding document (the *Debt Recovery and Hardship Policy*) and five years after the preceding document was approved.

Additionally, we note that the version of the standard that was initially provided by Hunter Water appeared to be incomplete, with the "Key Elements / Components", "Roles and Responsibilities" and "Related Documents" sections yet to be completed. Hunter Water subsequently provided to us an updated version of the standard. However, we note that while one of the sections had since been completed (the "Related Documents" section), the other two sections had been deleted, rather than completed.

Hunter Water advised that the primary system used to record payment assistance and collection actions is its customer information and billing system. The information recorded in this system includes information on

the customer's payment history, a flag indicating whether escalated collection actions have been applied, a flag indicating whether the customer is receiving financial hardship support, and a history of interactions with the customer.

During the audit interview, Hunter Water demonstrated an understanding of the overall process through which it implements payment assistance options and actions for non-payment, as well as the roles and responsibilities of key internal and external resources in implementing this process. Hunter Water also advised that relevant staff had been trained in the implementation of the *Customer Support Policy: Supporting customers who may be experiencing vulnerability*, customer information and billing system, and indicators that a customer may be experiencing financial hardship. We were provided with examples of the guidance and training provided to staff, such as Knowledge Centre procedures and a record of training undertaken by relevant staff in the audit period.

If Hunter Water does not maintain its policies and procedures for payment difficulties and actions for non-payment, there is a moderate risk that its vulnerable customers and consumers facing payment difficulties are not aware of their rights and obligations, leading to these customers not being protected when interacting with the monopoly supplier. However, the risks associated with the identified shortcomings with the policy and procedural documentation are minimised through effective training and implementation. Therefore, we consider the above shortcomings to be shortcomings only and not deficiencies. We recommend that Hunter Water ensure its key policies and standards for payment assistance and actions for non-payment are reviewed, approved and signed in line with its document review schedule (Recommendation 2022/5.3.1-1).

Hunter Water advised that the impacts of COVID-19 continue to be a focus for the Customer Assistance team, with escalated collection actions yet to return to pre-pandemic levels. Hunter Water advised that escalated collection actions were placed on hold in March 2020 and remained on hold until October 2021.

The following area of good practice was observed:

- > During the audit interview, Hunter Water demonstrated an understanding of the key challenges facing the awareness and uptake of payment assistance options by its customers, such as a low level of awareness among specific marginalised groups. To this end, Hunter Water advised that it had engaged with the community through events such as Hunter Homeless Connect and Hunter Disability Expo. We were provided with a list of community engagement events attended by Hunter Water in the audit period.

There are no material changes to this clause as a result of the new operating licence, which came into effect on 1 July 2022.

Recommendations

Recommendation 2022/5.3.1-1: By 31 September 2023, ensure its key policies and standards for payment assistance and actions for non-payment are reviewed, approved and signed in line with its document review schedule.


Opportunities for improvement

No opportunities for improvement were identified.

Clause 5.7 – Provision of information to customers and the general public

Clause 5.7.1

Table 3-8 Clause 5.7.1 compliance grade

Subclause	Requirement	Compliance grade
Clause from 2017-2022 operating licence (1 November 2021 to 30 June 2022)		
5.7.1	<p>Hunter Water must prepare a pamphlet or pamphlets with the following information to Customers at least annually with their bills:</p> <ul style="list-style-type: none"> a) a brief explanation of the Customer Contract and a summary of the key rights and obligations of Customers under the Customer Contract; b) a brief explanation of the Procedure for Payment Difficulties and Actions for Non-payment; c) a brief explanation of rights of Customers to claim a rebate and the conditions that apply to those rights; d) information about the General Enquiry Process; e) information about how to make a Complaint under the Internal Complaints Handling Procedure; and f) a brief explanation of the external dispute resolution service, how to access that service, and Customers rights to have a Complaint or dispute referred to Energy and Water Ombudsman NSW. 	 Non-compliant (non-material)
Clause from 2022-2027 operating licence (1 July 2022 to 31 October 2022)		
25	<p>(1) Hunter Water must prepare one or more communications that:</p> <ul style="list-style-type: none"> (a) provide a brief explanation of the Customer Contract; (b) summarise the key rights and obligations of Customers under the Customer Contract; (c) refer to the types of account relief available for Customers experiencing payment difficulties; (d) outline the rights of Customers to claim a rebate and the conditions that apply to those rights; (e) contain information about how to contact Hunter Water by telephone, email or post, including the General Enquiry Process (or any replacement of it); and (f) contain information regarding the ability of a Customer to enter into agreements with Hunter Water separate to the Customer Contract for the provision of Services by Hunter Water to the Customer. <p>(3) Hunter Water must provide the communication or communications and any updates, free of charge:</p> <ul style="list-style-type: none"> (a) on its website; (b) to all residential Customers, at least annually with their Bills via the method chosen by the Customer to receive their Bill; and (c) to any person upon request made through the General Enquiry Process. <p>(4) Hunter Water must publish on its website and advertise at least annually in a manner that Hunter Water is satisfied is likely to come to the attention of, and be accessible to, members of the public without being limited to digital platforms, information as to:</p> <ul style="list-style-type: none"> (a) the types of account relief available for Customers experiencing payment difficulties; and (b) rights of Customers to claim rebates and the conditions that apply to those rights. 	
Risk	Target for full compliance	

If Hunter Water does not provide the information required by this licence condition, there is a low risk that Hunter Water's customers may not be aware of their rights and obligations leading to customers not being protected when interacting with the monopoly supplier.

Between 1 November 2021 and 30 June 2022:

Hunter Water must provide evidence that it prepared a pamphlet(s) with all of the information required in clause 5.7.1 (a) to (f) of the 2017-2022 operating licence and distributed the pamphlet(s) to customers with their bills at least annually.

Between 1 July 2022 and 31 October 2022:

Hunter Water must provide evidence that it has prepared a communication(s) with all of the information required in clause 25(1)(a) to (f) of the 2022-2027 operating licence and provided the communication(s) (and any updates) free of charge on its website throughout the audit period and also to any person who requested the communication(s) through the General Enquiry Process during the audit period.

Hunter Water must provide evidence that it provided the communication(s) to customers with their bills, via the method chosen by the customer to receive their bill, at least annually. If Hunter Water did not provide the information required to customers with their bills under the 2017-2022 or the 2022-2027 operating licences during the full audit period (i.e., between 1 November 2022 and 31 October 2023), Hunter Water must provide evidence demonstrating that the annual bill cycle was not triggered.

Hunter Water must provide evidence that it published the information required in clause 25(4)(a) and (b) of the 2022-2027 operating licence on its website during the audit period. Hunter Water must also provide evidence that it advertised this information to the public at least annually without being limited to digital platforms. If Hunter Water did not advertise during the audit period, Hunter Water must provide evidence demonstrating that this was not triggered.

Summary of reasons for grade

Hunter Water has prepared pamphlets that meet the majority of the requirements of this clause, and it has distributed this information to customers at least annually with their bills. However, as part of the audit process, Hunter Water has self-identified a deficiency where it did not distribute a summary of the customer contract to all customers in the audit period. This is a deficiency and not a shortcoming because it is a breach of the licence requirement leading to a risk that Hunter Water's customers will not be aware of their rights and obligations and not being protected when interacting with the monopoly supplier. However, we consider that this risk is minimal, and this deficiency is non-material, because the required information is available on Hunter Water's website.

This clause is graded Non-compliant (non-material).

Discussion and notes

Previous operating licence

The clause from the previous operating licence (effective until 30 June 2022) requires that Hunter Water prepare a pamphlet or pamphlets with the following information to Customers at least annually with their bills:

- > A brief explanation of the Customer Contract and a summary of the key rights and obligations of Customers under the Customer Contract
- > A brief explanation of the Procedure for Payment Difficulties and Actions for Non-payment
- > A brief explanation of rights of Customers to claim a rebate and the conditions that apply to those rights
- > Information about the General Enquiry Process
- > Information about how to make a Complaint under the Internal Complaints Handling Procedure
- > A brief explanation of the external dispute resolution service, how to access that service, and Customers rights to have a Complaint or dispute referred to the Energy and Water Ombudsman New South Wales.

Hunter Water has prepared and distributed the following pamphlets to customers with their bills at least annually in order to meet the above requirements:

- > *Payment support & assistance options.* This provides a summary of the payment support and assistance options available to customers. We note that this pamphlet does not contain information on actions for non-payment, such as restrictions and legal actions. To this end, Hunter Water advised that actions for non-payment are summarised within the bill itself, with the customer being directed to hunterwater.com.au and Hunter Water's *Debt Recovery and Hardship Policy* for further information. Hunter Water provided a screenshot of part of a typical bill as evidence.
- > *Our customer rebates.* This provides a summary of the rebates available and the conditions under which these rebates may be awarded.
- > *General Enquiries.* This provides a summary of the methods through which a general enquiry can be submitted to Hunter Water.
- > *Complaints handling.* This provides a summary of the complaints management process, including the external dispute resolution scheme. Within the summary of the external dispute resolution scheme (the Energy and Water Ombudsman of New South Wales), contact details are provided, as well as clarification that the scheme is a free service available to customers for any disputes they may have with Hunter Water.
- > *Making Waves.* This raises awareness of topics such as strategies and plans under development for Hunter Water's area of operations, actions to prevent blockages in the sewerage system, and residential water efficiency measures.

While Hunter Water has met the majority of the requirements of this clause, it has self-identified a deficiency where it did not distribute a summary of the customer contract to all customers in the audit period. This deficiency was self-identified as part of the audit process rather than as part of the Statement of Compliance. Hunter Water advised that the summary was prepared and included as part of a *Welcome Pack* issued to new customers only, and it was not distributed to existing customers. We note that this information is available on Hunter Water's website, along with the information summarised in the pamphlets listed above. However, it is a requirement of sub-clause (a) that Hunter Water prepare a pamphlet or pamphlets to customers at least annually with their bills that includes a brief explanation of the Customer Contract and a summary of the key rights and obligations of Customers under the Customer Contract.

This is a deficiency and not a shortcoming because it is a breach of the licence requirement leading to a risk that Hunter Water's customers will not be aware of their rights and obligations and not being protected when interacting with the monopoly supplier. However, we consider that this risk is minimal, and this deficiency is non-material, because the required information is available on Hunter Water's website. Therefore, we consider this clause to be non-compliant (non-material).

To assist in preventing the recurrence of this deficiency, Hunter Water has since drafted a *Standard Operating Procedure - Process-Communication of Regulated Information with Customer Bills* (TRIM number to be developed). This procedure sets out the steps required to plan, design, print and insert regulated information with customer bills and the role responsible for each step. The procedure is currently awaiting approval. We recommend that Hunter Water finalise, approve and implement this procedure by 30 June 2023 (Recommendation 2022/5.7.1-1).

New operating licence

The clause from the new operating licence, which came into effect on 1 July 2022, requires Hunter Water to prepare one or more communications that:

- > Provide a brief explanation of the Customer Contract
- > Summarise the key rights and obligations of Customers under the Customer Contract
- > Refer to the types of account relief available for Customers experiencing payment difficulties
- > Outline the rights of Customers to claim a rebate and the conditions that apply to those rights
- > Contain information about how to contact Hunter Water by telephone, e-mail or post, including the General Enquiry Process (or any replacement of it)
- > Contain information regarding the ability of a Customer to enter into agreements with Hunter Water separate to the Customer Contract for the provision of Services by Hunter Water to the Customer.

The new operating licence also requires that Hunter Water provide the communication or communications, and any updates, free of charge:

- > On its website
- > To all residential Customers, at least annually with their Bills via the method chosen by the Customer to receive their Bill
- > To any person upon request made through the General Enquiry Process.

Additionally, the new operating licence requires that Hunter Water publish on its website and advertise at least annually in a manner that Hunter Water is satisfied is likely to come to the attention of, and be accessible to, members of the public without being limited to digital platforms, information as to:

- > The types of account relief available for Customers experiencing payment difficulties
- > Rights of Customers to claim rebates and the conditions that apply to those rights.

Hunter Water has prepared most of the above communications as part of the pamphlets prepared to meet the requirements of the previous operating licence. As noted earlier, most of the above communications have been distributed to customers at least annually with their bills and published online. Hunter Water advised that it has not yet met the requirement to prepare communications regarding the ability of a customer to enter into agreements with Hunter Water separate to the customer contract. Hunter Water advised that the ability to enter into an agreement outside of the customer contract is limited to certain customer groups, and that this message is currently being tailored to suit their needs and avoid confusion that could be caused if it was distributed to ineligible customers. Hunter Water anticipates meeting all requirements of the new operating licence by the end of the year.

We sought clarity from IPART as to when Hunter Water would need to prepare the communications required by the new operating licence. In response, IPART confirmed that it would expect the communications to be prepared by one year from the commencement of the operating licence (i.e., 30 June 2023). Therefore, we do not consider Hunter Water to be non-compliant with the requirements of the new operating licence.

Hunter Water considers that information regarding payment assistance options and customer rebates is most effectively advertised as part of its cyclic billing process. Customers can choose to receive their bill (and associated communications) either digitally or via traditional print methods. Hunter Water considers that using this method to communicate payment assistance options and customer rebates ensures customers have chosen the way they receive this information. Hunter Water advised that the information in high demand from customers (payment assistance options) is also distributed in non-digital ways at key events throughout the year attended by its Customer Assistance team and shared with its community service partners.

Recommendations

Recommendation 2022/5.7.1-1: By 30 June 2023, finalise, approve and implement the *Standard Operating Procedure - Process-Communication of Regulated Information with Customer Bills*.


Opportunities for improvement

No opportunities for improvement were identified.

Clause 5.8 – Code of Conduct with WIC Act Licensee

Clause 5.8.1

Table 3-9 Clause 5.8.1 compliance grade

Subclause	Requirement	Compliance grade
Clause from 2017-2022 operating licence (1 November 2021 to 30 June 2022)		
5.8.1	Hunter Water must use reasonable endeavours to cooperate with any WIC Act Licensee that seeks to establish with Hunter Water a code of conduct required under a licence under the WIC Act.	 Not required
Clause from 2022-2027 operating licence (1 July 2022 to 31 October 2022)		
37(1) and 37(2)	<p>(1) Hunter Water must use its best endeavours to cooperate with each WIC Act licensee to establish a code of conduct required by a WIC Act licence where Hunter Water has received a written request from the WIC Act licensee to establish such a code.</p> <p>(2) Where the Minister administering the WIC Act has established a code of conduct under clause 46 of the WIC Regulation, Hunter Water will be taken to have satisfied its obligation under clause 37(1) by applying the code of conduct to the relevant licensee under the WIC Act.</p>	

Risk

If Hunter Water does not cooperate with WIC Act licensees seeking to establish codes of conduct, there is a moderate risk that the utilities' respective responsibilities for provision of services will not be made clear, leading to possible impacts on the quality and availability of services to end-users.

Target for full compliance

Hunter Water must provide evidence that it used reasonable/ its best endeavours to cooperate with each WIC Act licensee that sought to establish a code of conduct required by a WIC Act licence during the audit period. Hunter Water must provide evidence of the requests received from the WIC Act licensees during the audit period, seeking to establish the code of conduct. Auditors need to undertake a factual assessment of Hunter Water's conduct in any negotiations to establish a code of conduct.

- Hunter Water should:
 - actively and constructively participate in negotiations to progress establishment of the code of conduct in a timely manner
 - act reasonably and honestly and not hinder or prevent the establishment of the code of conduct
 - pursue the establishment of the code of conduct diligently
- Hunter Water is not obliged to act against its own commercial interests or to agree to a code of conduct that would cause it to breach a law or licence condition.
- Best endeavours do not require the code of conduct to actually be established, what matters for compliance is Hunter Water's conduct in attempting to establish the code.
- Auditors should take into account the surrounding circumstances when making an assessment (e.g., delays on the part on the WIC Act licensee and any other relevant factors that impact Hunter Water's ability to establish a code of conduct).

Summary of reasons for grade

In 2016, Hunter Water entered into two Utility Services Agreements with Flow Systems Pty Ltd for Cooranbong Water and Huntlee Water. Hunter Water advised that it has not received any further requests from Private Network Operators to establish a code of conduct under the WIC Act with Hunter Water. Therefore, Hunter Water has not been required to comply with this clause during the audit period.

Discussion and notes

Hunter Water advised that it assesses requests from Private Network Operators under the WIC Act in the same manner as requests for services for any other types of development in its area of operations. A commercial agreement is required to govern the long-term bulk supply arrangements entered into between Hunter Water and Private Network Operators. This agreement is referred to as a Utility Services Agreement and sets out matters such as the conditions precedent to the agreement, requirements for the services and charges, obligations of each party, and a coordination protocol. In 2016, Hunter Water entered into two Utility Services Agreements with Flow Systems Pty Ltd for Cooranbong Water and Huntlee Water. Hunter Water advised that it has not received any further requests from Private Network Operators to establish a code of conduct under the WIC Act with Hunter Water. Therefore, Hunter Water has not been required to comply with this clause during the audit period.

Recommendations

No recommendations were identified.


Opportunities for improvement

No opportunities for improvement were identified.

Clause 6.2 – Reporting manual

Clause 6.2.1

Table 3-10 Clause 6.2.1 compliance grade

Subclause	Requirement	Compliance grade
Clause from 2017-2022 operating licence (1 November 2021 to 30 June 2022)		
6.2.1	Hunter Water must comply with all of its reporting obligations set out in the Reporting Manual, including in relation to: <ul style="list-style-type: none"> a) water conservation; b) supply services and performance standards; c) organisational systems management; d) customer and stakeholder relations; and e) performance monitoring and reporting, including: <ul style="list-style-type: none"> i) IPART performance indicators; and ii) the National Water Initiative Performance Indicators. 	 Compliant (minor shortcomings)
Clause from 2022-2027 operating licence (1 July 2022 to 31 October 2022)		
39(2)	Hunter Water must comply with all of its reporting obligations set out in the Reporting Manual, including in relation to: <ul style="list-style-type: none"> (a) water conservation and planning; (b) performance standards for water quality; (c) performance standards for service interruptions; (d) organisational systems management; (e) customer and stakeholder relations; (f) information and services for competitors; and (g) performance monitoring and reporting, including: <ul style="list-style-type: none"> (i) IPART performance indicators; and (ii) the National Water Initiative Performance Indicators. 	
Risk	Target for full compliance	
If Hunter Water does not comply with its reporting obligations as set out in the Reporting Manual, there is a moderate risk that Hunter Water's performance of against its operating licence requirements will not be known leading to IPART being unable to effectively undertake its regulatory function to monitor Hunter Water's compliance with its operating licence.	Hunter Water must provide evidence that it complied with all of the reporting obligations triggered during the audit period, as set out in the Reporting Manual.	

Summary of reasons for grade

There is an ongoing shortcoming in relation to the development of a process to ensure that IPART, as well as NSW Health, are advised of changes to the Drinking Water and Recycled Water Quality Systems. A process is yet to be developed for recycled water and the Recommendation 2021-21 remains open. This is considered a shortcoming as there have been no events noted in the audit period where Hunter Water has not informed IPART, as required in the Operating Licence. No other shortcomings were noted.

This clause is graded Compliant (minor shortcomings).

Discussion and notes

Recommendation 2021/21 from last year's audit stated: by 30 September 2022, a process should be set up to ensure that IPART, as well as NSW Health, are advised of any changes to Drinking Water and Recycled Water Quality Systems. Hunter Water provided the Guideline - Catchment to Tap Risk Assessment for Drinking Water Quality Guideline Version 5 which had been updated to define the process that ensures that IPART and NSW Health notification. We confirmed that the Section 4.2 Unscheduled Risk Assessment

included text that highlighted the need to advise IPART as well as NSW Health. However, we were advised that no process for advising IPART had been documented for recycled water. It should be noted that the failure of Hunter Water to notify IPART of a proposed new CCP at Dungog WWTW as required under section 3.2.2 of the Reporting Manual had prompted the recommendation in last year's audit. As Recommendation 2021/21 is only partially implemented it will remain open.

Recommendation 2021/22 from last year's audit stated: by 30 September 2022, the Corporate Standard – Reporting and Monitoring Protocol should be reviewed and updated, following completion of the BOM review of NPR reporting in late February 2022. We were advised that the Bureau of Meteorology (BOM) review had been significantly delayed and had not been completed at the time of the audit interviews. Nevertheless, Hunter Water had updated the Corporate Standard – Reporting and Monitoring Protocol to address the deficiencies noted in the 2021 audit. A review of the document confirmed that the items that the shortcomings noted in the previous audit had been addressed.

The Compliance Calendar addresses regular reporting requirements. As-required reporting is addressed through individual business area/ subject matter experts. The Group Manager Audit, Assurance & Management Systems reports on performance against the Compliance Calendar to the Audit and Risk Committee (ARC). However, performance on as-required reporting is not reported to ARC but is reported through the Business Performance Report. We viewed the Business Performance Report for February 2022 which showed a range of performance metrics including reportable dry weather overflows.

Both the 2017-2022 and 2022 -2027 Operating Licences include the following clause: *Hunter Water must maintain sufficient record systems to enable Hunter Water to report accurately in accordance with clause 6.2.2 in the 2017-2022 Licence and 39(2) in the 2022-2027 Licence*. The existing Compliance Calendar has some limitations as it is a spreadsheet with limited controls and capability but has been able to adequately monitor compliance requirements. Hunter Water advised at the last audit that centralisation of compliance requirements in an integrated incident and risk management application, was in progress. Since then, another vendor, Protecht had been contracted to deliver the application. We were provided with a presentation on Protecht and its capability and implementation. Listed amongst Phase 1 deliverables was an Obligations Management function which addressed legal, regulatory and other compliance obligations with scheduled compliance activity allocated to responsible personnel to ensure these obligations were met. Some of the advantages of the Protecht software included being accessible through tablets in the field and the ability to prepare attestations. Phase 1 of the project is scheduled for completion by the end of March 2023 with phase 2 scheduled to be completed by the end of August 2023. The capabilities of the software should overcome many of the current weaknesses of spreadsheets such as the Compliance Calendar.

The nominated National Performance Reporting (NPR) indicators were audited. These were considered to be satisfactory. More detailed information is provided in the report Hunter Water National Water Initiative Indicators Audit 2022.

Recommendations

No further recommendations were identified. The issue of reporting to IPART, as well as NSW Health, is addressed under Recommendation 2021-21 which remains open.

Opportunities for improvement

No opportunities for improvement were identified.

4 Previous recommendations

4.1 Recommendation 2021-1 (Clause 3.1.1) Drinking water

Table 4-1 Recommendation 2021-1 (Clause 3.1.1) Drinking water

Item	Detail
IPART's recommendation to the Minister	By 31 March 2023, Hunter Water must undertake a review and revise both the MidCoast Council and the Central Coast Council water supply agreements, with particular attention to quality, quantity, maintenance, operations and ownership aspects.
Progress on audit findings as reported by utility on 28 June 2022	Hunter Water is in the process of reviewing and revising the Mid-Coast Council and the Central Coast Council water supply agreements. Completion of this task is expected to be 31 March 2023.
IPART guidance	Auditor to check for progress.
Audit finding	<p>Hunter Water stated the following:</p> <p>“The review of the agreements is being led by the Business Customer Group which includes dedicated resources for management of non-standard water supply agreements.</p> <p>The details of planned improvements to address the recommendation have been communicated to NSW Health through the Drinking Water Quality Improvement Plan quarterly update.”</p> <p>The auditor confirmed that the planned improvement action and timeframe to address the recommendation were communicated to IPART and NSW Health (3.1.1-REC-2021-01-E001 - Letter - Status of Recommendations - Letter and Report and actions 338 and 339 within the quarterly update, provided to NSW Health via email, 31 May 2022).</p> <p>Hunter Water is linking in a check of the Central Coast Council transfers to the risk assessment. The outcomes of this process will be used to review and inform the water quality component of the agreement. MidCoast Council is involved in the water quality risk assessment, therefore a separate review is not considered necessary. The Business Customer Group is still engaging with Central Coast Council. Progress for this recommendation is reviewed via the drinking water quality management improvement process, monthly. HWC is confident it is on track to meet the timeline for this recommendation.</p> <p>Based on the evidence sighted and further insights gained in the interview, it is the audit finding that the approach to progressing the recommendation is sound.</p>
Recommendation status	This recommendation remains open, for review at the next audit.

4.2 Recommendation 2021-2 (Clause 3.1.1) Drinking water

Table 4-2 Recommendation 2021-2 (Clause 3.1.1) Drinking water

Item	Detail
IPART's recommendation to the Minister	At the next Corporate Incident and Emergency Management Plan review, Hunter Water must review incident level categories and make clear which ones require a root cause analysis / incident investigation.
Progress on audit findings as reported by utility on 28 June 2022	The Corporate Emergency Management Plan has been reviewed and updated to include guidance for root cause analysis and incident investigations.
IPART guidance	Auditor to check for completion.
Audit finding	The auditor confirmed the current plan has been recently revised (HW2007-900/27/19, September 2022 (version 13) and communication occurred via the Drinking Water Quality Improvement Plan quarterly update. Root cause analysis is covered in Section 8, p13.

Recommendation status Adequately addressed, recommendation closed.

4.3 Recommendation 2021-3 (Clause 3.1.1) Drinking water

Table 4-3 Recommendation 2021-3 (Clause 3.1.1) Drinking water

Item	Detail
IPART's recommendation to the Minister	By 30 June 2022, Hunter Water must communicate finalisation of its health complaints guideline to NSW Health.
Progress on audit findings as reported by utility on 28 June 2022	Hunter Water has communicated the finalisation of the health complaints guideline to NSW Health.
IPART guidance	Auditor to check for completion.
Audit finding	The auditor confirmed communication via the finalised document, attached in an email from Hunter Water to NSW Health, 2022-06-16 (document control table was sighted to confirm finalisation). Action #341 in Drinking Water Quality Improvement Plan also sighted as confirmation.
Recommendation status	Adequately addressed, recommendation closed.

4.4 Recommendation 2021-4 (Clause 3.1.1) Drinking water

Table 4-4 Recommendation 2021-4 (Clause 3.1.1) Drinking water

Item	Detail
IPART's recommendation to the Minister	By 1 November 2022, Hunter Water must improve documentation of the evidence base for Critical Control Point (CCP) limits (e.g., through annotations in the CCP limits table).
Progress on audit findings as reported by utility on 28 June 2022	The documentation for the evidence base for CCP limits is being reviewed to determine methods of improvement. Completion of this task is expected to be 1 November 2022.
IPART guidance	Auditor to check for progress during audit period and completion at audit interview (recommendation due outside of the audit period but audit interviews will occur after recommendation due date).
Audit finding	<p>Register - Basis for Critical Limits at Drinking Water CCPs.XLSX (Revision 1, 2022-06-08) confirms documentation of the evidence base. This register is considered noteworthy in its format and content.</p> <p>Communication with IPART and NSW Health was confirmed (letter to IPART 2022-06-28 and email to NSW Health 2022-06-16).</p> <p>Hunter Water considers the documentation of the evidence base for the critical limits to be complete, this is also the opinion of the auditor.</p> <p>A contractor has now been engaged to review the basis of the critical limits to ensure the limits are still adequate. The next step is to include the register as part of the documentation supporting Element 3 and Element 9 of the DWQMS Manual. The register is also referenced as part of the CCP table evidence.</p> <p>Noteworthy Practice: The register is considered an exemplar of documentation of CCPs and critical limits.</p>
Recommendation status	Adequately addressed, recommendation closed.

4.5 Recommendation 2021-5 (Clause 3.1.2) Drinking water

Table 4-5 Recommendation 2021-5 (Clause 3.1.2) Drinking water

Item	Detail
------	--------

IPART's recommendation to the Minister	By 30 June 2022, Hunter Water must include MidCoast Council and Central Coast Council in the Key Emergency Services and Stakeholder Contact List of the Corporate Emergency Plan.
Progress on audit findings as reported by utility on 28 June 2022	The Corporate Emergency Management Plan has been updated to include contact details for Mid-Coast and Central Coast Council.
IPART guidance	New recommendation from the 2021 operational audit.
Audit finding	<p>The auditor confirmed the recent revision of the Corporate Emergency Management Plan (HW2007-900/27/19, September 2022 (version 13) and that communication of the same occurred via the Drinking Water Quality Improvement Plan quarterly update.</p> <p>MidCoast Council and Central Coast Council are included in Section 15.3 of the Corporate Emergency Management Plan, and in the Key Emergency Services and Stakeholder Contact List.</p> <p>Hunter Water noted that it already has operational protocols for notification and contact will be strengthened through finalisation of the agreements with Central Coast Council and MidCoast Council (the subject of recommendation 2021—1).</p> <p>Hunter Water also uses a link through to a regional contact list for details of key stakeholders, as a central point of truth. MidCoast Council, while originally not included in this list, was added post the audit date scope.</p>
Recommendation status	Adequately addressed, recommendation closed.

4.6 Recommendation 2021-6 (Clause 3.1.2) Drinking water

Table 4-6 Recommendation 2021-6 (Clause 3.1.2) Drinking water

Item	Detail
IPART's recommendation to the Minister	At the next risk review, Hunter Water must ensure that the risk assessments capture a corresponding risk treatment for medium controlled risks and above, within the risk register itself.
Progress on audit findings as reported by utility on 28 June 2022	Risk assessments are being reviewed to ensure inclusion of a treatment for medium and above controlled risks in the risk register. Completion of this task is expected to be 30 September 2022.
IPART guidance	New recommendation from the 2021 operational audit.
Audit finding	<p>Hunter Water's schedule for review of risk assessments was confirmed (Drinking Water Quality Risk Assessment Calendar (HW2006-2906/8/33.014). The next risk review since Hunter Water's formalisation of recommendation 2021-6 was the distribution network risk assessment due 2022-06-30 (item number 17-22-8). A briefing paper and risk register were sighted as evidence of the review having occurred in the stated timeframe. The updated Catchment to Tap Risk Assessment Guideline (Version 5, approved 16/09/2022) was confirmed as including a step to ensure that medium residual risks and above must have a corresponding risk treatment (p8 of 25). All medium residual risks, bar one (CHL-002 Chlorine overdosing at distribution chlorine boosters leading to levels of chlorine above the ADWG guideline values), in the risk register were confirmed as having corresponding risk treatment actions.</p> <p>Hunter Water explained that while no specific treatment had been identified for risk CHL-002, there is a continuing program in place (DOS1B) for upgrade of chlorinators and mixers (a note to this effect was sighted in the register). Sufficient evidence is therefore available to close out this recommendation.</p>
Recommendation status	Adequately addressed, recommendation closed.

4.7 Recommendation 2021-7 (Clause 3.1.2) Drinking water

Table 4-7 Recommendation 2021-7 (Clause 3.1.2) Drinking water

Item	Detail
IPART's recommendation to the Minister	By 1 November 2022, Hunter Water must review the CCP Limit Tables and ensure that the limits and the logic are accurate and match SCADA.
Progress on audit findings as reported by utility on 28 June 2022	The CCP Limit Tables are being reviewed to ensure accuracy and that they match SCADA. Completion of this task is expected to be 1 November 2022.
IPART guidance	New recommendation from the 2021 operational audit.
Audit finding	See commentary and evidence for 2021-4. A review of the treatment CCPs and network chlorinator CCP has been conducted. Evidence was sighted for Dungog CCP limit review (HW2016-1069/2/5.004), a column is included showing the SCADA check. Evidence was also provided to confirm review of Grahamstown CCPs and the Network Chlorinators (SE-003a and SE-003b). Next steps are to simplify the CCP information in SCADA, through SCADA blocks which will corral all the CCP information in one place, as the point of truth. Hunter Water is also commencing a review process for the CCP tables to improve information readability. Some inconsistencies remain between the SCADA information and the CCP Tables for the Four Mile Creek and Toronto chlorinators and for the description of the Dungog chlorination CCP location description (this latter point identified and since rectified) (further commentary is included under Clause 3.1.2, Element 3).
Recommendation status	Recommendation remains open until the consistencies are addressed.

4.8 Recommendation 2021-8 (Clause 3.1.2) Drinking water

Table 4-8 Recommendation 2021-8 (Clause 3.1.2) Drinking water

Item	Detail
IPART's recommendation to the Minister	By 1 November 2022, Hunter Water must update the network chlorinators CCP information to include the currency information, according to the stated process.
Progress on audit findings as reported by utility on 28 June 2022	The network chlorinators CCP information is being updated to include currency information. Completion of this task is expected to be 1 November 2022.
IPART guidance	Auditor to check for completion.
Audit finding	Hunter Water stated that the details of planned improvement to address the recommendation have been communicated to NSW Health through the Drinking Water Quality Improvement Plan quarterly update. This action is confirmed as having been addressed within the Hunter Water/NSW Health Liaison Committee Minutes 01 June 2022 2pm HW2006-1448/64/4.012 - Action #347. Hunter Water noted that this recommendation will be added as 'action completed' (within Section 4 of the report) for the December 2022 liaison meeting. Further evidence was provided to confirm the currency of the Network Chlorinators table (28/10/2022), with the same having been communicated to NSW Health.
Recommendation status	Adequately addressed, recommendation closed.

4.9 Recommendation 2021-9 (Clause 3.1.2) Drinking water

Table 4-9 Recommendation 2021-9 (Clause 3.1.2) Drinking water

Item	Detail
------	--------

IPART's recommendation to the Minister	By 30 June 2022, Hunter Water must ensure that operators are trained to complete all components of the site checklists.
Progress on audit findings as reported by utility on 28 June 2022	The respective operators have been trained to ensure completion of all components of the site checklists.
IPART guidance	Auditor to check for completion.
Audit finding	<p>The auditor confirmed the following: weekly planning schedule (Bay Operations weekly schedule sighted) to ensure availability of resources and time, weekly PMT duties sheet TEM-2824 (Lemon Tree Passage completed sheet sighted) and a new procedure Performing and Recording Operator Duties on Drinking Water Plants – HW (PRO-15348-1, 28/09/22).</p> <p>LTP TEM-2824 completed sheet provided as evidence of implementation, did not have the 'week commencing' date filled in; however, a handwritten date, further in the sheet, confirmed that the inspection was completed for the week containing 2022-02-02. The Water Treatment Manager noted that in future, checklists will migrate to electronic sheets, which will prevent fields, not being filled. A Grade 6 position was interviewed for use of, and knowledge of the procedure, and awareness was confirmed.</p> <p>The Water Treatment Manager noted that awareness of the new process was also undertaken formally, and in Toolbox talks. Records were provided to confirm the training occurred in practice (Toolbox meeting records 5 and 6 October 2022 and evidence of training, 3 February 2022) as well as an email to confirm that the stated process of sending the LTP sheet to the Manager, occurs in practice (28 February 2022).</p>
Recommendation status	Adequately addressed, recommendation closed.

4.10 Recommendation 2021-10 (Clause 3.1.2) Drinking water

Table 4-10 Recommendation 2021-10 (Clause 3.1.2) Drinking water

Item	Detail
IPART's recommendation to the Minister	By 30 September 2022, Hunter Water must strengthen existing reporting lines to the water quality committee to include comparison of the network verification sampling that has been completed with what was scheduled.
Progress on audit findings as reported by utility on 28 June 2022	The existing reporting lines to the water quality committee are being reviewed and strengthened to include the required elements. Completion of this task is expected to be 30 September 2022.
IPART guidance	Auditor to check for completion.
Audit finding	A user guide has been developed (User Guide – Verification of Monitoring Compliance and Review of Water Quality Data HW2022-511/3/2.001). The guide clearly shows a step to review sample count with samples collected, and with laboratory schedules. QA register (HW2022-511 3 2.002) of checks from 9/4/22 to 10/9/22 was sighted as confirmation of implementation of the guideline. The register and guideline are considered noteworthy in terms of the information captured, simple layout and general fitness for purpose.
Recommendation status	Adequately addressed, recommendation closed.

4.11 Recommendation 2021-11 (Clause 3.2.1) Recycled water

Table 4-11 Recommendation 2021-11 (Clause 3.2.1) Recycled water

Item	Detail
IPART's recommendation to the Minister	By 31 March 2022, Hunter Water must update Table 2.1 of the Corporate Recycled Water Quality Management Plan to include residential use as an intended use for recycled water from the Morpeth and Farley Wastewater Treatment Works.

Progress on audit findings as reported by utility on 28 June 2022	The Corporate RWQMP has been updated to include residential use as an intended use for recycled water from the Morpeth and Farley WWTWs.
IPART guidance	Auditor to check for completion.
Audit finding	Table 2-1 of the Corporate Recycled Water Quality Management Plan (HW2008-1592/20/22.001, v14 dated 1/9/2022) includes that Farley RWTP and Morpeth RWTP as residential recycling schemes and the end use type as dual reticulation.
Recommendation status	This recommendation is closed

4.12 Recommendation 2021-12 (Clause 3.2.1) Recycled water

Table 4-12 Recommendation 2021-12 (Clause 3.2.1) Recycled water

Item	Detail
IPART's recommendation to the Minister	By 30 June 2022, Hunter Water must document the process for providing annual reports on recycled water to end users and clearly communicate this process with each end user.
Progress on audit findings as reported by utility on 28 June 2022	The process for providing annual reports has been documented in the Corporate RWQMP. Customers will be notified by 30 June 2022.
IPART guidance	Auditor to check for completion.
Audit finding	Hunter Water provided copies of letters dated 30/6/2022 to Branxton Golf Club, The Vintage Golf Club and Cooreei Farm that describe the new process for providing annual reports. A copy of the report on recycled water quality from Branxton WWTW sent to Branxton Golf Club was also provided.
Recommendation status	This recommendation is closed

4.13 Recommendation 2021-13 (Clause 3.2.1) Recycled water

Table 4-13 Recommendation 2021-13 (Clause 3.2.1) Recycled water

Item	Detail
IPART's recommendation to the Minister	By 31 March 2022, Hunter Water must update the Corporate Recycled Water Quality Management Plan to reflect changes to the process for scheduling internal audits of Recycled Water Quality Management Plans, including how the scope of the audits is determined and how the audit recommendations are actioned and tracked.
Progress on audit findings as reported by utility on 28 June 2022	The Corporate RWQMP has been updated to reflect changes to the process for scheduling internal audits of RWQMPs.
IPART guidance	Auditor to check for completion.
Audit finding	Section 11.2.1 of the Corporate Recycled Water Quality Management Plan (HW2008-1592/20/22.001, v14 dated 1/9/2022) includes description of how internal audits of recycled water systems are schedule in the Procedure - 2LOD Integrated Management System Audits (HW2013-421/11.003). This description was consistent with the procedure described during the audit.
Recommendation status	This recommendation is closed

4.14 Recommendation 2021-14 (Clause 3.2.2) Recycled water

Table 4-14 Recommendation 2021-14 (Clause 3.2.2) Recycled water

Item	Detail
------	--------

IPART's recommendation to the Minister	By 31 March 2022, Hunter Water must ensure that all recycled water customer agreements are not past their expiry date, and it must develop procedures to ensure the agreements are extended or renewed before the expiry date.
Progress on audit findings as reported by utility on 28 June 2022	All agreements are current in line with Clause 1.5(b): "After the Expiry Date, if Hunter Water continues to supply and the Customer continues to take Recycled Water, then this Agreement will continue to apply on a monthly basis." Hunter Water is updating its Recycled Water agreement in line with a general review of Recycled Water, Trade Waste and Non-standard customer agreements. Customers have been advised that a review of agreements will be conducted when this is complete. Once all reviewed agreements are in place dates will be manually updated in Velocity and a queue will generate a request to enter into agreement negotiations. Due to the large-scale review that is required, it is anticipated that this will be completed by 30 November 2022.
IPART guidance	Auditor to check for completion.
Audit finding	Hunter Water provided copies of letters to Branxton Golf Club (15/10/2021) and Cooreei Farm (19/10/2020) that describes the process to review and update the recycled water supply agreements and extending the current agreement until a new agreement is executed. A copy of the agreement for The Vintage Golf Club was also provided which expires on 2/2/2045.
Recommendation status	This recommendation is closed

4.15 Recommendation 2021-15 (Clause 3.2.2) Recycled water

Table 4-15 Recommendation 2021-14 (Clause 3.2.2) Recycled water

Item	Detail
IPART's recommendation to the Minister	By 31 March 2022, Hunter Water must update the process flow diagram for Kurri Kurri Wastewater Treatment Works to accurately reflect the current number of clarifiers and chemical dosing.
Progress on audit findings as reported by utility on 28 June 2022	The process flow diagram for Branxton WWTW has been updated reflect the current number of clarifiers and chemical dosing.
IPART guidance	Auditor to check for completion.
Audit finding	An updated process flow diagram for Kurri Kurri WWTW dated March 2022 was provided. This diagram shows the number of clarifiers and chemical dosing that were observed at the 2020/21 audit.
Recommendation status	This recommendation is closed

4.16 Recommendation 2021-16 (Clause 3.2.2) Recycled water

Table 4-16 Recommendation 2021-14 (Clause 3.2.2) Recycled water

Item	Detail
IPART's recommendation to the Minister	By 31 March 2022 Hunter Water must review, together with Veolia, the need for testing of every delivery of aluminium sulphate at wastewater treatment works and update the work instruction for delivery and testing to reflect the outcome of this review.
Progress on audit findings as reported by utility on 28 June 2022	The review of testing of every delivery of aluminium sulphate at wastewater treatment works has been reviewed and the work instruction has been updated as required.
IPART guidance	Auditor to check for completion.
Audit finding	The requirement to test every delivery of aluminium sulphate was reviewed by Veolia and found that it was not required for wastewater

treatment plants. A specific wastewater treatment work instruction for Alum Ordering, Delivery Testing -WWTWs (WIS-2976, v2.0 dated 11/1/2020) was created and provided which does not include a requirement to test every delivery.

Recommendation status This recommendation is closed

4.17 Recommendation 2021-17 (Clause 3.2.2) Recycled water

Table 4-17 Recommendation 2021-14 (Clause 3.2.2) Recycled water

Item	Detail
IPART's recommendation to the Minister	By 30 June 2022, Hunter Water must include the basis for the 4 log reduction in helminths in the membrane bioreactor at Dungog Wastewater Treatment Works. Hunter Water must update the Validation Testing Program for Water Recycling Schemes to include the log reductions for the upgraded Dungog Wastewater Treatment Works. Hunter Water must also develop a process to ensure changes to log reduction values are reviewed and incorporated into the Validation Testing Program for Water Recycling Schemes.
Progress on audit findings as reported by utility on 28 June 2022	The basis for the Dungog WWTW log reduction value has been reviewed and the RWQMP has been updated.
IPART guidance	Auditor to check for completion.
Audit finding	Section 9.1 of the Dungog RWQMP (v8 dated September 2022) includes a description of how the 4-log reduction in helminths is achieved including references to literature. An email from NSW Health on 14/9/2022 confirming they have reviewed and are satisfied with the changes to the Dungog RWQMP was also provided
Recommendation status	This recommendation is closed

4.18 Recommendation 2021-18 (Clause 3.2.2) Recycled water

Table 4-18 Recommendation 2021-14 (Clause 3.2.2) Recycled water

Item	Detail
IPART's recommendation to the Minister	By 31 March 2022, Hunter Water must update the Disinfected Effluent UVT limit to reflect the CCP limit in the spreadsheet used to present long term trends of Kurri Kurri recycled water quality and check all other recycled water trend spreadsheets for discrepancies in the limits.
Progress on audit findings as reported by utility on 28 June 2022	The Kurri Kurri process spreadsheets have been updated to reflect the CCP limit.
IPART guidance	Auditor to check for completion.
Audit finding	A copy of the recycled water quality spreadsheet for Kurri Kurri WWTW was provided as evidence and shows the UVT limit on the long-term trend has been updated to 45% which is the same as the CCP.
Recommendation status	This recommendation is closed

4.19 Recommendation 2020-02 (Clause 3.2.1) Recycled water

Table 4-19 Recommendation 2020-02 (Clause 3.2.1) Recycled water

Item	Detail
IPART's recommendation to the Minister	By 31 October 2021, Hunter Water should ensure that the quality assurance and validation procedures for sampling are documented in its recycled water quality monitoring plan. The AGWR (Box 2.10) requires that quality assurance details are in a monitoring plan.

Progress on audit findings as reported by utility on 28 June 2022

IPART guidance	Auditor to check for completion.
Audit finding	Section 5.3.1 of the Corporate RWQMP includes requirement in ALS contract to use NATA accredited methods and references the ALS sampling procedure number
Recommendation status	This recommendation is closed.

4.20 Recommendation 2013-14-03, 2013-14-04, 2013-14-06, 2013-14-13 (Clause 3.2.1 and 3.2.2) Recycled water

Table 4-20 Recommendation 2013-14-03, 2013-14-04, 2013-14-06, 2013-14-13 (Clause 3.2.1 and 3.2.2) Recycled water

Item	Detail
IPART's recommendation to the Minister	<p>Within 6 months, Hunter Water should review Critical Control Points (CCPs) for each treatment plant, including:</p> <p>a) review all CCP critical limits (including alarm delays), and monitoring points to ensure they reflect current practice, as agreed with NSW Health. (Note: other elements of these recommendations had been fully addressed in previous audits)</p>
Progress on audit findings as reported by utility on 28 June 2022	
IPART guidance	Auditor to check for completion.
Audit finding	<p>Hunter Water have reviewed the SCADA alarms and delays have been reviewed by Veolia. During the audit site visit to Branxton WWTW the CCP limits and delays on SCADA were reviewed and found to be consistent with the RWQMP and critical limits were not able to be changed by the operator.</p> <p>NSW Health responded on the Recycled Water Existing Schemes Validation Program on 1/7/2020 and confirmed that their comments on the previous version had been addressed. In their response, NSW Health requested consideration of the appropriateness of using means to calculate LRVs and to investigate online UVT analysers.</p> <p>Hunter Water have sought advice from Water Futures on the use of the 5th percentile and provided this information to NSW Health on 23/6/2021. Hunter Water had not received a response from NSW Health at the time of the audit.</p> <p>Hunter Water have also reviewed the CCP limits for UVT against the minimum criteria for the UV system to achieve the required LRV and provide this information to NSW Health on 30/6/2021. Hunter Water had not received a response from NSW Health at the time of the audit.</p> <p>While ongoing liaison is being undertaken with NSW Health, we consider that the original recommendation is complete.</p>
Recommendation status	This recommendation is closed

4.21 Recommendation 2021-19 (Clause 4.3.1) Quality management system

Table 4-21 Recommendation 2021-19 (Clause 4.3.1) Quality management system

Item	Detail
IPART's recommendation to the Minister	By 31 October 2022, Hunter Water should develop a plan for, and report on, its progress with implementing the proposed opportunities for improvement for its Integrated Management System document control.
Progress on audit findings as reported by utility on 28 June 2022	The plan associated with the Integrated Management System document control improvement project is substantially developed and will be available for review along with a progress report by 31 October 2022. It is

	expected that the project implementation will make significant progress over the following year.
IPART guidance	Auditor to check for completion.
Audit finding	<p>An interim document control change management plan was sighted as evidence of progressing Stage One of the improvement project. Records of management meetings provided evidence of appropriate oversight of the process at an appropriate level (Executive Management Team). A dedicated resource has been allocated to the area (Governance and Policy Coordinator). Originally selected proprietary software products, as the document control solutions, were found lacking and therefore, an Access Database has been implemented as an interim solution. The database was tested at the interview and found to have appropriate functionality (e.g., ability to store documents, ability to record document history, ability to transmit updated documents to the correct stakeholders), to meet document control requirements. Moreover, the database facilitates downloads for reporting and tracking purposes, and is organised by Integrated Management System functional areas making it easy to search. Since implementation of the interim solution, the proportion of overdue documents has been reduced from around 50% last year, to around 20%, at the time of the site visit.</p> <p>The database is practical, easy to use, fulfills the requirements of this recommendation and should be considered for Hunter Water's long-term document control solution.</p> <p>Noteworthy observation: The hierarchy approach that has been developed to categorise functional areas within the business is practical and sensible. It should facilitate integration across the organisation and improve usage of, and compliance with, document control.</p>
Recommendation status	Given that this recommendation required Hunter Water to develop a plan and report on it, this recommendation is considered closed, with an additional recommendation and an OFI for consideration included under Element 10 of Clause 3.1.2, to foster improvement in this area.

4.22 Recommendation 2021-20 (Clause 5.7.1) Provision of information to Customers and the general public

Table 4-22 Recommendation 2021-20 (Clause 5.7.1) Provision of information to Customers and the general public

Item	Detail
IPART's recommendation to the Minister	By 30 September 2022, Hunter Water should include a brief explanation of actions for non-payment in a pamphlet that is distributed with bills at least annually.
Progress on audit findings as reported by utility on 28 June 2022	Hunter Water has included this information in a pamphlet that will be distributed in the next bill cycle commencing 1 July 2022.
IPART guidance	Auditor to check for completion.
Audit finding	<p>Hunter Water has prepared and distributed a <i>Payment support & assistance options</i> pamphlet at least annually. This provides a summary of the payment support and assistance options available to customers. We note that this pamphlet does not contain information on actions for non-payment, such as restrictions and legal actions. To this end, Hunter Water advised that actions for non-payment are summarised within the bill itself, with the customer being directed to hunterwater.com.au and Hunter Water's <i>Debt Recovery and Hardship Policy</i> for further information. Hunter Water provided a screenshot of part of a typical bill as evidence.</p>
Recommendation status	This recommendation is closed.

4.23 Recommendation 2021-21 (Clause 6.2.1) Reporting manual

Table 4-23 Recommendation 2021-21 (Clause 6.2.1) Reporting manual

Item	Detail
IPART's recommendation to the Minister	By 30 September 2022, Hunter Water should set up a process to ensure that IPART, as well as NSW Health, are advised of any proposed significant changes to the Drinking Water and Recycled Water Quality Systems.
Progress on audit findings as reported by utility on 28 June 2022	A process to ensure that IPART and NSW Health are advised of changes to the Drinking Water and Recycled Water Quality Systems is being developed. Completion of this task is expected to be 30 September 2022.
IPART guidance	Auditor to check for completion.
Audit finding	Hunter Water provided the Guideline - Catchment to Tap Risk Assessment for Drinking Water Quality, Version 5 which had been updated to define the process that ensures that IPART and NSW Health are notified. We confirmed that the Section 4.2 Unscheduled Risk Assessment included text that highlighted the need to advise IPART as well as NSW Health. However, we were advised that no process for advising IPART had been documented for recycled water. It should be noted that the failure of Hunter Water to notify IPART of a proposed new CCP at Dungog WWTP as required under section 3.2.2 of the Reporting Manual had prompted the recommendation in last year's audit.
Recommendation status	Recommendation remains open until a process is set up in relation to Recycled Water Quality

4.24 Recommendation 2021-22 (Clause 6.2.1) Reporting manual

Table 4-24 Recommendation 2021-22 (Clause 6.2.1) Reporting manual

Item	Detail
IPART's recommendation to the Minister	By 30 September 2022, Hunter Water should review and update the Corporate Standard – Reporting and Monitoring Protocol, following completion of the BOM review of NPR reporting in late February 2022.
Progress on audit findings as reported by utility on 28 June 2022	As of 20 June 2022, the BOM has not completed their review of NPR reporting. Hunter Water anticipates the review and revision of the Reporting and Monitoring Protocol will be complete approximately six months after receiving the new parameters from the BOM.
IPART guidance	Auditor to check for completion.
Audit finding	We were advised that the Bureau of Meteorology (BOM) review had been significantly delayed and had not been completed at the time of the audit interviews. Nevertheless, Hunter Water had updated the Corporate Standard – Reporting and Monitoring Protocol to address the shortcomings noted in the 2021 audit. A review of the document confirmed that the items noted as deficiencies in the previous audit had been addressed
Recommendation status	This recommendation is closed

5 Appendix A – Evidence sighted

Clause 3.1 – Drinking water

- > 2021-2022 Compliance and Performance Report.pdf
- > 3.1-ADWG-01-E001 - HW2006-2906 2 6.006 Plan - Water Quality Monitoring Plan.pdf
- > 3.1-ADWG-01-E002 - HW2006-2968 41 44.001 Drinking Water Quality Policy.pdf
- > 3.1-ADWG-01-E003 - HW2015-1444 5.008 Report - DWQMS Manual Update Process Report.pdf
- > 3.1-ADWG-01-E004 - Plan - Emergency Communications Plan.DOCX
- > 3.1-ADWG-01-E005 - Quality legal and other requirements register.xlsx
- > 3.1-ADWG-01-E006 - Register - Business Resilience Yearly Event Calendar Schedule (2022).XLSX
- > 3.1-ADWG-01.1-E001 - Hunter- Grade 6 Operator Position Description.docx
- > 3.1-ADWG-01.1-E002 - Hunter Water's Drinking Water Quality Policy displayed at Dungog WTP.jpg
- > 3.1-ADWG-01.1-E003 - HW2006-2968 41 44.001 Drinking Water Quality Policy.pdf
- > 3.1-ADWG-01.1-E004 - Photos of Hunter Water and Veolia Drinking Water Quality Policies at Grahamstown and Dungog WTPs.pdf
- > 3.1-ADWG-02.3-E001 - HW2008-704 17.004 Standard - CURRENT - Enterprise Risk Management Standard.docx
- > 3.1-ADWG-03-E001 - HW2006-2906 8 33.014 Drinking Water Quality Risk Assessment Calendar extract.pdf
- > 3.1-ADWG-03-E002 - HW2015-1303 6.002 Guideline - Catchment to Tap Risk Assessment for Drinking Water Quality Guideline.pdf
- > 3.1-ADWG-03-E003 - HW2015-1343 16 8.002 Report - Dungog WTP Workshop Briefing Paper Part 1 Catchment - FINAL.PDF
- > 3.1-ADWG-03-E004 - HW2015-1343 16 8.005 Report - Dungog WTP Workshop Briefing Paper Part 2 Water Treatment Plan - FINAL.PDF
- > 3.1-ADWG-03-E005 - HW2015-1343 22 2.006 Report - Grahamstown WTP Water Quality Risk Assessment Briefing Note.PDF
- > 3.1-ADWG-03-E006 - HW2015-1343 22 2.012 Report - Grahamstown WTP Water Quality Risk Assessment output paper V1.0.pdf
- > 3.1-ADWG-03-E007 - HW2015-1365 10.008 Register - Grahamstown WTP Risk Assessment.pdf
- > 3.1-ADWG-03-E008 - HW2015-1365 94.002 Register - Dungog WTP Risk Assessment.XLSX
- > 3.1-ADWG-03-E009 - HW2015-1444 3.001 Procedure - Establishing and Reviewing Drinking Water Critical Control Points.pdf
- > 3.1-ADWG-03-E010 - Report - DungogWTSS_RA_Report_FINAL.PDF
- > 3.1-ADWG-03.2-E001 - HW2012-1337 11 31.001 Procedure - Water Network CCP Non-conformance Response.pdf
- > 3.1-ADWG-03.2-E002 - HW2014-778 15 30 Register - veolia - changes to Drinking Water Quality CCPs and other compliance req.xlsx
- > 3.1-ADWG-03.2-E003 - HW2014-778 46.001 Register - Water Quality Target Change Requests (to and from Veolia) GWTP DWTP.xlsx
- > 3.1-ADWG-03.2-E004 - HW2015-1303 10.003 Register - Network Chlorinators CCP Limit Table.pdf
- > 3.1-ADWG-03.2-E005 - SCADA Screenshots for Dungog WTP for each CCP.pdf
- > 3.1-ADWG-04-E001 - Drinking Water Quality Management Plan - MAN-2813-3.pdf

- > 3.1-ADWG-04, 5-E001 - Algae data extract.docx
- > 3.1-ADWG-04, 5-E002 - Data - Water Quality Summary Data - December 2021.XLSX
- > 3.1-ADWG-04, 5-E003 - Data - Water Quality Summary Data - June 2022.XLSX
- > 3.1-ADWG-04, 5-E004 - Data - Water Quality Summary Data - March 2022.XLSX
- > 3.1-ADWG-04, 5-E005 - HW2006-1897.027 Agreement - Copy of Original Hunter Central Coast Pipeline Agreement -.pdf
- > 3.1-ADWG-04, 5-E006 - HW2006-2906 2 6.006 Plan - Water Quality Monitoring Plan.docx
- > 3.1-ADWG-04, 5-E007 - HW2006-2906 4 6.009 Blue-green Algae Alert Level Framework - Potable Water.pdf
- > 3.1-ADWG-04, 5-E008 - HW2006-2906 4 6.012 Blue-Green Algae Contingency Plan for Potable Waters.pdf
- > 3.1-ADWG-04, 5-E009 - HW2007-2177 23 26.038 Agreement - MidCoast Water Agreement to Provide Water and Sewerage Services 17.pdf
- > 3.1-ADWG-04, 5-E010 - HW2008-235 29 8.019 Plan - Service Fault Map.PDF
- > 3.1-ADWG-04, 5-E011 - HW2015-1469 7 4.011 Standard - Complaint Handling Standard - ISO 10002-2022.docx
- > 3.1-ADWG-04, 5-E012 - Water Quality Data - Dungog and Grahamstown water supply zones - 01.01.2022 to 31.08.2022.xlsx
- > 3.1-ADWG-04.1.4.3-E001 - STS-408-Water-Quality-Acceptance-Testing.pdf
- > 3.1-ADWG-04.1.4.3-E003 - Grahamstown WTP Plant Manual.pdf
- > 3.1-ADWG-04.2 5.1 5.2-E001 - Data - Water Quality Summary Data - December 2021.XLSX
- > 3.1-ADWG-04.2 5.1 5.2-E002 - Data - Water Quality Summary Data - June 2022.XLSX
- > 3.1-ADWG-04.2 5.1 5.2-E003 - Data - Water Quality Summary Data - March 2022.XLSX
- > 3.1-ADWG-04.2 5.1 5.2-E004 - TEM-5055-5 Dungog WTP - Flow Diagram.pdf
- > 3.1-ADWG-04.2 5.1 5.2-E005 - TEM-5056-7 Grahamstown WTP - Flow Diagram.pdf
- > 3.1-ADWG-04.4-E001 - Dungog February Calibration.pdf
- > 3.1-ADWG-04.4-E002 - Dungog June Calibration.pdf
- > 3.1-ADWG-04.4-E003 - Dungog September Calibration.pdf
- > 3.1-ADWG-04.4-E004 - Grahamstown Feb, June, September.pdf
- > 3.1-ADWG-04.5-E001 - August Dungog Alum Certificate of Compliance_Alum_June_2022_22-0772-15 AlumSO4 June 2022 Tomago V-H.pdf
- > 3.1-ADWG-04.5-E002 - August Dungog Alum Deliver y2.jpg
- > 3.1-ADWG-04.5-E003 - August Dungog Alum Delivery.jpg
- > 3.1-ADWG-04.5-E004 - August Dungog Chlorine 25.8.22.jpg
- > 3.1-ADWG-04.5-E005 - August Dungog Chlorine SP034461 Analysis on IXOM Laverton Liquid November 2021 - AWWA Conformance.pdf
- > 3.1-ADWG-04.5-E006 - August Dungog CO2 Scan02-08-2022-114540.pdf
- > 3.1-ADWG-04.5-E007 - August Dungog Flouride COA.pdf
- > 3.1-ADWG-04.5-E008 - August Dungog Flouride Scan02-08-2022-114203.pdf
- > 3.1-ADWG-04.5-E009 - August Dungog Lime 2AT-202208-0007-00080489-F.pdf
- > 3.1-ADWG-04.5-E010 - August Dungog Lime 2AT-202208-0007-ATT-ITEM-6437.pdf
- > 3.1-ADWG-04.5-E011 - August Dungog Lime ATTUNGA MU Report-Bulk Hydrated Lime.pdf

- > 3.1-ADWG-04.5-E012 - August Dungog Lime Delivery docket.jpg
- > 3.1-ADWG-04.5-E013 - August Dungog Polymer CH4531_FA920PWG.PDF
- > 3.1-ADWG-04.5-E014 - August Dungog Polymer Scan11-04-2022-135046.pdf
- > 3.1-ADWG-04.5-E015 - August Grahamstown Alum Certificate of Compliance_Alum_June_2022_22-0772-15 AlumSO4 June 2022.pdf
- > 3.1-ADWG-04.5-E016 - August Grahamstown Alum Scan15-09-2022-143621.pdf
- > 3.1-ADWG-04.5-E017 - August Grahamstown Chlorine Scan15-09-2022-140152.pdf
- > 3.1-ADWG-04.5-E018 - August Grahamstown Fluoride 8.8 GRA FI Delivery.pdf
- > 3.1-ADWG-04.5-E019 - August Grahamstown Fluoride Scan15-09-2022-133235.pdf
- > 3.1-ADWG-04.5-E020 - August Grahamstown Lime 2AT-202208-0007-00080489-F.pdf
- > 3.1-ADWG-04.5-E021 - August Grahamstown Lime 2AT-202208-0007-ATT-ITEM-6437.pdf
- > 3.1-ADWG-04.5-E022 - August Grahamstown Lime ATTUNGA MU Report-Bulk Hydrated Lime.pdf
- > 3.1-ADWG-04.5-E023 - August Grahamstown Lime Scan15-09-2022-152033.pdf
- > 3.1-ADWG-04.5-E024 - August Grahamstown Polymer CH4531_FA920PWG.PDF
- > 3.1-ADWG-04.5-E025 - August Grahamstown Polymer VEOLIA - GRAHAMSTOWN_HUNTERPW_PT095176_PO 7300115300_DD.pdf
- > 3.1-ADWG-04.5-E026 - August GrahSP034461 Analysis on IXOM Laverton Liquid Chlorine November 2021 - AWWA Conformance.pdf
- > 3.1-ADWG-04.5-E027 - Drinking Water Quality Management Plan - MAN-2813-3.pdf
- > 3.1-ADWG-04.5-E028 - January Dungog Alum Certificate of Compliance_Alum_SO4 January 2022 Tomago V-H.pdf
- > 3.1-ADWG-04.5-E029 - January Dungog Alum Delivery.jpg
- > 3.1-ADWG-04.5-E030 - January Dungog Chlorine 5.1.22.jpg
- > 3.1-ADWG-04.5-E031 - January Dungog Chlorine SP034461 Analysis on IXOM Laverton Liquid Chlorine November 2021 - .pdf
- > 3.1-ADWG-04.5-E032 - January Dungog CO2 Scan13-01-2022-120718.pdf
- > 3.1-ADWG-04.5-E033 - January Dungog Fluoride 24.1 coa.jpg
- > 3.1-ADWG-04.5-E034 - January Dungog Fluoride 24.1 Delivery.jpg
- > 3.1-ADWG-04.5-E035 - January Dungog Lime 2AT-202202-0009-00078860-F.pdf
- > 3.1-ADWG-04.5-E036 - January Dungog Lime 2AT-202202-0009-ATT-ITEM-6241.pdf
- > 3.1-ADWG-04.5-E037 - January Dungog Lime ATTUNGA MU Report-Bulk Hydrated Lime.pdf
- > 3.1-ADWG-04.5-E038 - January Dungog Lime unnamed.jpg
- > 3.1-ADWG-04.5-E039 - January Grahamstown Alum Certificate of Compliance_Alum_January_2022_22-0532-18 .pdf
- > 3.1-ADWG-04.5-E040 - January Grahamstown Alum Scan15-09-2022-143720.pdf
- > 3.1-ADWG-04.5-E041 - January Grahamstown Chlorine Scan15-09-2022-140219.pdf
- > 3.1-ADWG-04.5-E042 - January Grahamstown Fluoride Certificate Of Analysis 5564277.pdf
- > 3.1-ADWG-04.5-E043 - January Grahamstown Fluoride Scan15-09-2022-124459.pdf
- > 3.1-ADWG-04.5-E044 - January Grahamstown Lime 2AT-202202-0009-00078860-F.pdf
- > 3.1-ADWG-04.5-E045 - January Grahamstown Lime 2AT-202202-0009-ATT-ITEM-6241.pdf
- > 3.1-ADWG-04.5-E046 - January Grahamstown Lime ATTUNGA MU Report-Bulk Hydrated Lime.pdf

- > 3.1-ADWG-04.5-E047 - January Grahamstown Lime Scan15-09-2022-152000.pdf
- > 3.1-ADWG-04.5-E048 - January Grahamstown Poly CH4531_FA920PWG.PDF
- > 3.1-ADWG-04.5-E049 - Lab Chemicals Fluoride.pdf
- > 3.1-ADWG-04.5-E050 - Lab Chemicals Free Chlorine.pdf
- > 3.1-ADWG-04.5-E051 - Lab Chemicals pH4.pdf
- > 3.1-ADWG-04.5-E052 - Lab Chemicals pH7.pdf
- > 3.1-ADWG-04.5-E053 - Lab Chemicals StablCa Calibration Set for 2100Q.pdf
- > 3.1-ADWG-04.5-E054 - Lab Chemicals StablCal Calibration Set with RFID-Tag.pdf
- > 3.1-ADWG-04.5-E055 - March Dungog Alum Certificate of Compliance_Alum_March_2022_22-0532-21 AlumSO4 April 2022 Tomago V-H.pdf
- > 3.1-ADWG-04.5-E056 - March Dungog Alum Delivery.jpg
- > 3.1-ADWG-04.5-E057 - March Dungog Chlorine 25.3.22.jpg
- > 3.1-ADWG-04.5-E058 - March Dungog Chlorine SP034461 Analysis on IXOM Laverton Liquid Chlorine November 2021.pdf
- > 3.1-ADWG-04.5-E059 - March Dungog CO2 COA.jpg
- > 3.1-ADWG-04.5-E060 - March Dungog CO2 Delivery.jpg
- > 3.1-ADWG-04.5-E061 - March Dungog Lime 2AT-202204-0031-00079328-F.pdf
- > 3.1-ADWG-04.5-E062 - March Dungog Lime 2AT-202204-0031-ATT-ITEM-6297.pdf
- > 3.1-ADWG-04.5-E063 - March Dungog Lime ATTUNGA MU Report-Bulk Hydrated Lime.pdf
- > 3.1-ADWG-04.5-E064 - March Dungog Lime Delivery.jpg
- > 3.1-ADWG-04.5-E065 - March Dungog Polymer Certificate of Analysis.PDF
- > 3.1-ADWG-04.5-E066 - March Dungog Polymer CH4531_FA920PWG.PDF
- > 3.1-ADWG-04.5-E067 - March Grahamstown Alum Certificate of Compliance_Alum_March_2022_22-0532-21 AlumSO4 April 2022.pdf
- > 3.1-ADWG-04.5-E068 - March Grahamstown Alum Scan15-09-2022-143706.pdf
- > 3.1-ADWG-04.5-E069 - March Grahamstown Chlorine Scan15-09-2022-140205.pdf
- > 3.1-ADWG-04.5-E070 - March Grahamstown Chlorine SP034461 Analysis on IXOM Laverton Liquid Chlorine November 2021.pdf
- > 3.1-ADWG-04.5-E071 - March Grahamstown Fluoride Certificate Of Analysis 5484664.pdf
- > 3.1-ADWG-04.5-E072 - March Grahamstown Fluoride Scan15-09-2022-132534.pdf
- > 3.1-ADWG-04.5-E073 - March Grahamstown Lime 2AT-202204-0031-00079328-F.pdf
- > 3.1-ADWG-04.5-E074 - March Grahamstown Lime 2AT-202204-0031-ATT-ITEM-6297.pdf
- > 3.1-ADWG-04.5-E075 - March Grahamstown Lime ATTUNGA MU Report-Bulk Hydrated Lime.pdf
- > 3.1-ADWG-04.5-E076 - March Grahamstown Lime Scan15-09-2022-152052.pdf
- > 3.1-ADWG-06-E001 - Drinking Water Quality Management Plan - MAN-2813-3.pdf
- > 3.1-ADWG-06-E002 - HW2010-1986 8.023 Procedure - Water Quality Exception Reporting - CURRENT.pdf
- > 3.1-ADWG-06-E003 - PN111 - Drinking Water Standards.pdf
- > 3.1-ADWG-06-E004 - PN201 - Water Quality Incident Notification.pdf
- > 3.1-ADWG-06.1-E001 - Dungog Contact List - Location.pdf
- > 3.1-ADWG-06.1-E002 - Dungog Contact List - Version.pdf

- > 3.1-ADWG-06.1-E003 - Grahamstown Contact List - Location.pdf
- > 3.1-ADWG-06.1-E004 - Grahamstown Contact List - Version.pdf
- > 3.1-ADWG-06.1-E005 - TEM-2802 HW - Emergency Contact List.pdf
- > 3.1-ADWG-06.2,7.2-E001 - Desktop Scenario Extreme Wet Weather Event 02092022.pdf
- > 3.1-ADWG-06.2,7.2-E002 - DWQA (ELSA Screenshots) - 24022021 (1).pptx
- > 3.1-ADWG-06.2,7.2-E003 - ELSA training records.xlsx
- > 3.1-ADWG-06.2,7.2-E004 - Grahamstown WTP Weekly Duties Competency Checklist NICJ.pdf
- > 3.1-ADWG-06.2,7.2-E005 - Grahamstown WTP Weekly Duties Competency Checklist RORP.pdf
- > 3.1-ADWG-06.2,7.2-E006 - Powerpoint-STS 408-Hunter-Water-Training.pdf
- > 3.1-ADWG-06.2,7.2-E007 - Report - 2021 Emergency Exercise - Debrief Report.DOCX
- > 3.1-ADWG-06.2,7.2-E008 - Report - EMT 2021 Emergency Exercise Report.DOCX
- > 3.1-ADWG-06.2,7.2-E009 - Report - Hunter Water - Emergency Exercise Report (RiskLogic).PDF
- > 3.1-ADWG-06.2,7.2-E010 - WTP Operator Competencies.pdf
- > 3.1-ADWG-06.2&3-E001 - Extract from Integrum - Incidents Dungog and Grahamstown Audit Period with Follow-up.xlsx
- > 3.1-ADWG-06.2&3-E002 - RE Grahamstown R
- > 3.1-ADWG-06.2&3-E002 - RE Grahamstown Raw - Elevated Microcystis - Medium Alert - Sample Collected on 19042022.msg
- > 3.1-ADWG-07-E001 - Drinking Water Quality Management Plan - MAN-2813-3.pdf
- > 3.1-ADWG-07-E002 - Screen shot - HW training matrix.pdf
- > 3.1-ADWG-07-E003 - WTP Operator Competencies.pdf
- > 3.1-ADWG-09-E001 - Building and development web page.docx
- > 3.1-ADWG-09-E002 - HW2006-1417 36 10.011 Minutes - June 2022 Water Quality Committee.pdf
- > 3.1-ADWG-09-E003 - HW2006-1417 37 1.009 Minutes - July 2022 Water Quality Committee.pdf
- > 3.1-ADWG-09-E004 - HW2007-2744 5.082 Guideline - QG052 Design Validation Guideline - CURRENT.pdf
- > 3.1-ADWG-09-E005 - InnoVeo Presentation 02.06.2022.pdf
- > 3.1-ADWG-10-E001 - Drinking Water Quality Management Plan - MAN-2813-3.pdf
- > 3.1-ADWG-10-E002 - HW2013-421 22.002 Standard - Integrated Management System Document Management.DOCX
- > 3.1-ADWG-10.2,6.2,6.3-E001 - BCS2021-9-04 2.004 Committee Paper - Water Quality Risk Management.pdf
- > 3.1-ADWG-10.2,6.2,6.3-E002 - HW2006-1417 36 9.001 Report - Water Network Operations - June 2022.pdf
- > 3.1-ADWG-10.2,6.2,6.3-E003 - HW2006-1417 36 10.011 Minutes - June 2022 Water Quality Committee.pdf
- > 3.1-ADWG-10.2,6.2,6.3-E004 - HW2006-1417 37 1.002 Presentation - WTP Monthly Performance - June 2022.pdf
- > 3.1-ADWG-10.2,6.2,6.3-E005 - HW2006-1417 37 1.009 Minutes - July 2022 Water Quality Committee.pdf
- > 3.1-ADWG-10.2,6.2,6.3-E006 - HW2006-1417 37 1.012 Report - Drinking Water Quality Improvement Plan June 2022.pdf

- > 3.1-ADWG-10.2,6.2,6.3-E007 - HW2006-1417 37 2.001 Report - Water Network Operations - July 2022.pdf
- > 3.1-ADWG-10.2,6.2,6.3-E008 - HW2006-1417 37 2.002 Presentation - WTP Monthly Performance - July 2022.pdf
- > 3.1-ADWG-10.2,6.2,6.3-E009 - HW2006-1417 37 2.004 Report - Drinking Water Quality Improvement Plan July 2022.pdf
- > 3.1-ADWG-10.2,6.2,6.3-E010 - HW2006-1448 64 4.014 Email - Agenda - Hunter Water NSW Health Liaison Committee Ag.MSG
- > 3.1-ADWG-10.2,6.2,6.3-E011 - HW2006-1448 64 5.019 Email - Upcoming Health-Hunter Water liaison meeting - agenda.MSG
- > 3.1-ADWG-10.2,6.2,6.3-E012 - HW2015-1443 10 9.002 Report - Drinking Water Quality Improvement Plan Investment .pdf
- > 3.1-ADWG-10.2,6.2,6.3-E013 - Management Review 2022 V1 20220502.pdf
- > 3.1-ADWG-11-E001 - 00825 01656 81728 nl.pdf
- > 3.1-ADWG-11-E002 - 00825 01656 cert 2022.pdf
- > 3.1-ADWG-11-E003 - 00825 09847 76412 nl.pdf
- > 3.1-ADWG-11-E004 - 00825 09847 cert 2022.pdf
- > 3.1-ADWG-11-E005 - Drinking Water Quality Management Plan - MAN-2813-3.pdf
- > 3.1-ADWG-11-E006 - HW2006-1417 36 10.011 Minutes - June 2022 Water Quality Committee.pdf
- > 3.1-ADWG-11-E007 - HW2006-1417 37 1.009 Minutes - July 2022 Water Quality Committee.pdf
- > 3.1-ADWG-11-E008 - HW2013-421 9.001 Register - 2LOD IMS Audit Programme - CURRENT.XLSX
- > 3.1-ADWG-11-E009 - HW2013-421 11.003 Procedure - 2LOD Integrated Management System Audits.docx
- > 3.1-ADWG-11-E010 - Newcastle Biology Laboratory - ALS Life Sciences Environmental - Accredited Organisation (Site No. 9847).pdf
- > 3.1-ADWG-11-E011 - Newcastle Chemistry Laboratory - ALS Life Sciences Environmental - Accredited Organisation (Site No. 165).pdf
- > 3.1-ADWG-11.2-E001 - HW2010-601 61 4.001 Report - Dungog WTP and Temporary PAC dosing system Site Inspection - 22nd June.pdf
- > 3.1-ADWG-11.2-E002 - HW2010-1566 43 7.001 Report - Grahamstown WTP Site Inspection - 21 June 2022.pdf
- > 3.1-ADWG-11.2-E003 - HW2015-1343 22 2.009 Report - HWC2001 Grahamstown audit report v3.0.PDF
- > 3.1-ADWG-11.2-E004 - Report - Veolia Drinking Water Quality Management System (DWQMS) Audit - 2022.PDF
- > 3.1-ADWG-12-E001 - Drinking Water Quality Management Plan - MAN-2813-3.pdf
- > 3.1-ADWG-12-E002 - DWQIP extract for Grahamstown and Dungog open actions.pdf
- > 3.1-ADWG-12.2-E001 - DWQIP extract for Grahamstown and Dungog open actions.pdf
- > 3.1.1-E001 - HW2006-2968 41 44.001 Policy - Drinking Water.pdf
- > 3.1.1-E002 - HW2015-1303 9.001 Hunter Water Drinking Water Quality Management System Manual.pdf
- > 3.1.1-E003 - HW2014-778 15 2.002 Plan - Drinking Water Quality Management Plan.pdf
- > 3.1.1-E004 - HW2006-2906 2 6.006 Water Quality Monitoring Plan.pdf
- > 3.1.1-E005 - HW2006-1448 64 4.015 Minutes - Hunter Water NSW Health Liaison Committee Meeting - June 2022.MSG

- > 4.1.2-E036 - Risk Appetite Statements - Version 3.DOCX
- > Chemical Delivery Work Permit Alum Grahamstown 14/9/22
- > SE-001 IPART Opening Meeting 1 Nov 2022.pptx
- > SE-002 Drinking Water Overview.pdf
- > SE-020 Benefits Identification and Measurement Guideline (QG062).DOCX
- > SE-021 Benefits Realisation Procedure (QP037).DOCX
- > SE-022 Belmont 6 Carrier Main Rehabilitation Benefits Assessment - Sep 2022.DOCX
- > SE-023 Benefits Realisation Management Standard (QS001).DOCX
- > SE-024 Committee Paper - EMT Brief - Climate Risk Maturity Health Check Tool.DOCX
- > SE-025 File note - Climate Risk Maturity Health Check Tool - 071221.XLSX
- > SE-026 File note - Review and update of SAMP Objectives - 2022.DOCX
- > SE-027 Committee Paper - EMT Brief - SAMP Update.DOCX
- > SE-028 Form - PDP Water Network Control Valve Improvements.DOCX
- > SE-029 Presentation - AMS Operating Licence Audit - Nov 2022.pptx
- > SE-030 Register - Actions - East Lakes Water Main Breaks 8th Jan 2021 - Root Cause Analysis.XLSX
- > SE-031 Report - East Lakes Water Main Breaks Final Report - Sologic software.DOCX
- > SE-032 Working Document - Draft Sustainability Guiding Principles_2020 (1).DOCX
- > SE-033 Report - Morpeth Stage 3 Benefits Assessment Summary - Sep 2022.DOCX
- > SE-034 Strategic Asset Management Plan (SAMP).docx
- > SE-035 Work order V assets Memo - Veolia Treatment Operations Contract - June 2023.docx
- > SE-036 Root Cause Analysis Report - East Lakes Water Main Breaks - Version 1.docx
- > SE-037 Report - State of the Assets 2022 Summary - 22 November 2022.DOCX
- > SE-038 Report - Farley WWTW Stage 3B Upgrade Benefits Assessment Summary - Sep 2022.DOCX
- > SE-039 4.1.2 IPART Audit - Supply Chain Risk.msg
- > SE-040 0005-LAYOUT PLAN AND LONG SECTIONS-HWC Civil_A1.pdf
- > SE-041 North Lambton Reservoir.msg
- > SE-042 HW2020-803 18 5.008 Plan - 16361-009_0(2) - Example of valve house roof replacement design.PDF
- > SE-043 HW2020-799 11 4.004 Form - SR120 - Appendix - North Lambton - northern slope Risk Assessment 2022-05-26.XLSM
- > SE-044 Copy of HW2020-799 11 4.005 Form - QT120 - Asset Data Collection Sheet - SR120 - North Lambton northern slope(2).XLSX
- > SE-045 Recycled-water-CA.pdf
- > SE-046 IPART Evidence BRA Lab Schedule.xlsx
- > SE-047 FW_ EXCEEDANCE NOTIFICATION for ALS Workorder _ WN2210874 _ Your Reference_ Scheduled Work - RET_Morpeth RWTP (Sample Date_ 09-0.msg
- > SE-048 HW2008-1592.067 Memo - RW Water Quality Data Assessment Methodology IPART Recommendation - Final.DOCX
- > SE-049 FW_ Purified Recycled Water.msg
- > SE-050 12_Kurri Kurri RWQLT.xlsx
- > SE-051 Excerpt from WWQMP and Alum Delivery.msg

- > SE-052 RE_ ELG Example.msg
- > SE-052a Veolia Hunter Water meeting evidence.msg
- > SE-053 FW_ Improvement Item Response Regarding UVt.msg
- > SE-054 FW_ Closing out the RMIP action relating to considering the 5%ile statistic for recycled water scheme validation .msg
- > SE-055 FW_ WWTW Recycled Water Existing Schemes Validation Program.msg
- > SE-058a Excerpt from WWQMP and Alum Delivery.msg
- > SE-058bSodium Bisulphite invoice and sample description.msg
- > SE-059 HW2012-778 92 23.001 Schedule - Compliance Calendar - 2021 2022.XLSX
- > SE-060 22-02 Business Performance Report (2).PDF
- > SE-061 Protecht 2022-10 Detailed Version.pptx
- > SE-062 6.2.1 Qtly Exception Reporting to NSW Health .msg
- > SE-063a Extract of NSW Health Liaison meeting draft minutes for September 2022 m....png
- > SE-063b Overview of process for managing significant changes.pdf
- > SE-064 Recycled Water Branxton Sample Monitoring.msg
- > SE-065 Recycled Water Branxton Calibration Certificates.msg
- > SE-066 NPR F9 DRC Breakdown.msg
- > SE-067 Finance NPR Statutory Account Information.msg
- > SE-068 Rec 2021-22 IPART Reporting and Protocol Procedure.DOCX
- > SE-069 5.7.1 Digital bills summaries sent to customers.msg
- > SE-070 5.7.1 Inclusion of each pamphlet inserted into envelopes.msg
- > SE-071 File note - VP2421 Branxton WWTW Diffuser Replacement and Tank Inspection.DOCX
- > SE-072 Report - Branxton WWTW (ST-BRA) Treatment Plant Maintenance Audit 20210426.DOCX
- > SE-073a - Network Chlorinators Maintenance Schedules Ellipse.docx
- > SE-073b - Water Treatment Plant Chlorinators Maintenance Schedules Ellipse.docx
- > SE-075 - Current CCP tables for drinking water.msg
- > SE-077 RFI.DOCX
- > SE-079 - EmergencyCrisisScenarioRivoActionsRecord.pdf
- > SE-084a 1006322394 WT-GRA-Tank Scour Valves Exercising.pdf
- > SE-084b 1006372833 WT-GRA-Valve leaking past clarifier 1.pdf
- > SE-084c 1006710752 WT-GRA-Impeller and Scraper Inspection.pdf
- > SE-084d 1006811768 WT-GRA-Need to replace wheels 6&7 which will need to be machined up.pdf
- > SE-084e 1006668349 WT-GRA-Compliance SCBA inspection.pdf
- > SE-084f 1006478122 WT-GRA-Vibration & thermography analysis backwash pump 1.pdf
- > SE-084g 14190214 Grahamstown WTP Backwash Pumps 16 Mar 2022 (1).pdf
- > SE-084h WTGRAALSPU01 dosing pump 1 alum.xlsx
- > SE-086b North Lambton1 Reservoir Inspection 220921.pdf
- > SE-086c Report - North Lambton 1_2022-02-25_FCD Level 1 Inspection.PDF
- > SE-088 3.2 #351 RFIs.msg
- > SE-117a Calibration.pdf

- > SE-117b Calibration.pdf
- > SE-117c Calibration.msg
- > SE-125 HW2015-1449 12.001 File note - Grahamstown WTP Turbimax CUS52D - January 2023(4).DOCX
- > SE-126 HW2015-1449 12.002 File note - WTP chemical handling and receival - January 2023.DOCX
- > SE-127 HW2015-1449 12.008 File note - WTP instrument calibration - January 2023.DOCX
- > SE-128 Four Mile Creek - CCP Alarm Code Screenshot.png

Clause 3.2 – Recycled water

- > 3.2-REC-2021-12-E001 - Branxton Golf Club Annual Reporting letter June 2022.pdf
- > 3.2-REC-2021-12-E002 - Branxton Golf Club Recycled Water Annual Water Quality Report 2021-2022.xlsx
- > 3.2-REC-2021-12-E003 - Coorrei Farm Annual Reporting letter June 2022.pdf
- > 3.2-REC-2021-12-E004 - Cedar International The Vintage Annual Reporting letter June 2022.pdf
- > 3.2-REC-2021-14-E001 - Cedar International The Vintage Recycled Water Agreement - 25082016101407-0001.PDF
- > 3.2-REC-2021-14-E002 - Branxton Golf Club – Recycled Water Supply Agreement Oct 14 – June 19 EXECUTED.PDF
- > 3.2-REC-2021-14-E003 - Letter - Branxton Golf Club RW Customer Contract Extension Letter June 2021.pdf
- > 3.2-REC-2021-14-E004 - Cooreei – Recycled Water Supply Agreement – Final.PDF
- > 3.2-REC-2021-14-E005 - Letter – Dungog Cooreei – Contract Extension.pdf
- > 3.2-REC-2021-15-E001 - Updated - Kurri Kurri WWTW process flow schematic diagram Mar 22.pdf
- > 3.2-REC-2021-16-E001 - MAN 3068 - WasteWater Quality Management Plan.pdf
- > 3.2-REC-2021-17-E001 - Dungog WWTW Recycled Water Quality Management Plan.DOCX
- > 3.2-REC-2021-17-E002 - NSW Health Endorsement of Dungog RWQMP.docx
- > 3.2-REC-2021-18-E001 - Kurri Kurri Worksheet.xlsx
- > 3.2-REC-2021-18-E002 - Summary of Section 12 Monthly Report (CCP) Alarms.pdf
- > 3.2-REC-2021-18-E003 - Section 12 Biosolids and Effluent Reuse.pdf
- > 3.2.1-AGWR-01-E001 - Minutes - Hunter Water NSW Health Liaison Committee Meeting - June 2022.DOCX
- > 3.2.1-AGWR-01-E002 - Recycled Water Site Inspection Dungog farm (Coorrei) September 2022.XLSX
- > 3.2.1-AGWR-01-E003 - Recycled Water Site Inspection The Vintage Golf Course March 2022.XLSX
- > 3.2.1-AGWR-01-E004 - Recycled Water Site Inspection The Vintage Golf Course September 2022.XLSX

- > 3.2.1-AGWR-01-E005 - Branxton WWTW Risk Assessment Workshop Summary April 2022.DOCX
- > 3.2.1-AGWR-01-E006 - Clarence Town WWTW Risk Assessment Workshop Summary April 2022.docx
- > 3.2.1-AGWR-01-E007 - PN102 – Operator Competency.PDF
- > 3.2.1-AGWR-01-E008 - Recycled Water Dual Reticulation Awareness Training Final.pptx
- > 3.2.1-AGWR-01-E009 - Screen shot of Dual Reticulation Training records.docx
- > 3.2.1-AGWR-01-E010 - 4 - MAN-3000 HW - Operational Management Plan.pdf
- > 3.2.1-AGWR-01-E011 - CP 3425 - ST-DUN-CM-PLN - 0003 Commissioning Training Plan.pdf
- > 3.2.1-AGWR-01-E012 - Appendix B - Training Calendar.pdf
- > 3.2.1-AGWR-01-E013 - TEM-6719 - HW Skills and Competency Matrix for Operations Staff.xlsx
- > 3.2.1-AGWR-01-E014 - Branxton WWTW CCP Training May 2019.pdf
- > 3.2.1-AGWR-01-E015 - Recycled Water – Safe Use and Application.pdf
- > 3.2.1-AGWR-01-E016 - Corporate Recycled Water Quality Management Plan August 2022.pdf
- > 3.2.1-AGWR-01-E017 - Manager Water Network Operations PD.pdf
- > 3.2.1-AGWR-01-E018 - Manager Wastewater Treatment Operations PD.pdf
- > 3.2.1-AGWR-01-E019 - Team Leader Alternative Water PD.DOC
- > 3.2.1-AGWR-01-E020 - Screen shot of HW online recycled water awareness training.docx
- > 3.2.1-AGWR-01-E021 - Veolia Monthly Report - July 2022.pdf
- > 3.2.1-AGWR-01-E022 - 0.2 North 1 Toolbox Feb 22.pdf
- > 3.2.1-AGWR-01-E023 - 0.8 North1 Toolbox 31 Aug 22.pdf
- > 3.2.1-AGWR-01-E024 - 03. South Toolbox 31 Mar 22.pdf
- > 3.2.1-AGWR-01-E025 - 09. South Toolbox Sep 22.pdf
- > 3.2.1-AGWR-01-E026 - Corporate Recycled Water Quality Management Plan.DOCX
- > 3.2.1-AGWR-01-E027 - Screen shot - risk assessment review schedule.docx
- > 3.2.1-AGWR-01-E028 - Procedure - Managing Legal and Other Requirements.DOCX
- > 3.2.1-AGWR-01-E029 - Quality legal and other requirements register.xlsx
- > 3.2.1-AGWR-01-E030 - Email communication example audit inspections Recycled Water customers.pdf
- > 3.2.1-AGWR-01-E031 - Recycled Water - 2020-2023.pdf
- > 3.2.1-AGWR-01-E032 - TEM 2908 HW- Branxton WWTW Sampling Guide.pdf

- > 3.2.1-AGWR-01-E033 - TEM 2913 HW - Dungog WWTW Sampling Guide Sheet.pdf
- > 3.2.1-AGWR-01-E034 - MAN-3073 HW Dungog WWTW RWQMP.pdf
- > 3.2.1-AGWR-01-E035 - MAN-3069 HW - Branxton WWTW RWQMP.pdf
- > 3.2.1-AGWR-02-E002 - Branxton WWTW Recycled Water Quality Management Plan.DOCX
- > 3.2.1-AGWR-02-E003 - Recycled Water Quality Committee Terms of Reference.DOC
- > 3.2.1-AGWR-02-E003a - Risk driver analysis summary - Inability to manage recycled water 2021.DOCX
- > 3.2.1-AGWR-02-E004 - Agenda - RWQ Steering Committee.DOCX
- > 3.2.1-AGWR-02-E004a - Branxton WWTW Recycled Water Risk Assessment Briefing Paper April 2022.docx
- > 3.2.1-AGWR-02-E005 - Branxton WWTW risk assessment April 2022.xlsx
- > 3.2.1-AGWR-02-E005a - Screen shot - risk assessment review calendar.docx
- > 3.2.1-AGWR-02-E007 - Clarence Town WWTW risk assessment April 2022.xlsx
- > 3.2.1-AGWR-02-E011 - Clarence Town WWTW Recycled Water Risk Assessment Briefing Paper April 2022.docx
- > 3.2.1-AGWR-02-E012 - HW and Veolia - Meeting Minutes Apr 2022.docx
- > 3.2.1-AGWR-02-E016 - Branxton RW quality trends.pdf
- > 3.2.1-AGWR-02-E017 - Dungog RW Quality.pdf
- > 3.2.1-AGWR-02-E018 - Branxton Worksheet.xlsb
- > 3.2.1-AGWR-02-E019 - Dungog Worksheet.xlsb
- > 3.2.1-AGWR-02-E022 - Recycled Water Risk Assessment Workshop Briefing Paper Template.DOCX
- > 3.2.1-AGWR-02-E027 - Dungog WWTW risk register - 2020 - NSW Health Issue.XLSM
- > 3.2.1-AGWR-02-E028 - MAN 2960 HW - Dungog Ops Manual.pdf
- > 3.2.1-AGWR-02-E029 - MAN 2954 HW Branxton Ops Manual.pdf
- > 3.2.1-AGWR-02-E032 - TEM-3124-2 Dungog WWTW - Weekly Duties (20922).pdf
- > 3.2.1-AGWR-02-E033 - TEM -3148 - Branxton WWTW Weekly Duties (41121).pdf
- > 3.2.1-AGWR-02-E046 - HW SCADA Change Register.pdf
- > 3.2.1-AGWR-02-E053 - ACMM Section 18 - Dungog WWTW CCP.pdf
- > 3.2.1-AGWR-02-E054 - Dungog CCP Alarms SCADA.pdf
- > 3.2.1-AGWR-02-E056 - Dungog Effluent Reuse Storage SCADA.pdf
- > 3.2.1-AGWR-02-E057 - Branxton WWTW SCADA CCP Alarm Summary.PNG

- > 3.2.1-AGWR-02-E063 - Dungog and Branxton Reuse Instruments Schedule.xlsx
- > 3.2.1-AGWR-02-E064 - Reservoir Inspection Farley RWTP September 2022.pdf
- > 3.2.1-AGWR-02-E065 - Reservoir Inspection MORPETH RWTP.pdf
- > 3.2.1-AGWR-02-E066 - HW website - approved products.docx
- > 3.2.1-AGWR-02-E071 - PRO - 123 - Hazardous Materials - Delivery, Storage and Handling Procedure.pdf
- > 3.2.1-AGWR-05-E003 - TEM -2877 - (DUNv5) - HW Dungog WWTW Sampling Calendar 22.pdf
- > 3.2.1-AGWR-05-E004 - TEM -2877 (BRAv5) HW - Branxton WWTW Sampling Calendar.pdf
- > 3.2.1-AGWR-05-E006 - Dungog COP and EPL Alarms SCADA.pdf
- > 3.2.1-AGWR-05-E023 - Branxton Golf Club Soil and Water Tests April 2022.MSG
- > 3.2.1-AGWR-05-E030 - Recycled Water Quality Monitoring Plan.DOCX
- > 3.2.1-AGWR-05-E031 - Excerpt End Users Communication Log RWQM spreadsheet.pdf
- > 3.2.1-AGWR-05-E032 - Contact Centre Competency Assessment Form - Service Faults.DOCX
- > 3.2.1-AGWR-05-E033 - Call Centre Recycled Water Dual Reticulation Awareness Training Attendance Sheet.pdf
- > 3.2.1-AGWR-05-E034 - Recycled Water Quality Monitoring and Communication.DOCX
- > 3.2.1-AGWR-05-E043 - Hunter Water Customer Contract.PDF
- > 3.2.1-AGWR-05-E044 - MAN-2799 HW - Incident and Emergency Management.pdf
- > 3.2.1-AGWR-05-E045 - TEM-2802 HW - Emergency Contact List - Sheet1.pdf
- > 3.2.1-AGWR-05-E047%20-%200692-RW-DUN.pdf
- > 3.2.1-AGWR-05-E048 - 0751-RW-BRA.pdf
- > 3.2.1-AGWR-05-E049 - 0796-WW-BRA.pdf
- > 3.2.1-AGWR-05-E050 - 0803-WW-DUN.pdf
- > 3.2.1-AGWR-06-E124 - Recycled Water Quality Incident Response Procedure.DOCX
- > 3.2.1-AGWR-06-E126 - Potable and recycled water incident response map.PDF
- > 3.2.1-AGWR-06-E128 - TEM3049 HW - Dungog WWTW .pdf
- > 3.2.1-AGWR-06-E131 - TEM - 3044 HW - Branxton WWTW EPL Guide Sheet .pdf
- > 3.2.1-AGWR-06-E137 - Process Incident Report Register - Dungog_Branxton.xlsx
- > 3.2.1-AGWR-06-E144 - Excerpt customer contact register from RWQM spreadsheet.pdf
- > 3.2.1-AGWR-06-E149 - Corporate Emergency Management Plan.PDF

- > 3.2.1-AGWR-06-E150 - Emergency Communication Plan.DOCX
- > 3.2.1-AGWR-06-E153 - Incident and Emergency Response Procedure PRO-2803.pdf
- > 3.2.1-AGWR-06-E154 - Incident Management Procedure - PRO 317.pdf
- > 3.2.1-AGWR-06-E155 - TEM-2800 HW - Incident Notification Protocols.pdf
- > 3.2.1-AGWR-06-E157 - Hunter Water - Emergency Exercise Report (RiskLogic).PDF
- > 3.2.1-AGWR-06-E158 - 2021 Emergency Exercise - Debrief Report.DOCX
- > 3.2.1-AGWR-06-E159 - Business Resilience Yearly Event Calendar Schedule (2022).XLSX
- > 3.2.1-AGWR-06-E160 - Screen shot - Lesson learnt Incident management.docx
- > 3.2.1-AGWR-06-E161 - Clostridium detect - Morpeth RWTP.msg
- > 3.2.1-AGWR-07-E002 - Screen shot - RW Awareness completion.docx
- > 3.2.1-AGWR-07-E003 - Branxton Golf Club Recycled Water Induction Register.pdf
- > 3.2.1-AGWR-07-E014 - Veolia Recycled Water Training Register.pdf
- > 3.2.1-AGWR-07-E015 - TEM -23 Contractor SHEQ Handbook.pdf
- > 3.2.1-AGWR-07-E016 - PRO - 280 - Visitor and Contractor Site Induction.pdf
- > 3.2.1-AGWR-07-E017 - Screen shot – HW training matrix.docx
- > 3.2.1-AGWR-07-E019 - STA 153-3 Skills, Training and Competency.pdf
- > 3.2.1-AGWR-07-E020 - POL 7-Learning and Development Policy.pdf
- > 3.2.1-AGWR-07-E021 - Dungog - Training Calendar.xlsx
- > 3.2.1-AGWR-08-E002 - LHWSP technical report v1.1_RW sections.pdf
- > 3.2.1-AGWR-09-E001 - WWTW Recycled Water Existing Schemes Validation Program.DOCX
- > 3.2.1-AGWR-09-E003 - Branxton WWTW Validation report.DOCX
- > 3.2.1-AGWR-09-E005 - WaterRA agreement - purified RW.PDF
- > 3.2.1-AGWR-09-E006 - WaterRA agreement - MBR LRV.pdf
- > 3.2.1-AGWR-10-E001 - Pro-2821 - HW Change Management.pdf
- > 3.2.1-AGWR-10-E002 - Pro - 129 Documented Information.pdf
- > 3.2.1-AGWR-10-E003 - Pro - 4261 - Records Management.pdf
- > 3.2.1-AGWR-10-E004 - Email example of Trim Training Requirements.msg
- > 3.2.1-AGWR-10-E005 - TRIM part 1 - Mandatory training.msg
- > 3.2.1-AGWR-10-E006 - TRIM part 2 mandatory training.msg

- > 3.2.1-AGWR-10-E007 - TRIM Completions - ELSA Record (last 4 yrs).xlsx
- > 3.2.1-AGWR-10-E008 - Recycled Water Report 20211201.xlsx
- > 3.2.1-AGWR-10-E009 - Recycled Water Report 20211208.xlsx
- > 3.2.1-AGWR-10-E010 - Recycled Water Report 20211215.xlsx
- > 3.2.1-AGWR-10-E011 - Recycled Water Report 20211224.xlsx
- > 3.2.1-AGWR-10-E012 - Recycled Water Report 20211229.xlsx
- > 3.2.1-AGWR-10-E013 - Recycled Water Report 20220406.xlsx
- > 3.2.1-AGWR-10-E014 - Recycled Water Report 20220413.xlsx
- > 3.2.1-AGWR-10-E015 - Recycled Water Report 20220420.xlsx
- > 3.2.1-AGWR-10-E016 - Recycled Water Report 20220427.xlsx
- > 3.2.1-AGWR-10-E017 - Veolia Document Control and Access for Operators - Hunter Water Portal.pdf
- > 3.2.1-AGWR-11-E003 - 2LOD IMS Audit Programme.XLSX
- > 3.2.1-AGWR-11-E004 - IMS-2022-P-08 Audit Checklist_Recycled Water_Draft-20220310.docx
- > 3.2.1-AGWR-11-E005 - 2LOD Integrated Management System Audits.DOCX
- > 3.2.1-AGWR-11-E006 - Recycled Water 2nd Party Audit Report Branxton and Clarence Town 2022 (Water Futures).DOCX
- > 3.2.1-AGWR-11-E007 - Compliance-and-Performance-Report-2020-21.pdf
- > 3.2.1-AGWR-12-E001 - 220614 - Minutes HW - Veolia POP's June 2022.pdf
- > 3.2.1-AGWR-12-E002 - Recycled Water Quality Improvement Plan May 2022.docx
- > 3.2.1-AGWR-12-E003 - Recycled Water Quality Improvement Plan September 2022.DOCX
- > 3.2.1-AGWR-12-E004 - Recycled Water Quality Improvement Plan March 2022.DOCX
- > 3.2.1-AGWR-12-E005 - Recycled Water Quality Improvement Plan December 2021.DOCX
- > 3.2.1-AGWR-12-E008 - IPART recommendations update – email.msg
- > FW EXCEEDANCE NOTIFICATION for ALS Workorder WN2210874 - RET_Morpeth RWTP (Sample Date 09-07-22).msg
- > FW EXCEEDANCE NOTIFICATION for ALS Workorder WN2210874 Your Reference Scheduled Work - RET_Morpeth RWTP (Sample Date 09-07-22).msg
- > SE-045 Recycled-water-CA.pdf
- > SE-046 IPART Evidence BRA Lab Schedule.xlsx
- > SE-048 HW2008-1592.067 Memo - RW Water Quality Data Assessment Methodology IPART Recommendation - Final.DOCX

- > SE-050 12_Kurri Kurri RWQLT.xlsx
- > SE-051 Excerpt from WWQMP and Alum Delivery.msg
- > SE-052 RE_ ELG Example.msg
- > SE-052a Veolia Hunter Water meeting evidence.msg
- > SE-053 FW_ Improvement Item Response Regarding UVt.msg
- > SE-054 FW_ Closing out the RMIP action relating to considering the 5%ile statistic for recycled water scheme validation .msg
- > SE-054 FW_ Closing out the RMIP action relating to considering the 5%ile statistic for recycled water.msg
- > SE-055 FW_ WWTW Recycled Water Existing Schemes Validation Program.msg
- > SE-056 Audit evidence for trim training.msg
- > SE-057 Audit Evidence_ TRIM training second session content.msg
- > SE-058a Excerpt from WWQMP and Alum Delivery.msg
- > SE-058bSodium Bisulphite invoice and sample description.msg
- > SE-064 Recycled Water Branxton Sample Monitoring.msg
- > SE-065 Recycled Water Branxton Calibration Certificates.msg
- > SE-094a Branxton RWQLT Trends.xlsx
- > SE-094b Dungog RWQLT Trends.xlsx
- > SE-119a Bulk Chemical Specification - Hunter 202111.pdf
- > SE-119b Chemical Supply Agreement - Sodium Bisulphite.pdf
- > SE-119c Chemical Supply Agreement COntact - IXOM Signed.pdf

Clause 4.1 – Asset management system

- > 4.1.2-E078 - RE_ Follow up action - ISO Audit.msg
- > 4.1.2-E001 - Policy - Asset Management 2021.pdf
- > 4.1.2-E002 - S09-3 4 5 1.002 Plan - Strategic Asset Management Plan (SAMP).pdf
- > 4.1.2-E003 - Hunter Water_BVC_AUDIT_REPORT_SV2_May22_INTEGRATED_55kQHSE_R1 (1).pdf
- > 4.1.2-E004 - HW2013-1447184.007 Certificate - AU004029-1 HWC - AMS ISO55001 - Jul 2020.PDF
- > 4.1.2-E005 - Compliance-and-Performance-Report-2020-21.pdf
- > 4.1.2-E006 - Business Performance Report – May 2022.pdf
- > 4.1.2-E007 - Risk Driver Analysis Summary - Critical Asset ~ 2021.DOCX
- > 4.1.2-E008 - HWC Operating Licence Performance Dashboard 21-22.docx
- > 4.1.2-E009 - AOMS Dashboard 21-22.docx
- > 4.1.2-E010 - Report - Dungog WTP (WT-DUN) Treatment Plant Maintenance Audit 20220406.DOCX

- > 4.1.2-E011 - Report - Dungog WWTW (ST-DUN) Treatment Plant Maintenance Audit 20220406.DOCX
- > 4.1.2-E012 - Asset Management System Steering Committee - Terms of Reference.DOCX
- > 4.1.2-E013 - Minutes - AMS SC Meeting 2022.05.03.DOCX
- > 4.1.2-E014 - Minutes - AMS SC Meeting 2022.08.02.DOCX
- > 4.1.2-E015 - Hunter Water - Asset Management System (AMS) Improvement Plan.XLSX
- > 4.1.2-E016 - Template - National Performance Report 2021-22.XLSX
- > 4.1.2-E017 - Veolia Report MCR CS0341 - July 2022.pdf
- > 4.1.2-E018 - Veolia Report Changes since Draft Report.pdf
- > 4.1.2-E019 - Veolia Report MCR CS0341 - July 2022 - Attachments A and B.zip
- > 4.1.2-E020 - Veolia Report MCR CS0341 - July 2022 - Attachments C, D and E.zip
- > 4.1.2-E021 - State of the Assets 2021 Summary.pdf
- > 4.1.2-E022 - Management Review 2022 V1 20220502.pdf
- > 4.1.2-E023 - HWC Cascade - Reduce wastewater overflows - Dashboard.docx
- > 4.1.2-E024 - AM Awareness Completion Update.msg
- > 4.1.2-E025 - RE_ AMC AM Fundamentals - List of people.msg
- > 4.1.2-E026 - Design Assurance Training - Participants Master List.xlsx
- > 4.1.2-E027 - AMCV 2020 Utility Report Hunter Water FINAL_20201202.pdf
- > 4.1.2-E028 - AMPEAK Paper 2022 - Asset Management Competency Framework.docx
- > 4.1.2-E029 - WSAA AM Network 2022 Presentation - AM Competency.pptx
- > 4.1.2-E030 - AM Competencies Model v5.08.xlsm
- > 4.1.2-E031 - SR Response Template _Asset Management System Phase 2.pdf
- > 4.1.2-E032 - Work Instruction 001 – Working on Potable Water Mains and Fittings.DOCX
- > 4.1.2-E033 - Work Instruction 006 – Conduct First Response Including Diagnostics.DOCX
- > 4.1.2-E034 - CS0341 Treatment Operations Contract - Schedules.PDF
- > 4.1.2-E035 - Standard - CURRENT - Enterprise Risk Management Standard.DOCX
- > 4.1.2-E036 - Risk Appetite Statements - Version 3.DOCX
- > 4.1.2-E037 - Grahamstown WTP - Business Continuity Plan.docx
- > 4.1.2-E038 - Standard - Critical Assets.DOCX
- > 4.1.2-E039 - Minutes - Meeting - Critical Assets Quarterly Review March 2022.DOCX
- > 4.1.2-E040 - Asset Class Dashboard - Sewer Rising Mains.docx
- > 4.1.2-E041 - Towards 2024 Business Plan.pdf
- > 4.1.2-E042 - Strategic Case – Safe and Reliable Water Services.DOCX
- > 4.1.2-E043 - Hunter Water Growth Plan 2021.pdf
- > 4.1.2-E044 - Plan - Asset Class Management Plan - Reservoirs 2022.DOCX
- > 4.1.2-E045 - STS 409 Potable Water Reservoirs.pdf
- > 4.1.2-E046 - BCP5 Grahamstown WTP.DOCX
- > 4.1.2-E047 - BCP7 Water Supply Network.DOCX
- > 4.1.2-E048 - Standard Asset Disposal - Version 2.DOCX
- > 4.1.2-E049 - Technical change request - Replacing Merewether 2 HLT zone to VSDs Retrofitted Pumping Zon.docx

- > 4.1.2-E050 - Technical change request - Decommission Dora Creek 1 Reservoir.DOCX
- > 4.1.2-E051 - Committee Paper - Item 2.1 Climate change adaptation - Dec 2021.DOCX
- > 4.1.2-E052 - Committee Paper - Climate Risk Vulnerability Mapping – Pilot Summary.DOCX
- > 4.1.2-E053 - Guideline – Project Climate Risk Screening.DOCX
- > 4.1.2-E054 - Project Climate Risk Screening Tool.XLSX
- > 4.1.2-E055 - Business Case to implement an investment item template.DOCX
- > 4.1.2-E056 - ACF overview.JPG.JPG
- > 4.1.2-E057 - ACF - initiation (1).JPG.JPG
- > 4.1.2-E058 - ACF - initiation (2).JPG.JPG
- > 4.1.2-E059 - ACF – development (1).JPG.JPG
- > 4.1.2-E060 - ACF - development (2).JPG.JPG
- > 4.1.2-E061 - ACF - delivery.JPG.JPG
- > 4.1.2-E062 - ACF - completion.JPG.JPG
- > 4.1.2-E063 - ACF Gateway Process Overview.PDF
- > 4.1.2-E064 - Brookfield to Burmi CTGM Replacement - Business case.pdf
- > 4.1.2-E065 - Donald Street Sewermain - Business case.pdf
- > 4.1.2-E066 - NPV_model_outputs - Watermain Replacements.XLSX
- > 4.1.2-E067 - PDP - North Lambton 1, Black Hill 1 & Four Mile Creek 2 Roof Structural Defects Remediated.DOCX
- > 4.1.2-E068 - Project Development Plan - Mini Project - Aberdare 1 WWPS - RM renewal.DOCX
- > 4.1.2-E069 - File note - Critical mains - Large Diameter Sewermain Package 1.DOCX
- > 4.1.2-E070 - PDP - Critical mains - Rail Lining Package.DOCX
- > 4.1.2-E071 - File note - VP2189 Branxton WWTW Chlorine Storage Tank Replacement PDP.DOCX
- > 4.1.2-E072 - File note - VP2439 Grahamstown WTP Backwash Recovery Pump #1 Replacement PDP.DOCX
- > 4.1.2-E073 - Network Condition Assessment - Sept 2022 – DRAFT.pdf
- > 4.1.2-E074 - SR00199 in relation to the Critical Mains CA program.DOCX
- > 4.1.2-E075 - Water trunks mains Dashboard.docx
- > 4.1.2-E076 - Treatment Plant Condition Assessment Dashboard.docx
- > 4.1.2-E077 - Screenshots showing CA scheduled within Ellipse for each treatment plant.docx
- > SE-086c Report - North Lambton 1_2022-02-25_FCD Level 1 Inspection.PDF
- > SE-084a 1006322394 WT-GRA-Tank Scour Valves Exercising.pdf
- > SE-084b 1006372833 WT-GRA-Valve leaking past clarifier 1.pdf
- > SE-084c 1006710752 WT-GRA-Impeller and Scraper Inspection.pdf
- > SE-084d 1006811768 WT-GRA-Need to replace wheels 6&7 which will need to be machined up.pdf
- > SE-084e 1006668349 WT-GRA-Compliance SCBA inspection.pdf
- > SE-084f 1006478122 WT-GRA-Vibration & thermography analysis backwash pump 1.pdf
- > SE-084g 14190214 Grahamstown WTP Backwash Pumps 16 Mar 2022 (1).pdf
- > SE-084h WTGRAALSPU01 dosing pump 1 alum.xlsx
- > SE-086b North Lambton1 Reservoir Inspection 220921.pdf

- > SE-018 2021 Emergency Exercise Reports IPART 4.2.1.msg
- > SE-019 Emergency Exercise Further Evidence - IPART 4.2.1.msg
- > SE-020 Benefits Identification and Measurement Guideline (QG062).DOCX
- > SE-021 Benefits Realisation Procedure (QP037).DOCX
- > SE-022 Belmont 6 Carrier Main Rehabilitation Benefits Assessment - Sep 2022.DOCX
- > SE-023 Benefits Realisation Management Standard (QS001).DOCX
- > SE-024 Committee Paper - EMT Brief - Climate Risk Maturity Health Check Tool.DOCX
- > SE-025 File note - Climate Risk Maturity Health Check Tool - 071221.XLSX
- > SE-026 File note - Review and update of SAMP Objectives - 2022.DOCX
- > SE-027 Committee Paper - EMT Brief - SAMP Update.DOCX
- > SE-028 Form - PDP Water Network Control Valve Improvements.DOCX
- > SE-029 Presentation - AMS Operating Licence Audit - Nov 2022.pptx
- > SE-030 Register - Actions - East Lakes Water Main Breaks 8th Jan 2021 - Root Cause Analysis.XLSX
- > SE-031 Report - East Lakes Water Main Breaks Final Report - Sologic software.DOCX
- > SE-032 Working Document - Draft Sustainability Guiding Principles_2020 (1).DOCX
- > SE-033 Report - Morpeth Stage 3 Benefits Assessment Summary - Sep 2022.DOCX
- > SE-034 Strategic Asset Management Plan (SAMP).docx
- > SE-035 Work order V assets Memo - Veolia Treatment Operations Contract - June 2023.docx
- > SE-036 Root Cause Analysis Report - East Lakes Water Main Breaks - Version 1.docx
- > SE-037 Report - State of the Assets 2022 Summary - 22 November 2022.DOCX
- > SE-038 Report - Farley WWTW Stage 3B Upgrade Benefits Assessment Summary - Sep 2022.DOCX
- > SE-039 4.1.2 IPART Audit - Supply Chain Risk.msg
- > SE-040 0005-LAYOUT PLAN AND LONG SECTIONS-HWC Civil_A1.pdf
- > SE-041 North Lambton Reservoir.msg
- > SE-042 HW2020-803 18 5.008 Plan - 16361-009_0(2) - Example of valve house roof replacement design.PDF
- > SE-043 HW2020-799 11 4.004 Form - SR120 - Appendix - North Lambton - northern slope Risk Assessment 2022-05-26.XLSM
- > SE-044 Copy of HW2020-799 11 4.005 Form - QT120 - Asset Data Collection Sheet - SR120 - North Lambton northern slope(2).XLSX
- > SE087b - 16350-001-01.pdf
- > SE-085 - FW_ #351 RFIs.msg
- > SE-085a - Modifications To Balickera Wps Probity Committee Endorsement.PDF
- > SE-085b -MSEMST (1) - Balickera 1 WPS.xlsx
- > SE-086a SE-086d SE087 - FW_ #351 RFIs.msg
- > SE087a - HW2016-530 26 5.013 Memo - Project Scope and Funding Variation of CP338219 - VSD Option for Merewether 2 HLT (Revised Version .DOCX
- > SE-101b- W22279.pdf
- > SE-096 - Hunter Water SAMP Version 5 - Nov 2022.DOCX
- > SE-098 - Plan - Condition Assessment - Critical Valves - PDP.DOCX
- > SE-099 - Report - Branxton WWTW (ST-BRA) Treatment Plant Maintenance Audit 20210426.DOCX

- > SE-099a - Report - Grahamstown WTP (WT-GRA) Treatment Plant Maintenance Audit 20210622.DOCX
- > SE-101 - Executive Summary-W22314.pdf
- > SE-101a- W22156.pdf

Clause 5.3 – Payment difficulties and actions for non-payment

- > 5.3.1-E001 - Customer Support Policy .pdf
- > 5.3.1-E002 - Non-Payment Collections Standard.pdf
- > 5.3.1-E003 - Account Assistance Brochure.pdf
- > SE-106 Outreach Engagement Program - Events 2022.xlsx
- > SE-107 HW2022-737.002 Policy - Policy - Customer Support Policy (Vulnerability)(3).DOCX
- > SE-108 Policy - Standard Non - Payment Collections.DOCX
- > SE-109 & SE-110 Policy - Debt Recovery and Hardship Policy.PDF
- > SE-109a Debt-Recovery-and-Hardship-Policy - current.pdf
- > SE-111 Knowledge Centre procedures.docx
- > SE-112 COVID 19-Collection and Vulnerability Plan.pptx
- > SE-112 Sustainability Committee Paper-Vulnerable Customers-May 2021 (002).docx
- > SE-113 d Training - Payments, Collection, Vulnerable.pptx
- > SE-113 Easy Pay Training.pptx
- > SE-113b Managing Customer Conversations Training Package AS.pptx
- > SE-113c Vulnerable Customer Program-Sustainability Committee Presentation.pptx

Clause 5.7 – Provision of information to customers and the general public

- > 5.7.1-E006 - Customer Contract Summary 21-22 (Not distributed with bills)..pdf
- > 5.7.1-E001 - Account Assistance Brochure 21-22.pdf
- > 5.7.1-E002 - Complaints Handling Brochure 21-22.pdf
- > 5.7.1-E003 - General Enquiries Brochure 21-22.pdf
- > 5.7.1-E004 - Inserts by Bill Cycle Spreadsheet 21-22-Includes screed shots to prove being sent and Customer Rebates insert ex.xlsx
- > 5.7.1-E005 - Customer Contract Summary 22-23.PDF
- > SE-069 5.7.1 Digital bills summaries sent to customers.msg
- > SE-070 5.7.1 Inclusion of each pamphlet inserted into envelopes.msg
- > SE-114a Procedure - Bill Insert Process (DRAFT).DOCX
- > SE-114b Training Completed.xlsx
- > SE-115 IPART Operating Licence Audit Discussion.msg
- > SE-115 RE_ IPART Audit 2022 Clause 5_7_1.msg

Clause 5.8 – Code of Conduct with WIC Act Licensee

- > 5.8.1-E001 - Assessment of water and sewer requirements procedure HW2015-1469 15 4.001.DOCX
- > 5.8.1-E002 - Cooranbong Water HW2013-1003 40 8.001.PDF
- > 5.8.1-E003 - Huntlee Water HW2013-1003 40 40.010.PDF





Clause 6.2 – Reporting manual





- > 6.2.1-REC-2021-22-E001 - 2021-22 Recommendation.msg
- > 6.2.1-E001 - Report - Quarterly to NSW - Drinking Water and Recycled Water Quality Ex....docx
- > 6.2.1-E002 - Report - Quarterly to NSW Health Drinking Water and Recycled Water Quali....docx
- > 6.2.1-E003 - Report - Quarterly to NSW Health - Drinking Water and Recycled Water Qua....docx
- > 6.2.1-E004 - Procedure - Internal Audit Actions.PDF
- > 6.2.1-E005 - Procedure - Nonconformity, Corrective and Preventive Action - CURRENT.DOCX
- > 6.2.1-E006 - 20220926 Protecht Steerco.pptx
- > 6.2.1-E007 - User Manual - Integrated Management System.DOCX
- > 6.2.1-E008 - Procedure - 2LOD Integrated Management System Audits.DOCX
- > 6.2.1-E009 - Internal Audit Charter.PDF
- > 6.2.1-E010 - User Manual - A-M01 - Internal Audit Manual.PDF
- > 6.2.1-E011 - Schedule - Hunter Water 2022-23 IA Plan - Final.pptx
- > 6.2.1-E012 - 2LOD IMS Audit Programme.XLSX
- > 6.2.1-E013 - MRM-2022-05-02 - IMS Management Review Minutes 2022.pdf
- > 6.2.1-E014 - Schedule - Compliance Calendar - 20222023.XLSX
- > 6.2.1-E015 - Appendix A - Item 4.2 Signed Statement of Compliance 2021-22 - 26 August 2022_Approved by Board .pdf
- > 6.2.1-REC-2021-21-E001 - FW 2021-21Reporting requirements clause 6.2.1 .msg
- > 6.2.1-REC-2021-21-E002 - HW2015-1303 6.002 Guideline - Catchment to Tap Risk Assessment for DW Quality Guide.pdf
- > SE-063b Overview of process for managing significant changes.pdf
- > SE-059 HW2012-778 92 23.001 Schedule - Compliance Calendar - 2021 2022.XLSX
- > SE-060 22-02 Business Performance Report (2).PDF
- > SE-061 Protecht 2022-10 Detailed Version.pptx
- > SE-062 6.2.1 Qtly Exception Reporting to NSW Health .msg
- > SE-063a Extract of NSW Health Liaison meeting draft minutes for September 2022 m....png




F IPART's 2022 checks of Hunter Water's compliance with its operating licence

In our audit scope we identified a number of licence conditions that IPART would audit without the assistance of a specialist auditor. Our assessment of both the 2017-2022 and 2022-2027 Licence conditions that we audited is in Table F.1 below.

Table F.1 Clauses that we audited as part of the 2022 operational audit

Operating Licence clause and requirement		Compliance grade
1.7.1 2017-2022 Licence	Hunter Water must make a copy of this Licence available to any person, free of charge: <ul style="list-style-type: none"> (a) on its website for downloading; and (b) upon request made through the General Enquiry Process. 	
6(1) 2022-2027 Licence	Hunter Water must make a copy of this Licence available to any person, free of charge: <ul style="list-style-type: none"> (a) on its website; and (b) upon request made through the General Enquiry Process. 	
1.9.2 2017-2022 Licence	Hunter Water must provide to the person undertaking the End of Term Review such information as is reasonably required to enable the person to undertake the End of Term Review.	
8(2) 2022-2027 Licence	<i>Not applicable to this audit. This requirement will be tested after IPART's end of term review of the 2022-27 Licence</i>	
5.6.1 2017-2022 Licence	Hunter Water must be a member of the Energy and Water Ombudsman NSW to facilitate the resolution, by a dispute resolution body, of disputes between Hunter Water and its Customers or Consumers.	
31(1) 2022-2027 Licence	Hunter Water must be a member of the Energy and Water Ombudsman NSW to facilitate the resolution of disputes between Hunter Water and its Customers or Consumers.	
5.7.2 2017-2022 Licence	Hunter Water must make a copy of the following documents available to any person, free of charge on its website for downloading and upon request through the General Enquiry Process: <ul style="list-style-type: none"> (a) the Customer Contract; (b) a pamphlet or pamphlets (as referred to in clause 5.7.1); (c) the Procedure for Payment Difficulties and Actions for Non-payment; (d) the Customer Advisory Group Charter; (e) customer advisory group minutes; (f) the Internal Complaints Handling Procedure; (g) information about the dispute resolution scheme provided by Energy and Water Ombudsman NSW; and (h) a map of the Area of Operations. 	
2(2), 24(2), 25(3), 27(2)(a) and (d), 28(3)(a) and (c), 29(4), 30(3), and 31(4) 2022-2027 Licence	<i>Substantially similar requirements, with the addition of information about Hunter Water's family violence policy. The obligation to provide copies of the Customer Advisory Group Charter and minutes is removed and is replaced by an obligation to provide information about the Community Consultation Procedure from 1 July 2023.</i>	

Operating Licence clause and requirement	Compliance grade
<p>6.1.2 2017-2022 Licence Hunter Water must provide to IPART or the Auditor all information in Hunter Water's possession, or under Hunter Water's custody or control, which is necessary or convenient for the conduct of the Operational Audit.</p> <p>38(1) 2022-2027 Licence Hunter Water must cooperate with any audit undertaken by IPART or an Auditor of Hunter Water's compliance with any of the following:</p> <ul style="list-style-type: none"> (a) this Licence (including the Customer Contract); (b) the Reporting Manual; and (c) any matters required by the Minister in writing. <p>(Operational Audit).</p>	
<p>6.1.3 2017-2022 Licence Without limiting clause 6.1.2, Hunter Water must provide to IPART or the Auditor any information necessary or convenient for the conduct of the Operational Audit which IPART or the Auditor requests in writing, within any reasonable period of time specified by IPART or the Auditor in writing.</p> <p>38(2) 2022-2027 Licence For the purpose of any Operational Audit or verifying a report on an Operational Audit, Hunter Water must, within a reasonable period of receiving a request from IPART or an Auditor, provide IPART or the Auditor with all the information in Hunter Water's possession, custody or control that is necessary to conduct the Operational Audit, including any information that is reasonably requested by IPART or the Auditor.</p>	
<p>6.1.4 2017-2022 Licence For the purposes of any Operational Audit or verifying a report on an Operational Audit, Hunter Water must, within a reasonable period of time from receiving a request from IPART or an Auditor, permit IPART or the Auditor to:</p> <ul style="list-style-type: none"> (a) access any works, premises or offices occupied by Hunter Water; (b) carry out inspections, measurements and tests on, or in relation to, any such works, premises or offices; (c) take on to any such premises or offices, any person or equipment necessary for the purposes of performing the Operational Audit or verifying any report on the Operational Audit; (d) inspect and make copies of, and take extracts from, any books and records of Hunter Water that are maintained in relation to the performance of Hunter Water's obligations under this Licence (including obligations under the Reporting Manual); and (e) discuss matters relevant to the Operational Audit or any report on the Operational Audit with Hunter Water, including Hunter Water's officers and employees. 	
<p>38(3) 2022-2027 Licence Subject to clause 38(4), for the purposes of any Operational Audit or verifying a report on an Operational Audit, Hunter Water must permit IPART or the Auditor to:</p> <ul style="list-style-type: none"> (a) access any works, premises or offices occupied by Hunter Water; (b) carry out inspections, measurements and tests on, or in relation to, any such works, premises or offices; (c) take onto any such premises or offices, any person or equipment necessary for the purposes of performing the Operational Audit or verifying any report on the Operational Audit; (d) inspect and make copies of, and take extracts from, any documents and records of Hunter Water that are maintained in relation to the performance of Hunter Water's obligations under this Licence (including obligations under the Reporting Manual); and (e) discuss matters relevant to the Operational Audit or any report on the Operational Audit with Hunter Water, including Hunter Water's Personnel. 	
<p>6.3.1 2017-2022 Licence Hunter Water must provide IPART or an Auditor with information relating to the performance of any of Hunter Water's obligations under clause 6.2 (including providing IPART with physical and electronic access to the records required to be kept under clause 6.2) within a reasonable period of time from Hunter Water receiving a request from IPART or an Auditor for that information</p>	
<p>40(1) 2022-2027 Licence Hunter Water must provide IPART or an Auditor with information relating to the performance of any of Hunter Water's obligations under clause 39 (including providing IPART with physical or electronic access to the records required to be kept under clause 39) within a reasonable period of time from Hunter Water receiving a request from IPART or an Auditor for that information.</p>	

Operating Licence clause and requirement		Compliance grade
6.3.2 2017-2022 Licence	Hunter Water must provide IPART or an Auditor with such information as is reasonably required to enable IPART or an Auditor to conduct any review or investigation of Hunter Water's obligations under this Licence within a reasonable period of time from Hunter Water receiving a request from IPART or an Auditor for that information.	
40(2) 2022-2027 Licence	Hunter Water must provide IPART such information as is reasonably required to enable IPART to conduct any review or investigation of Hunter Water's obligations under this Licence within a reasonable time of Hunter Water receiving a request from IPART for that information.	
6.3.3 2017-2022 Licence	If Hunter Water contracts out any of its activities to any person (including a subsidiary) it must take all reasonable steps to ensure that, if required by IPART or an Auditor, any such persons provide information and do the things specified in this clause 6 as if that person were Hunter Water.	
40(3) 2022-2027 Licence	If Hunter Water engages any person (including a subsidiary) to undertake any activities on its behalf, it must take all reasonable steps to ensure that, if required by IPART or an Auditor, any such persons provide information and do the things specified in clause 38 and clause 39 as if that person were Hunter Water.	
6.3.4 2017-2022 Licence	Where this Licence requires Hunter Water to provide information to IPART or an Auditor that is information to which: <ul style="list-style-type: none"> (a) Section 24FF of the IPART Act applies; or (b) Section 24FF of the IPART Act does not apply but IPART or the Auditor has agreed to treat the information as though section 24FF of the IPART Act applies to that information Hunter Water must, to the maximum extent permitted by the law, provide that information even if it is confidential.	
40(4) 2022-2027 Licence	If IPART or an Auditor requests information from Hunter Water that is confidential, the information must be provided to IPART, subject to IPART or the Auditor entering into reasonable arrangements with Hunter Water to ensure that the information remains confidential.	

Note:  = Compliant

- ¹ Act, section 18B.
- ² 2017-2022 Licence, clause 3.1.2 and 2022-2027 Licence, clause 15(3).
- ³ 2017-2022 Licence, clause 3.2.1 and 2022-2027 Licence, clause 16(1).
- ⁴ 2017-2022 Licence, clause 3.2.2 and 2022-2027 Licence, clause 16(3).
- ⁵ 2017-2022 Licence, clause 4.1.2. and 2022-2027 Licence, clause 21(2).
- ⁶ 2017-2022 Licence, clause 5.3.1 and 2022-2027 Licence, clause 27(1).
- ⁷ 2017-2022 Licence, clause 6.2.1 and 2022-2027 Licence, clause 39(2); IPART, [Hunter Water 2021 operational audit - Report to the Minister](#), March 2022, recommendation 2021-21 .
- ⁸ 2017-2022 Licence, clause 5.71 and 2022-2027 Licence, clause 25(4).
- ⁹ IPART, [Hunter Water 2021 operational audit - Report to the Minister](#), March 2022.
- ¹⁰ IPART, [Hunter Water 2021 operational audit - Report to the Minister](#), March 2022, Table 3, p 13.
- ¹¹ IPART, [Compliance and Enforcement Policy](#), December 2017.
- ¹² IPART, [Audit Guideline – Public Water Utilities](#), July 2019.

© Independent Pricing and Regulatory Tribunal (2022).

With the exception of any:

- a. coat of arms, logo, trade mark or other branding;
- b. photographs, icons or other images;
- c. third party intellectual property; and
- d. personal information such as photos of people.

this publication is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Australia Licence.



The licence terms are available at the [Creative Commons website](#)

IPART requires that it be attributed as creator of the licensed material in the following manner: © Independent Pricing and Regulatory Tribunal (2022).

The use of any material from this publication in a way not permitted by the above licence or otherwise allowed under the Copyright Act 1968 (Cth) may be an infringement of copyright. Where you wish to use the material in a way that is not permitted, you must lodge a request for further authorisation with IPART.

Disclaimer

This document is published for the purpose of IPART fulfilling its statutory or delegated functions as set out in this document. Use of the information in this document for any other purpose is at the user's own risk, and is not endorsed by IPART.

ISBN 978-1-76049-625-8