

# HUNTER WATER CORPORATION **OPERATIONAL AUDIT** 2020

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### The Independent Pricing and Regulatory Tribunal (IPART)

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## Summary






Customers in NSW rely on safe and reliable water and wastewater services. Operating licences outline the obligations imposed by the NSW Government on publicly owned monopoly suppliers of essential services such as Hunter Water Corporation (Hunter Water). The Independent Pricing and Regulatory Tribunal of NSW (IPART) conducts annual licence audits to ensure Hunter Water meets these expectations.






This is our report to the Minister on the 2020 operational audit as required under the *Hunter Water Act 1991* (Act).<sup>i</sup> In the 2020 annual audit, we audited Hunter Water's compliance with 29 clauses of the *Hunter Water 2017–2022 Operating Licence* (Licence).<sup>1</sup>

### Key findings

The 2020 audit found that Hunter Water had a high level of compliance with the Licence conditions. We have summarised Hunter Water's compliance with audited clauses of the Licence in **Table 1.1** below.

**Table 1.1 Hunter Water's compliance in 2020, the third year of its 2017–22 licence**

Licence part	Number of audited clauses	Compliance grade assigned				
						
Part 1 – Licence context and authorisation	2	1	-	1	-	-
Part 2 – Water conservation	0	-	-	-	-	-
Part 3 – Supply services and performance standards	8	5	3	-	-	-
Part 4 – Organisational systems management	1	1	-	-	-	-
Part 5 – Customer and stakeholder relations	11	10	-	-	-	1
Part 6 – Performance monitoring and reporting	7	6	-	-	-	1
<b>Total</b>	<b>29</b>	<b>23</b>	<b>3</b>	<b>1</b>	<b>-</b>	<b>2</b>

**Note:**  = Compliant;  = Compliant (minor shortcomings);  = Non-Compliant (non-material);  = Non-Compliant (material);  = No Requirement.

**Source:** Cobbitty Consulting, *2020 Operational Audit of Hunter Water Corporation*, 5 February 2021; IPART, 2020 audit of Hunter Water Corporation's "IPART check" clauses.

<sup>1</sup> Our report presents an exception based summary of the audit. We discuss any audited clause which did not receive a "Compliant" grading in Chapter 2. For the full findings of the audit, refer to the auditor's report in Appendix D and our IPART checks in Appendix E.

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The 2020 audit found:

- ▼ One Non-compliant (non-material) grade for Hunter Water's incorrect application of stormwater drainage charges and sewer discharge allowance for non-residential properties.
- ▼ Three Compliant (minor shortcomings) grades for not fully carrying out all relevant activities in line with its Drinking Water Quality Management System (DWQMS), not fully maintaining its Recycled Water Quality Management System (RWQMS) in line with the *Australian Guidelines for Water Recycling (AGWR)* and not fully carrying out all relevant activities in line with its RWQMS.

These issues are discussed in **Table 2.2**.

We make 5 recommendations to the Minister for clauses where we did not assign a fully Compliant grade.<sup>2</sup> All of these recommendations are set out in Chapter 1 and further discussed in Chapter 2.

This audit also followed up on 7 recommendations arising from previous audits. We found that Hunter Water has closed out 5 of the 7 recommendations. We do not consider the 2 outstanding recommendations to be of concern. Our discussion of Hunter Water's progress with previous recommendations is presented in Chapter 3.

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<sup>2</sup> Consistent with the IPART *Audit Guideline Public Water Utilities*, July 2019, auditors are only required to make recommendations for grades other than Compliant, (i.e. for Compliant (minor shortcomings), Non-compliant (non-material) and Non-compliant (material) grades).

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# 1 Introduction

The 2020 audit is the third operational audit of Hunter Water’s compliance with the requirements of the Licence.

We engaged specialist auditing firm, Cobbitty Consulting Pty Ltd (Cobbitty Consulting), in partnership with Viridis Consultants Pty Ltd (Viridis), to undertake the audit on our behalf. We have prepared this report to summarise the audit findings for the Minister for Water, Property and Housing, the Hon. Melinda Pavey MP.

## 1.1 Recommendations

We make the following 5 recommendations for the clauses where we did not assign a Compliant grade<sup>3</sup> to Hunter Water to promote compliance with the Licence. These recommendations are based on the findings of the audit by our auditor Cobbitty Consulting and should be read in conjunction with each of the relevant Licence clauses.

### Recommendations

<b>2020-01:</b> By 30 June 2021, Hunter Water should ensure that minor drinking water quality incidents are all recorded as required by the <i>Corporate Emergency Management Plan</i> .	7
<b>2020-02:</b> 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.	8
<b>2020-03:</b> By 31 October 2021, Hunter Water should review the manner in which recycled water quality issues are documented and reported so as to ensure that they are managed and closed out in a consistent manner.	8
<b>2020-04:</b> By 30 June 2021, Hunter Water should review the effectiveness of the <i>Recycled Water Quality Management Plan</i> at the Integrated Management System Review Meeting or at other appropriate senior management meetings.	8
<b>2020-05:</b> By 31 March 2021, Hunter Water should ensure that the <i>Recycled Water Quality Management System Improvement Plan</i> is monitored and improvement tasks are actioned in line with the plan.	8

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<sup>3</sup> Compliant grade does not include Compliant (minor shortcomings) grade.

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The compliance grades are explained in Appendix A. IPART's Reporting Manual<sup>ii</sup> requires Hunter Water to provide a report on its progress in implementing these recommendations by 31 March 2021 or at a later date agreed to by IPART. We agreed to a later date of 28 May 2021.

## **1.2 Annual statement of compliance**

In preparing this report we have also considered Hunter Water's annual Statement of Compliance (Appendix F). This is an exception-based report<sup>4</sup> certified by the Managing Director and the Chairman of the Board of Directors of Hunter Water. It lists all Licence non-compliances identified by Hunter Water and what remedial action has been taken, or is being taken, to resolve these non-compliances.

This year Hunter Water reported one non-compliance on pricing. The non-compliance relates to incorrectly applying stormwater drainage charges and sewer discharge allowance, which was identified in 2018–19. As set out in the auditor's report (Appendix D), Hunter Water had corrected the error during the audit period.

## **1.3 Progress with previous recommendations**

Hunter Water completed 5 of the 7 recommendations from previous operating audits. We have discussed this further in Chapter 3.

Hunter Water completed 2 out of 3 recommendations on pricing. One of the recommendations is due after the audit period, which we will assess at the next audit. Hunter Water completed 2 out of 3 recommendations on maintaining its RWQMS in line with the AGWR. We will assess the outstanding recommendation at the next audit. Hunter Water also completed the recommendation on the provision of information to customers and the general public.

## **1.4 Audit scope**

The 2020 audit covered the period from 1 November 2019 to 31 October 2020. The full process we followed to undertake the audit is in Appendix B and the audit scope is in Appendix C.

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<sup>4</sup> This means reporting only on those clauses where Hunter Water considers it is non-compliant.



## 2 Audit findings and recommendations













This chapter provides an exception-based summary of Hunter Water’s compliance with the audited clauses of the Licence. It explains the auditor’s findings on audited clauses that did not receive the highest compliance grade (Compliant).

Hunter Water has shown an overall high level of compliance with the Licence. The quality of water produced by Hunter Water continues to be of a high standard and meets public health requirements. The auditors identified minor shortcomings with Hunter Water’s implementation of the DWQMS and maintenance and implementation of the RWQMS. The auditors also found one non-material non-compliance on pricing. We consider that these shortcomings have not affected water quality, public health or the environment. However, these issues require attention from Hunter Water to ensure compliance is maintained.

For the clauses subject to this audit, **Table 2.1** provides a snapshot of Hunter Water’s non-compliances over the course of the Licence for the clauses where Hunter Water has not been assigned a compliant grade in this year’s audit. **Table 2.2** provides an audit exception summary (i.e. a summary of the non-compliances) and our reasoning for the assigned grade and any relevant recommendations.

The auditor has also identified some opportunities for improvement in Hunter Water’s operational audit report, provided in Appendix D.

**Table 2.1 2020 audit exceptions in relation to historic performance with Licence requirements**





Licence clause	Requirement	Compliance grade				
		2017–18 <sup>a</sup>	2018–19 <sup>b</sup>	2019–20 <sup>c</sup>	2020–21	2021–22
1.8.1	Pricing – fees set in line with IPART’s determination					
3.1.2	Implement the DWQMS					
3.2.1	Recycled Water Quality Management System in line with the AGWR					
3.2.2	Implement the RWQMS					

**a** IPART, *Hunter Water Corporation Operational Audit 2018 – Report to the Minister – Compliance Report*, March 2019.


**b** IPART, *Hunter Water Corporation Operational Audit 2019 – Report to the Minister – Compliance Report*, March 2020.


**c** Cobbitty Consulting, *2020 Operational Audit of Hunter Water Corporation*, 5 February 2021.



**Note:** The 2017–18 audit period is 1 July 2017–31 October 2018. The 2018–19 audit period is 1 November 2018–31 October 2019. The 2019–20 audit period is 1 November 2019–31 October 2020.

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

**Table 2.2 2020 compliance with Hunter Water’s operating Licence – grades other than fully compliant**

Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
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 determination under the IPART Act.	 <i>Non-compliant (non-material)</i>	<p>Our auditor assigned Hunter Water a Non-compliant (non-material) grade for clause 1.8.1. We agree with this grade.</p> <p>The auditor confirmed Hunter Water’s declared non-compliance of the incorrect application of sewer discharge allowance until 30 June 2020. This non-compliance was initially identified at the 2019 Operational Audit and we considered this non-compliance non-material.</p> <p>The auditor found that Hunter Water had taken corrective action to reimburse the affected customers and bring the applied sewer discharge allowance in line with the 2016 IPART Determination. The auditor also noted that the sewer discharge allowance is no longer applicable in the 2020 Determination which came into effect on 1 July 2020. On this basis, the auditor assigned a Non-compliant (non-material) grade in respect of this obligation.</p> <p>The auditor also confirmed Hunter Water’s declared non-compliance of the incorrect application of stormwater drainage charges to some properties due to mismatches between property information and billing practices. This non-compliance was initially identified at the 2019 Operational Audit and we considered this non-compliance non-material. Since first reported in 2019, Hunter Water identified a further 20 properties were overcharged, which took the total to 537 properties that were overcharged.</p>	As Hunter Water has corrected the sewer discharge allowance and stormwater drainage charges prior to the end of the audit period, as stated in its statement of compliance, the auditor did not make any recommendations in respect of this non-compliance.

Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
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)	<p>The auditor found that Hunter Water had refunded 76% of the total overcharged amount since the non-compliance was identified and had taken further action to correct the non-compliance. The auditor also noted that Hunter Water would continue to attempt to locate previous owners that were overcharged to provide a refund.</p> <p>Given the small percentage of Hunter Water's customers who were overcharged and the corrective actions implemented, the auditor assigned a Non-Compliant (non-material) grade in respect of this obligation.</p> <p>Our auditor assigned Hunter Water a Compliant (minor shortcomings) grade for clause 3.1.2. We agree with this grade.</p> <p>The auditor identified minor shortcomings in Hunter Water's corrective action process under Element 5, where minor drinking water quality incidents were not always administered in accordance with its internal procedure. This type of incident was managed predominantly by chains of emails rather than using the specified system in the <i>Corporate Emergency Management Plan</i>. The auditor found that while Hunter Water adequately responded to these incidents, this process did not align with its <i>Corporate Emergency Management Plan</i>.</p> <p>The auditor did not consider that this shortcoming affected water quality, public health and safety, or the environment.</p>	<p><b>2020-01:</b> By 30 June 2021, Hunter Water should ensure that minor drinking water quality incidents are all recorded as required by the <i>Corporate Emergency Management Plan</i>.</p>

Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
3.2.1	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).	 Compliant (minor shortcomings)	<p>Our auditor assigned Hunter Water a Compliant (minor shortcomings) grade for clause 3.2.1. We agree with this grade.</p> <p>The auditor identified minor shortcomings in documenting the detail of the quality assurance processes for sampling and monitoring under Element 5. The auditor found that Hunter Water's corporate and scheme specific Recycled Water Quality Management Plans, which refers to the monitoring plan, do not specify the quality control aspects of the monitoring program.</p> <p>The auditor did not consider that this shortcoming affected water quality, public health and safety, or the environment.</p>	<p><b>2020-02:</b> 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.</p>
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)	<p>Our auditor assigned Hunter Water a Compliant (minor shortcomings) grade for clause 3.2.2. We agree with this grade.</p> <p>The auditor identified minor shortcomings with:</p> <ul style="list-style-type: none"> <li>▼ Hunter Water's implementation of internal procedure to document and manage water quality issues under Element 5. The auditor found that Hunter Water did not consistently follow its <i>Dual Reticulation Recycled Water Quality Microbiological Exception Reporting Procedure</i>. Hunter Water did report incidents to NSW Health as required, but it did not keep consistent records in line with the procedure.</li> <li>▼ The <i>Recycled Water Quality Management Plan</i> is not reviewed by senior managers as required under Element 12. The Executive Management team did not review the <i>Recycled Water Quality Management Plan</i> at its annual Integrated Management System Review Meeting.</li> </ul>	<p><b>2020-03:</b> By 31 October 2021, Hunter Water should review the manner in which recycled water quality issues are documented and reported so as to ensure that they are managed and closed out in a consistent manner.</p> <p><b>2020-04:</b> By 30 June 2021, Hunter Water should review the effectiveness of the <i>Recycled Water Quality Management Plan</i> at the Integrated Management System Review Meeting or at other appropriate senior management meetings.</p> <p><b>2020-05:</b> By 31 March 2021, Hunter Water should ensure that the <i>Recycled Water Quality Management System</i></p>

Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
			<p>▼ Hunter Water's implementation of the <i>Recycled Water Quality Improvement Plan</i> under Element 12. The plan was out of date and a number of improvement tasks were overdue.</p> <p>The auditor did not consider that this shortcoming affected water quality, public health and safety or the environment.</p>	<p><i>Improvement Plan</i> is monitored and improvement tasks are actioned in line with the plan.</p>

**Source:** Cobbitty Consulting, 2020 Operational Audit of Hunter Water Corporation, 5 February 2021.

### 3 Progress on previous audit recommendations

The previous audits identified areas where Hunter Water was not fully Compliant with the Licence obligations. As noted, we made recommendations to Hunter Water to address these issues. The following table outlines Hunter Water’s progress in implementing these recommended actions.

Hunter Water has fully implemented 5 of the 7 previous audit recommendations. We do not consider that the 2 outstanding recommendations to be of concern as Hunter Water is progressing the recommendations at a reasonable rate.

Recommendation 2019-06 is not yet due to be completed. We will check Hunter Water’s progress against this recommendation at the next audit. Recommendation 2013-14-03, 04, 06, 13 has been ongoing since 2015. We note that this recommendation includes multiple tasks and one last task remains outstanding. We expect Hunter Water to fully address this recommendation in the next audit period. We will check Hunter Water’s progress at the next audit.

The progress of the previous recommendations is shown in **Table 3.1**.

**Table 3.1 Hunter Water’s progress in 2020 to address our recommendations from the previous audits**

Recommendation	Progress
2019-01 Pricing (clause 1.8.1): By 30 June 2020, Hunter Water must report to IPART on the further progress made in contacting past owners of properties affected by the incorrect charging of the Stormwater Drainage Charge, the total of the refunds made compared to the amount overcharged, and any further actions to be undertaken (if necessary) to rectify this non-compliance.	Complete
2019-02 Pricing (clause 1.8.1): By 30 June 2020, Hunter Water must correct its application of the sewer discharge allowance within the billing system; determine the number of customers affected and the incorrectly billed amounts; and report these details to IPART together with details of actions and/or further actions proposed.	Complete
2019-06 Pricing (clause 1.8.1): By 31 March 2021, Hunter Water must ensure that the proposed functionality for fully automated tankered waste billing is incorporated into the new corporate billing system.	Ongoing Completion of this recommendation is dependent upon full implementation of Hunter Water’s new billing system. Completion is now anticipated by 31 December 2021.

	<b>Recommendation</b>	<b>Progress</b>
2013-14-03 2013-14-04 2013-14-06 2013-14-13	<p>Recycled Water (clauses 3.2.1 &amp; 3.2.2):</p> <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.</p>	<p>Ongoing</p> <p>Completion of this recommendation requires the addition of two items (one remains outstanding) to the Recycled Water Quality Improvement Plan to meet NSW Health's conditions for approval of the final Validation Plan (i.e. the Validation Testing Program for Water Recycling Schemes).</p>
2019-03	<p>Water Quality; Recycled Water (clause 3.2.1):</p> <p>By 30 September 2020, Hunter Water must document the methodology for assessment of water quality data to inform risk assessment to ensure consistency across schemes. The assessment should include methods for trending and identifying problems.</p>	Complete
2019-04	<p>Recycled Water (clause 3.2.1):</p> <p>By 30 June 2020, Hunter Water must review the verification monitoring program for the Chisholm and Gillieston Heights recycled water schemes, to ensure microbiological testing is consistent with the advice provided in the AGWR for large high exposure schemes, and include weekly testing of clostridial spores and somatic coliphage, and monthly testing of adenovirus and cryptosporidium oocysts.</p>	Complete
2019-05	<p>Provision of information to Customers and the general public (clause 5.7.2):</p> <p>By 30 June 2020, Hunter Water must ensure that all information required to be available on its website for downloading, or upon request through the General Enquiry Process, can be readily identified by methods such as menu navigation or using the search function.</p>	Complete

**Source:** IPART, Hunter Water Operational Audit 2019 Report to the Minister, March 2020. Cobbitty Consulting, 2020 Operational Audit of Hunter Water Corporation, 5 February 2021.








## Appendix



## A Compliance grades

Table A.1 Current compliance grades

Grades of compliance	Description
 <b>Compliant</b>	Sufficient evidence is available to confirm that the requirements have been met.
 <b>Compliant (minor shortcomings)</b>	Sufficient evidence is available to confirm that the requirements have been met apart from <b>minor shortcomings</b> which to date have not compromised the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
 <b>Non-compliant (non-material)</b>	Sufficient evidence is not available to confirm that the requirements have been met and the <b>deficiency does not adversely impact</b> the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
 <b>Non-compliant (material)</b>	Sufficient evidence is not available to confirm the requirements have been met and the <b>deficiency does adversely impact</b> the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
 <b>No Requirement</b>	There is no requirement for the utility to meet this criterion within the audit period.

Source: IPART Audit Guideline Public Water Utilities, July 2019, Figure 2.1.

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## B Audit process

### B.1 Audit programme

In developing our annual audit scopes for Hunter Water we apply IPART's *Compliance and Enforcement Policy, December 2017*. This policy sets out our risk-based regulatory model.

Under this policy, we can:

- ▼ Focus on allocating resources to areas of higher risk
- ▼ Increase our efficiency
- ▼ Tailor our enforcement response.

We base our risk-based approach on evaluating the risk that each part of our regulatory function aims to reduce. We evaluate the risk 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 allocation of resources in proportion to the risk and complexity of regulated entities and 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 conducted interviews remotely.

### B.2 2020 audit scope

We do not audit every licence clause each year, instead we adopt a risk-based audit approach. This means we audit 'high risk' clauses more frequently and 'low risk' clauses less frequently. We conduct audits in accordance with our *Audit Guideline – Public Water Utilities* (Audit Guideline) which is available on our website.

Following the risk-based approach, the audit scope for this year included licence obligations on:

- ▼ Licence context and authorisation (Part 1) – requirements on making copies of the licence available and pricing.
- ▼ Supply services and performance standards (Part 3) – requirements on drinking water and recycled water, and system performance standards.
- ▼ Organisation systems management (Part 4) – requirements on asset management.

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- ▼ Customer and stakeholder relations (Part 5) – requirements related to payment difficulties and actions for non-payment, the customer advisory group, external disputes resolution, Hunter Water’s General Enquiry Process, establishing a Code of Conduct with WIC Act licensees, and its Memorandum of Understanding with NSW Health.
  - ▼ Performance monitoring and reporting (Part 6) – requirements on reporting obligations.

Applying the risk-based approach used in the auditing program, we did not audit clauses from Part 2 (Water Conservation) this year.

We consulted with the Department of Planning, Industry and Environment (DPIE), NSW Health, Fire and Rescue NSW and sought public submissions in determining the scope of the audit. We have included the audit scope in Appendix C.

We received submissions from DPIE, NSW Health and Fire and Rescue NSW. We did not receive any public submissions. All submissions from stakeholder agencies indicated stakeholders were generally satisfied that Hunter Water had met its obligations under the Licence relevant to their portfolio.

We did not amend the audit scope as a result of the submissions from stakeholder agencies. Generally, where stakeholders identified areas of interest for the operational audit, our auditor had regard to these comments and reviewed evidence in line with these comments to inform the assessment of Hunter Water’s compliance.

### **B.3 2020 audit plan**

We engaged Cobbitty Consulting Pty Ltd (Cobbitty Consulting), in partnership with Viridis Consultants Pty Ltd (Viridis) to undertake the 2020 Hunter Water audit.

We held a project start-up meeting with the auditor on 15 July 2020 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 3 November 2020. 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.
3. Review reports and documents provided by Hunter Water in response to the questionnaire.
4. Conduct interviews with Hunter Water staff and Veolia contractors as appropriate.

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5. Conduct field verification and assess the implementation of Hunter Water's systems and procedures.
  6. Assess the level of compliance (according to our compliance grades) Hunter Water achieved for each of the identified obligations of the licence 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 drafts of the audit report to us and address comments from Hunter Water and IPART regarding draft audit findings.
  10. Prepare a final report outlining audit findings (Appendix D).

Our auditor adopted a methodology consistent with ISO 19011 Guidelines for Auditing Management Systems. This guideline defines the requirements of an audit, ensuring that it is conducted in accordance with an established and recognised audit protocol.

Our auditor also carried out the audit according to our *Audit Guideline - Public Water Utilities, July 2019*.<sup>iii</sup> Under this guideline, the auditor can make recommendations or suggest opportunities for improvement.

Where we support an auditor's recommendation, we make our recommendation based on the auditor's recommendation. Our recommendations are summarised in section 1.1 of this report.

Where the auditor suggested opportunities for improvement, Hunter Water can decide whether to implement these suggestions. This approach should balance improved performance with the investment required to achieve it. That is, we want Hunter Water to first consider the pricing implications and value for money of continued improvement. As a consequence, 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 D.

Our auditor conducted audit interviews from 3 November to 5 November remotely using online video conferencing facilities. On 4 November, the auditor also undertook a virtual site visit to the following locations:

- ▼ The Farley recycling scheme, including
  - Farley wastewater treatment plant
  - Farley recycled water treatment plant
  - Gilleston Heights recycled water network
- ▼ Tomago borefield
- ▼ Schroder PAC dosing facility
- ▼ Grahamstown water treatment plant
- ▼ Anna Bay water treatment plant, and

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▼ Nelson Bay water treatment plant.

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

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## C 2020 audit scope

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# 2020 operational audit scope Hunter Water Corporation

## 2020 audit scope

This document sets out the 2020 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 2019 to 31 October 2020. We expect that interviews for the audit will be held in November 2020. However, this is subject to change depending on auditor availability.

## 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 2020 audits 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 2020 audit.
SC	Audit of this clause not required in the 2020 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 2020 Audit scope for Hunter Water Corporation**

Licence clause	Operating Licence obligation	2020 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"> <li>a) provide transparent and auditable terms and conditions for Hunter Water to lawfully undertake its activities at industry good-practice;</li> <li>b) recognise the interests of stakeholders within its Area of Operations; and</li> <li>c) impose the minimum regulatory burden on Hunter Water by avoiding duplication or conflict with other regulatory instruments.</li> </ul>	NR	
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	
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	
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	
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	



Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
1.3	Term of this 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	
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	
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	
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"> <li>a) in the case of supplying water, the Water Supply System; and</li> <li>b) in the case of providing sewerage services and/or disposing of Wastewater, the Sewerage System.</li> </ul>	SC	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
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"> <li>a) in the case of supplying water, the Water Supply System; and</li> <li>b) in the case of providing sewerage services and/or disposing of Wastewater, the Sewerage System.</li> </ul>	SC	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
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	
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	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
1.7	Making copies of this Licence available		
1.7.1	Hunter Water must make this Licence available to any person, free of charge: <ul style="list-style-type: none"> <li>a) on its website for downloading; and</li> <li>b) upon request made through the General Enquiry Process.</li> </ul>	Internal IPART check	This clause is not included in the auditor's scope.
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.	Audit	<p>We audited this clause in 2018 and 2019. We assigned a Non-Compliant Non-Material grade in those audits.</p> <p>Auditor should audit this clause and also check the following recommendations relevant to this clause for completion (see Table 3):  2019-01  2019-02  2019-06.</p> <p>Hunter Water identified that it has remained non-compliant with this clause. Refer to the Statement of Compliance dated 27 August 2020.</p>
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"> <li>a) whether this Licence is fulfilling its objectives; and</li> <li>b) any issues which have arisen during the term of this Licence, which may affect the effectiveness of this Licence,</li> </ul> (End of Term Review)	NR	
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.	NR	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor				
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					
	<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"> <li>a) in accordance with the memorandum of understanding with the Department of Primary Industries Water referred to in clause 5.10.1(a); or</li> <li>b) if no such memorandum of understanding is in effect, in accordance with a reasonable methodology that Hunter Water considers suitable.</li> </ul>	SC	We last 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	We last audited this clause in 2019. We assigned a Compliant grade in that audit.				
2.1.3	The Water Conservation Strategy must include: <ul style="list-style-type: none"> <li>a) identification and documentation of the existing water conservation activities;</li> <li>b) a process for identifying additional options for conserving water;</li> <li>c) a process for comparing these options; and</li> <li>d) a process for selecting options for implementation.</li> </ul>	SC	We last audited this clause in 2019. We assigned a Compliant grade in that audit.				
2.1.4	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	We last audited this clause in 2019. We assigned a Compliant grade in that audit.				

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
2.2	Water treatment plants to tap		
2.2.1	<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>[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.]</p>	NR	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
2.2.2	<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"> <li>a) water leakage (within and downstream of its water treatment plants);</li> <li>b) water recycling; and</li> <li>c) water efficiency (including demand management).</li> </ul>	NR	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
2.2.3	<p>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.</p>	NR	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
2.2.4	<p>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.</p>	NR	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
2.2.5	<p>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).</p>	SC	

Licence clause	Operating Licence obligation	2020 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>[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>	Audit	<p>We last audited this clause in 2019. We assigned a Compliant grade in the audit.</p> <p>We intend to only audit Hunter Water's management system against certain elements of the Australian Drinking Water Guidelines each year.</p> <p>This year, we propose to audit elements <b>1, 2, 3, 4, 5, 6, 8, 10 and 12</b>. This includes the elements that we consider higher risk that we intend to audit every year. It also includes lower risk clauses that we will audit periodically through the licence period. The auditor will check close out of shortcomings found in the WQMS against some of these elements in previous audits.</p> <p>We propose to not audit elements 7, 9 and 11 this year. We have audited against these in previous audits. Hunter Water was compliant with these elements and/or has closed out any outstanding recommendations. We will audit these again in future years.</p> <p><b>We sought and received NSW Health's comments</b> on Hunter Water's performance against this clause. Refer to NSW Health's submission, dated 27 July 2020.</p>

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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 last audited this clause in 2019. We assigned a Compliant grade in that audit.</p> <p>We intend to only audit implementation of Hunter Water's management system against elements <b>1, 2, 3, 4, 5, 6, 8, 10 and 12</b> of the ADWG.</p> <p>We propose to not audit elements 7, 9 and 11 this year. We will audit these in future years.</p> <p><b>We sought and received NSW Health's comments</b> on Hunter Water's performance against this clause. Refer to NSW Health's submission, dated 27 July 2020.</p>

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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 last audited this clause in 2019. We assigned a Non-Compliant Non-Material grade in that audit.</p> <p>We intend to only audit Hunter Water's management system against certain elements of the Australian Guidelines for Water Recycling each year.</p> <p>This year we propose to audit elements <b>2, 3, 4, 5, 6, 8 and 12</b>. This includes the elements that we consider higher risk that we intend to audit every year.</p> <p>We propose to not audit elements 1, 7, 9, 10 and 11. We have audited against these in previous audits. Hunter Water was compliant with these elements and/or has closed out any outstanding recommendations. We will audit these again in future years.</p> <p><b>We sought and received NSW Health's comments</b> on Hunter Water's performance against this clause. Refer to NSW Health's submission, dated 27 July 2020.</p> <p>Auditor should check the following recommendations relevant to this clause for completion (see Table 3):</p> <p>2019-03 2019-04 2013-14-03 2013-14-04 2013-14-06 2013-14-13</p>

Licence clause	Operating Licence obligation	2020 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 last audited this clause in 2019. We assigned a Compliant grade in that audit.</p> <p>We intend to only audit implementation of Hunter Water's management system against elements <b>2, 3, 4, 5, 6, 8 and 12</b> of the AGWR.</p> <p>We propose to not audit elements 1, 7, 9, 10 and 11 this year. We will audit these in future years.</p> <p><b>We sought and received NSW Health's comments</b> on Hunter Water's performance against this clause. Refer to NSW Health's submission, dated 27 July 2020.</p> <p>Auditor should check the following recommendations relevant to this clause for completion (see Table 3):</p> <ul style="list-style-type: none"> <li>2013-14-03</li> <li>2013-14-04</li> <li>2013-14-06</li> <li>2013-14-13</li> </ul>



Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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> <ul style="list-style-type: none"> <li>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</li> <li>ii. when Hunter Water's systems identify that the Property has experienced a Water Pressure Failure.</li> </ul> <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"> <li>i. a Planned Water Interruption or Unplanned Water Interruption;</li> <li>ii. water usage by authorised fire authorities in the case of a fire; or</li> <li>iii. iii) a short term or temporary operational problem (such as a main break) which is remedied within four days of its occurrence.</li> </ul>	Audit	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
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"> <li>i. no more than 10,000 Properties experience an Unplanned Water Interruption that lasts more than five continuous hours; and</li> <li>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"> <li>i. whether a Property has experienced an Unplanned Water Interruption; and</li> <li>ii. the duration of the Unplanned Water</li> </ul> <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> </li></ul>	Audit	We last audited this clause in 2018. We assigned a Compliant grade in that audit.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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"> <li>i. no more than 5,000 Properties experience an Uncontrolled Wastewater Overflow in dry weather; and</li> <li>ii. no more than 45 Properties experience three or more Uncontrolled Wastewater Overflow in dry weather,</li> </ul> <p>(Wastewater overflow Standard).</p>	Audit	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
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"> <li>a) surveying its Customers and Consumers for any lawful purpose at such times as it sees fit; or</li> <li>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.]</li> </ul>	Audit	This is the first audit of this clause in this licence period.
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> <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>	NR	Information clause
4	Organisational Systems Management		
4.1	Asset Management System		
4.1.1	<p>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).</p>	NR	We last audited this clause in 2018. We assigned a Compliant grade in that audit.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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	We audited this clause in 2018 and 2019. We assigned Compliant grades in those audits.  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.
4.1.3	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.  [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.].	NR	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
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 last audited this clause in 2018. We assigned a Compliant grade in that audit.
4.2.2	Hunter Water must fully implement, and carry out all relevant activities in accordance with, the Environmental Management System.	SC	We last audited this clause in 2018. We assigned a Compliant (Minor Shortcomings) grade in that 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	
4.3.2	Hunter Water must fully implement, and carry out all relevant activities in accordance with, the Quality Management System.	SC	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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	
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	
5.2	Consumers		
5.2.1	Hunter Water's obligations under the Customer Contract relating to: <ul style="list-style-type: none"> <li>a) Complaint handling and Complaint resolution procedures; and</li> <li>b) redress (clause 16.3 of the Customer Contract) and claims for damages (clause 16.4 of the Customer Contract)</li> </ul> are extended to those Consumers who are not parties to the Customer Contract.	NR	
5.3	Payment difficulties and actions for non-payment		
5.3.1	Hunter Water must maintain and fully implement the following: <ul style="list-style-type: none"> <li>a) a financial hardship policy that assists residential Customers and Consumers experiencing financial hardship to better manage their current and future bills;</li> <li>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;</li> <li>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</li> <li>d) provisions for self-identification, identification by community welfare organisations and identification by Hunter Water of residential Customers and Consumers experiencing financial hardship,</li> </ul> (the Procedure for Payment Difficulties and Actions for Non-payment).	Audit	This is the first audit of this clause in this licence period.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
5.4	Customer advisory group		
5.4.1	Hunter Water must maintain and regularly consult with its Customers through a customer advisory group.	Audit	This is the first audit of this clause in this licence period.
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.	Audit	This is the first audit of this clause in this licence period.
5.4.3	<p>Hunter Water:</p> <ul style="list-style-type: none"> <li>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;</li> <li>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"> <li>i. business;</li> <li>ii. organisations representing low income</li> <li>iii. Customers living in rural and urban fringe areas;</li> <li>iv. residential;</li> <li>v. local government;</li> <li>vi. pensioners;</li> <li>vii. Customers with disabilities;</li> <li>viii. Indigenous Australians; and</li> <li>ix. Customers from culturally and linguistically diverse backgrounds; and</li> </ul> </li> <li>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"> <li>i. business Consumers;</li> <li>ii. residential Consumers; and</li> <li>iii. environmental groups</li> </ul> </li> </ul>	Audit	This is the first audit of this clause in this licence period.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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"> <li>a) the role of the customer advisory group;</li> <li>b) how members and the Chair of the customer advisory group will be appointed</li> <li>c) the term for which members are appointed</li> <li>d) information on how the customer advisory group will operate;</li> <li>e) a description of the type of matters that will be referred to the customer advisory group and how those matters may be referred;</li> <li>f) procedures for communicating the outcomes of the customer advisory group's work to the public;</li> <li>g) procedures for monitoring issues raised at meetings of the customer advisory group and ensuring appropriate follow-up of those issues;</li> <li>h) procedures for amending the charter; and</li> <li>i) funding and resourcing of the customer advisory group by Hunter Water, <p>(Customer Advisory Group Charter).</p> </li></ul>	Audit	This is the first audit of this clause in this licence period.
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.	Audit	This is the first audit of this clause in this licence period.
<b>5.5</b>	<b>Internal complaints handling</b>		
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.
<b>5.6</b>	<b>External Dispute Resolution scheme</b>		
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	2020 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"> <li>a) a brief explanation of the Customer Contract and a summary of the key rights and obligations of Customers under the Customer Contract;</li> <li>b) a brief explanation of the Procedure for Payment Difficulties and Actions for Non-payment;</li> <li>c) a brief explanation of rights of Customers to claim a rebate and the conditions that apply to those rights;</li> <li>d) information about the General Enquiry Process;</li> <li>e) information about how to make a Complaint under the Internal Complaints Handling Procedure; and</li> <li>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.</li> </ul>	SC	
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"> <li>a) the Customer Contract;</li> <li>b) a pamphlet or pamphlets (as referred to in clause 5.7.1);</li> <li>c) the Procedure for Payment Difficulties and Actions for Non-payment;</li> <li>d) the Customer Advisory Group Charter;</li> <li>e) customer advisory group minutes;</li> <li>f) the Internal Complaints Handling Procedure;</li> <li>g) information about the dispute resolution scheme provided by Energy and Water Ombudsman NSW; and</li> <li>h) a map of the Area of Operations.</li> </ul>	Internal IPART check	<p>We last audited this clause in 2019. We assigned a Compliant (Minor Shortcomings) grade in that audit.</p> <p>This clause is not included in the auditor's scope. However, the auditor should still check recommendation 2019-05 relevant to this clause for completion (see Table 3).</p>
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 last audited this clause in 2018. We assigned a Compliant grade in that audit.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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	
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"> <li>a) maintain a memorandum of understanding with NSW Health; and</li> <li>b) comply with the memorandum of understanding maintained under clause 5.9.1(a).</li> </ul> <p>[Note: Clause 5.9.1 does not limit the persons with whom Hunter Water may enter into a memorandum of understanding.]</p>	Audit	<p>This is the first audit of this clause in this licence period.</p> <p><b>We sought and received NSW Health's comments</b> on Hunter Water's performance against this clause. Refer to NSW Health's submission, dated 27 July 2020.</p>
5.9.2	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.	NR	
5.9.3	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.	Audit	<b>We sought and received NSW Health's comments</b> on Hunter Water's performance against this clause. Refer to NSW Health's submission, dated 27 July 2020.
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	<b>We sought and received NSW Health's comments</b> on Hunter Water's performance against this clause. Refer to NSW Health's submission, dated 27 July 2020.



Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
5.10	Memorandum of Understanding with Department of Primary Industries - Water		
5.10.1	<p>Hunter Water must use its best endeavours to:</p> <p>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:</p> <p>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</p> <p>ii. calculation and reporting of System Yield; and</p> <p>b) comply with the memorandum of understanding maintained under clause 5.10.1(a).</p> <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.</p> <p><b>We sought and received the Department of Planning, Industry and Environment's (DPIE) comments</b> on Hunter Water's performance against this clause. DPIE "is satisfied that Hunter Water has acted in accordance with the Roles and Responsibilities Protocol during the audit period" (DPIE's submission, reference number OUT20/7676).</p>
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	
5.11	Memorandum of understanding with Fire and Rescue NSW		
5.11.1	<p>Hunter Water must use its best endeavours to:</p> <p>a) develop and enter into a memorandum of understanding with FRNSW by 31 December 2017; and</p> <p>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> <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 last audited this clause in 2019. We assigned a Compliant grade in that audit.</p> <p><b>We sought and received FRNSW's comments</b> on Hunter Water's performance against this clause. "FRNSW does not have any concerns regarding Hunter Water's compliance with clause 5.11 of the operating licence over the 2020 audit period" (FRNSW's submission, dated 30 June 2020).</p>

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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"> <li>a) develop the roles and responsibilities of the parties to the memorandum of understanding as they relate to each other;</li> <li>b) identify the needs and constraints of the parties to the memorandum of understanding as they relate to each other; and</li> <li>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.</li> </ul>	NR	
5.11.3	<p>The memorandum of understanding referred to in clause 5.11.1 must require:</p> <ul style="list-style-type: none"> <li>a) the establishment of a working group, comprised of representatives from Hunter Water and FRNSW; and</li> <li>b) the working group to consider the following matters (at a minimum): <ul style="list-style-type: none"> <li>i. arrangements regarding information sharing between Hunter Water and FRNSW;</li> <li>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);</li> <li>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</li> <li>iv. other matters as agreed by both parties to the memorandum of understanding.</li> </ul> </li> </ul>	SC	<p>We last audited this clause in 2019. We assigned a Compliant grade in that audit</p> <p><b>We sought and received FRNSW's comments</b> on Hunter Water's performance against this clause. "FRNSW does not have any concerns regarding Hunter Water's compliance with clause 5.11 of the operating licence over the 2020 audit period" (FRNSW's submission, dated 30 June 2020).</p>
6	Performance monitoring and reporting		
6.1	Operational audits		
6.1.1	<p>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:</p> <ul style="list-style-type: none"> <li>a) this Licence;</li> <li>b) the Reporting Manual; and</li> <li>c) any matters required by the Minister, (Operational Audit).</li> </ul>	NR	
6.1.2	<p>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>	Internal IPART check	This clause is not included in the auditor's scope.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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"> <li>a) access any works, premises or offices occupied by Hunter Water;</li> <li>b) carry out inspections, measurements and tests on, or in relation to, any such works, premises or offices;</li> <li>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;</li> <li>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</li> <li>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.</li> </ul>	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"> <li>a) water conservation;</li> <li>b) supply services and performance standards;</li> <li>c) organisational systems management;</li> <li>d) customer and stakeholder relations; and</li> <li>e) performance monitoring and reporting, including: <ul style="list-style-type: none"> <li>i. IPART performance indicators; and</li> <li>ii. the National Water Initiative Performance Indicators</li> </ul> </li> </ul>	SC	
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	
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. <p>[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.]</p>	NR	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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"> <li>a) Section 24FF of the IPART Act applies; or</li> <li>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</li> </ul> <p>Hunter Water must, to the maximum extent permitted by the law, provide that information even if it is confidential.</p>	Internal IPART check	This clause is not included in the auditor's scope.

**Table 3 Recommendations / outstanding items from previous audits**

Recommendation number	Licence part	IPART's recommendation to the Minister	Previous audit findings	Guidance for 2019 audit
2019-01	Pricing Clause 1.8.1	By 30 June 2020, Hunter Water must report to IPART on the further progress made in contacting past owners of properties affected by the incorrect charging of the Stormwater Drainage Charge, the total of the refunds made compared to the amount overcharged, and any further actions to be undertaken (if necessary) to rectify this non-compliance.	New recommendation from 2019 audit.	Auditor to check for completion.
2019-02	Pricing Clause 1.8.1	By 30 June 2020, Hunter Water must correct its application of the sewer discharge allowance within the billing system; determine the number of customers affected and the incorrectly billed amounts; and report these details to IPART together with details of actions and/or further actions proposed.	New recommendation from 2019 audit.	Auditor to check for completion.
2019-06	Pricing Clause 1.8.1	By 31 March 2021, Hunter Water must ensure that the proposed functionality for fully automated tankered waste billing is incorporated into the new corporate billing system.	New recommendation from 2019 audit. (Recommendation from the 2018 audit revised in the 2019 audit)	Auditor to check for progress.
2013-14-03 2013-14-04 2013-14-06 2013-14-13	Recycled Water Clauses 3.2.1 & 3.2.2	Within 6 months, Hunter Water should review Critical Control Points (CCPs) for each treatment plant, including: 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)	Hunter Water is awaiting NSW Health agreement to the final CCP critical limits.  Hunter Water is required to provide a report on progress by 12 June 2020.	Auditor to check for completion.
2019-03	Recycled Water Clause 3.2.1	By 30 September 2020, Hunter Water must document the methodology for assessment of water quality data to inform risk assessment to ensure consistency across schemes. The assessment should include methods for trending and identifying problems.	New recommendation from 2019 audit.	Auditor to check for completion.

Recommendation number	Licence part	IPART's recommendation to the Minister	Previous audit findings	Guidance for 2019 audit
2019-04	Recycled Water Clause 3.2.1	By 30 June 2020, Hunter Water must review the verification monitoring program for the Chisholm and Gillieston Heights recycled water schemes, to ensure microbiological testing is consistent with the advice provided in the AGWR for large high exposure schemes, and include weekly testing of clostridial spores and somatic coliphage, and monthly testing of adenovirus and cryptosporidium oocysts.	New recommendation from 2019 audit.	Auditor to check for completion.
2019-05	Provision of information to Customers and the general public Clause 5.7.2	By 30 June 2020, Hunter Water must ensure that all information required to be available on its website for downloading, or upon request through the General Enquiry Process, can be readily identified by methods such as menu navigation or using the search function.	New recommendation from 2019 audit.	Auditor to check for completion.

**a Hunter Water's Status Report on Recommendations - 2019 Operating Licence Audit is due by 12 June 2020.**

**b Licence references are to the Hunter Water Corporation Operating Licence 2017-2022 unless otherwise stated.**

**Table 4 Previous field verification locations for Hunter Water Corporation**

<b>Audit year</b>	<b>Location</b>	<b>Facility</b>
<b>2019</b>	Morpeth	Recycled water plant
	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)
<b>2018</b>	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
<b>2017</b>	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
	Elmore Vale	Reservoir
<b>2016</b>	Tomago Sandbeds	Borefields
	Lemon Tree Passage	Water Treatment Plant
	Karuah	Wastewater Treatment Plant and the reuse enterprise
	Boulder Bay	Wastewater Treatment Plant
<b>2015</b>	Edgeworth	Wastewater Treatment works
	KIWS (Kooragang Industrial Water Scheme), incl. Mayfield West plant	Advanced Water Treatment Plant (recycled water)
	Grahamstown	Spillway
		Water Treatment Plant
	Campvale	Pumping station

<b>Audit year</b>	<b>Location</b>	<b>Facility</b>
<b>2014</b>	Chichester	Dam
	Dungog	Water Treatment Plant
	Clarence	Sewage Treatment Plant
	Boags Hill	Inlet
	Seaham	Weir
<b>2013</b>	Branxton	Recycled Water Treatment Plant
	Grahamstown	Water treatment plant
<b>2012</b>	Port Stephens	Lemon Tree Passage Water Treatment Plant
	Grahamstown	Dam
	Campvale	Pumping station
	Between Newcastle and Port Stephens	Tomago Sandbeds
	Karuah	Sewage Treatment Plant
<b>2011</b>	Dungog	Water Treatment Plant
	Grahamstown	Water Treatment Plant
	n/a	Service reservoirs and storages
	n/a	Work sites – mains replacement and burst mains repair



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D Auditor's report on the operational audit 2020 –  
Hunter Water



# 2020 Operational Audit of Hunter Water Corporation

## **Final Audit Report**

#20010-10-001 Version 3.0

Independent Pricing and Regulatory Tribunal

February 2021

## Document History

### 2020 Operational Audit of Hunter Water Corporation

Final Audit Report

### Independent Pricing and Regulatory Tribunal

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## Glossary

Acronym/Term	Description
ADWG (2011)	<i>Australian Drinking Water Guidelines, 2011</i>
AGWR (2006)	<i>Australian Guidelines for Water Recycling, 2006</i>
ALS	Australian Laboratory Services (laboratory testing service provider)
AMP	Asset Management Plan
AOMS	Asset Operations Maintenance System
BMS	Build and Construction Management System (cloud-based platform used by Veolia for records management)
CCAG	Customer and Community Advisory Group
CCP	Critical Control Point
CIS	Customer Information System
CMMS	Computerised Maintenance Management System
COP	Critical Operational Point
CPI	Consumer Price Index
ΔCPI	Change in CPI calculated in accordance with the Hunter Water Determination (refer Section 2.2.1.1)
DOS	Disinfection Optimisation Strategy
DWQIP	Drinking Water Quality Improvement Plan
DWQMP	Drinking Water Quality Management Plan
DWQMS	Drinking Water Quality Management System
Ellipse	Enterprise Asset Management System used by Hunter Water
EMP	Emergency Management Plan
EMS	Environmental Management System
EMT	Executive Management Team
Envirosys	Environmental and water quality data management software
ERM	Enterprise Risk Management (framework implemented by Hunter Water)
Integrum	Compliance software package (no longer supported and being replaced by Hunter Water)
IPART	The Independent Pricing and Regulatory Tribunal (NSW)
LHWSP	<i>Lower Hunter Water Security Plan</i>
MBR	Membrane Bioreactor
ML	Megalitre (1 million litres)
ML/day	Megalitres per day
MoU	Memorandum of Understanding
NATA	National Association of Testing Authorities

Acronym/Term	Description
NTU	Nephelometric Turbidity Unit
OFI	Opportunity for Improvement
O&M	Operations and Maintenance
PFAS	Per- and poly-fluoroalkyl substances
pH	A measure of acidity or alkalinity of water
QA	Quality Assurance
QC	Quality Control
Reservoir	Hunter Water SharePoint site
RWTP	Recycled Water Treatment Plant
RWQIP	Recycled Water Quality Improvement Plan
RWQMP	Recycled Water Quality Management Plan
RWQMS	Recycled Water Quality Management System
SCADA	Supervisory Control and Data Acquisition
SOP	Standard Operating Procedure
TRIM	Total Records and Information Management
UAT	User Acceptance Testing
UV	Ultra Violet (as it relates water disinfection using ultra violet light)
UVT	UV Transmissivity
VAMS	Veolia Asset Management System (computerised maintenance management system used by Veolia)
VSD	Variable Speed Drive
Watershed	Compliance tracking software (adopted by Hunter Water to replace Integrum)
WSAA	Water Services Association of Australia
WTP	Water Treatment Plant
WWTW	Wastewater Treatment Works

## Executive Summary

### Auditor Declaration

This report presents the findings of an Operational Audit of Hunter Water Corporation's compliance with the requirements of its Operating Licence during the period 1 November 2019 to 31 October 2020. The audit was undertaken by Cobbitty Consulting, in association with Viridis Consultants, for the Independent Pricing and Regulatory Tribunal (IPART).

The audit team confirms that:

- the auditors have seen sufficient evidence on which to base their conclusions;
- the audit findings accurately reflect the professional opinion of the auditors;
- the lead auditor and team members have conducted the audit, determined audit findings and prepared this report in accordance with the requirements of the *Audit Guideline – Public Water Utilities*<sup>1</sup> and IPART's *Request for Quote*.<sup>2</sup>
- the audit findings have not been unduly influenced by the utility and/or any of its associates.

### Major Findings

The audit team found that Hunter Water had performed well against the audited obligations over the audit period. Nineteen (19) clauses of the Operating Licence were audited, the findings in respect of which can be summarised as follows:

- there was No Requirement for compliance in respect of one (1) clause;
- Non-compliance (non-material) has been assigned in respect of one (1) clause;
- Compliance (minor shortcomings) has been assigned in respect of three (3) clauses; and
- Compliance has been awarded to all of the remaining fourteen (14) audited clauses.

The identified shortcomings relate to Pricing, Drinking water and Recycled water.

The findings of the audit of performance against the audited Licence obligations are summarised in **Table E.1**. The assessment of progress in respect of previous audit recommendations is summarised in **Table E.2**.

It is noted that there have been significant naturally occurring events (drought, flood, bushfire and the global COVID-19 pandemic) during the last 12 months. Notwithstanding, it is apparent that by adapting its delivery model Hunter Water has continued to operate effectively with little to no impact on service delivery. Furthermore, the need to adopt has driven some of the improvements observed during the audit.

<sup>1</sup> IPART, *Audit Guideline; Public Water Utilities* (Issue PWUAG-Rev4), July 2019.

<sup>2</sup> IPART, *Request for Quote – RFQ 20/156; 2020 Public Water Utility Audits*, undated.



**Table E.1 Summary of Audit Findings**

Licence Part	Clause/Obligation	Compliance Grade/Comment <sup>3</sup>
1. Licence context and authorisation	1.8.1	Non-complaint (non-material) <i>Hunter Water declared ongoing non-compliance with this obligation; incorrect application of wastewater usage charges (specifically the sewer discharge allowance) and stormwater drainage charges had continued into the audit period. These non-compliances are not considered to have compromised Hunter Water's ability to achieve its defined objectives or assure that controlled processes are implemented in setting prices and charges; the resultant risk in respect of customer relations and financial viability is considered very low.</i>
3. Supply services and performance standards	3.1.1	Compliant
	3.1.2	Compliant (minor shortcomings) <i>There were minor deficiencies in that minor water quality incidents were not always administered in accordance with internal procedures. This shortcoming is not considered to have affected water quality, public health and safety or the environment.</i>
	3.2.1	Compliant (minor shortcomings) <i>There was a minor deficiency in that quality assurance and validation procedures for sampling are not documented in the Recycled Water Quality Monitoring Plan. This shortcoming is not considered to have affected water quality, public health and safety or the environment.</i>
	3.2.2	Compliant (minor shortcomings) <i>There were minor deficiencies in implementation of the documented procedures for Microbiological Exception Reporting; undertaking management review; and the timely completion of actions identified in the Recycled Water Quality Improvement Plan. These shortcomings are not considered to have affected water quality, public health and safety or the environment.</i>
	3.3.1	Compliant
	3.3.2	Compliant
	3.3.3	Compliant
	3.3.4	Compliant

<sup>3</sup> Comment provided where less than full compliance assessed.

Licence Part	Clause/Obligation	Compliance Grade/Comment <sup>3</sup>
4. Organisational systems management	4.1.2	Compliant
5. Customer and stakeholder relations	5.3.1	Compliant
	5.4.1	Compliant
	5.4.2	Compliant
	5.4.3	Compliant
	5.4.4	Compliant
	5.4.5	Compliant
	5.8.1	No Requirement
	5.9.1	Compliant
	5.9.3	Compliant

**Table E.2 Summary of Assessed Progress in Respect of Previous Audit Recommendations**

Recommendation	Licence Reference <sup>4</sup> and Operational Issue	Status/Comment <sup>5</sup>
2019-01	<i>Pricing (clause 1.8.1):</i> By 30 June 2020, Hunter Water must report to IPART on the further progress made in contacting past owners of properties affected by the incorrect charging of the Stormwater Drainage Charge, the total of the refunds made compared to the amount overcharged, and any further actions to be undertaken (if necessary) to rectify this non-compliance.	Completed
2019-02	<i>Pricing (clause 1.8.1):</i> By 30 June 2020, Hunter Water must correct its application of the sewer discharge allowance within the billing system; determine the number of customers affected and the incorrectly billed amounts; and report these details to IPART together with details of actions and/or further actions proposed.	Completed
2019-06	<i>Pricing (clause 1.8.1):</i> By 31 March 2021, Hunter Water must ensure that the proposed functionality for fully automated tankered waste billing is incorporated into the new corporate billing system.	Ongoing <i>Completion of this recommendation is dependent upon full implementation of Hunter Water's new billing system. Completion is now anticipated by 31 December 2021.</i>

<sup>4</sup> Refer to the relevant section of this report and associated appendix for full details of previous recommendations.

<sup>5</sup> Comment provided where less than recommendation has not been fully addressed (i.e. completed).

Recommendation	Licence Reference <sup>4</sup> and Operational Issue	Status/Comment <sup>5</sup>
2013-14-03 2013-14-04 2013-14-06 2013-14-13	<p><i>Recycled Water (clauses 3.2.1 &amp; 3.2.2).</i><sup>6</sup></p> <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.</p> <p><i>[Note: other elements of these recommendations, as they apply to Recycled Water, had been fully addressed at the time of the 2019 Operational Audit.]</i></p>	<p>Ongoing</p> <p><i>Completion of this recommendation requires the addition of two items (one remains outstanding) to the Recycled Water Quality Improvement Plan to meet NSW Health's conditions for approval of the final Validation Plan (i.e. the Validation Testing Program for Water Recycling Schemes).</i></p>
2019-03	<p><i>Water Quality; Recycled Water (clause 3.2.1):</i></p> <p>By 30 September 2020, Hunter Water must document the methodology for assessment of water quality data to inform risk assessment to ensure consistency across schemes. The assessment should include methods for trending and identifying problems.</p>	<p>Completed</p>
2019-04	<p><i>Recycled Water (clause 3.2.1):</i></p> <p>By 30 June 2020, Hunter Water must review the verification monitoring program for the Chisholm and Gillieston Heights recycled water schemes, to ensure microbiological testing is consistent with the advice provided in the AGWR for large high exposure schemes, and include weekly testing of clostridial spores and somatic coliphage, and monthly testing of adenovirus and cryptosporidium oocysts.</p>	<p>Completed</p>
2019-05	<p><i>Provision of information to Customers and the general public (clause 5.7.2):</i></p> <p>By 30 June 2020, Hunter Water must ensure that all information required to be available on its website for downloading, or upon request through the General Enquiry Process, can be readily identified by methods such as menu navigation or using the search function.</p>	<p>Completed</p>

<sup>6</sup> Recommendations originally raised in respect of clauses 2.2.1 and 2.2.2 in the previous *Hunter Water Corporation Operating Licence 2012-2017*; clauses 3.2.1 and 3.2.2 are the equivalent clauses in the current Licence.

## Recommendations

Recommendations arising from the audit are presented in **Table E.3**.

**Table E.3 Audit Recommendations**

Licence Part	Clause /Obligation	Recommendation
2. Supply services and performance standards	3.1.2	<b>REC-HWC-2020-01:</b> By 30 June 2021, Hunter Water should ensure that minor water quality incidents are all recorded as required by the <i>Corporate Emergency Management Plan</i> .
	3.2.1	<b>REC-HWC-2020-02:</b> By 31 October 2021, Hunter Water should ensure that the quality assurance and validation procedures for sampling are documented in the <i>Recycled Water Quality Monitoring Plan</i> . The AGWR (Box 2.10) requires that quality assurance details are in a monitoring plan.
	3.2.2	<b>REC-HWC-2020-03:</b> By 31 October 2021, Hunter Water should review the manner in which water quality issues are documented and reported so as to ensure that they are managed and closed out in a consistent manner. <b>REC-HWC-2020-04:</b> Hunter Water should review the effectiveness of the <i>Recycled Water Quality Management Plan</i> at each Integrated Management System Review Meeting. This action should be implemented from the next scheduled Integrated Management System Review Meeting (nominally by 30 June 2021). <b>REC-HWC-2020-05:</b> By 31 March 2021, Hunter Water should ensure that the <i>Recycled Water Quality Management System Improvement Plan</i> is monitored and tasks that are 'at risk' are picked up at an appropriate time to action them before the due date.

It is noted that no further recommendation(s) have been made in respect of non-compliance with clause 1.8.1. The ongoing non-compliances in respect of this obligation, which were the subject of previous recommendations REC-HWC-2019-01 and REC-HWC-2019-02, had been effectively addressed by the end of the audit period.

## Opportunities for Improvement

Opportunities for improvement identified during the audit are presented in **Table E.4**.

**Table E.4 Opportunities for Improvement**

Licence Part	Clause /Obligation	Recommendation
2. Supply services and performance standards	3.1.1	<p><b>OFI-HWC-2020-01:</b> Revise the Anna Bay WTP CWT outlet turbidity CCP to be consistent with the ADWG requirement of &lt;1NTU or validate disinfection at the higher turbidity, if required.</p> <p><b>OFI-HWC-2020-02:</b> Update the Drinking Water Quality Management System Manual with the details of Veolia's new document management system.</p> <p><b>OFI-HWC-2020-03:</b> Consider mapping types of documents and records to the location or records management system used to store them (for example, verification water quality data is stored in Envirosys). This would clarify the location for retained documents and records.</p>
	3.1.2	<p><b>OFI-HWC-2020-04:</b> Ensure that documents on the Hunter Water website are updated within the review period.</p> <p><b>OFI-HWC-2020-05:</b> Ensure that the requirements of regulatory and formal undertakings are clearly documented in relation to how they apply to Hunter Water. Commentary should be added where context is required to understand compliance requirements; for example, in relation to the <i>Public Health Act 2010</i>.</p> <p><b>OFI-HWC-2020-06:</b> Ensure risk assessment reports reference all of the water quality data relied upon to assess the risk of hazards and hazardous events. An example is the 2020 Grahamstown WTP risk assessment which did not include or reference the results of PFAS monitoring for the Tomago Bore Field.</p> <p><b>OFI-HWC-2020-07:</b> Consider making algae management a 'business as usual' control, thereby eliminating the need to categorise algal blooms as incidents, unless the associated controls fail.</p> <p><b>OFI-HWC-2020-08:</b> Prioritise implementation of Improvement Item 260 in the DWQIP and keep NSW Health updated through the liaison meetings. This should be completed by March 2021.</p>

Licence Part	Clause /Obligation	Recommendation
	3.2.2	<p><b>OFI-HWC-2020-09:</b> Mark unused fields in the risk assessment as not applicable.</p> <p><b>OFI-HWC-2020-10:</b> Include the use of differential pressure and electrical conductivity as preventive measures for cross-connection in the next review of the risk assessment.</p> <p><b>OFI-HWC-2020-11:</b> Consider making the CCP SCADA limits consistent with documentation, even if they are tighter. The SCADA set points at the Farley RWTP do not match those in the risk management plans. Multiple versions of limits make it more complex to control and creates more set points to manage.</p>
5. Customer and stakeholder relations	5.4.4	<p><b>OFI-HWC-2020-12:</b> It is suggested that Hunter Water considers revising the <i>Customer and Community Advisory Group Charter</i> to specifically acknowledge the role of the Customer and Community Advisory Group in endorsing any proposed changes to the Charter prior to approval by its Board of Directors.</p>
	5.7.2 (REC 2019-05)	<p><b>OFI-HWC-2020-13:</b> It is suggested that Hunter Water makes appropriate adjustments to its website functionality to ensure that the <i>Customer Advisory Group Charter</i> can be directly located using the website search function.</p>

# 1. Introduction

## 1.1 Objectives

The objective of this audit was to assess, for the period from 1 November 2019 to 31 October 2020, Hunter Water Corporation’s (Hunter Water’s) performance against the terms and conditions (obligations) of:

- the *Hunter Water Operating Licence 2017-2022* (Operating Licence); and
- any other Ministerially-imposed requirements.

## 1.2 Audit Method

### 1.2.1 Audit Scope

The scope of the 2019 Operational Audit of Hunter Water is specified in detail in the *Request for Quote – RFQ 20/156; 2020 Public Water Utility Audits*. It comprised:

- an audit of Hunter Water’s compliance with the obligations and requirements set out in its Operating Licence;<sup>7</sup> and
- an assessment of Hunter Water’s progress in addressing outstanding recommendations arising from previous audits.

As outlined in its *Audit Guideline – Public Water Utilities*,<sup>8</sup> IPART adopts a risk-based approach in setting the scope of public water utility operational audits. The clauses/obligations against which Hunter Water’s compliance has been assessed are identified in **Table 1.1**. Full details of the audit scope, as defined by IPART, are presented in **Appendix A**.

**Table 1.1 Scope of 2019 Operational Audit of Hunter Water**

Licence Part	Clause/Obligation
1. Licence context and authorisation	1.8.1
3. Supply services and performance standards	3.1.1; 3.1.2 3.2.1; 3.2.2 3.3.1; 3.3.2; 3.3.3; 3.3.4
4. Organisational systems management	4.1.2
5. Customer and stakeholder relations	5.3.1 5.4.1; 5.4.2; 5.4.3; 5.4.4; 5.4.5 5.8.1 5.9.1; 5.9.3

Hunter Water’s progress in addressing recommendations from previous audits was also considered as part of the audit. Those recommendations are identified in **Table 1.2**.

<sup>7</sup> Refer to **Section 1.3** for a discussion of the regulatory regime under which Hunter Water operates, including identification of its operating licence.

<sup>8</sup> IPART, *Audit Guideline; Public Water Utilities* (Issue PWUAG-Rev4), July 2019.

**Table 1.2 Recommendations/Outstanding Items from Previous Audits included in the Audit Scope**

Recommendation	Licence Reference <sup>9,10</sup> and Operational Issue
2019-01	<p><i>Pricing (clause 1.8.1):</i></p> <p>By 30 June 2020, Hunter Water must report to IPART on the further progress made in contacting past owners of properties affected by the incorrect charging of the Stormwater Drainage Charge, the total of the refunds made compared to the amount overcharged, and any further actions to be undertaken (if necessary) to rectify this non-compliance.</p>
2019-02	<p><i>Pricing (clause 1.8.1):</i></p> <p>By 30 June 2020, Hunter Water must correct its application of the sewer discharge allowance within the billing system; determine the number of customers affected and the incorrectly billed amounts; and report these details to IPART together with details of actions and/or further actions proposed.</p>
2019-06	<p><i>Pricing (clause 1.8.1):</i></p> <p>By 31 March 2021, Hunter Water must ensure that the proposed functionality for fully automated tankered waste billing is incorporated into the new corporate billing system.</p>
2013-14-03 2013-14-04 2013-14-06 2013-14-13	<p><i>Recycled Water (clauses 3.2.1 &amp; 3.2.2):<sup>11</sup></i></p> <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.</p> <p><i>[Note: other elements of these recommendations, as they apply to Recycled Water, had been fully addressed at the time of the 2019 Operational Audit.]</i></p>
2019-03	<p><i>Water Quality; Recycled Water (clause 3.2.1):</i></p> <p>By 30 September 2020, Hunter Water must document the methodology for assessment of water quality data to inform risk assessment to ensure consistency across schemes. The assessment should include methods for trending and identifying problems.</p>
2019-04	<p><i>Recycled Water (clause 3.2.1):</i></p> <p>By 30 June 2020, Hunter Water must review the verification monitoring program for the Chisholm and Gillieston Heights recycled water schemes, to ensure microbiological testing is consistent with the advice provided in the AGWR for large high exposure schemes, and include weekly testing of clostridial spores and somatic coliphage, and monthly testing of adenovirus and cryptosporidium oocysts.</p>
2019-05	<p><i>Provision of information to Customers and the general public (clause 5.7.2):</i></p> <p>By 30 June 2020, Hunter Water must ensure that all information required to be available on its website for downloading, or upon request through the General Enquiry Process, can be readily identified by methods such as menu navigation or using the search function.</p>

<sup>9</sup> Refer to the relevant section of this report for full details of previous recommendations.

<sup>10</sup> Clause reference relates to the *Hunter Water Corporation Operating Licence 2012-2017*.

<sup>11</sup> Recommendations originally raised in respect of clauses 2.2.1 and 2.2.2 in the previous *Hunter Water Corporation Operating Licence 2012-2017*; clauses 3.2.1 and 3.2.2 are the equivalent clauses in the current Licence.



### 1.2.2 Audit Standard

The auditing principles/guidance presented in ISO 19011:2018 *Guidelines for auditing management systems* have been applied in conducting this audit. Guidance presented in the following standards was also considered where appropriate:

- ASAE 3100 (2008) *Compliance Engagements*;
- Auditing and Assurance Standard AUS 110 *Assurance Engagements other than Audits or Reviews of Historical Financial Information*; and
- International Standard on Quality Control ISQC 2009.

### 1.2.3 Audit Steps

The audit was undertaken in accordance with the methodology outlined in IPART's *Audit Guideline – Public Water Utilities*.<sup>12</sup> The audit steps are identified in **Table 1.3**.

**Table 1.3 Audit Steps**<sup>13</sup>

Step	Description	Responsibility
Step 1	Audit scoping	IPART
Step 2	Appointment of the auditor	IPART
Step 3	Audit preparation	Auditor/Utility/IPART
Step 4	Audit interviews and Field verification site visits	Auditor/Utility (IPART observer)
Step 5	Audit assessment and reporting	Auditor/Utility/IPART
Step 6	Report to the Minister	IPART
Step 7	Report on audit recommendations	Utility

Audit interviews and field verification site visits were undertaken during the three (3) day period 3 November 2020 to 5 November 2020. Due to the coronavirus disease (COVID-19) pandemic, all aspects of the audit (interviews and field verification site visits) were undertaken virtually via online video conferencing.

Field verification site visits were made to:

- Farley Recycled Water Scheme, including:
  - Farley Wastewater Treatment Plant;
  - Farley Recycled Water Treatment Plant; and
  - Gillieston Heights Recycled Water Network;
- Tomago Borefield;
- Schroder PAC Dosing Facility;
- Grahamstown Water Treatment Plant;
- Anna Bay Water Treatment Plant; and
- Nelson Bay Water Treatment Plant.

<sup>12</sup> IPART, *Audit Guideline; Public Water Utilities* (Issue PWUAG-Rev4), July 2019.

<sup>13</sup> IPART, *Audit Guideline; Public Water Utilities* (Issue PWUAG-Rev4), July 2019, section 3 and figure 3.1.

An overview in respect of the field verification visits, including further details of the adopted approach for conducting them, is presented in **Appendix B**.

#### 1.2.4 Audit Team

The audit team comprised of the following:

- Jim Sly – team lead and Lead Auditor;
- James Howey – Lead Auditor;
- Karen Pither –Lead Auditor providing audit support; and
- Asoka Wijeratne – Lead Auditor providing audit support.

The allocation of responsibility for the various components of the audit (clauses audited by each auditor) was as nominated in **Table 1.4**.

IPART representatives Jamie Luke and Shweta Shrestha<sup>14</sup> attended throughout the audit as observers. A list of Hunter Water representatives that attended audit interviews and/or field verification visits is provided in **Appendix B**; Hunter Water’s Audit Coordination Team members Matthew Wickens, Lynn Haining and Charlie McInerny attended throughout the audit.

**Table 1.4 Allocation of Audit Responsibilities**






Licence Part	Clause/Obligation	Lead Auditor
1. Licence context and authorisation	1.8.1	Jim Sly
3. Supply services and performance standards	3.1.1; 3.1.2 3.2.1, 3.2.2 3.3.1; 3.3.2; 3.3.3; 3.3.4	James Howey James Howey Jim Sly
4. Organisational systems management	4.1.2	Jim Sly
5. Customer and stakeholder relations	5.3.1 5.4.1; 5.4.2; 5.4.3; 5.4.4; 5.4.5 5.8.1 5.9.1; 5.9.3	Jim Sly Jim Sly Jim Sly Jim Sly
Recommendations/Outstanding Items from Previous Audits	2019-01, 02, 06 2013/14-03, 04,06,13 2019-03, 04 2019-05	Jim Sly James Howey James Howey Jim Sly

#### 1.2.5 Audit Grades

Audit grades have been awarded in accordance with the guidance presented in the *Audit Guideline – Public Water Utilities*. The compliance grades used in this report are as identified in **Table 1.5**.

<sup>14</sup> Gudny Palsdottir attended in place of Shweta Shrestha for one session.

**Table 1.5 Compliance Grades for Public Utilities<sup>15</sup>**

Grades of compliance	Description
 <b>Compliant</b>	Sufficient evidence is available to confirm that the requirements have been met.
 <b>Compliant (minor shortcomings)</b>	Sufficient evidence is available to confirm that the requirements have been met apart from <b>minor shortcomings</b> which to date have not compromised the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
 <b>Non-compliant (non-material)</b>	Sufficient evidence is not available to confirm that the requirements have been met and the <b>deficiency does not adversely impact</b> the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
 <b>Non-compliant (material)</b>	Sufficient evidence is not available to confirm that the requirements have been met and the <b>deficiency does adversely impact</b> the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
 <b>No Requirement</b>	There is no requirement for the utility to meet this assessment criterion within the audit period.

### 1.3 Regulatory Regime

Hunter Water Corporation is constituted under the *Hunter Water Act 1991* and is a statutory State-owned corporation pursuant to the *State Owned Corporations Act 1989*. It provides drinking water, wastewater, recycled water, and some stormwater services to a population approaching 600,000 people in homes and businesses across the Lower Hunter. Its area of operations encompasses some 5,366 square kilometres and consists of the local government areas of Cessnock, Dungog, Lake Macquarie, Maitland, Newcastle, Port Stephens and a small part of Singleton Shire.

The *State Owned Corporations Act* defines overall objectives which Hunter Water must pursue. These include being a successful business, complying with the principles of ecologically sustainable development, exhibiting a sense of social responsibility, and exhibiting a sense of responsibility towards regional development and decentralisation.

The *Hunter Water Act* details the specific roles and responsibilities of Hunter Water, to meet the policy objective of ensuring the provision of essential water, wastewater and stormwater drainage services.

Pursuant to Section 12 of the *Hunter Water Act*, Hunter Water can be granted an operating licence to authorise it to carry out its specified and other functions. For the purposes of this audit (which addresses the audit period 1 November 2019 to 31 October 2020), Hunter Water has been granted, and has been operating under the provisions of, the *Hunter Water Operating Licence 2017-2022*.

<sup>15</sup> IPART, *Audit Guideline; Public Water Utilities* (Issue PWUAG-Rev4), July 2019, figure 2.1.

## 1.4 Quality Assurance Process

The quality assurance processes implemented in undertaking this audit have included:

- Peer review of the audit questionnaires prior to submission to IPART;
- Processes to control all documents used in the audit;
- Accuracy checks of reported data and the completeness of audit trails;
- Peer review of preliminary findings and audit assessments included in the Draft Reports;
- Quality review of the Draft Reports (both independently and by the Audit Team Leader);
- Peer review of the Revised Draft Reports, specifically the treatment of comments received on the Draft Report and the feasibility of recommendations and opportunities for continuous improvement; and
- Quality review of the Final Report (both independently and by the Audit Team Leader).

An independent peer review has been undertaken to ensure that the accuracy of each section of the report is checked through quality control steps and all audit judgements, conclusions and recommendations are validated. The independent review was undertaken by Bob Burford, who has held Exemplar Global lead auditor accreditation in respect of Drinking Water Quality Management Systems and ISO lead auditor certification in respect of Environmental Management Systems, Quality Management Systems, OHS Management Systems, Food Safety (Water) Management Systems and Information Security Management Systems.

As Audit Team Leader, Jim Sly has also reviewed the Audit Report prior to release.

## 2. Detailed Audit Findings

### 2.1 Overview

This section sets out the detailed findings of the audit for each audited sub-clause of the *Operating Licence*. In each case the following is provided:

- the Licence requirement is defined;
- the risk that non-compliance with the requirement presents;
- the target for full compliance;
- the assessed level of compliance (Compliance grade);
- a summary of the reason for the assessed compliance grade;
- discussion of the evidence reviewed and how it demonstrates/supports the assessed level of compliance;
- any recommendations (in the event that full compliance is not assessed); and
- any identified opportunities for improvement.

A list of the evidence reviewed in assessing compliance for each clause is presented in **Appendix C**.

Detailed findings are presented in the following sections on the basis of assigned audit grade, as shown in **Table 2.1**.

**Table 2.1 Assessed Compliance/Report Section Allocation**

Licence Part/Clause	Sub-clause	Assessed Compliance Grade	Report Section
<b>1. Licence context and authorisation</b>			
1.8 Pricing	1.8.1	Non-compliant (non-material)	2.2.1.1
<b>3. Supply services and performance standards</b>			
3.1 Drinking Water	3.1.1	Compliant	2.4.1.1
	3.1.2	Compliant (minor shortcomings)	2.3.1.1
3.2 Recycled Water	3.2.1	Compliant (minor shortcomings)	2.3.2.1
	3.2.1	Compliant (minor shortcomings)	2.3.2.2
3.3 System performance standards	3.3.1	Compliant	2.4.2.1
	3.3.2	Compliant	2.4.2.2
	3.3.3	Compliant	2.4.2.3
	3.3.4	Compliant	2.4.2.4
<b>4. Organisational systems management</b>			
4.1 Asset management system	4.1.2	Compliant	2.4.3.1

Licence Part/Clause	Sub-clause	Assessed Compliance Grade	Report Section
<b>5. Customer and stakeholder relations</b>			
5.3 Payment difficulties and actions for non-payment	5.3.1	Compliant	2.4.4.1
5.4 Customer advisory group	5.4.1	Compliant	2.4.5.1
	5.4.2	Compliant	2.4.5.2
	5.4.3	Compliant	2.4.5.3
	5.4.4	Compliant	2.4.5.4
	5.4.5	Compliant	2.4.5.5
5.8 Code of Conduct with WIC Act Licensee	5.8.1	No Requirement	2.5.1.1
5.9 Memorandum of Understanding with NSW Health	5.9.1	Compliant	2.4.6.1
	5.9.3	Compliant	2.4.6.2


The assignment of compliance grades in respect of the nineteen (19) clauses of the *Operating Licence* that were audited can be summarised as follows:

- Non-compliant (material) – nil;
- Non-compliant (non-material) – one (1) clause;
- Compliant (minor shortcomings) – three (3) clauses;
- Compliant – fourteen (14) audited clauses; and
- No Requirement – one (1) clause;

## 2.2 Non-compliant (non-material)

### 2.2.1 Licence context and authorisation – Pricing (clause 1.8)

#### 2.2.1.1 Pricing (sub-clause 1.8.1)

Sub-clause	Requirement	Compliance Grade
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 determination under the IPART Act.	 <b>Non-compliant (non-material)</b>

#### Risk

Failure to comply with the requirements of this obligation presents a risk that Hunter Water is either overcharging its customers or failing to recover the costs of providing the service.

#### Target for Full Compliance

Evidence that Hunter Water has set the level of fees, charges and other amounts payable for its Services in accordance with any applicable determination or determination under the IPART Act.

#### Obligation

This obligation requires Hunter Water to set fees and charges and other amounts payable for its Services in accordance with the relevant IPART Determinations.

#### Summary of reasons for grade

Hunter Water demonstrated that, in most respects, it has calculated and applied fees, charges and other amounts payable for its Services in accordance with the applicable IPART Determinations, principally the *2016 Hunter Water Determination* and *2020 Hunter Water Determination*, during the audit period. This assessment is based on a detailed review of Hunter Water's *Price Schedules* in comparison with the IPART Determinations and review of a sample of Customers' bills.

However, as reported by Hunter Water in its annual *Statement of Compliance* in respect of the 2019/20 financial year, it had remained non-complaint with this obligation in two previously identified and reported respects; incorrect application of wastewater usage charges due to a rounding discrepancy and the application of stormwater drainage charges based on incorrect catchment delineation information. To the extent applicable (some charges were revised under the *2020 Determination*, applicable from 1 July 2020), these charges were being correctly applied by the end of the audit period.

In assessing the materiality of these non-compliances, consideration has again been given to their impact on Hunter Water's ability to achieve its defined objectives and to assure its controlled processes, products, and outcomes. In this case the relevant objective is to ensure that customers are charged in accordance with the determined price levels. From this perspective, Hunter Water has demonstrated an open and proactive approach both in declaring the non-compliance (stormwater charges) to customers and the regulator, and in the actions taken to address them (stormwater charges and sewage discharge allowance). Furthermore, as noted above, both issues were substantially addressed prior to the end of the audit period, and the materiality of the impact of both issues is considered to have been minimal from an overall perspective (both in total and more specifically within the current audit period).

On this basis, a non-compliant (non-material) grade is assigned in respect of this obligation.

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## Discussion and notes

### **Overview:**

Assessment of compliance in respect of this obligation has involved review of Hunter Water's annual price updating process and the more detailed assessment of a sample of prices/charges and their application.

In its *Statement of Compliance*,<sup>16</sup> Hunter Water advised that it had remained non-compliant with this obligation during the 2019/20 financial year in two respects:

- incorrect application of wastewater usage charges – this was due to a 'rounding error' in applying the sewer discharge allowance (this non-compliance was initially identified/reported in December 2019 during the 2019 Operational Audit); and
- incorrect application of stormwater drainage charges – incorrect charges were applied to a number of properties (this non-compliance was initially reported in Hunter Water's 2018/19 *Statement of Compliance*).

Hunter Water's actions in addressing previous recommendations in respect of these non-compliances (Recommendations REC-HWC-2019-01 and REC-HWC-2019-02) are discussed in **Sections 3.2.1.1** and **3.2.1.2** respectively. These non-compliances are also further discussed below.

To otherwise assess compliance with this obligation during the audit period, a sample of water and wastewater charges, trade waste service charges, backflow prevention device fees and complex works design review charges were reviewed.

It is noted that prices/charges for both 2019/20 and 2020/21 were applicable during the audit period. A sample of 2019/20 prices were reviewed as part of the 2019 Operational Audit;<sup>17</sup> they have also been included in the current assessment, as applicable to the sample of prices assessed.

It is further noted that, during the audit period, Hunter Water continued working towards the replacement/upgrade of its billing system. After several delays, the new system went 'live' on 1 November 2020.

### **Determination and Price Schedule:**

Hunter Water noted that its schedule of fees and charges is described in the IPART *2020 Price Determination*;<sup>18</sup> these fees and charges are applicable from 1 July 2020. For the portion of the audit period ending 30 June 2020, Hunter Water's schedule of fees and charges is described in the IPART *2016 Price Determination*.<sup>19</sup> For the purposes of this report, these *Hunter Water Determinations* are referred to as the *2020 Determination* and the *2016 Determination* respectively.

It is noted the Hunter Water's pricing arrangements during the audit period were also subject to:

- *Pricing arrangements for recycled water and sewer mining: Sydney Water Corporation, Hunter Water Corporation, Gosford City Council and Wyong Shire Council, Determination No. 8, 2006* (Recycled Water and Sewer Mining Determination); and
- *Maximum prices for connecting, or upgrading a connection, to a water supply, sewerage, or drainage system: Sydney Water, Hunter Water and Central Coast Council; Final Determination, October 2018* (Developer Charges Determination);

however, the application of fees and charges under these Determinations were not assessed for the purposes of this audit.

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<sup>16</sup> Hunter Water, *Statement of Compliance 2019-20*, 27 August 2020.

<sup>17</sup> Cobbitty Consulting/Viridis Consultants, *2019 Operational Audit of Hunter Water Corporation; Final Audit Report* (Version 3.0), 28 February 2020, section 3.2.1 (table 3.1).

<sup>18</sup> Document: *1.8.1-E-001 2020 Final Determination - HWC - Maximum prices for water sewerage stormwater drainage.pdf*.

<sup>19</sup> IPART, *Hunter Water Corporation; Maximum prices for water, sewerage, stormwater drainage and other services from 1 July 2016; Determination No. 4*, June 2016.



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The *Hunter Water Determinations* detail the maximum prices/charges that Hunter Water can levy with prices after the first year of the period for which prices have been determined to be calculated by application of changes in the Consumer Price Index (CPI). The value of the change in CPI ( $\Delta$ CPI) is calculated in accordance with the *Determination* and advised annually by IPART. For example, IPART advised that the following change in CPI figures should be used in calculating prices for 2019/20:<sup>20</sup>

- *Hunter Water Determination: 5.5%.*
- *Recycled water and Sewer Mining Determination: 1.8%.*

As the period commencing 1 July 2020 is the first year of the *2020 Determination*, application of the CPI adjustment was not required to calculate fees and charges for the 2020/21 financial year, with the exception of those for trade waste (refer later discussion).

In its response to the Audit Questionnaire, Hunter Water advised that:

*“Hunter Water has converted this price determination to our own spreadsheet schedule of prices, showing the calculation of various fees and charging, including appropriate application of IPART’s determination relating to annual indexing (to reflect changes in the Consumer Price Index) and specific rounding rules. This is our master pricing spreadsheet for internal use, including annual updates of our prices.*

.....

*IPART typically provides us a letter containing the appropriate CPI to use for annual indexing, however, because 2020-21 is the first year of a new price determination, IPART calculates the final nominal price (in \$2020-21) and publishes this in their Final Determination.*

*To implement several new charge structures under the 2020-21 Final Determination, a project was undertaken to ensure that the billing system was updated accurately to reflect both the new charge structures and the new charge levels.”*

The *Price Schedule* is updated annually generally in accordance with a *Price Update Procedure*,<sup>21</sup> which sets out the step-by-step process to be implemented (the process was varied when preparing the *2020/21 Price Schedule* as it was the first year of the *2020 Determination*). Once updated, the *Price Schedule* is endorsed and approved, following which it is used as the basis for updating Hunter Water’s billing system. Evidence of endorsement and approval of the *2020/21 Price Schedule* was provided in the form of a screenshot showing online record of endorsements and approval in Hunter Water’s document management system.<sup>22</sup> Review and endorsement requirements were outlined in an internal email sent to personnel having input to the approval process.<sup>23</sup>

The *Price Schedules* for 2020/21<sup>24,25</sup> were provided for review (a separate schedule had been prepared for trade waste prices) as well as the *Schedule* for 2019/20.<sup>26</sup> The *2019/20 Price Schedule* was reviewed as part of the 2019 Operational Audit and found to be consistent with the *2016 Determination* (CPI changes had been correctly applied); a detailed review of the *2020/21 Price Schedule* found that the provisions of the *2020 Determination* had been correctly applied (refer below for further discussion).

Hunter Water advised that IPART provides a spreadsheet template in which it (Hunter Water) is required to submit the updated prices so that IPART can confirm the correct application of the CPI adjustments. Hunter Water demonstrated that it had (for example):

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<sup>20</sup> Letter dated 6 May 2019 from IPART to Hunter Water (re: *Consumer Price Index (CPI) movements and pricing information regarding IPART determined prices for Hunter Water in 2019-20*) [provided for the 2019 Operational Audit].

<sup>21</sup> Sighted and discussed when undertaking the 2019 Operational Audit.

<sup>22</sup> Document: *1.8.1-E-005 pricing schedule endorsements.PNG*.

<sup>23</sup> Email correspondence: *SE-036 1.8.1 2020-21 Final price schedule - QA.msg*.

<sup>24</sup> MS Excel workbook: *1.8.1-E-002 Report - Price schedule 2020-21\_Final Determination.XLSX*.

<sup>25</sup> MS Excel workbook: *1.8.1-E-003 Report - Price schedule 2020-21\_Final Determination Trade Waste.XLSX*.

<sup>26</sup> MS Excel workbook: *1.8.1-E-004 Working Paper - Price Schedule 2019-20 MASTER FINAL.XLSX*.

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- submitted the completed template for the 2019/20 prices<sup>27</sup> to IPART on 28 May 2019;<sup>28</sup> and
  - although not officially requested, submitted the calculated Trade Waste prices for 2020/21 to IPART on 4 June 2020.<sup>29</sup>

Hunter Water advised that it undertakes extensive validation testing to ensure that updates to prices in its billing system are accurate; testing is undertaken in two stages. The first stage involved undertaking tests to validate all possible bill combinations. The outcomes of this testing process for the 2020/2021 pricing update are summarised in the *PP20 Test Summary Report*.<sup>30</sup>

Review of the *Test Summary Report* reveals that testing was undertaken across the full scope of Hunter Water's charges, including:

- Cycle 1 – UAT<sup>31</sup> tests (against the draft Determination) – 505 tests passed; no tests failed; and 58 tests were not conducted in the first testing cycle (in many cases not ready), but were tested in the subsequent cycle;
- Cycle 2 – Dress Rehearsal tests (again against the draft Determination, to confirm CIS<sup>32</sup> installation procedures and changes) – 466 tests passed; 2 tests failed (due to incorrect bill setup), but were confirmed and passed in the subsequent cycle; and 6 tests were not conducted (either not ready (5 tests) or deferred to post go-live (1 test));
- Cycle 3 – Final Determination (to ensure prices and changes were updated correctly in accordance with the Final Determination) – 307 test passed; no test failed; and 3 tests were not conducted (these related to 'business as usual' tasks and were deferred to post go-live.

The second stage of the validation process involved 'Production Go-live Testing', which was conducted against production systems to verify that the changes had been loaded successfully into the billing system. The outcomes of this testing process for the 2020/2021 pricing update are summarised in the *PP20 Go-Live Test Summary Report*.<sup>33</sup>

The *Go-Live Test Summary Report* indicates that a total of 349 tests were successfully conducted with no failures or outstanding defects. It concludes that:

*"The exit criteria have been met. As there are no outstanding defects, the recommendation is for the applied changes to remain in production and for the customer bills to be held and verified until the business is comfortable for them to be released to the public."*

As reported in respect of the 2019 Operational Audit, similar testing had been undertaken in respect of the 2019/20 fees and charges. A copy of the IPART Annual Pricing Update 2019/20; Test Summary<sup>34</sup> report was provided as evidence.

### ***Water and Wastewater Charges:***

As reported above, all fees and charges in both the *2019/20* and *2020/21 Price Schedules* were independently checked by the auditor. This included all water service and usage charges and sewerage connection and deemed usage charges.

Water usage charges (residential and non-residential) and Sewer service charges (residential and non-residential) were specifically identified for review.<sup>35</sup> A sample of these charges is summarised in the following table, which shows that the values were correctly calculated:<sup>36</sup>

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<sup>27</sup> MS Excel workbook: *2019 CPI Compliance Hunter Water Corporation – Price Schedule Input Templ...xlsx* [provided for the 2019 Operational Audit]

<sup>28</sup> Email correspondence dated 28 May 2019 from Hunter Water to IPART (re: *Hunter Water 2019-20 Price Schedule*), including attachment [provided for the 2019 Operational Audit].

<sup>29</sup> Email correspondence: *SE-037 1.8.1 FW 2020 CPI Compliance Hunter Water Corporation - Price Schedule Input Template.msg* (including attachment: *2020 CPI Compliance Hunter Water Corporation - Price Schedule Input Template.xlsx*).

<sup>30</sup> Document: *1.8.1-E-006 Report - PP20 - Test Summary Report.DOCX*.

<sup>31</sup> User Acceptance Testing.

<sup>32</sup> Customer Information System.

<sup>33</sup> Document: *1.8.1-E-007 Report - PP20 - Go Live Test Summary Report.DOCX*.

<sup>34</sup> Document: *1.8.1-E-018 Report - IPART 2019\_2020 Test Summary Report.docx*.

Charge	ΔCPI (%) 2019/20	Hunter Water calculated Charge		Auditor Calculated			
		2019/20	2020/21	2019/20		2020/21	
				Det. Base	Value	Det. Base	Value
<b>Water Usage Charge</b>							
<i>Non-drought response days:</i>							
Filtered/Potable Water ≤ 50,000kL	5.5	2.37	2.46	2.25	2.37	2.46	2.46
Filtered/Potable Water > 50,000kL (Dungog)	5.5	1.91	1.98	1.81	1.91	1.98	1.98
Filtered/Potable Water > 50,000kL (Newcastle)	5.5	2.16	2.24	2.05	2.16	2.24	2.24
<i>Drought response days:</i>							
Filtered/Potable Water ≤ 50,000kL	n/a	n/a	2.90	n/a	n/a	2.90	2.90
Filtered/Potable Water > 50,000kL (Dungog)	n/a	n/a	2.42	n/a	n/a	2.42	2.42
Filtered/Potable Water > 50,000kL (Newcastle)	n/a	n/a	2.68	n/a	n/a	2.68	2.68
<b>Sewerage Service Charge (including deemed usage charge)</b>							
Metered Residential Properties (House) /Unmetered Properties	5.5	649.28	694.43	718.97 (x ΔCPI x 75% + DU)	949.28	817.10 (x 75% + DU)	694.43
Metered Multi-premises Residential Properties	5.5	535.66	590.27	593.15 (x ΔCPI x 75% + DU)	535.66	694.54 (x 75% + DU)	590.27
Metered Non-Residential Properties: 100mm meter and 85% DF	5.5	16,198.74	17,363.38	17,974.17 (x ΔCPI x 85% + DU)	16,198.74	20,427.50 (x 85% + DU)	17,363.38

Notes:

1. "Det. Base" means the base price (pre-application of ΔCPI) published in the Determination.
2. For 2020/21, the value is equal to the base price (no ΔCPI is applied).
3. "DF" is the discharge factor; 75% for residential properties and as determined by Hunter Water for non-residential properties.
4. "DU" is the deemed usage charge, which is applied following application of the discharge factor as follows:
  - a. for 2019/20 – \$80.40 is applied for residential houses and non-residential properties and \$66.33 for multi premises residential properties; and
  - b. for 2020/21 - \$81.60 for residential houses and \$69.36 for Transition Properties (multi premises residential and non-residential properties); there is no deemed usage charge for other non-residential properties.
5. In determining the 2019/20 sewer service charges, ΔCPI is applied to the sewer connection charge before application of discharge factor and deemed usage charge.

A check of the current (2020/21) residential water service and usage (non-drought response and drought response days) charges, residential sewer service charge and stormwater drainage charges published on the Hunter Water website revealed them to be consistent with the above table (where applicable), Hunter Water's *Price Schedule* and the *Determination*.

Hunter Water provided examples of Customers' bills as follows:

<sup>35</sup> These were identified in the Audit Questionnaire.

<sup>36</sup> Charges checked during the 2019 Operational Audit have been adopted (i.e. they have not been re-calculated).

- Residential Customer (Account No: 0040 710 000) for periods 1 March 2020 to 30 June 2020<sup>37</sup> and 1 July 2020 to 31 October 2020;<sup>38</sup>
- Non-residential Customer (Account No: 7480 100 000) for period 1 March 2020 to 30 June 2020<sup>39</sup> and 1 July 2020 to 31 October 2020.<sup>40</sup>

Review of these sample bills confirmed that the water and sewer charges had been correctly calculated and applied, noting that pro-rating of annual charges is based on the number of days in the period (with allowance for the additional leap year day in 2020). It is noted that the discrepancy in calculation of the sewer discharge allowance identified during the 2019 Operational Audit appears to have been correctly calculated and applied (based on the sample of bills sighted).

### **Trade Waste Charges:**

As reported above, all fees and charges in both the 2019/20 and 2020/21 Price Schedules review (including the separate schedule for 2020/21 trade waste prices)<sup>41</sup> were independently checked by the auditor. This included all trade waste agreement fees, administrative and inspection fees, pollutant charges and high strength charges.

Pursuant to the 2020 Determination, the charges to be applied in 2020/21 were calculated by applying the change in CPI ( $\Delta$ CPI) to the 2019/20 charges. Hunter Water determined  $\Delta$ CPI by reference to CPI indices published by the Australian Bureau of Statistics (ABS)<sup>42</sup> and calculation in accordance with the 2020 Determination; it was confirmed that the adopted 2.2% had been correctly calculated.

Trade waste service charges for Major Agreement Customers were specifically identified for review.<sup>43</sup> The associated charges are set out in the following table, which indicates that the values were correctly calculated:

Charge	$\Delta$ CPI (%) 2019/20 / 2020/21	Hunter Water calculated Charge		Auditor Calculated			
		2019/20	2020/21	2019/20		2020/21	
				Det. Base	Value	Det. Base	Value
<b>Major Agreement Trade Waste</b>							
Annual Trade Waste Agreement fee	5.5 / 2.2	485.38	496.06	460.08	485.38	485.38	496.06
Establish Major Agreement (new)	5.5 / 2.2	568.52	599.42	555.94	586.52	586.52	599.42
Inspection Fee	5.5 / 2.2	126.72	129.51	120.11	126.72	126.72	129.51
Existing renew/reissue	5.5 / 2.2	414.84	423.97	393.21	414.84	414.84	423.97
Variation to Major Agreement fee	5.5 / 2.2	114.74	117.26	108.76	114.74	114.74	117.26

A check of the current (2020/21) Major Agreement Trade Waste charges published on the Hunter Water website revealed them to be consistent with the above table, and therefore Hunter Water's 2020 Price Schedule and the Determination.

Hunter Water provided examples of Major Agreement Trade Water Customers' bills as follows:

- Customer (Account No: 5332 300 000) for the period 1 November 2019 to 29 February 2020<sup>44</sup> – this showed that the correct permit establishment fee had been applied,

<sup>37</sup> Document: 1.8.1-E-010 Residential Water Usage and Sewer Service 2019-20.pdf.

<sup>38</sup> Document: 1.8.1-E-011 Residential Water Usage and Sewer Service 2020-21.pdf.

<sup>39</sup> Document: 1.8.1-E-008 Non-Residential Water Usage and Sewer Service 2019-20.pdf.

<sup>40</sup> Document: 1.8.1-E-009 Non-Residential Water Usage and Sewer Service 202—21.pdf.

<sup>41</sup> MS Excel workbook: 1.8.1-E-003 Report - Price schedule 2020-21\_Final Determination Trade Waste.XLSX.

<sup>42</sup> Australian Bureau of Statistics, 6401.0 Consumer Price Index, Australia; TABLES 3 and 4. CPI: Groups, Weighted Average of Eight Capital Cities, Index Numbers and Percentage Changes.xls.

<sup>43</sup> These were identified in the Audit Questionnaire.

<sup>44</sup> Document: 1.8.1-E-012 Major Permit Est Fee + Service 19\_20.pdf.

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that the annual fee had been correctly applied and prorated, and that the annual inspection fee had been correctly applied;

- Customer (Account No: 6715 610 000) for the period 1 July 2020 to 31 October 2020<sup>45</sup> – this showed that the permit establishment fee had been correctly applied;
- Customer (Account No: 6715 610 000) for the period 31 March 2020 to 29 April 2020<sup>46</sup> – this showed that the correct permit renewal fee had been applied; and
- Customer (Account No: 6715 610 000) for the period 1 July 2020 to 31 October 2020<sup>47</sup> – this showed that the annual inspection fee (June 2020) and permit renewal fee (July 2020) had been correctly applied.

On the basis of these examples, it is assessed that the Major Agreement Trade Waste charges had been correctly calculated and applied.

#### ***Backflow Prevention Device Fees:***

In its response to the Audit Questionnaire, Hunter Water advised as follows in respect of fees for testing of backflow prevention devices, which had been specifically identified for review:

*“For the 2019-20 period, no backflow prevention device fees were required to be charged to customers i.e. no Hunter Water device tests were completed, no customers were disconnected for non-compliance or re-connected after disconnection for non-compliance. Backflow prevention device fees are not included in the 2020-24 price determination.”*

Review of the charges shown in the 2019/20 Price Schedule confirmed that they had been correctly calculated by applying the change in CPI ( $\Delta$ CPI) to the 2016 Determination base charges and rounding up to the next dollar (all charges are in excess of \$100).

As these charges had not been applied during the audit period, there was no billing evidence to be reviewed.

#### ***Complex Works Design Review Charges:***

Review of the Complex Works Design Review (Inspection) Fees in the 2020/21 Price Schedule confirms that they have been corrected transposed from the 2020 Determination, subject to the applicable rounding rule (rounded up to next dollar as all charges are in excess of \$100). The equivalent charges in the 2019/20 Price Schedule were the Pump Station Design Assessment Fees; these had again been correctly calculated by applying the change in CPI ( $\Delta$ CPI) to the 2016 Determination base charges and rounding up to the next dollar (again all charges are in excess of \$100).

Hunter Water provided an example of a receipt issued in respect of a Sewer Pump Station design assessment undertaken in 2019/20.<sup>48</sup> The receipted payment of \$5,547.00 is consistent with the scheduled fee.

On the basis of this assessment, it is considered that the Complex Works Design Review Charges had been correctly calculated and applied.

#### ***Sewer Discharge Allowance:***

As noted above, Hunter Water advised that it had remained non-compliant with this obligation during the 2019/20 financial year in that, due to a ‘rounding error’ in applying the sewer discharge allowance, it had incorrectly applied its wastewater usage charges. This non-compliance was initially identified/reported in December 2019 during the 2019 Operational Audit.

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<sup>45</sup> Document: 1.8.1-E-013 Major Permit Est Fee 20\_21.pdf.

<sup>46</sup> Document: 1.8.1-E-014 Major Permit Renewal Fee 19\_20.pdf.

<sup>47</sup> Document: 1.8.1-E-015 Major Permit Renewal Fee 20\_21.pdf.

<sup>48</sup> Document: 1.8.1-E-017 Receipt created 30 July, 2020.docx.



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In its *Statement of Compliance*,<sup>49</sup> Hunter Water indicated that the period of non-compliance was 1 July 2016 to 30 June 2020. In comments provided in response to the Draft Audit Report, Hunter Water indicated that although some bills issued early in the audit period may have been issued with an incorrectly calculated sewer discharge allowance, corrective action implemented ensured that the total sewer discharge allowance applied to each customer during the audit period was in accordance with the *2016 Determination*. This is taken to indicate that the charges may not have been correctly applied during the early part of the audit period, which is technically non-compliant.

It is noted that, under the *2020 Determination*, which came into effect on 1 July 2020, the sewage discharge allowance is no longer applicable. This previous non-compliance would no longer be applicable under the new pricing regime.

#### ***Stormwater Drainage Charge:***

As noted above, Hunter Water advised that it had also remained non-compliant with this obligation during the 2019/20 financial year in that stormwater drainage charges had been incorrectly applied to some properties, primarily due to mismatches between property information and billing practices. This non-compliance was initially reported by Hunter Water in its 2018/19 *Statement of Compliance*.

In its *Statement of Compliance*,<sup>50</sup> Hunter Water indicated that the period of non-compliance was 1 July 2006 to 30 June 2020. In comments provided in response to the Draft Audit Report, Hunter Water indicated that application of the charge had been corrected prior to the start of the audit period; however, no evidence has been provided to confirm that was the case.

It is noted that in its report (file note) to IPART dated 30 June 2020,<sup>51</sup> Hunter Water indicated that “additional properties” had been identified by a due diligence and quality assurance exercise, but did not indicate when these properties were identified (this may have been during the audit period), or when the application of the charge to these properties was subsequently corrected.

Hunter Water advised that,<sup>51</sup> as at 1 July 2020, all stormwater drainage charges are now being applied correctly; however, this has not been confirmed.

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### **Recommendations**

No recommendations are made in respect of this obligation. As reported above Hunter Water’s actions in addressing recommendations in respect of the carry-over (previously identified) non-compliances (Recommendations REC-HWC-2019-01 and REC-HWC-2019-02) are discussed in **Sections 3.2.1.1** and **3.2.1.2** respectively.

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### **Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.

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<sup>49</sup> Hunter Water, *Statement of Compliance 2019-20*, 27 August 2020.

<sup>50</sup> Hunter Water, *Statement of Compliance 2019-20*, 27 August 2020.

<sup>51</sup> File Note: *Stormwater drainage pricing non-compliance update* (from Hunter Water to IPART) dated 30 June 2020 [attachment to email correspondence: 1.8.1-R 2019-01-E-001a *Operational audit recommendation 2019-01-Stormwater Drainage Pricing.msg*].

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### Supplemental information

In its response to the Audit Questionnaire, Hunter Water noted that:

*“It is our intention to develop a full end-to-end procedure for undertaking annual pricing updates (and address OFI-HWC-2017/18-01: “It is suggested Hunter Water considers developing a comprehensive ‘end-to-end’ procedure detailing its annual price updating process.”). It was decided that this would only add value after our new billing system (‘Velocity’) is introduced (currently expected in November 2020).”*


This advice is consistent with advice at the time of the 2019 Operational Audit in that the procedure would be developed following implementation of the new billing system, which at that time was expected to be late 2019. This proposed action in response to this previously identified opportunity for improvement is supported.

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## 2.3 Compliant (minor shortcomings)

### 2.3.1 Supply services and performance standards – Drinking Water (clause 3.1)

#### 2.3.1.1 Drinking Water (sub-clause 3.1.2)

Sub-clause	Requirement	Compliance Grade
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.	 <b>Compliant</b> (minor shortcomings)

#### Risk

If the Drinking Water Quality Management System is not fully implemented, there is a high risk that Hunter Water may not be able to effectively manage risks to drinking water quality and protect public health.

#### Target for Full Compliance

Evidence that the Drinking Water Quality Management System is fully implemented, and that all relevant activities are carried out in accordance with the System, and to the satisfaction of NSW Health.

#### Obligation

This obligation requires Hunter Water to ensure that its Drinking Water Quality Management System is fully implemented, and that all activities are carried out in accordance with the Drinking Water Quality Management System and to the satisfaction of NSW Health.

#### Summary of reasons for grade

Hunter Water has been found to be compliant with minor shortcomings for this obligation. It was noted that minor water quality incidents were not being administered as required by internal procedures. This type of incident is being managed predominantly by chains of emails rather than the specified system. Although this issue was identified, it is considered that there is sufficient evidence to demonstrate that the shortcoming is minor and does not affect water quality, public health and safety or the environment.

#### Discussion and notes

Implementation of the Drinking Water Quality Management System is discussed below by ADWG Element.

#### *Element 1 – Commitment to drinking water quality management:*

Hunter Water is required to implement the requirements of Element 1 of the DWQMS. Hunter Water was found to be fully compliant with the requirements of this element.

#### *Drinking Water Policy*

The Drinking Water Quality Policy was accessed on the Hunter Water website;<sup>52</sup> it was noted that this was the previous version, which was due to be updated in June 2020. The current version<sup>53</sup> was approved in October 2020.

<sup>52</sup> Document: [https://www.hunterwater.com.au/documents/assets/src/uploads/documents/Policies/Water-Wastewater/drinking\\_water\\_quality\\_policy.PDF](https://www.hunterwater.com.au/documents/assets/src/uploads/documents/Policies/Water-Wastewater/drinking_water_quality_policy.PDF).

<sup>53</sup> Document: 3.1.1-ADWG-01-E-001 HW2006-2968 41 44.001 Policy - Drinking Water Policy.PDF.



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**OFI-HWC-2020-04:** Ensure that documents on the Hunter Water website are updated within the review period.

*Regulatory and Formal Requirements*

The *Legal and Other Requirements Register*<sup>54</sup> is updated following the *Managing Legal and Other Requirements Procedure*.<sup>55</sup> The register was last updated, according to the change history, on 10 October 2019. The relevant legislation does appear to be in the register; however, the information is very high level. For example, the entry on the *Public Health Act 2010* only discusses the relevance of quality assurance programs; the other sections of the Act are not mentioned nor Hunter Water's exemption for the requirement to have a quality assurance program. The ADWG requires that all regulatory and formal requirements are identified and documented. The legislation is linked in the register but using the *Public Health Act 2010* as an example, commentary is required to fully understand the requirements of the Act.

**OFI-HWC-2020-05:** ensure that the requirements of regulatory and formal undertakings are clearly documented in relation to how they apply to Hunter Water. Commentary should be added where context is required to understand compliance requirements; for example, in relation to the *Public Health Act 2010*.

*Engaging Stakeholders*

Minutes for the Health Liaison Meeting<sup>56</sup> were provided as evidence of liaison with stakeholders.

Relevant stakeholders were engaged as part of the risk assessment process.<sup>57,58</sup>

Hunter Water also liaised with industry groups such as the Water Services Association of Australia (WSAA) during the audit period in relation to the management of and response to the COVID pandemic.<sup>59</sup>

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***Element 2 – Assessment of the drinking water supply system:***

Hunter Water is required to implement the requirements of Element 2 of the DWQMS. Hunter Water was found to be compliant with the requirements of this element.

*Water Supply System Analysis*

The flow diagrams for Anna Bay,<sup>60</sup> Nelson Bay<sup>61</sup> and Grahamstown<sup>62</sup> WTPs have all been reviewed during the audit period and were confirmed as part of the site inspection process and were found to be accurate.

The description of the treatment processes in the risk assessment summary reports<sup>63,64</sup> reflected the system observed and discussed onsite.

*Assessment of Water Quality Data*

Water quality data for the schemes reviewed as part of this audit was assessed during the audit period and was used as input to the risk assessments.<sup>65,66</sup> This included statistics for customer

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<sup>54</sup> MS Excel workbook: 3.1.1-ADWG-01-E-004 HW2013-421 9.006 Register - Legal and Other Requirements – Quality.XLS.

<sup>55</sup> Document: 3.1.1-ADWG-01-E-002 HW2012-441 23 1.029 Procedure - Managing Legal and Other Requirements.DOC.

<sup>56</sup> Document: 3.1.2-ADWG-01-E-011 HW2006-1448/59/3.011 Minutes - Hunter Water NSW Health Liaison Committee Meeting – 3 June 2020.DOC.

<sup>57</sup> Document: 3.1.2-ADWG-02-E-004 HW2015-1365 18.010 Grahamstown WTP Risk Assessment Summary Report.PDF.

<sup>58</sup> Document: 3.1.2-ADWG-02-E-005 HW2015-1365 18.006 Anna Nelson Bay WTP Risk Assessment Summary Report.PDF.

<sup>59</sup> Document: Customer Support Provisions for 29 April 2020.pdf.

<sup>60</sup> Document: 3.1.1-ADWG-02-E-002 HW2015-705 1.001 Plan - Anna Bay WTP - Flow Diagram.PDF.

<sup>61</sup> Document: 3.1.1-ADWG-02-E-003 HW2015-705 1.006 Plan - Nelson Bay WTP - Flow Diagram.PDF.

<sup>62</sup> Document: 3.1.2-ADWG-02-E-001 HW2015-705 1.003 Grahamstown WTP Flow Diagram.PDF.

<sup>63</sup> Document: 3.1.2-ADWG-02-E-004 HW2015-1365 18.010 Grahamstown WTP Risk Assessment Summary Report.PDF.

<sup>64</sup> Document: 3.1.1-ADWG-03-E-002 HW2015-1365 18.006 Anna Nelson Bay WTP Risk Assessment Summary Report.PDF.

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complaints, water quality for raw water sources, process water, and treated water. Time series plots were available for relevant data and water quality excursions were identified. The data and analyses were consistent with the scheme and appropriate to assess the risk. PFAS is a risk at the Grahamstown WTP, and the risk assessment report mentioned the monitoring of PFAS; however the findings of the monitoring were not included.

**OFI-HWC-2020-06:** Ensure risk assessment reports reference all of the water quality data relied upon to assess the risk of hazards and hazardous events. An example is the 2020 Grahamstown WTP risk assessment which did not include or reference the results of PFAS monitoring for the Tomago Bore Field.

#### *Hazard Identification and Risk Assessment*

The Anna Bay, Nelson Bay<sup>67</sup> and Grahamstown<sup>68</sup> WTPs were risk assessed during the audit period. The risk assessments were undertaken with an appropriate risk assessment team and in accordance with the *Drinking Water Quality Risk Assessment Calendar*.<sup>69</sup> Each risk assessment is reviewed once during the Operating Licence period (5 years).

In undertaking the Grahamstown WTP risk assessment, Hunter Water adopted two new approaches; hazard pathway diagrams and hazard screening.<sup>70</sup> The hazard pathway diagrams were used to assess hazards with multiple sources to better understand the catchment and were the input to half of a bowtie diagram.<sup>71</sup> These were a useful addition to the risk assessment process.

Hazards were also screened for inclusion in the risk assessment. This was sound approach to reduce the complexity of the risk assessment, focusing on those hazards that may impact water quality.

A number of risks were identified as out of risk appetite and had management actions identified as part of the risk assessment process.<sup>72,73</sup>

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### ***Element 3 – Preventive measures for drinking water quality management:***

Hunter Water is required to implement the requirements of Element 3 of the DWQMS. Hunter Water was found to be compliant with the requirements of this element.

#### *Preventive Measures and Multiple Barriers*

Preventive measures were reviewed as part of the audit and were found to be implemented in accordance with the plan.

The management of manganese in order to prevent dirty water complaints has been an ongoing issue for Hunter Water when the Tomago bores are used. Measures implemented to address this issue include:

- Selective bore abstraction; bores with historic poor water quality are not used.
- Blending of water sources; the bores do not supply sufficient water and the source must be supplemented with water from Grahamstown Dam.

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<sup>65</sup> Document: 3.1.2-ADWG-02-E-004 HW2015-1365 18.010 *Grahamstown WTP Risk Assessment Summary Report.PDF.*

<sup>66</sup> Document: 3.1.1-ADWG-03-E-002 HW2015-1365 18.006 *Anna Nelson Bay WTP Risk Assessment Summary Report.PDF.*

<sup>67</sup> MS Excel workbook: 3.1.1-ADWG-02-E-007 HW2015-1365 1.013 *Register – Anna Nelson Bay WTP Risk Assessment.XLS.*

<sup>68</sup> MS Excel workbook: 3.1.1-ADWG-02-E-006 HW2015-1365 1.002 *Register - Grahamstown WTP Risk Assessment.XLS.*

<sup>69</sup> MS Excel workbook: 3.1.2-ADWG-02-E-007 HW2006-2906 8 33.014 *Drinking Water Quality Risk Assessment Calendar.XLS.*

<sup>70</sup> Document: 3.1.2-ADWG-02-E-004 HW2015-1365 18.010 *Grahamstown WTP Risk Assessment Summary Report.PDF.*

<sup>71</sup> The Bowtie method is a risk evaluation method that can be used to analyse and demonstrate causal relationships in high-risk scenarios.

<sup>72</sup> Document: 3.1.2-ADWG-02-E-004 HW2015-1365 18.010 *Grahamstown WTP Risk Assessment Summary Report.PDF.*

<sup>73</sup> Document: 3.1.2-ADWG-02-E-005 HW2015-1365 18.006 *Anna Nelson Bay WTP Risk Assessment Summary Report.PDF.*

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- Flushing in the network; an example of reactive flushing was provided<sup>74</sup>.
  - A letter to residents to notify them of changes to the flushing program; a copy was provided.<sup>75</sup>

The following preventive measures were also reviewed:

- Drop tests for chemical dosing pumps<sup>76 77</sup>.
- Jar testing, which is only done as required at Grahamstown due to the stable water quality.<sup>78</sup>
- Reservoir inspection program; the register<sup>79</sup> and a work order<sup>80</sup> to rectify an issue were provided.

#### *Critical Control Points*

The critical limits in the CCP Limit Tables<sup>81,82,83</sup> were reviewed against those in SCADA<sup>84</sup> and they were found to be implemented correctly. Hunter Water audits CCP implementation every six months.<sup>85</sup>

Over the audit period it was noted that there were no exceedances of critical limits at the treatment plants. There was one identified in the network where total chlorine exceeded the critical limit; it was greater than 4.5mg/L for 15 minutes. The exceedance was at a rechlorination facility at North Lambton and the cause of the issue was that the calibration factor on the dosing pump had been manually changed. This was rectified and improvements for this and similar dosing facilities were implemented.<sup>86</sup> NSW Health was notified within an appropriate timeframe<sup>87</sup> and the incident recorded in Integrum.<sup>88</sup> This issue was followed up at the NSW Health Liaison Meeting.<sup>89</sup>

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#### ***Element 4 – Operational procedures and process control:***

Hunter Water is required to fulfil the requirements of Element 4 of the DWQMS. Hunter Water was found to be fully compliant with the requirements of this element.

#### *Operational Procedures*

The following records were provided to demonstrate that operation procedures are being followed:

- Grahamstown WTP Weekly PMT Duties;<sup>90</sup>
- Grahamstown WTP Daily Datasheet;<sup>91</sup>

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<sup>74</sup> Image: SE-003 - Example Work Order - AOMS Planned Flushing job.JPG.

<sup>75</sup> Document: SE-004 - Example Letter - Water main flushing program advice to customers.pdf.

<sup>76</sup> Document: 3.1.2-ADWG-04-E-006 Grahamstown WTP Daily WQ Test Sheet.PDF.

<sup>77</sup> Document: 3.1.2-ADWG-04-E-009 Anna Bay WTP Daily Datasheet.PDF.

<sup>78</sup> Document: 3.1.2-ADWG-05-E-010 HW2014-778 15 2.001 Plan - Veolia CCP Exceedance Response.DOC.

<sup>79</sup> MS Excel workbook: SE-005a - CWT Inspection Register (AN-NB-GR).xlsx.

<sup>80</sup> Document: SE-005b - WO1005401018 - AB CWT Gap Sealing.pdf.

<sup>81</sup> Document: 3.1.2-ADWG-03-E-001 HW2014-778 15 2.006 Register - Grahamstown WTP CCP Limit Table.PDF.

<sup>82</sup> Document: 3.1.2-ADWG-03-E-002 HW2014-778 15 2.004 Register - Anna Bay WTP CCP Limit Table.PDF.

<sup>83</sup> Document: 3.1.2-ADWG-03-E-003 HW2014-778 15 2.009 Register - Nelson Bay WTP CCP Limit Table.PDF.

<sup>84</sup> Document: 3.1.2-ADWG-03-E-009 Critical Limit Alarm SCADA Screenshots.DOC.

<sup>85</sup> MS Excel workbook: 3.1.1-ADWG-01-E-005 HW2012-778 93.001 Compliance Calendar MASTERFILE.XLSX.

<sup>86</sup> Email correspondence: 3.1.2-ADWG-03-E-028 HW2006-1448 58 14.005 Email - Follow-up Email to NSW Health.MSG.

<sup>87</sup> Email correspondence: 3.1.2-ADWG-03-E-027 HW2006-1448 58 14.003 Email Chlorine Critical Control Point (CCP) Breach - North Lambton Chlorinator.MSG.

<sup>88</sup> Document: 3.1.2-ADWG-03-E-029 Incident record for CCP exceedance RMAL-7D83C6.PDF.

<sup>89</sup> Document: 3.2.1-AGWR-12-E-003 Hunter Water NSW Health Liaison Committee Meeting 3 June 2020.

<sup>90</sup> Document: 3.1.2-ADWG-04-E-004 Grahamstown WTP Weekly PMT Duties.PDF.

<sup>91</sup> Document: 3.1.2-ADWG-04-E-005 Grahamstown WTP Daily Datasheet.PDF.

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- Grahamstown WTP Daily WQ Test Sheet;<sup>92</sup>
  - Anna Bay WTP Weekly PMT Duties;<sup>93</sup>
  - Anna Bay WTP Daily Datasheet;<sup>94</sup>
  - Anna Bay WTP Daily WQ Test Sheet;<sup>95</sup>
  - Nelson Bay WTP Weekly PMT Duties;<sup>96</sup>
  - Nelson Bay WTP Daily Datasheet;<sup>97</sup> and
  - Nelson Bay WTP Daily WQ Test Sheet.<sup>98</sup>

On review of the above documents and the interview of staff it was determined that operational procedures and monitoring are being undertaken in accordance with the plan.

### *Operational Monitoring*

The following records were provided to demonstrate that monitoring is being undertaken:

- HW2014-1579 2.004 Data - Grahamstown WTP;<sup>99</sup>
- HW2014-1579 2.007 Data - Anna Bay WTP;<sup>100</sup>
- HW2014-1579 2.001 Data - Nelson Bay WTP;<sup>101</sup>
- Grahamstown WTP Daily WQ Test Sheet;<sup>102</sup>
- Anna Bay WTP Daily WQ Test Sheet;<sup>103</sup> and
- Nelson Bay WTP Daily WQ Test Sheet;<sup>104</sup> and
- Anna Bay WTP SCADA screenshot detailing online water quality monitoring.<sup>105</sup>

On review of a sample of water quality data, it is apparent that monitoring is being undertaken as prescribed in the CCP Limit Tables<sup>106,107,108</sup> and *Water Quality Monitoring Plan*.<sup>109</sup>

Monitoring is reported to Hunter Water monthly by Veolia in the *Monthly Contract Report*.<sup>110</sup> In addition, out of specification results are notified automatically by the plant spreadsheets via email.<sup>111,112,113</sup>

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<sup>92</sup> Document: 3.1.2-ADWG-04-E-006 *Grahamstown WTP Daily WQ Test Sheet*.PDF.

<sup>93</sup> Document: 3.1.2-ADWG-04-E-008 *Anna Bay WTP Weekly PMT Duties*.PDF.

<sup>94</sup> Document: 3.1.2-ADWG-04-E-009 *Anna Bay WTP Daily Datasheet*.PDF.

<sup>95</sup> Document: 3.1.2-ADWG-04-E-010 *Anna Bay WTP Daily WQ Test Sheet*.PDF.

<sup>96</sup> Document: 3.1.2-ADWG-04-E-012 *Nelson Bay WTP Weekly PMT Duties*.PDF.

<sup>97</sup> Document: 3.1.2-ADWG-04-E-013 *Nelson Bay WTP Daily Datasheet*.PDF.

<sup>98</sup> Document: 3.1.2-ADWG-04-E-014 *Nelson Bay WTP Daily WQ Test Sheet*.PDF.

<sup>99</sup> MS Excel workbook: 3.1.2-ADWG-04-E-001 *HW2014-1579 2.004 Data - Grahamstown WTP*.XLS.

<sup>100</sup> MS Excel workbook: 3.1.2-ADWG-04-E-002 *HW2014-1579 2.007 Data - Anna Bay WTP*.XLS.

<sup>101</sup> MS Excel workbook: 3.1.2-ADWG-04-E-003 *HW2014-1579 2.001 Data - Nelson Bay WTP*.XLS.

<sup>102</sup> Document: 3.1.2-ADWG-04-E-006 *Grahamstown WTP Daily WQ Test Sheet*.PDF.

<sup>103</sup> Document: 3.1.2-ADWG-04-E-010 *Anna Bay WTP Daily WQ Test Sheet*.PDF.

<sup>104</sup> Document: 3.1.2-ADWG-04-E-014 *Nelson Bay WTP Daily WQ Test Sheet*.PDF.

<sup>105</sup> Document: *SE-075 SCADA Screenshot of Anna Bay WTP CWTin Fluoride Analyser*.PNG.

<sup>106</sup> Document: 3.1.1-ADWG-03-E-003 *HW2014-778 15 2.006 Register - Grahamstown WTP CCP Limit Table*.pdf.

<sup>107</sup> Document: 3.1.1-ADWG-03-E-004 *HW2014-778 15 2.004 Register - Anna Bay WTP CCP Limit Table*.PDF.

<sup>108</sup> Document: 3.1.1-ADWG-03-E-005 *HW2014-778 15 2.009 Register - Nelson Bay WTP CCP Limit Table*.pdf.

<sup>109</sup> Document: 3.1.1-ADWG-05-E-001 *HW2006-2906 2 6.006 Water Quality Monitoring Plan*.DOC.

<sup>110</sup> Document: 3.1.2-ADWG-04-E-021 *HW2014-778 10 79.008 Extract from Veolia MCR C50341 - June 2020*.PDF.

<sup>111</sup> Document: *SE-009a - Corporate Mail - Data Check - Grahamstown WTP-22Oct2020*.pdf.

<sup>112</sup> Document: *SE-009b - Corporate Mail - Exceedance Notification for Metals Analysis 08-Jul-2020*.pdf.

<sup>113</sup> Document: *SE-009c - Corporate Mail - Grahamstown WTP Alum Stock*.pdf.

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### *Corrective Action*

Corrective actions are carried out in accordance with the *CCP Exceedance Response Plan*<sup>114</sup> at the treatment plants. There were no CCP excursions at treatment plant during the audit period; there was one in the distribution network at North Lambton. This was notified to NSW Health appropriately<sup>115</sup> and the issues thoroughly investigated leading to a number of improvements that were to be implemented at similar network dosing facilities.<sup>116</sup>

### *Equipment Capability and Maintenance*

The following records were provided to demonstrate that equipment maintenance is undertaken:

- Grahamstown WTP Instrument Calibration List;<sup>117</sup>
- Anna Bay WTP Instrument Calibration List;<sup>118</sup>
- Nelson Bay WTP Instrument Calibration List;<sup>119</sup>
- Grahamstown WTP Maintenance Work orders;<sup>120</sup>
- Anna Bay WTP Maintenance Work orders;<sup>121</sup> and
- Nelson Bay WTP Maintenance Work orders.<sup>122</sup>

In addition, a demonstration of VAMS was provided and maintenance routines for chemical dosing pumps at Grahamstown WTP were reviewed (e.g. HWC-STD-T-0094 Chlorine dosing electrical service).

### *Materials and Chemicals*

To demonstrate that the chemical procurement was undertaken in accordance with the plan the following records were provided:

- COA (Certificate of Analysis) log spreadsheet Screenshot;<sup>123</sup>
- Certification of Analysis Example – Fluoride;<sup>124</sup>
- Certification of Analysis Example – Lime – Boral;<sup>125</sup>
- Certification of Analysis Example – Alum;<sup>126</sup> and
- Certification of Analysis Example – Lime – Graymont.<sup>127</sup>

These demonstrate that certificates of analysis were obtained on delivery and the quality assessed against the specification. In addition, the plant spreadsheets<sup>128,129,130</sup> show that the analysis is being undertaken upon receipt.

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<sup>114</sup> Document: 3.1.1-ADWG-03-E-006 HW2014-778 15 2.001 Plan - Veolia CCP Exceedance Response.PDF.

<sup>115</sup> Email correspondence: 3.1.2-ADWG-03-E-027 HW2006-1448 58 14.003 Email Chlorine Critical Control Point (CCP) Breach - North Lambton Chlorinator.MSG.

<sup>116</sup> Document: 3.1.2-ADWG-03-E-029 Incident record for CCP exceedance RMAIL-7D83C6.pdf.

<sup>117</sup> Document: 3.1.2-ADWG-04-E-007 Grahamstown WTP Instrument Calibration List.pdf.

<sup>118</sup> Document: 3.1.2-ADWG-04-E-011 Anna Bay WTP Instrument Calibration List.pdf.

<sup>119</sup> Document: 3.1.2-ADWG-04-E-015 Nelson Bay WTP Instrument Calibration List.pdf.

<sup>120</sup> MS Excel workbook: 3.1.2-ADWG-04-E-016 Grahamstown WTP Maintenance Work orders.xlsx.

<sup>121</sup> MS Excel workbook: 3.1.2-ADWG-04-E-017 Anna Bay WTP Maintenance Work orders.xlsx.

<sup>122</sup> MS Excel workbook: 3.1.2-ADWG-04-E-018 Nelson Bay WTP Maintenance Work orders.xlsx.

<sup>123</sup> Image: 3.1.2-ADWG-04-E-024 COA log spreadsheet Screenshot.JPG.

<sup>124</sup> Document: 3.1.2-ADWG-04-E-025 Certification of Analysis Example - Fluoride.PDF.

<sup>125</sup> Document: 3.1.2-ADWG-04-E-026 Certification of Analysis Example - Lime - Boral.PDF.

<sup>126</sup> Document: 3.1.2-ADWG-04-E-027 Certification of Analysis Example - Alum.PDF.

<sup>127</sup> Document: 3.1.2-ADWG-04-E-028 Certification of Analysis Example - Lime - Graymont.PDF.

<sup>128</sup> MS Excel workbook: 3.1.2-ADWG-04-E-001 HW2014-1579 2.004 Data - Grahamstown WTP.XLS.

<sup>129</sup> MS Excel workbook: 3.1.2-ADWG-04-E-002 HW2014-1579 2.007 Data - Anna Bay WTP.XLS.



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### ***Element 5 – Verification of drinking water quality:***

Hunter Water is required to fulfil the requirements of Element 5 of the DWQMS. Hunter Water was found to be Compliant with minor shortcomings for this ADWG element; it is considered that the requirements had not been fully met as the corrective action for the exceedance of a water quality health limit was not implemented fully in accordance with the *Corporate Emergency Management Plan*.

#### *Drinking Water Quality Monitoring*

The Envirosys database was reviewed during the audit interviews; it is accessible by staff from the Reservoir intranet page. A query was run for sample point 18N0001 to show all analyses undertaken during the audit period and this was exported to MS Excel.<sup>131</sup> Trihalomethane (THM) data was interrogated due to there being ongoing issues in the Gresford scheme. The data from this extract was assessed against the monitoring plan and the monitoring undertaken was found to be consistent with that plan.

#### *Customer Satisfaction*

Customer complaints are reported and analysed in the monthly Network Operations Water Quality Report.<sup>132</sup>

#### *Short-term Evaluation of Results*

Based on the evidence provided at the interviews, water quality data is being reviewed through the various reports and meetings, as discussed in respect of Licence clause 3.1.1 (refer **Section 2.4.1.1**).

#### *Corrective Action*

THMs were an issue in the Gresford system during the summer of 2020.<sup>133</sup> The ADWG health limit was exceeded on 3 March 2020. This was reported to NSW Health on 9 March, the same day that notification was received from the testing laboratory.<sup>134</sup> This incident was not, however, recorded into Integrum as required for a Moderate Incident in the *Corporate Emergency Management Plan*.<sup>135</sup>

From the evidence supplied, it would appear that the incident was appropriately responded to, but the administration was not undertaken as required by the plan. It appears that Integrum is used to create a record, but this may not be intrinsic to the process. Much of the incident management for low priority incidents is by email.

**REC-HWC-2020-01:** By 30 June 2021, Hunter Water should ensure that minor water quality incidents are all recorded as required by the *Corporate Emergency Management Plan*.

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### ***Element 6 Management of incidents and emergencies:***

Hunter Water is required to fulfil the requirements of Element 6 of the DWQMS. Hunter Water was found to be Compliant with minor shortcomings for this ADWG element; it was considered that the requirements had not been fully complied with as the *Corporate Emergency Management Plan* was not adhered to in the recording of a moderate incident.

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<sup>130</sup> MS Excel workbook: *3.1.2-ADWG-04-E-003 HW2014-1579 2.001 Data - Nelson Bay WTP.XLS*.

<sup>131</sup> Email correspondence: *SE-014 FW Tabular Results Data.msg*.

<sup>132</sup> Document: *3.1.2-ADWG-05-E-005 HW2006-1417 33 11.008 Network Operations Report - July 2020.DOCX*.

<sup>133</sup> Document: *SE-010 and SE-012 Gresford THM Exceedance.docx*.

<sup>134</sup> Email correspondence: *SE-076 FW EXTERNAL - RE Exceedance.msg*.

<sup>135</sup> Document: *3.1.1-ADWG-06-E-001 HW2007-900 27 1.013 Corporate Emergency Management Plan.PDF*.

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### *Communication*

The *Corporate Emergency Management Plan*<sup>136</sup> was last updated in September 2020 and the contacts within the plan are comprehensive and thorough.

One aspect reviewed during the audit was how sensitive customers are identified and notified of potential issues with the drinking water supply. This is done using the GIS system;<sup>137</sup> isolation traces can be undertaken identifying all the affected properties and sensitive customers.

### *Incident and Emergency Response Protocols*

There were two incidents declared during the audit period:

- Chichester Dam Microcystis algae event;<sup>138</sup> and
- Wet weather event – not an issue for drinking water.

The Chichester Dam event was reviewed during the audit interviews and this seemed to be managed appropriately. It was noted that algae blooms are getting more frequent and more severe. There may come a point where it is no longer classified as an incident but ‘business as usual’ whereby controls are more permanent and reporting is through normal channels, unless the controls fail. Maintaining incident management teams for months may not add significant value to the management of the event.

The *Business Resilience Calendar*<sup>139</sup> details the activities that are required to ensure Hunter Water is prepared to respond to an incident. Items on the calendar have mostly been undertaken. A small number of items were postponed due to COVID constraints, including the annual emergency scenario which was initially rescheduled to April 2020 due to drought conditions and now postponed until after June 2021 due to COVID.

Veolia ran an incident scenario at the Nelson Bay WTP<sup>140</sup> in March 2020.

There have been two incident management teams activated throughout the COVID pandemic, which have tested procedures.

Minor incidents are recorded in Integrum; however, as noted in respect of Element 5, this may not be consistently undertaken. No recommendation is noted here as it is covered by the recommendation (**REC-HWC-2020-01**) in respect of Element 5.

At the beginning of the COVID pandemic there was an internal operational remote desktop exercise with two teams to test a shift hand over.<sup>141,142</sup> Incident control training has also been undertaken during the audit period.<sup>143</sup>

**OFI-HWC-2020-07:** Consider making algae management a ‘business as usual’ control, thereby eliminating the need to categorise algal blooms as incidents, unless the associated controls fail.

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### ***Element 8 – Community involvement and awareness:***

Hunter Water is required to fulfil the requirements of Element 8 of the DWQMS. Hunter Water was found to be fully compliant with the requirements of this element.

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<sup>136</sup> Document: 3.1.1-ADWG-06-E-001 HW2007-900 27 1.013 *Corporate Emergency Management Plan.PDF*.

<sup>137</sup> Document: SE-017 - *Method for extracting Affected Customers and Type.docx*.

<sup>138</sup> Email correspondence: 3.1.2-ADWG-06-E-001 HW2007-900 29 53.249 *Email - FW Update on Chichester Algal Event - 7th August*.

<sup>139</sup> MS Excel workbook: SE-021 HW2019-620 21.001 *Register - Business Resilience Yearly Event Calendar Schedule 2020.XLSX*.

<sup>140</sup> Document: SE-018 - *Nelson Bay WTP Gas Leak Scenario (March 2020).pdf*.

<sup>141</sup> Document: SE-015 *Element 6 Memo - Desktop Exercise - Operational Incident Update.DOCX*.

<sup>142</sup> MS Excel workbook: SE-016a *Plan - Incident Management Team Analysis.xlsx*.

<sup>143</sup> Document: SE-016b *Element 6 Course Attendance Sheet L2 Incident Controller .pdf*.

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### *Community Consultation*

Phase 1 of the Voice of the Customer Initiative involved interviews<sup>144,145</sup> and a bulletin board<sup>146,147</sup> which were summarised in a report<sup>148</sup> regarding the current level of satisfaction with Hunter Water's delivery services, and customers' expectations about rebates for service failures.

During the COVID pandemic, Hunter Water put in place principles to mitigate financial hardship of customers.<sup>149</sup> These were developed based on a study undertaken by WSAA.<sup>150</sup> Throughout this period, WSAA tracked customer sentiment to determine if the measures were well received by customers.<sup>151,152</sup> In addition the Customer and Community Advisory Group met during the year to discuss a range of operational and planning matters.<sup>153</sup>

### *Communication*

Hunter Water's website has a 'Water Quality' section,<sup>154</sup> which explains the details of water treatment, catchment management and includes a monthly water quality monitoring report.<sup>155</sup>

Information is made available to the wider community through the Hunter Water website. This includes annual reports, policies, plans and strategies. Hunter Water also utilises social media; an example is the Twitter account.<sup>156</sup>

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### ***Element 10 – Documentation and reporting:***

Hunter Water is required to fulfil the requirements of Element 10 of the DWQMS.  
Hunter Water was found to be fully compliant with the requirements of this element.

### *Management of Documents and Records*

During the audit the various documents supplied have been reviewed for currency and all appear to be appropriately managed. A demonstration of the Hunter Water Integrum and TRIM systems was provided during the audit. The Veolia BMS was also reviewed.

Integrum is no longer supported by the developer and is being replaced by a new system, Watershed. Due to issues experienced with Integrum, documents such as the Corporate Emergency Management Plan are managed using the Business Resilience Calendar.<sup>157</sup>

### *Reporting*

Hunter Water provided examples of the monthly water quality<sup>158</sup> and fluoride<sup>159</sup> reports and quarterly reports to NSW Health.<sup>160</sup>

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<sup>144</sup> Document: 3.1.1-ADWG-08-E-005 HW2020-82 4 2.002 Article - Service Levels Phase 1 - Depth Interviews 1 page summary.DOC.

<sup>145</sup> Document: 3.1.1-ADWG-08-E-006 HW2020-82 4 2.001 Report - Depth interviews topline summary – FINAL.DOC.

<sup>146</sup> Document: 3.1.1-ADWG-08-E-003 HW2020-82 4 1.003 Article - Service Levels Phase 1 - Online Bulletin Board 1 page summary.PDF.

<sup>147</sup> Document: 3.1.1-ADWG-08-E-004 HW2020-82 4 1.002 Report - Bulletin Board topline summary – FINAL.

<sup>148</sup> Document: 3.1.1-ADWG-08-E-002 HW2020-82 5.002 Report - Final Report - FE Kantar - Service level and attributes customer research - July 2020.PDF.

<sup>149</sup> Document: Hardship principles - for circulation.pdf.

<sup>150</sup> Document: Customer Support Provisions for 29 April 2020.pdf.

<sup>151</sup> Document: Summary of Sentiment Monitoring 22 April.docx.

<sup>152</sup> Document: Summary of Customer sentiment 30 April2020.pdf.

<sup>153</sup> Website: <https://yourvoice.hunterwater.com.au/ccag> (Customer and Community Advisory Group meeting minutes).

<sup>154</sup> Website: <https://www.hunterwater.com.au/Water-and-Sewer/Water-Supply/Water-Quality/>.

<sup>155</sup> Document: <https://www.hunterwater.com.au/documents/assets/src/uploads/documents/Other-Reports/Water-Quality-Monthly-Reports/Monthly-Water-Quality-Summary-October-2020.pdf>.

<sup>156</sup> Website: <https://twitter.com/HunterWater>.

<sup>157</sup> MS Excel workbook: SE-021 HW2019-620 21.001 Register - Business Resilience Yearly Event Calendar Schedule 2020.XLSX.

<sup>158</sup> Document: 3.1.1-ADWG-10-E-005 HW2012-807 21.038 Report - Monthly Water Quality Summary - June 2020.PDF.

<sup>159</sup> Email correspondence: 3.1.1-ADWG-10-E-006 HW2007-1642 43 3.012 Report - Hunter Water - Monthly Fluoride Report - June 2020.MSG.



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The Veolia monthly reports were also provided.<sup>161,162,163</sup>

During the audit process, reports were reviewed and it was found that there is a high level of reporting and no issues were identified. Monthly emails are sent to ensure that the items in the Compliance Calendar are actioned and reporting is undertaken.<sup>164</sup>

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### ***Element 12 – Review and continual improvement:***

Hunter Water is required to fulfil the requirements of Element 12 of the DWQMS.  
Hunter Water was found to be fully compliant with the requirements of this element.

#### *Review by Senior Executive*

The Hunter Water DWQMS Manual<sup>165</sup> states that an annual Integrated Management System Review Meeting is to be held with the Executive Management Team. The Drinking Water Quality Management System is considered as a subsection of the quality management system.<sup>166</sup> The meeting report<sup>167</sup> and minutes<sup>168</sup> of the meeting provide evidence of this review.

The Water Quality Committee plays an important role in overseeing the drinking water quality management and meets monthly.<sup>169</sup>

#### *Drinking Water Quality Management Improvement Plan*

Improvement items are added to the Drinking Water Quality Improvement Plan (DWQIP) from a number of sources, including risk assessments and audits.<sup>170</sup> The progress of the DWQIP is updated and reported through the monthly Water Quality Committee as a standing agenda item.<sup>171</sup>

There were 20 improvement items completed during the audit period.<sup>172</sup> There were another 50 items added to the Improvement Plan during the audit period. Most of these activities resulted from the risk assessments completed during that time.

There were five overdue items at the time of the audit; three of these were related to the improvement mains hygiene procedure. Training in this procedure has been delayed due to the need to comply with COVID related constraints.

Two were related to CCPs; a standard is to be developed and the disinfection CCP critical limits are to be amended as agreed with NSW Health. The limits are to be increased from 4mg/L/min to 15mg/L/min, agreed with NSW Health on 1 December 2018. New critical limits were developed and signed off by NSW Health in early 2020. Implementation did not start until the next committee meeting in June 2020.<sup>173</sup> This roll out has been delayed due to COVID restrictions; it was advised during the audit interviews that it should be completed by the next operational audit. This action has taken over two years from the time that the new treatment

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<sup>160</sup> Document: 3.1.1-ADWG-10-E-007 HW2006-1448 41 11.008 Report - Quarterly to NSW Health - Drinking Water and Recycled Water Quality Exceptions April to June 2020.DOC.

<sup>161</sup> Document: SE-008a - 03 Water Treatment Performance (April 2020).docx.

<sup>162</sup> Document: SE-008b - 03 Water Treatment Performance (June 2020).docx.

<sup>163</sup> Document: SE-008c - 03 Water Treatment Performance (May 2020).docx.

<sup>164</sup> Email correspondence: SE-022 3.1.1 Element 10 Email - Compliance Calendar Updates Due - October 2020.MSG.

<sup>165</sup> Document: 3.1.1-E-001 HW2015-1303 9.001 Report - Hunter Water Drinking Water Quality Management System.PDF.

<sup>166</sup> PowerPoint presentation: 3.1.1-ADWG-12-E-001 HW2016-790 1 5.030 Presentation - Management System Review - EMT Summary - May 2020.PPT.

<sup>167</sup> Document: SE-023 Report - Management Systems Review - 1 JULY 2019 – 30 APRIL 2020 - May 2020.DOCX.

<sup>168</sup> Document: 3.1.1-ADWG-12-E-002 HW2013-1447 3 24.002 Minutes - IMS Exec Management Review Meeting - Minutes – 12 May 2020.DOC.

<sup>169</sup> Document: 3.1.2-ADWG-12-E-003 HW2006-1417 33 11.011 Minutes - August 2020 Water Quality Committee.DOC.

<sup>170</sup> Document: 3.1.2-ADWG-12-E-007 DWQIP Extract - Open Actions.PDF.

<sup>171</sup> Document: 3.1.2-ADWG-12-E-003 HW2006-1417 33 11.011 Minutes - August 2020 Water Quality Committee.DOC.

<sup>172</sup> Document: 3.1.2-ADWG-12-E-008 DWQIP Extract - Actions Completed During Audit Period.pdf.

<sup>173</sup> Document: 3.1.2-ADWG-12-E-005 HW2006-1448 59 3.011 Minutes - Hunter Water NSW Health Liaison Committee Meeting – 3 June 2020.DOCX.

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requirement was identified.

**OFI-HWC-2020-08:** Prioritise implementation of Improvement Item 260 in the DWQIP and keep NSW Health updated through the liaison meetings. This should be completed by March 2021.

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### Recommendations

The following recommendation is made in respect of this obligation:

- **REC-HWC-2020-01:** By 30 June 2021, Hunter Water should ensure that minor water quality incidents are all recorded as required by the *Corporate Emergency Management Plan*.
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### Opportunities for improvement

The following opportunities for improvement have been identified in respect of this obligation:

- **OFI-HWC-2020-04:** Ensure that documents on the Hunter Water website are updated within the review period.
  - **OFI-HWC-2020-05:** Ensure that the requirements of regulatory and formal undertakings are clearly documented in relation to how they apply to Hunter Water. Commentary should be added where context is required to understand compliance requirements; for example, in relation to the *Public Health Act 2010*.
  - **OFI-HWC-2020-06:** Ensure risk assessment reports reference all of the water quality data relied upon to assess the risk of hazards and hazardous events. An example is the 2020 Grahamstown WTP risk assessment which did not include or reference the results of PFAS monitoring for the Tomago Bore Field.
  - **OFI-HWC-2020-07:** Consider making algae management a 'business as usual' control, thereby eliminating the need to categorise algal blooms as incidents, unless the associated controls fail.
  - **OFI-HWC-2020-08:** Prioritise implementation of Improvement Item 260 in the DWQIP and keep NSW Health updated through the liaison meetings. This should be completed by March 2021.
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### Supplemental information

No supplemental information is provided in respect of this obligation.

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## 2.3.2 Supply services and performance standards – Recycled Water (clause 3.2)

### 2.3.2.1 Recycled Water (sub-clause 3.2.1)

Sub-clause	Requirement	Compliance Grade
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 <b>Recycled Water Quality Management System</b>).</p> <p><i>[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.]</i></p>	 <b>Compliant</b> (minor shortcomings)
<b>Risk</b>	<p>Without a comprehensive Recycled Water Quality Management System, there is a high risk that Hunter Water may not be able to effectively manage risks to recycled water quality, thereby posing risks to both public health and the environment.</p>	<p><b>Target for Full Compliance</b></p> <p>Evidence that a Recycled Water Quality Management System is established, maintained, and kept up to date, and that it is consistent with the <i>Australian Guidelines for Water Recycling</i>, and any additional requirements of NSW Health.</p>
<b>Obligation</b>	<p>This obligation requires Hunter Water to maintain a Recycled Water Quality Management System that is consistent with the requirements of the <i>Australian Guidelines for Water Recycling</i>, subject to any specific requirements of NSW Health.</p>	
<b>Summary of reasons for grade</b>	<p>In general, all of the elements of the recycled water quality system are present and well addressed. There has been a lot of change over the last few years with the introduction of dual reticulation and this has taken some effort to keep on top of. One weakness in the Hunter Water response is the detail of the quality assurance processes for sampling and monitoring. The veracity of the data collected is of utmost importance, if this data is going to be used to make risk management decisions. It was considered, that although full compliance with this clause was not demonstrated, this minor shortcoming would not affect water quality, public health and safety or the environment.</p>	

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## Discussion and notes

Maintenance of the Recycled Water Quality Management System (RWQMS) to be consistent with each audited *Australian Guidelines for Water Recycling* (AGWR) Element is discussed below.<sup>174</sup>

It is noted that evidence referenced relates primarily to the Gillieston Heights Recycled Water Scheme as this scheme was inspected as part of the audit. The Chisholm Recycled Water Scheme, which was developed in conjunction with the Gillieston Heights scheme, is also referenced.

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### ***Element 2 – Assessment of the recycled water system:***

Hunter Water is required to fulfil the requirements of Element 2 of the RWQMS. Hunter Water was found to be fully compliant with the requirements of this AGWR Element.

#### *Source of recycled water, intended uses, receiving environments and routes of exposure*

The AGWR Framework requires sources of water, intended uses, routes of exposure, receiving environments, endpoints and effects to be identified and inadvertent or unauthorised uses considered.

The Corporate *Recycled Water Quality Management Plan* (RWQMP)<sup>175</sup> was reviewed and updated in September 2020 and overarching information on the sources of water for the recycled water schemes, receiving environments and routes of exposure was incorporated. Scheme specific RWQMPs detail the site specific information for each scheme. Hunter Water provided the Chisholm and Gillieston Heights RWQMP<sup>176</sup> which details the sources of effluent for the scheme in Table 2-1. The treatment processes at the Waste Water Treatment Works (WWTW) are also detailed, providing an indication of the quality of water received by the Recycled Water Treatment Plants (RWTPs)

Intended and ‘non-intended’ uses are detailed in Table 2-1. Table 2-2 details the routes of exposure for intended and unauthorised uses, including potential cross connections that could result in non-intended exposure.

#### *Recycled water system analysis*

The AGWR Framework requires pertinent information to be assembled and key characteristics of the recycled water system to be considered and documented. A team with appropriate knowledge and expertise should be assembled and a flow diagram of the recycled water system from the source to the application or receiving environments constructed. The recycled water system analysis should be periodically reviewed.

The Corporate RWQMP includes a commitment to establishing a team with appropriate knowledge and expertise to be included in the risk assessments. The Chisholm and Gillieston Heights RWQMP and *Chisholm and Gillieston Heights Recycled Water Scheme HACCP Report*<sup>177</sup> contain details of the risk assessment team, including the attendees at the 2016, 2018 and 2019 HACCP workshops. The scheme specific RWQMP includes descriptions of the WWTW and RWTPs. This is also detailed in *HACCP Report*.

The Corporate RWQMP includes an overview of each recycled water scheme in operation in 2018 including the treatment processes, customer, end use type, AGWR water quality objectives and volume supplied in 2018.

The Chisholm and Gillieston Heights RWQMP includes flow diagrams for the WWTW and RWTPs. The *HACCP Report* states that the flow diagram components were reviewed during the HACCP Workshops. The site inspection of the Farley RWTP confirmed that the flow diagram

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<sup>174</sup> The audit scope was limited to Elements 2, 3, 4, 5, 6, 8 and 12 of the AGWR.

<sup>175</sup> Document: 3.2.1-AGWR-02-E-006 *Corporate Recycled Water Quality Management Plan*.

<sup>176</sup> Document: 3.2.1-AGWR-02-E-001 *Chisholm and Gillieston Heights Recycled Water Quality Management Plan (.docx)*.

<sup>177</sup> Document: 3.2.1-AGWR-02-E-002 *Chisholm and Gillieston Heights Recycled Water Scheme HACCP report (.pdf)*.

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was consistent with the infrastructure observed on site.

#### *Assessment of water quality data*

The AGWR Framework requires historical data about sewage to be assembled, as well as data from treatment plants and of recycled water supplied to users. Gaps in data should be identified and the reliability of data assessed. Data should be assessed using tools such as control charts and trends analysis, to identify trends and potential problems.

The Corporate RWQMP<sup>175</sup> states that for each risk assessment, relevant data is collated and analysed as part of the risk assessment process. As the risk assessments for Chisholm and Gillieston Heights were undertaken prior to the production of recycled water, the analysis of historical data was not possible. A new procedure for water quality data assessment<sup>178</sup> has been developed and will be utilised for future risk assessments and reviews.

#### *Hazard identification and risk assessment*

The AGWR Framework requires the approach to hazard identification and risk assessment, which considers both public and ecological health, to be defined. The hazard identification and risk assessment should incorporate any changes to the system. These processes should be periodically reviewed and updated. Hazards and hazardous events for each component of the recycled water system should be identified and documented. The level of risk for each identified hazard or hazardous event should be estimated. Inadvertent and unauthorised use or discharge should be considered. Significant risks and document priorities for risk management should be determined. The major sources of uncertainty associated with each hazard and hazardous event should be identified and actions to reduce uncertainty considered.

The risk assessment process is described in the Corporate RWQMP and includes public and environmental health. The *HACCP Report*<sup>177</sup> for Chisholm and Gillieston Heights further details the risk assessment methodology that includes assessment of 'raw' risk, identification of preventive measures, and assessment of mitigated risk that evaluates the effectiveness of the preventive measures.

An assessment of uncertainty in the risk assessment methodology is included in the *HACCP Report* and is discussed in the Corporate RWQMP in Section 2.4.7.

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### ***Element 3 – Preventive measures for recycled water management:***

Hunter Water is required to fulfil the requirements of Element 3 of the RWQMS. Hunter Water was found to be fully compliant with the requirements of this AGWR Element.

#### *Preventive measures and multiple barriers*

The AGWR Framework requires existing preventive measures to be identified across the whole system for each significant hazard or hazardous event, and the residual risk estimated. Alternative or additional preventive measures that are required to ensure risks are reduced to acceptable levels should be identified. Preventive measures and strategies, addressing each significant risk, should be documented.

The Corporate RWQMP<sup>175</sup> identifies the assessment of preventive measures in the risk assessment workshop and the assessment of risk without preventive measures and with preventive measures to assess effectiveness. The Gillieston and Chisholm risk assessments were undertaken in the previous audit period; the RWQMP for Chisholm and Gillieston Heights<sup>179</sup> details the multiple barriers and the *HACCP Report* details the preventive measures identified to manage recycled water hazards.

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<sup>178</sup> Document: 3.2.2-R2019-3-E-001 *RW Water Quality Data Assessment Methodology IPART Recommendation – Final*.

<sup>179</sup> Document: 3.2.1-AGWR-02-E-001 *Chisholm and Gillieston Heights Recycled Water Quality Management Plan (.docx)*.



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### *Critical control points*

The AGWR Framework requires preventive measures throughout the recycled water system to be assessed in order to identify critical control points and establish mechanisms for operational control. Critical control points (CCPs), critical limits and target criteria should be documented.

Hunter Water has established a process for identifying and assessing CCPs, the *Standard – Establishment and Review of Recycled Water CCPs*<sup>180</sup>. CCPs are documented in Section 2.3 of the scheme specific RWQMPs<sup>181,182</sup> and includes the definition of critical limits, the rationale for choosing the parameters, and the logic of how the critical limits correspond to the pathogen log reduction targets adopted for the schemes. Table 4-1 of the RWQMP provides details of the parameters, monitoring location and frequencies, alarm set points, critical limits, and corrective actions.

The Veolia RWQMP<sup>183</sup> for the Gillieston Heights recycled water scheme provides an overview of the CCPs in Table 7-1.

Mechanisms for operational control largely rely on automatic shutdowns or plant bypasses when a critical limit is breached to prevent the potential supply of out-of-specification recycled water.

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### ***Element 4 – Operational procedures and process control:***

Hunter Water is required to fulfil the requirements of Element 4 of the RWQMS. Hunter Water was found to be fully compliant with the requirements of this AGWR Element.

#### *Operational procedures*

The AGWR Framework requires the identification of procedures for all processes and activities applied within the whole recycled water system from source to use. The procedures should be documented and compiled into an Operations Manual.

Operational procedures for the management of recycled water and the CCP response tables are included in the scheme specific RWQMP prepared by both Hunter Water and Veolia. Veolia has established the *Farley WWTW Plant Operating Manual*<sup>184</sup> for the Farley WWTP to document the operational procedures for that site.

#### *Operational monitoring*

The AGWR Framework requires monitoring protocols to be developed for operational performance of the recycled water supply system, including the selection of operational parameters and criteria, and the routine analysis of results. Monitoring protocols should be documented in an operational monitoring plan.

Hunter Water provided the *Standard – Recycled Water Quality Monitoring and Communication*<sup>185</sup> which details responsibilities for the Veolia Water Operators to implement operational monitoring, routine weekly effluent quality results, online monitoring systems and ongoing equipment performance during normal operations to determine whether effluent is of a sufficient quality for reuse applications.

Table 4-1 of the scheme specific RWQMP<sup>186</sup> and Table 7-1 of the Veolia scheme specific RWQMP for Farley contain details of operational monitoring of CCPs. Operational monitoring is undertaken using online instruments via SCADA; additional grab samples are also taken where

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<sup>180</sup> Document: 3.2.1-AGWR-03-E-002 *Establishment and Review of Recycled Water CCPs (.docx)*.

<sup>181</sup> Document: 3.2.1-AGWR-03-E-001 *Chisholm and Gillieston Heights Recycled Water Quality Management Plan (.docx)*.

<sup>182</sup> Document: 3.2.1-E-020 MAN13925-2 HW – Farley RWTP – Gillieston Heights Scheme RWQMP (.docx).

<sup>183</sup> Document: 3.2.1-E-020 MAN13925-2 HW – Farley RWTP – Gillieston Heights Scheme RWQMP (.docx).

<sup>184</sup> Document: 3.2.1-AGWR-04-E-008 MAN2962-2 HW – Farley WWTW Plant Operating Manual (.docx).

<sup>185</sup> Document: 3.2.1-AGWR-04-E-003 *Recycled Water Quality Monitoring and Communication (.docx)*.

<sup>186</sup> Document: 3.2.1-AGWR-04-E-001 *Chisholm and Gillieston Heights Recycled Water Quality Management Plan (.docx)*.

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relevant.

Table 4-1 of the site specific RWQMP includes operational monitoring in the recycled water storage and network including for the critical operational points (COPs) that require free chlorine residual and pressure differential monitoring in the network.

#### *Operational corrections*

The AGWR Framework requires procedures to be established and documented for corrective actions to be taken where operational parameters are not met. Rapid communication systems should be established to deal with unexpected events.

Table 4-1 of the scheme specific RWQMP<sup>187</sup> identifies the operational corrections in response to exceedance of alert and critical limits for CCPs and COPs. In general, exceedance of a critical limit will trigger an automatic shutdown or bypass within the SCADA system. The *Standard – Recycled Water Quality Monitoring and Communication*<sup>188</sup> details the corrective responses and reporting required by Veolia Water Operators.

#### *Equipment capability and maintenance*

The AGWR Framework requires recycled water operators to ensure that equipment performs adequately and provides sufficient flexibility and process control and that a program for regular inspection and maintenance of all equipment, including monitoring equipment is established.

Veolia undertakes weekly checks of equipment and plant through the WWTW worksheets<sup>189</sup> and duties lists,<sup>190</sup> and ongoing equipment capability and maintenance via Veolia Asset Management System (VAMS). Electrical and mechanical maintenance for each recycled water scheme is scheduled by Hunter Water through the maintenance module of Hunter Water's 'Ellipse' system.

Maintenance work orders for the distribution network, including reservoir inspections, and inspection and maintenance of electrical and mechanical equipment, are raised and managed within Ellipse (mechanical and electrical)/AOMS (civil).

#### *Materials and chemicals*

The AGWR Framework requires recycled water operators to ensure that only approved materials and chemicals are used and to establish documented procedures for evaluating chemicals, materials, and suppliers.

Hunter Water maintains an approved products and manufacturers list on its website<sup>191</sup> that includes the guideline<sup>192</sup> which outlines the process for having products approved for use in the Hunter Water area of operations and the relevant standard that apply. There is a list<sup>193</sup> of approved chemicals and manufacturers. The Corporate RWQMP indicates that Veolia manages chemicals used for recycled water treatment. Section 7.3 of the Veolia site specific RWQMP describes the approach to chemical quality and traceability. Veolia's chemical ordering and delivery procedures include:

- *Veolia Aluminium Chlorohydrate Ordering and Delivery*;<sup>194</sup>
- *Veolia Citric Acid Ordering Delivery and Testing*;<sup>195</sup>

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<sup>187</sup> Document: 3.2.1-AGWR-04-E-001 *Chisholm and Gillieston Heights Recycled Water Quality Management Plan (.docx)*.

<sup>188</sup> Document: 3.2.1-AGWR-04-E-003 *Recycled Water Quality Monitoring and Communication (.docx)*.

<sup>189</sup> MS Excel workbook: 3.2.1-AGWR-04-E-013 TEM-3152 HW - Farley WWTW Weekly Duties (.xlsx).

<sup>190</sup> Document: SE-047 – Element 3 FAR Weekly Duties and Daily Test Results.

<sup>191</sup> Webpage: <https://www.hunterwater.com.au/building-and-developing/drawings-plans-and-specifications/approved-products-and-manufacturers> Accessed 1/12/2020.

<sup>192</sup> Document: HW2018-561/70.001 *Gudlieine Engineering Products – Water and Sewer*.

<sup>193</sup> Document: QPA 003 – *Approved Products and Materials – Water*.

<sup>194</sup> Document: 3.2.1-AGWR-04-E-011 WIS-13935-1 HW - *Aluminium Chlorohydrate Ordering, Delivery, Testing (.docx)*.

<sup>195</sup> Document: 3.2.1-AGWR-04-E-010 WIS-2978-2 HW - *Citric Acid 50% Solution Ordering, Delivery, Testing (.docx)*.

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- *Veolia Sodium Hydroxide Ordering, Delivery, Testing*<sup>196</sup> and
  - *Veolia Sodium Hydroxide Ordering, Delivery, Testing*<sup>197</sup>

The procedures identify the responsibilities for chemical management, including checking the correct chemical is being delivered and checking of the chemical against the acceptable range in the procedure.

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***Element 5 – Verification of recycled water quality and environmental performance:***

Hunter Water is required to fulfil the requirements of Element 5 of the RWQMS. Hunter Water was found to be Compliant with minor shortcomings for this AGWR element due to quality assurance details are not being included in the verification monitoring plan.

*Recycled water quality monitoring*

The AGWR Framework requires the characteristics to be monitored and the monitoring points and frequencies to be determined.

The Corporate RWQMP<sup>198</sup> and the individual scheme plan<sup>199</sup> outline the sampling program for the schemes. The scheme specific RWQMP includes Table 5-1 which contains the parameters, frequency and limits from AGWR where relevant. Parameters include microbiological, physical and chemical characteristics consistent with AGWR guidance. The frequencies generally include weekly testing for *E. coli*, clostridial spores and somatic coliphage and monthly testing of adenovirus and cryptosporidium oocysts. These details are largely consistent with Table 5-6 of the AGWR.

*Application site and receiving environment monitoring*

The AGWR Framework requires the characteristics to be monitored and the points at which monitoring will be undertaken should be determined for the application and receiving environment monitoring.

The scheme specific RWQMP<sup>200</sup> for Chisholm and Gillieston Heights states that recycled water is not intended to be released to the environment or water courses. For non-dual reticulation schemes, recycled water customers are responsible for undertaking sampling of the recycled water application site as detailed in the Corporate RWQMP.

*Documentation and reliability*

The AGWR Framework requires a sampling plan for each characteristic to be established and documented, including the location and frequency of sampling, ensuring that monitoring data is representative and reliable.

The scheme specific RWQMPs include a table for verification monitoring that contains the parameters, frequency and limits for internal lab notification and the basis of the notification (e.g. AGWR guideline value or a scheme operational target). Parameters include microbiological, physical and chemical characteristics consistent with AGWR guidance. The frequencies and parameters identified in the scheme specific RWQMPs for Gillieston Heights and Chisholm were consistent with AGWR guidance.

In relation to the quality control aspects of the monitoring program, the site specific RWQMP refers to the corporate RWQMP, which refers to the monitoring plan; however, quality control requirements are not specified in any of the documents.

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<sup>196</sup> Document: 3.2.1-AGWR-04-E-009 WIS-2985-2 HW - Sodium Hydroxide (Caustic Soda) Solution Ordering, Delivery, Testing (.docx).

<sup>197</sup> Document: 3.2.1-AGWR-04-E-012 WIS-2986-2 HW - Sodium Hypochlorite Chemical Ordering, Delivery, Testing (.docx).

<sup>198</sup> Document: 3.2.1-AGWR-05-E-015 Corporate Recycled Water Quality Management Plan.

<sup>199</sup> Document: 3.2.1-AGWR-05-E-001 Chisholm and Gillieston Heights Recycled Water Quality Management Plan (.docx).

<sup>200</sup> Document: 3.2.1-AGWR-05-E-001 Chisholm and Gillieston Heights Recycled Water Quality Management Plan (.docx).



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**REC-HWC-2020-02:** By 31 October 2021, Hunter Water should ensure that the quality assurance and validation procedures for sampling are documented in the *Recycled Water Quality Monitoring Plan*. The AGWR (Box 2.10) requires that quality assurance details are in a monitoring plan.

#### *Satisfaction of users of recycled water*

The AGWR Framework requires the establishment of an inquiry and response program for users of recycled water, including appropriate training of people responsible for the program.

Hunter Water provided *Guideline - Customer Complaints Management*,<sup>201</sup> which details the formal process for the reporting and management of complaints. Hunter Water has established a *Call Centre Guideline*<sup>202</sup> for the dual networks systems which provides guidance on how to manage customer complaints or concerns for dual reticulation schemes. Complaints can be recorded in AOMS, the operational database or through the Hunter Water Complaints Management Portal.

#### *Short-term evaluation of results*

The AGWR Framework requires the establishment of procedures for the short-term review of monitoring data and satisfaction of users of recycled water and the development of mechanisms for internal and external reporting, where required.

Section 5.5 of the Corporate RWQMP details the short term review requirements for recycled water. The Hunter Water *Standard-Recycled Water Quality Monitoring and Communication* details the process for Veolia Water Operators to monitor performance. Veolia is required to report to Hunter Water on a weekly basis providing recycled water quality results and highlighting exceedances with trigger levels. The Contract Practice Note, *PN110 - Recycled Water Standards*<sup>203</sup> details the analysis of performance and the types of reporting that Veolia is required to undertake. The reporting requirements for routine sampling are detailed in the scheme specific RWQMP.

The *Dual Reticulation Recycled Water Quality Microbiological Exception Reporting*<sup>204</sup> procedure details the short-term evaluation of results for the dual reticulation schemes.

Weekly reports<sup>205</sup> detailing the results of monitoring are provided by Veolia and monthly recycled water quality meetings are held between Hunter Water and Veolia at which recycled water quality trends are reviewed.

#### *Corrective responses*

The AGWR Framework requires procedures for corrective responses to non-conformance or feedback from users of recycled water and rapid communication systems to deal with unexpected events to be established and documented.

Corrective responses for non-conformances are detailed in Section 5.6 of the Corporate RWQMP and the *Dual Reticulation Recycled Water Quality Microbiological Exception Reporting*.<sup>206</sup> Corrective responses to be implemented by Veolia are detailed in the Practice Note, *PN110 - Recycled Water Standards*.<sup>207</sup>

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<sup>201</sup> Document: 3.2.1-AGWR-05-E-009 *Guideline - Customer Complaints Management - April 2020*.

<sup>202</sup> Document: 3.2.1-AGWR-05-E-005 *Dual Reticulation Recycled Water Call Centre Guideline*.

<sup>203</sup> Document: 3.2.1-AGWR-04-E-005 *PN110 - Recycled Water Standards - v5 Aug 2019*.

<sup>204</sup> Document: 3.2.1-AGWR-05-E-004 *Dual Reticulation Recycled Water Quality Exception Reporting procedure. (.docx)*.

<sup>205</sup> Document: 3.2.1-AGWR-05-E-013 *Corporate Mail - Dual Reticulation Weekly Recycled Water Report 08\_07\_2020 (.pdf)*.

<sup>206</sup> Document: 3.2.1-AGWR-05-E-004 *Dual Reticulation Recycled Water Quality Exception Reporting procedure. (.docx)*.

<sup>207</sup> Document: 3.2.1-AGWR-04-E-005 *PN110 - Recycled Water Standards - v5 Aug 2019*.

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### ***Element 6 – Management of incidents and emergencies:***

Hunter Water is required to fulfil the requirements of Element 6 of the RWQMS. Hunter Water was found to be fully compliant with the requirements of this AGWR Element.

#### *Communication*

The AGWR Framework requires the definition of communication protocols with the involvement of relevant agencies and the preparation of a contact list of key people, agencies and stakeholders. A public and media communications strategy should be developed.

Hunter Water has established the *Corporate Emergency Management Plan*<sup>208</sup> which includes strategies for public and media communication including development of an emergency response communications plan by a Communications Coordinator who is responsible for handling all internal and external communications during an incident. The *Emergency Response Communications Plan*<sup>209</sup> includes a list of internal and external stakeholders including relevant government agencies that may need to be notified in the event of an emergency. The *Dual Reticulation Recycled Water Exception Reporting*<sup>210</sup> procedure details the reporting and communication in response to an event or incident in the dual reticulation systems. Other communication methods are detailed in:

- *Notification of Water Quality Events of Potential Public Health Significance to NSW Health*,<sup>211</sup> which provides detail on how a significant event should be reported to NSW Health;
- *Criteria for Notification to NSW Health*,<sup>212</sup> which provides the criteria and conditions where NSW Health must be notified; and
- *Practice Note, PN110 - Recycled Water Standards*,<sup>213</sup> which provides guidance on how Veolia must communicate with Hunter Water in the event of a significant event.

#### *Incident and emergency response protocols*

The AGWR Framework requires the definition of potential incidents and emergencies. It also requires that procedures and response plans should be documented with the involvement of relevant agencies. Employees should be trained and emergency response plans tested regularly. Any incidents or emergencies should be investigated and protocols revised as necessary.

Hunter Water's framework for managing incidents and emergencies is detailed in the overarching *Corporate Emergency Management Plan*,<sup>214</sup> which details the various levels of incidents for recycled water in the Incident Categorisation Guide. The *Incident and Emergency Management Manual*<sup>215</sup> details Veolia's incident management framework.

The *Procedure - Recycled Water Quality Incident Response* details the actions to be implemented in response to a recycled water quality event, a notifiable event or an incident, and details the process for managing incidents in the dual reticulation network and other recycled water schemes. It details the critical limits for each recycled water scheme and the steps that should be followed when responding to recycled water quality events, notifiable events and incidents including any investigation and revision of the protocols.

The *Corporate Emergency Response Plan*, states that the emergency management protocols are tested periodically through a structured testing regime which incorporates simulated (role played) emergency management exercises.

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<sup>208</sup> Document: 3.2.1-AGWR-06-E-011 *Corporate Emergency Management Plan (Intranet Version) (.pdf)*.

<sup>209</sup> Document: 3.2.1-AGWR-06-E-017 *Emergency Communications Plan\_Sept 2020 (.docx)*.

<sup>210</sup> Document: 3.2.1-AGWR-06-E-001 *Dual Reticulation Recycled Water Quality Exception Reporting procedure (.docx)*.

<sup>211</sup> Document: 3.2.1-AGWR-06-E-004 *Notification of Water Quality Events of Potential Public Health Significance to NSW Health (.docx)*.

<sup>212</sup> MS Excel workbook: 3.2.1-AGWR-06-E-003 *Water Quality Criteria for Notification to NSW Health (.xlsx)*.

<sup>213</sup> Document: 3.2.1-AGWR-04-E-005 *PN110 - Recycled Water Standards - v5 Aug 2019*.

<sup>214</sup> Document: 3.2.1-AGWR-06-E-011 *Corporate Emergency Management Plan (Intranet Version) (.pdf)*.

<sup>215</sup> Document: 3.2.1-AGWR-06-E-009 *MAN-2799 HW - Incident and Emergency management manual (.pdf)*.

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### ***Element 8 – Community involvement and awareness:***

Hunter Water is required to fulfil the requirements of Element 8 of the RWQMS. Hunter Water was found to be fully compliant with the requirements of this AGWR Element.

#### *Consultation with users of recycled water and the community*

The AGWR Framework requires the assessment of requirements for effective involvement of users of recycled water and the community and the development of a comprehensive strategy for consultation.

The Corporate RWQMP describes consultation with the community for recycled water and includes use of the Hunter Water website,<sup>216</sup> customer agreements, and direct and targeted consultation as relevant to share information and to undertake consultation.

Examples of specific consultation plans developed for different stages of the dual reticulation schemes include:

- The *Community Engagement Plan* for the construction of the Chisholm to Thornton North pipeline;<sup>217</sup> and
- Community engagement and education packages.<sup>218,219,220</sup>

#### *Communication and education*

The AGWR Framework requires the development of an active two-way communication program to inform users of recycled water and promote awareness of recycled water quality issues. Such a program should include the provision of information on the impacts of unauthorised use and the benefits of recycled water use.

The ‘Your Voice’ program<sup>221</sup> provides information on recycled water project and includes a two-way communication program that allows customers to register and be involved in consultation on Hunter Water projects. Projects on the Your Voice webpage include Thornton North and Edgeworth Sportsground Recycled Water irrigation projects.

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### ***Element 12 – Review and continuous improvement:***

Hunter Water is required to fulfil the requirements of Element 12 of the RWQMS. Hunter Water was found to be fully compliant with the requirements of this AGWR Element.

#### *Review by senior managers*

The AGWR Framework requires senior managers to review the effectiveness of the management system and evaluate the need for change.

A management system review meeting<sup>222</sup> is held with the EMT to report on management system performance. The PowerPoint presentation included briefings from management system representatives. *Integrated Management System Review Meeting Minutes*<sup>223</sup> provide details of the discussions of the annual management review.

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<sup>216</sup> Webpage: <https://yourvoice.hunterwater.com.au/thornton>.

<sup>217</sup> Document: 3.2.1-AGWR-08-E-002 · CSE PLAN\_ Chisholm to Thornton pipeline\_FINAL- 2020-09-09 (.pdf).

<sup>218</sup> Document: 3.2.1-AGWR-08-E-003 · FAQ - Letter - Recycled Water - Second letter to connecting customers - FAQs - FINAL - 2020-09-10 (.pdf).

<sup>219</sup> Document: 3.2.1-AGWR-08-E-004 · Recycled Water Community Education (3 of 3) (.docx).

<sup>220</sup> Document: 3.2.1-AGWR-08-E-005 · Recycled Water school education Community Engagement Plan (.docx).

<sup>221</sup> Website: <https://yourvoice.hunterwater.com.au/>.

<sup>222</sup> PowerPoint presentation: 3.2.1-AGWR-12-E-002 Management System Review - EMT Summary - May 2020 (.pptx).

<sup>223</sup> Document: 3.2.1-AGWR-12-E-001 Management Systems Review - 1 JULY 2019 – 30 APRIL 2020 - May 2020 (.docx).

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The Hunter Water and NSW Health liaison meeting<sup>224,225,226</sup> is undertaken quarterly to provide information on system performance. Any significant changes will be reviewed for satisfaction by NSW Health.

*Recycled water quality management improvement plan*

The AGWR Framework requires a recycled water quality management improvement plan to be developed and the plan to be communicated and implemented. Improvements should be monitored for effectiveness.

Hunter Water has developed a *Recycled Water Improvement Actions Register*,<sup>227</sup> which is used to track improvement actions. The Register was in the process of being updated during the audit and additional findings in relation the improvement plan are noted in the assessment of implementation below.

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**Recommendations**

The following recommendation has been made in respect of this obligation:

- **REC-HWC-2020-02:** By 31 October 2021, Hunter Water should ensure that the quality assurance and validation procedures for sampling are documented in the *Recycled Water Quality Monitoring Plan*. The AGWR (Box 2.10) requires that quality assurance details are in a monitoring plan.

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**Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.

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**Supplemental information**

No supplemental information is provided in respect of this obligation.

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<sup>224</sup> Document: 3.2.1-AGWR-12-E-003 Hunter Water NSW Health Liaison Committee Meeting 3 June 2020 (.docx).

<sup>225</sup> Document: 3.2.1-AGWR-12-E-004 Hunter Water NSW Health Liaison Committee Meeting Dec 2019 (.docx).

<sup>226</sup> Document: 3.2.1-AGWR-12-E-005 Hunter Water NSW Health Liaison Committee Meeting March 2020 (.docx).

<sup>227</sup> 3.2.1-AGWR-12-E-006 Recycled Water Improvement Plan (.xlsx).

### 2.3.2.2 Recycled Water (sub-clause 3.2.2)

Sub-clause	Requirement	Compliance Grade
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.	 <b>Compliant</b> (minor shortcomings)

#### Risk

If the Recycled Water Quality Management System is not fully implemented, there is a high risk that Hunter Water may not be able to effectively manage risks to recycled water quality, thereby posing risks to both public health and the environment.

#### Target for Full Compliance

Evidence that the Recycled Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the System, and to the satisfaction of NSW Health.

#### Obligation

This obligation requires Hunter Water to ensure that its Recycled Water Quality Management System is fully implemented and that all activities are carried out in accordance with the Recycled Water Quality Management System and to the satisfaction of NSW Health.

#### Summary of reason for grade

The recycled water treatment system is going through a lot of change at the moment, with the commissioning of dual reticulation schemes. This needs to be managed, but at the same time the core pillars of the risk assessment process also need to be maintained. This clause has been graded compliant with minor shortcomings because there were minor deficiencies in implementation of the documented procedures for Microbiological Exception Reporting; undertaking management review; and the timely completion of actions identified in the *Recycled Water Quality Improvement Plan*. At this stage the shortcomings were of a minor nature and it was not considered that they affected water quality, public health and safety or the environment. Care needs to be taken that these shortcomings do not slip any further.

#### Discussion and notes

Implementation of the Recycled Water Quality Management System is discussed below by AGWR Element.

#### ***Element 2 – Assessment of the recycled water system:***

Hunter Water is required to fulfil the requirements of Element 2 of the RWQMS. Hunter Water was found to be fully compliant with the requirements of this AGWR Element.

#### *Source of recycled water, intended uses, receiving environments and routes of exposure*

Pertinent information for the audited schemes is in the RWQMP.<sup>228</sup> This includes the source of recycled water, intended use, receiving environments and routes of exposure. These were reviewed during the virtual site inspections and are still current. There have been no changes during the audit period.

#### *Recycled water system analysis*

<sup>228</sup> Document: 3.2.2-AGWR-02-E-001 *Chisbalm and Gillieston Heights Recycled Water Quality Management Plan*.

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The system analysis is reviewed as part of the risk assessment process. These are scheduled according to the *RWQMP & Risk Assessment Review Calendar*.<sup>229</sup> The Chisholm and Gillieston Heights schemes have been flagged for a review in late 2020 or early 2021. It was last reviewed 26 July 2019.<sup>230</sup>

The flow diagrams in the *Recycled Water Quality Management Plan – Chisholm and Gillieston Heights*<sup>231</sup> were reviewed as part of the audit inspections and were found to be an accurate reflection of the treatment plants. The Farley Recycled Water Treatment Plant was inspected as part of the audit and it should be noted that it was not operational at the time of the inspection, due to equipment failure and was in caretaker mode. Both treatment trains are identical.

#### *Assessment of water quality data*

This is undertaken as part of the risk assessment process; however, as the treatment plants have just gone through the commissioning process the HACCP Report does not include water quality data. Trends have been monitored in spreadsheet in the interim.<sup>232</sup>

#### *Hazard identification and risk assessment*

The *HACCP Report* details the risk assessment process and the outcomes of the risk workshops undertaken in 2016, 2017, 2018 and 2019. The next review is due in the next audit period<sup>233</sup> and will consider supply to a new development.

Review of the risk assessment reveals the relevant risks have been identified. This risk assessment was completed prior to the schemes being commissioned. In the scheduled risk review to be completed it is expected that these hazardous events and levels of risk would be reviewed substantially to reflect the operational state. It is noted that there are a number of blank cells in the risk assessment. It is beneficial to mark fields that are not applicable to show that each field has been considered.

**OFI-HWC-2020-09:** Mark unused fields in the risk assessment as not applicable.

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### ***Element 3 – Preventive measures for recycled water management:***

Hunter Water is required to fulfil the requirements of Element 3 of the RWQMS. Hunter Water was found to be fully compliant with the requirements of this AGWR Element.

#### *Preventive measures and multiple barriers*

Preventive measures are identified in the risk assessments.<sup>234</sup> During the audit process the implementation of these was reviewed. These measures included, but were not limited to, the following:

- Duty standby pumps and dosing equipment.
- Potable water back-up.
- Power supply. There is no backup power at the Farley RWTP; if there is a prolonged outage, potable water will be supplied via the top-up and a portable generator brought onsite to operate the distribution pumps. A work order (no. 005872246) was viewed in VAMS in relation to a recent power outage. The adequacy of this preventive measure must be monitored to ensure there are not prolonged periods without toilet flushing.
- Plumbing inspections of properties by NSW Fair Trading.<sup>235,236</sup>

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<sup>229</sup> Document: 3.2.2-AGWR-02-E-007 *RWQMP & Risk Assessment Review Calendar*.

<sup>230</sup> Document: 3.2.2-AGWR-02-E-003 *Chisholm and Gillieston Heights Recycled Water Scheme HACCP report*.

<sup>231</sup> Document: 3.2.2-AGWR-02-E-001 *Chisholm and Gillieston Heights Recycled Water Quality Management Plan*.

<sup>232</sup> MS Excel workbook: *SE-043 - Element 2 RW Reporting Spreadsheet.xlsm*.

<sup>233</sup> Document: 3.2.2-AGWR-02-E-007 *RWQMP & Risk Assessment Review Calendar*.

<sup>234</sup> Document: 3.2.2-AGWR-02-E-003 *Chisholm and Gillieston Heights Recycled Water Scheme HACCP report*.



- Cross-connections. A guideline has been developed for investigations.<sup>237</sup> Evidence was supplied to indicate that a property was investigated following unusual chlorine levels.<sup>238</sup> Follow-up sampling was ordered<sup>239</sup> and a priority job was created in AOMS.<sup>240</sup> The investigation showed that it turned out to be a sampling error and that the process works.
- Chlorine and electrical conductivity are being charted to determine the suitability of using them to identify cross-connections.<sup>241,242</sup>
- Membrane direct integrity test. SCADA trends were viewed to determine that the tests are undertaken and that pressures relate to the documentation.

It was considered that the multiple barriers and preventive measures reviewed were as specified. It was good to see that the plant had been shut down due to failure of the UVT analyser. UV is one of the barriers for pathogens and continuous UVT monitoring is required to ensure that the appropriate treatment is being provided.

It was noted that differential pressure and electrical conductivity are being used to help manage the risk of potential cross-connections. However, these preventive measures were not in the risk assessment. They should be added at the next review.

**OFI-HWC-2020-10:** Include the use of differential pressure and electrical conductivity as preventive measures for cross-connection in the next review of the risk assessment.

#### *Critical control points*

The CCPs for Chisholm and Gillieston Heights are detailed in the Hunter Water and Veolia site specific RWQMPs.<sup>243,244</sup> A site inspection of the Farley RWTP was undertaken as part of the audit and the location of the monitoring points were consistent with the CCP requirements. It was noted that some instrumentation was connected to the service water at the time due to the plant being in caretaker mode.

Screenshots of the SCADA<sup>245</sup> set points were reviewed against those in the plans. It was identified that the set points are not quite the same when comparing the SCADA “Critical Control Point CCP Alarm Overview” to the plans. There does not appear to be a delay for some limits and the UVT set point is 55% not 40.1%. All of these differences make the alarms more stringent, but they are different to the documentation and the CCP site acceptance test.<sup>246</sup>

There is a process for changing SCADA limits to ensure that critical limits are not changed without approval and documentation. A record of a SCADA change request<sup>247</sup> was provided as evidence of this process being implemented.

Veolia provides a CCP incident report for all CCP critical limit exceedances. There was one CCP exceedance during the audit period, which was at the Dora Creek WWTW when recycled water was supplied during a bypass event.<sup>248</sup> Hunter Water created an Integrum record<sup>249</sup> and reported the issue to NSW Health.

<sup>235</sup> Document: *SE-046a - Plumbing Inspection Fair Trading Follow Up WNO.pdf*.

<sup>236</sup> MS Excel workbook: *SE-046b - Plumbing Inspection Fair Trading.docx*.

<sup>237</sup> Document: *3.2.2-AGWR-03-E-018 Recycled Water Cross Connection Investigation - Guideline.DOCX*.

<sup>238</sup> Document: *3.2.2-AGWR-03-E-020 Suspected Cross Connection 4 Les Cct Gillieston Heights 21 May 2020.pdf*.

<sup>239</sup> Document: *3.2.2-AGWR-03-E-022 Emailing gillieston-chisholm 21-5-20 - Resampling Required.pdf*.

<sup>240</sup> Document: *3.2.2-AGWR-03-E-023 Recycled Water Dual Reticulation Sampling Results - Suspected Cross Connection (AOMS Job No 605882)*.

<sup>241</sup> MS Excel workbook: *3.2.2-AGWR-03-E-014 Report - Dual Reticulation Trends - March 2020.XLSX*.

<sup>242</sup> MS Excel workbook: *3.2.2-AGWR-03-E-015 Report - Dual Reticulation Trends - August 2020.XLSX*.

<sup>243</sup> Document: *3.2.1-E-020 MAN13925-2 HW – Farley RWTP – Gillieston Heights Scheme RWQMP.docx*.

<sup>244</sup> Document: *3.2.2-AGWR-02-E-001 Chisholm and Gillieston Heights Recycled Water Quality Management Plan.docx*.

<sup>245</sup> Document: *3.2.2-AGWR-04-E-010 Farley RWTP SCADA Screenshots OV and CCPs.docx*.

<sup>246</sup> Document: *3.2.2-AGWR-03-E-007 Farley and Morpeth CCP Site Acceptance Test.pdf*.

<sup>247</sup> Document: *3.2.2-AGWR-03-E-006 Change Request Farley RWTP. Corporate Mail - FW\_ scada change RWTPs.pdf*.

<sup>248</sup> Document: *3.2.2-AGWR-03-E-009 Dora Ck WWTW CCP Breach 9-2-20 - Veolia Report.pdf*.

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**OFI-HWC-2020-11:** Consider making the CCP SCADA limits consistent with documentation, even if they are tighter. The SCADA set points at the Farley RWTP do not match those in the risk management plans. Multiple versions of limits make it more complex to control and creates more set points to manage.

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***Element 4 – Operational procedures and process control:***

Hunter Water is required to fulfil the requirements of Element 4 of the RWQMS. Hunter Water was found to be fully compliant with the requirements of this AGWR Element.

*Operational procedures*

The Farley RWTP started the 12-month defects and liability period on 11 December 2019. Comdain supplied an O&M manual for the treatment plant. This is in the process of being converted into a Veolia document; a draft was supplied as evidence.<sup>250</sup>

Operational procedures are accessed by the Hunter Water Portal for Veolia and Reservoir for Hunter Water. Veolia uses BMS to manage documents and Hunter Water uses a combination of TRIM and Integrum. The *RW Cross Connection Investigation Guideline HW2015-1364/1/12.030* was retrieved from Reservoir as a demonstration of the operation of this system.

*Operational monitoring*

The scheme specific RWQMP<sup>251</sup> details the operational monitoring for the RWTP and network. A plant spreadsheet has been developed that includes the worksheets for operational monitoring.<sup>252</sup> Operational data is also stored in the spreadsheet. Based on a review of the data and the site inspections the required grab samples and online monitoring is occurring.

SCADA trends of the online instruments that monitoring CCPs were reviewed.

Network monitoring is undertaken by ALS and this data, as well as the data for the Veolia Plant Spreadsheet is uploaded to Envirosys. The Envirosys database was reviewed during the audit and an extract of data for the Farley scheme was reviewed.<sup>253</sup>

*Operational corrections*

Table 4-1 of the RWQMP details corrective actions for critical control point and critical operational point exceedances. Operational corrections are mainly auto shutdowns.

Veolia sends Hunter Water a daily summary of all the alarms at the WWTW, including recycled water, demonstrating operational monitoring is undertaken and corrective actions taken.<sup>254,255</sup>

*Equipment capability and maintenance*

In order to ensure online instruments are working correctly they require regular calibration. During the interview VAMS was interrogated and the monthly clean and calibrate work order (WO No. 005867895) was reviewed for Farley RWTP. As part of the evidence, details of the all of the preventive maintenance for Farley RWTP were provided.<sup>256</sup>

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<sup>249</sup> Document: 3.2.2-AGWR-03-E-008 Dora Ck WWTW CCP Breach 9-2-20 - HW Report.pdf.

<sup>250</sup> Document: 3.2.2-AGWR-04-E-012 MAN-2962-2 Farley WWTW Plant Operating Manual Draft.docx.

<sup>251</sup> Document: 3.2.2-AGWR-04-E-001 Chisholm and Gillieston Heights Recycled Water Quality Management Plan.docx.

<sup>252</sup> MS Excel workbook: 3.2.2-AGWR-04-E-011 FarleyRWTPWorksheet.xlsx.

<sup>253</sup> MS Excel workbook: SE-048 - Envirosys 1 Nov 2019 - 31 Oct 2020 for Farley scheme.xlsx.

<sup>254</sup> Document: 3.2.2-AGWR-03-E-005 SCADA WWTW Alarms CCP and EPA Compliance 20200721 Email.pdf.

<sup>255</sup> Document: 3.2.2-AGWR-03-E-004 SCADAWWTW Alarms CCP and EPA Compliance 20200721 Report.pdf.

<sup>256</sup> Document: 3.2.2-AGWR-04-E-017 Farley RWTP PMs.



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### *Materials and chemicals*

To demonstrate the chemical delivery process, the Work Instructions for the ordering, delivery, testing of the following chemicals used at Farley RWTP were provided:

- sodium hydroxide;<sup>257</sup>
- citric acid;<sup>258</sup>
- aluminium chlorohydrate;<sup>259</sup> and
- sodium hypochlorite.<sup>260</sup>

Chemical deliveries are recoded in the RWTP Worksheet.<sup>261</sup>

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### ***Element 5 – Verification of recycled water quality and environmental performance:***

Hunter Water is required to fulfil the requirements of Element 5 of the RWQMS. Hunter Water was found to be Compliant with minor shortcomings for this AGWR element. It was identified that internal procedures were not consistently followed for the documentation and management of water quality issues.

#### *Recycled water quality monitoring*

The *Recycled Water Quality Monitoring Plan*<sup>262</sup> details the monitoring requirements for each of the schemes. Additional monitoring is also identified in the scheme specific RWQMP. Data is stored in Envirosys and the Plant Worksheet.<sup>263</sup>

Veolia provides Hunter Water with weekly reports detailing sample results for the required quality parameters.<sup>264,265</sup>

#### *Application site and receiving environment monitoring*

As recycled water not intended to be released to the environment or water courses, there is no environmental monitoring as part of this plan.

#### *Documentation and reliability*

The laboratory used for verification monitoring is NATA certified and the details of the monitoring are documented in the *Recycled Water Quality Monitoring Plan*.

#### *Satisfaction of users of recycled water*

There have been some issues with water pressure in the new recycled water areas. Evidence has been supplied showing a sample complaint record and the subsequent investigation into water pressure in the street.<sup>266</sup> The pressure was improved as a result of the corrective action and the complaint resolved.

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<sup>257</sup> Document: 3.2.2-AGWR-04-E-013 WIS-2985-2 HW - Sodium Hydroxide (Caustic Soda) Solution Ordering, Delivery, Testing.docx.

<sup>258</sup> Document: 3.2.2-AGWR-04-E-014 WIS-2978-2 HW - Citric Acid 50% Solution Ordering, Delivery, Testing.docx.

<sup>259</sup> Document: 3.2.2-AGWR-04-E-015 WIS-13935-1 HW - Aluminium Chlorohydrate Ordering, Delivery, Testing.docx.

<sup>260</sup> Document: 3.2.2-AGWR-04-E-016 WIS-2986-2 HW - Sodium Hypochlorite Chemical Ordering, Delivery, Testing.docx.

<sup>261</sup> MS Excel workbook: 3.2.2-AGWR-05-E-017 FarleyRWTPWorksheet.xlsx.

<sup>262</sup> Document: 3.2.2-AGWR-05-E-018 Recycled Water Quality Monitoring Plan.docx.

<sup>263</sup> MS Excel workbook: 3.2.2-AGWR-05-E-017 FarleyRWTPWorksheet.xlsx.

<sup>264</sup> Document: 3.2.2-AGWR-05-E-015 Corporate Mail - Dual Reticulation Weekly Recycled Water Report 08\_07\_2020.pdf.

<sup>265</sup> MS Excel workbook: 3.2.2-AGWR-05-E-016 Dual Reticulation Recycled Water Report 20200708.xlsx.

<sup>266</sup> Email correspondence: SE-056 - Example LWP Complaint.msg.

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### *Short-term evaluation of results*

The Plant Worksheet<sup>267</sup> contains the verification data and it is capable of sending an alert email. Veolia also sends a recycled *Water Quality Incident Form*<sup>268</sup> to Hunter Water. Veolia also sends a weekly summary report of the verification and operational data.<sup>269,270</sup>

### *Corrective responses*

Over the audit period there were two detections of *Clostridium perfringens*, one in the Morpeth product water tank and one in the Farley product water tank; there was also one high HPC result in the Chisholm reticulation. The causes of the *Clostridium perfringens* detections have not been identified. Both were reported, recorded and investigated as follows:

- Recorded in Integrum;<sup>271,272</sup>
- Morpeth detection was notified to NSW Health, but the date of the notification to NSW Health was not recorded in Integrum for incident CLAN-5D80AA, but was in the investigation report;<sup>273</sup> and
- Farley detection was reported to NSW Health as recoded in the Integrum report. However, there does not appear to be an investigation report.

Based on the evidence provided, it cannot be determined that the *Procedure – Dual Reticulation Recycled Water Quality Microbiological Exception Reporting*<sup>274</sup> was followed. It is unclear if the exception report refers to the Integrum record or a separate reporting process. The Integrum form appears to have been completed in an *ad hoc* fashion with all the detail in supporting email and documents. This makes it difficult to determine if the correct process has been followed.

As previously reported, Integrum is no longer supported by the developer and is being replaced by a new system, Watershed. Nonetheless, the manner in which issues are reported and managed needs to be reviewed. Reporting of issues should be consistent and should clearly follow the required process to ensure that they are managed correctly and closed out.

**REC-HWC-2020-03:** By 31 October 2021, Hunter Water should review the manner in which water quality issues are documented and reported so as to ensure that they are managed and closed out in a consistent manner.

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### ***Element 6 – Management of incidents and emergencies:***

Hunter Water is required to fulfil the requirements of Element 6 of the RWQMS. Hunter Water was found to be fully compliant with the requirements of this AGWR Element.

### *Communication*

The *Corporate Emergency Management Plan*<sup>275</sup> was last updated in September 2020 and the contacts within the plan are comprehensive and thorough.

Hunter Water has a list of stakeholders for recycled water, including customers. The stakeholder list for Thornton North was provided as an example.<sup>276</sup>

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<sup>267</sup> MS Excel workbook: 3.2.2-AGWR-05-E-017 FarleyRWTPWorksheet.xlsx.

<sup>268</sup> Document: SE-049 TO 055 Morpeth PWT-a 0605-RW-MOR.PDF.

<sup>269</sup> Document: 3.2.2-AGWR-05-E-015 Corporate Mail - Dual Reticulation Weekly Recycled Water Report 08\_07\_2020.pdf.

<sup>270</sup> MS Excel workbook: 3.2.2-AGWR-05-E-016 Dual Reticulation Recycled Water Report 20200708.xlsx.

<sup>271</sup> Document: SE-049 TO 055 Morpeth PWT-b CLAN-5D80AA.pdf.

<sup>272</sup> Document: SE-049 TO 055 Farley PWT-g KDEL-3D241D.pdf.

<sup>273</sup> Document: SE-049 TO 055 Morpeth PWT-c Clostridium Detect Morpeth RWTP 22 July 2020 Report.pdf.

<sup>274</sup> Document: 3.2.2-AGWR-05-E-003 Dual Reticulation Recycled Water Exception Reporting procedure.DOCX.

<sup>275</sup> Document: 3.1.1-ADWG-06-E-001 HW2007-900 27 1.013 Corporate Emergency Management Plan.PDF.

<sup>276</sup> MS Excel workbook: 3.2.2-AGWR-06-E-001 Thornton North Stakeholder list.XLSX.

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### *Incident and emergency response protocols*

There were four incidents reported during the audit period:<sup>277</sup>

- Elevated HPC and *E. coli* detection at Chisholm;
- Recycled water supplied during a bypass event at Dora Creek;
- *Clostridium perfringens* at Morpeth RWTP product water tank; and
- *Clostridium perfringens* at Farley RWTP product water tank.

The Veolia<sup>278</sup> and Hunter Water<sup>279</sup> reports for Dora Creek were provided as evidence. Hunter Water uses Integrum to track incidents, as discussed in Element 5; Veolia uses a system called Rivo.<sup>280</sup> The appropriate procedure appears to have been followed in relation to this issue.

The monitoring exceptions are discussed in Element 5. An issue with reporting was identified and it has been followed up in that element.

During the audit period a mock incident exercise was undertaken. This was undertaken for dual reticulation issues, a water quality exception report and a potential cross connection. Exercise presentations,<sup>281,282</sup> attendance sheet<sup>283</sup> and exercise report<sup>284</sup> were provided as evidence.

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### ***Element 8 – Community involvement and awareness:***

Hunter Water is required to fulfil the requirements of Element 8 of the RWQMS. Hunter Water was found to be fully compliant with the requirements of this AGWR Element.

#### *Consultation with users of recycled water and the community*

The Consultation Manager<sup>285</sup> software is being used to manage consultation.

The Your Voice website is used to get community feedback on projects. The Thornton project currently has a page.<sup>286</sup> There are other potential projects that Hunter Water is seeking feedback on before commencing, such the Edgeworth Sports Ground – recycled water irrigation.<sup>287</sup>

#### *Communication and education*

There is recycled water educational material on the Hunter Water website.<sup>288</sup>

Recycled water is being supplied to Thornton North and some customers have been affected by the construction. Letters have been sent out to those impacted:

- Recycled water owners;<sup>289</sup>
- Properties on route;<sup>290</sup>
- Occupiers recycled water;<sup>291</sup>

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<sup>277</sup> MS Excel workbook: 3.2.2-AGWR-06-E-004 *Integrum spreadsheet export.xlsx*.

<sup>278</sup> Document: 3.2.2-AGWR-06-E-006 *Dora Ck WWTW CCP Breach 9-2-20 - Veolia Report.pdf*.

<sup>279</sup> Document: 3.2.2-AGWR-06-E-005 *Dora Ck WWTW CCP Breach 9-2-20 - HW Report.pdf*.

<sup>280</sup> Document: SE-058 - *Element 6 Rivo Evidence Screenshot and Report.pdf*.

<sup>281</sup> PowerPoint presentation: 3.2.2-AGWR-06-E-010 *Presentation #1\_ Recycled Water Mock Incident Exercise (Dual Reticulation Recycled Water Quality).PPTX*.

<sup>282</sup> PowerPoint presentation: 3.2.2-AGWR-06-E-009 *Presentation # 2\_ Recycled Water Mock Incident Exercise (Customer Notification).PPTX*.

<sup>283</sup> Document: 3.2.2-AGWR-06-E-008 *Attendance Sheet.PDF*.

<sup>284</sup> Document: 3.2.2-AGWR-06-E-007 *Exercise 1 & 2 Report.DOCX*.

<sup>285</sup> Image: 3.2.2-AGWR-08-E-001 *SCREENSHOT – Consultant Manager.JPG*.

<sup>286</sup> Webpage: <https://yourvoice.hunterwater.com.au/throsby-creek-government-agencies-committee>.

<sup>287</sup> Webpage: <https://yourvoice.hunterwater.com.au/edgeworth>.

<sup>288</sup> Webpage: <https://www.hunterwater.com.au/our-water/sustainability/recycling-and-reuse>.

<sup>289</sup> Letter: 3.2.2-AGWR-08-E-003 *Letter - Early Work advice to community \_ Thornton Recycled Pipeline\_FINAL - Recycled Water owners.pdf*.

<sup>290</sup> Letter: 3.2.2-AGWR-08-E-004 *Letter - Early Work advice to community \_ Thornton Recycled Pipeline\_FINAL - Properties on route .pdf*.

- 
- Occupiers on route;<sup>292</sup> and
  - Construction impact customers.<sup>293</sup>
- 

### ***Element 12 – Review and continuous improvement:***

Hunter Water is required to fulfil the requirements of Element 12 of the RWQMS. Hunter Water was found to be Compliant with minor shortcomings for this AGWR element. The RWQMP is currently not included in the management review and at the time of the audit the *Recycled Water Quality Improvement Plan* was not current.

#### *Review by senior managers*

An annual Integrated Management System Review Meeting is held with the Executive Management Team. It would appear that recycled water is not part of this review. It is a requirement of the AGWR that the highest level of the organisation should review the effectiveness of the RWQMP. It is noted that the DWQMP is discussed at this meeting.

The Water Quality Committee plays an important role in overseeing the recycled water quality management and meets monthly.<sup>294</sup> In addition, the NSW Health Liaison group meets quarterly.<sup>295,296,297</sup>

**REC-HWC-2020-04:** Hunter Water should review the effectiveness of the *Recycled Water Quality Management Plan* at each Integrated Management System Review Meeting. This action should be implemented from the next scheduled Integrated Management System Review Meeting (nominally by 30 June 2021).<sup>298</sup>

#### *Recycled water quality management improvement plan*

The *Recycled Water Quality Improvement Plan*<sup>299</sup> is used to track improvement from risk assessments and other sources. This is out of date and is currently being updated and the new draft plan has been supplied as evidence.<sup>300,301</sup> The improvement plan is reviewed at the NSW Liaison Committee quarterly meeting.<sup>302</sup>

At the time of the audit there were a number of items that were either at risk or already overdue. These include a network control procedure to mitigate cross connections and development of a pressure monitoring program to reduce the risk of cross connections.

**REC-HWC-2020-05:** By 31 March 2021, Hunter Water should ensure that the *Improvement Plan Water Quality Management System* is monitored and tasks that are ‘at risk’ are picked up at an appropriate time to action them before the due date.

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<sup>291</sup> Letter: 3.2.2-AGWR-08-E-005 Letter - Early Work advice to community \_ Thornton Recycled Pipeline\_FINAL - Occupiers Recycled water.pdf.

<sup>292</sup> Letter: 3.2.2-AGWR-08-E-006 Letter - Early Work advice to community \_ Thornton Recycled Pipeline\_FINAL - Occupiers on route.pdf.

<sup>293</sup> Letter: 3.2.2-AGWR-08-E-007 Letter - Early Work advice to community \_ Thornton Recycled Pipeline\_FINAL - Construction Impact cus.pdf.

<sup>294</sup> Document: 3.1.2-ADWG-12-E-003 HW2006-1417 33 11.011 Minutes - August 2020 Water Quality Committee.DOC.

<sup>295</sup> Document: 3.2.2-AGWR-12-E-003 Hunter Water NSW Health Liaison Committee Meeting 3 June 2020.DOCX.

<sup>296</sup> Document: 3.2.2-AGWR-12-E-004 Hunter Water NSW Health Liaison Committee Meeting Dec 2019.DOCX.

<sup>297</sup> Document: 3.2.2-AGWR-12-E-005 Hunter Water NSW Health Liaison Committee Meeting March 2020.DOCX.

<sup>298</sup> It is noted that the last Integrated Management System Review Meeting was held in May 2020.

<sup>299</sup> MS Excel workbook: 3.2.2-AGWR-12-E-006 Recycled Water Improvement Plan.XLSX.

<sup>300</sup> Document: SE-063a - Improvement Plan Water Quality Management System.pdf.

<sup>301</sup> Document: SE-063b - Improvement Plan Water Quality Management System.docx.

<sup>302</sup> Document: 3.2.2-AGWR-12-E-003 Hunter Water NSW Health Liaison Committee Meeting 3 June 2020.DOCX.

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## Recommendations

The following recommendations are made in respect of this obligation:

- **REC-HWC-2020-03:** By 31 October 2021, Hunter Water should review the manner in which water quality issues are documented and reported so as to ensure that they are managed and closed out in a consistent manner.
- **REC-HWC-2020-04:** Hunter Water should review the effectiveness of the *Recycled Water Quality Management Plan* at each Integrated Management System Review Meeting. This action should be implemented from the next scheduled Integrated Management System Review Meeting (nominally by 30 June 2021).
- **REC-HWC-2020-05:** By 31 March 2021, Hunter Water should ensure that the *Improvement Plan Water Quality Management System* is monitored and tasks that are ‘at risk’ are picked up at an appropriate time to action them before the due date.

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## Opportunities for improvement

The following opportunities for improvement have been identified in respect of this obligation:

- **OFI-HWC-2020-09:** Mark unused fields in the risk assessment as not applicable.
- **OFI-HWC-2020-10:** Include the use of differential pressure and electrical conductivity as preventive measures for cross-connection in the next review of the risk assessment.
- **OFI-HWC-2020-11:** Consider making the CCP SCADA limits consistent with documentation, even if they are tighter. The SCADA set points at the Farley RWTP do not match those in the risk management plans. Multiple versions of limits make it more complex to control and creates more set points to manage.

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## Supplemental information


No supplemental information is provided in respect of this obligation.

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## 2.4 Compliant

### 2.4.1 Supply services and performance standards – Drinking Water (clause 3.1)

#### 2.4.1.1 Drinking Water (sub-clause 3.1.1)

Sub-clause	Requirement	Compliance Grade
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 <b>Drinking Water Quality Management System</b>).</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>	 <b>Compliant</b>

#### Risk

Without a comprehensive and effectively implemented Drinking Water Quality Management System, there is a high risk that Hunter Water may not be able to effectively manage risks to drinking water quality and protect public health.

#### Target for Full Compliance

Evidence that a Drinking Water Quality Management System is established, maintained and kept up to date, and that it is consistent with the *Australian Drinking Water Guidelines*, and any additional requirements of NSW Health.

#### Obligation

This obligation requires Hunter Water to maintain a Drinking Water Quality Management System that is consistent with the requirements of the *Australian Drinking Water Guidelines*,<sup>303</sup> subject to any specific requirements of NSW Health.

#### Summary of reasons for grade

Hunter Water has demonstrated compliance with audited elements of the *Australian Drinking Water Guidelines*. It is also evident that there has been an ongoing process of improvement. In particular there have been notable improvements in the risk assessment methodology and coordination of stakeholders. There were some opportunities for improvements identified but these were considered to be very minor in nature and did not impact upon compliance.

<sup>303</sup> NHMRC. *Australian Drinking Water Guidelines 2011*.



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## Discussion and notes

Maintenance of the Drinking Water Quality Management System (DWQMS) consistent with each audited *Australian Drinking Water Guidelines* (ADWG) Element is discussed below.<sup>304</sup>

It is noted that evidence referenced relates primarily to the Grahamstown, Anna Bay and Nelson Bay Water Treatment Plants (WTPs) as these sites were inspected as part of the audit.

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### ***Element 1 – Commitment to drinking water quality management:***

Hunter Water is required to fulfil the requirements of Element 1 of the DWQMS. The ADWG require organisational support and long-term commitment by senior executive to support an effective drinking water quality management plan (DWQMP). This is to be demonstrated through a drinking water policy, adherence to regulatory and formal requirements and the engagement of stakeholders. Hunter Water was found to be fully compliant with the requirements of this element.

#### *Drinking Water Policy*

Hunter Water has a drinking water policy,<sup>305</sup> which is consistent with the ADWG. The policy has been signed by the Managing Director. The policy was due for review in June 2020, the policy was approved in October 2020.

#### *Regulatory and Formal Requirements*

Hunter Water has a procedure<sup>306</sup> for identifying and managing legal and other requirements. Details of the requirements are in two registers, one for reporting<sup>307</sup> and one for legal and other requirements,<sup>308</sup> which appears to contain the relevant legal requirements. An MS Excel spreadsheet Compliance Calendar<sup>309</sup> is used to track compliance requirements.

#### *Engaging Stakeholders*

The ADWG require that stakeholders who could affect, or be affected by, decisions or activities of the drinking water supplier are identified, appropriate mechanisms are developed for their involvement and the list is regularly updated. Key stakeholders for drinking water quality have been identified and summarised in the DWQMS manual<sup>310</sup> including references to contact details and the basis of the relationship. This is an improvement from the last audit. For emergency communications, the *Emergency Management Plan*<sup>311</sup> contains the stakeholder list which is reviewed according to the Business Resilience Calendar.<sup>312</sup> The *Emergency Response Communications Plan*<sup>313</sup> links to useful documents and information required in an incident response. Individual contact detail registers are also maintained for other key stakeholders, including the Treatment Operations Contractor<sup>314</sup> and ALS staff.<sup>315</sup> Contact details for all contractors and suppliers are maintained on Hunter Water's Ellipse system.

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<sup>304</sup> The audit scope was limited to Elements 1, 2, 3, 4, 5, 6, 8, 10 and 12 of the ADWG.

<sup>305</sup> Document: 3.1.1-ADWG-01-E-001 HW2006-2968 41 44.001 Policy - Drinking Water Policy.PDF.

<sup>306</sup> Document: 3.1.1-ADWG-01-E-002 HW2012-441 23 1.029 Procedure - Managing Legal and Other Requirements.DOC.

<sup>307</sup> MS Excel workbook: 3.1.1-ADWG-01-E-003 HW2013-421 9.007 Register - Summary of Corporate Reporting Requirements.XLS.

<sup>308</sup> MS Excel workbook: 3.1.1-ADWG-01-E-004 HW2013-421 9.006 Register - Legal and Other Requirements – Quality.XLS.

<sup>309</sup> MS Excel workbook: 3.1.1-ADWG-01-E-005 HW2012-778 93.001 Compliance Calendar MASTERFILE.XLS.

<sup>310</sup> Document: 3.1.1-ADWG-01-E-011 HW2015-1303 9.001 Report - Hunter Water Drinking Water Quality Management System.PDF.

<sup>311</sup> Document: 3.1.1-ADWG-01-E-006 HW2007-900 27 1.013 Corporate Emergency Management Plan.PDF.

<sup>312</sup> MS Excel workbook: 3.1.1-ADWG-01-E-008 HW2019-620 21.001 Business Resilience Yearly Event Calendar Schedule 2020.XLS.

<sup>313</sup> Document: 3.1.1-ADWG-01-E-007 HW2011-662 14 5.007 Procedure - Emergency Communications Plan.DOC.

<sup>314</sup> MS Excel workbook: 3.1.1-ADWG-01-E-009 HW2014-778 35.005 Data - Veolia Staff Contact Details.XLS.

<sup>315</sup> Document: 3.1.1-ADWG-01-E-010 HW2015-108 4.001 Register - ALS Mayfield West - Contact Details.DOC.

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### ***Element 2 – Assessment of the drinking water supply system:***

Hunter Water is required to fulfil the requirements of Element 2 of the DWQMS. The ADWG require that Hunter Water documents pertinent information about the drinking water supply system, assesses long-term water quality and undertakes hazard identification and risk assessment. Hunter Water was found to be fully compliant with the requirements of this element.

#### *Water Supply System Analysis*

Risk assessments were undertaken for the Grahamstown, Anna Bay and Nelson Bay Water Treatment Plants (WTPs) within the audit period.

An appropriate risk assessment team was assembled, which is detailed in the *Anna Nelson Bay WTP Assessment Summary Report*<sup>316</sup> and *Grahamstown WTP Risk Assessment Summary Report*.<sup>317</sup> These reports also include pertinent details of the supply systems, including details of the raw water supplies and treatment processes. Additional details of the network are provided to the extent of supporting the WTP risk assessment.

Process Flow Diagrams have been prepared for each WTP. Flow diagrams were provided for Grahamstown,<sup>318</sup> Nelson Bay<sup>319</sup> and Anna Bay.<sup>320</sup> These diagrams show critical control points (CCP), area of responsibility, online monitoring, chemical dosing, and process flow.

#### *Assessment of Water Quality Data*

Historical water quality trends, exceedances and basic statistics are provided for the WTPs in the risk assessment summary reports.<sup>316,317</sup> The reports include data from the last five years. The information was prepared prior to the risk assessment workshops.

#### *Hazard Identification and Risk Assessment*

Hunter Water has a corporate risk assessment methodology that is applied to all risk assessments, the *Enterprise Risk Assessment Framework*.<sup>321</sup> The framework includes definitions for consequence, likelihood, a risk matrix as well as risk appetite. Specific action is required, based on the level of controlled risk. Risk assessments for WTPs include identification of catchment and network handover risks to ensure a catchment to tap process has been followed. A catchment to tap risk assessment guideline has been prepared to clearly articulate the process.<sup>322</sup>

Risk assessments were provided for Anna and Nelson Bay<sup>323</sup> and Grahamstown.<sup>324</sup> These risk assessments were completed within the audit period. A new template was utilised for the assessment and it is considerably clearer than the previous template and meets all the requirements of the ADWG.

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### ***Element 3 – Preventive measures for drinking water quality management:***

Hunter Water is required to fulfil the requirements of Element 3 of the DWQMS. The ADWG require that Hunter Water has preventive measures and multiple barriers in place to prevent hazardous events or reduce them to acceptable levels of risk. From these barriers and preventive measures, CCPs are to be identified which are essential to prevent a hazard or reduce it to an acceptable level of risk. Hunter Water was found to be fully compliant with the requirements of

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<sup>316</sup> Document: 3.1.1-ADWG-02-E-005 HW2015-1365 18.006 *Anna Nelson Bay WTP Risk Assessment Summary Report*.PDF.

<sup>317</sup> Document: 3.1.1-ADWG-02-E-004 HW2015-1365 18.010 *Grahamstown WTP Risk Assessment Summary Report*.PDF.

<sup>318</sup> Document: 3.1.1-ADWG-02-E-001 HW2015-705 1.003 *Plan - Grahamstown WTP - Flow Diagram*.PDF.

<sup>319</sup> Document: 3.1.1-ADWG-02-E-003 HW2015-705 1.006 *Plan - Nelson Bay WTP - Flow Diagram*.PDF.

<sup>320</sup> Document: 3.1.1-ADWG-02-E-002 HW2015-705 1.001 *Plan - Anna Bay WTP - Flow Diagram*.PDF.

<sup>321</sup> Document: 3.1.1-ADWG-02-E-008 HW2008-704 17.004 *Procedure Enterprise Risk Management Framework*.DOC.

<sup>322</sup> Document: 3.1.1-ADWG-02-E-009 HW2015-1303 6.002 *Report - Catchment to Tap Water Quality Risk Assessment Guideline*.DOC.

<sup>323</sup> MS Excel workbook: 3.1.1-ADWG-02-E-007 HW2015-1365 1.013 *Register – Anna Nelson Bay WTP Risk Assessment*.XLS.

<sup>324</sup> MS Excel workbook: 3.1.1-ADWG-02-E-006 HW2015-1365 1.002 *Register - Grahamstown WTP Risk Assessment*.XLS.



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this element.

#### *Preventive Measures and Multiple Barriers*

Preventive measures and barriers are identified for Hunter Water's Water Supply Systems as part of the risk assessment process; *Anna Nelson Bay WTP Assessment*<sup>325</sup> and *Grahamstown WTP Risk Assessment*<sup>326</sup> were provided as examples. The controls column in the risk register details preventive measures for each process step. Preventive measures for the plants are also detailed in the CCP Limit Tables.<sup>327,328,329</sup>

The Risk Summary Reports<sup>330,331</sup> discussed events which exceeded Hunter Water's risk appetite and proposed additional preventive measures or other appropriate mitigation to further reduce the risks.

#### *Critical Control Points*

CCPs have been identified and are detailed in the CCP Limit Tables for the treatment plants; the Anna Bay WTP,<sup>332</sup> Nelson Bay WTP<sup>333</sup> and Grahamstown<sup>334</sup> CCP Limit Tables have been provided. These documents provide the information for CCPs as required in the ADWG. The CCPs have been agreed upon with NSW Health; there are new disinfection CCPs, which are currently being rolled out in accordance with improvement item 260.<sup>335</sup> Anna Bay is one of the plants to have its SCADA revised, a change form<sup>336</sup> has been provided as an example. It was noted that the auto shutdown on the CWT outlet for turbidity at Anna Bay is <2.5NTU. This would seem to be inconsistent with the chlorine disinfection requirements of the ADWG of <1NTU at the point of disinfection. There is another auto shutdown on the raw water turbidity at <1NTU, which is why this has not been marked as non-compliant.

If there is an excursion from a CCP, critical limit actions are undertaken in accordance with the *CCP Exceedance Response Plan*.<sup>337</sup> Hunter Water is required to notify NSW Health immediately of any information or event that may adversely impact public health.<sup>338</sup>

**OFI-HWC-2020-01:** Revise the Anna Bay WTP CWT outlet turbidity CCP to be consistent with the ADWG requirement of <1NTU or validate disinfection at the higher turbidity, if required.

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#### ***Element 4 – Operational procedures and process control:***

Hunter Water is required to fulfil the requirements of Element 4 of the DWQMS. The ADWG require that Hunter Water has appropriate process control, which is achieved through the documentation of procedures, monitoring program, and corrective actions in response to excursions. In addition, this element requires confirmation that equipment is capable of operating safely and maintained and that appropriate chemicals and materials are being used in the water supply system. Hunter Water was found to be fully compliant with the requirements of this element.

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<sup>325</sup> MS Excel workbook: 3.1.1-ADWG-02-E-007 HW2015-1365 1.013 Register – Anna Nelson Bay WTP Risk Assessment.XLS.

<sup>326</sup> MS Excel workbook: 3.1.1-ADWG-02-E-006 HW2015-1365 1.002 Register - Grahamstown WTP Risk Assessment.XLS.

<sup>327</sup> Document: 3.1.1-ADWG-03-E-003 HW2014-778 15 2.006 Register - Grahamstown WTP CCP Limit Table.PDF.

<sup>328</sup> Document: 3.1.1-ADWG-03-E-004 HW2014-778 15 2.004 Register – Anna Bay WTP CCP Limit Table.PDF.

<sup>329</sup> Document: 3.1.1-ADWG-03-E-005 HW2014-778 15 2.009 Register – Nelson Bay WTP CCP Limit Table.PDF.

<sup>330</sup> Document: 3.1.1-ADWG-03-E-001 HW2015-1365 18.010 Grahamstown WTP Risk Assessment Summary Report.PDF.

<sup>331</sup> Document: 3.1.1-ADWG-03-E-002 HW2015-1365 18.006 Anna Nelson Bay WTP Risk Assessment Summary Report.PDF.

<sup>332</sup> Document: 3.1.1-ADWG-03-E-004 HW2014-778 15 2.004 Register – Anna Bay WTP CCP Limit Table.PDF.

<sup>333</sup> Document: 3.1.1-ADWG-03-E-005 HW2014-778 15 2.009 Register – Nelson Bay WTP CCP Limit Table.PDF.

<sup>334</sup> Document: 3.1.1-ADWG-03-E-003 HW2014-778 15 2.006 Register - Grahamstown WTP CCP Limit Table.PDF.

<sup>335</sup> Document: 3.1.2-ADWG-12-E-007 DWQIP Extract - Open Actions.pdf.

<sup>336</sup> Document: 3.1.2-ADWG-03-E-008 HW2014-778 27 2.538 Form - SC0570-W-ANN.PDF.

<sup>337</sup> Document: 3.1.1-ADWG-03-E-006 HW2014-778 15 2.001 Plan - Veolia CCP Exceedance Response.PDF.

<sup>338</sup> Document: 5.9.1-E-001 HW2006-1448/6/7.013 MOU Between NSW Health and Hunter Water Corporation.PDF.

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### *Operational Procedures*

Operational procedures for the WTPs are available through Hunter Water's 'Reservoir' and Veolia's 'Hunter Water Portal' intranet workspaces. Both document management systems were observed during the audit, TRIM and BMS respectively. Veolia has changed systems since the last audit; they were using a SharePoint library and now they use BMS, which is Google based. All relevant staff have access to these systems.

Procedures have been compiled into a manual for each WTP. The Grahamstown WTP,<sup>339</sup> Nelson Bay WTP<sup>340</sup> and Anna Bay WTP<sup>341</sup> Operating Manuals were provided as evidence. These are detailed operational procedures covering plant operations during normal and abnormal events.

Procedures for the distribution network are available through the 'OurSafety'<sup>342</sup> and the 'Asset Operations'<sup>343</sup> intranet web pages. These were viewed during the audit.

### *Operational Monitoring*

The CCP Tables<sup>344,345,346</sup> for each plant detail the operational envelopes, critical limits, critical operational points (COP) and other monitoring, including grab sampling. They also specify the location, if the monitoring is online and continuous, or grab samples, and the frequency of non-continuous sampling. In addition to this, Hunter Water has a detailed monitoring plan<sup>347</sup> that includes operational and verification monitoring, undertaken by Veolia and ALS.

The plant spreadsheets<sup>348,349,350</sup> detail the grab sample monitoring that operators are required to undertake using the Daily and Weekly Datasheets.

### *Corrective Action*

Corrective actions at the WTP are undertaken in accordance with the *Veolia CCP Exceedance Response Plan*.<sup>351</sup> This plan details the responses to be undertaken when the CCP limits are exceeded (alert and critical), as well as action to be taken if the limits for the COPs are exceeded. Details of notifications are also included in this plan.

Operational data is entered into the plant spreadsheets with conditional formatting to change cell colour to identify out of specification results. The spreadsheet is also capable of sending an email to the supervisor group for out of specification results. Online instrument alarms are sent through the SCADA system. Hunter Water records CCP exceedances in Integrum.<sup>352</sup>

### *Equipment Capability and Maintenance*

Maintenance for WTPs is managed by Veolia using the Veolia Asset Management System (VAMS) to ensure that assets operate to the required level of performance. Maintenance scheduling on the distribution system is managed using Hunter Water's corporate asset management system (Ellipse/AOMS). Maintenance schedules were observed during the interviews and, based on the sample observed, appeared to be appropriate. Asset management is

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<sup>339</sup> Document: 3.1.1-ADWG-04-E-001 MAN-2963-3 HW - Grahamstown WTP Plant Operating Manual.PDF.

<sup>340</sup> Document: 3.1.1-ADWG-04-E-003 MAN-2970-1 HW - Nelson Bay WTP Plant Operating Manual.PDF.

<sup>341</sup> Document: 3.1.1-ADWG-04-E-002 MAN-2951-2 HW - Anna Bay WTP Plant Operating Manual.PDF.

<sup>342</sup> Image: 3.1.1-ADWG-04-E-004 Screenshot OurSafety Intranet Page.JPG.

<sup>343</sup> Image: 3.1.1-ADWG-04-E-005 Asset Operation Intranet Page.JPG.

<sup>344</sup> Document: 3.1.1-ADWG-03-E-003 HW2014-778 15 2.006 Register - Grahamstown WTP CCP Limit Table.PDF.

<sup>345</sup> Document: 3.1.1-ADWG-03-E-004 HW2014-778 15 2.004 Register - Anna Bay WTP CCP Limit Table.PDF.

<sup>346</sup> Document: 3.1.1-ADWG-03-E-005 HW2014-778 15 2.009 Register - Nelson Bay WTP CCP Limit Table.PDF.

<sup>347</sup> Document: 3.1.1-ADWG-05-E-001 HW2006-2906 2 6.006 Water Quality Monitoring Plan.DOC.

<sup>348</sup> MS Excel workbook: 3.1.2-ADWG-03-E-015 HW2014-1579 2.004 Data - Grahamstown WTP.XLS.

<sup>349</sup> MS Excel workbook: 3.1.2-ADWG-04-E-003 HW2014-1579 2.001 Data - Nelson Bay WTP.XLS.

<sup>350</sup> MS Excel workbook: 3.1.2-ADWG-03-E-016 HW2014-1579 2.007 Data - Anna Bay WTP.XLS.

<sup>351</sup> Document: 3.1.1-ADWG-04-E-007 HW2014-778 15 2.001 Plan - Veolia CCP Exceedance Response.PDF.

<sup>352</sup> Document: 3.1.1-ADWG-06-E-001 HW2007-900 27 1.013 Corporate Emergency Management Plan.PDF.

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considered in depth in respect of Licence clause 4.1.2 (refer **Section 2.4.3.1**).

Maintenance with a frequency greater than a month is stored in VAMS. Plant spreadsheets<sup>353,354,355</sup> are used schedule the weekly internal calibration work. The external calibration of monitoring equipment is stored in VAMS.

#### *Chemicals and Materials*

Hunter Water has approved suppliers for materials and chemicals who are selected through a market tender process managed by the Procurement team. The contract with Ixom Operations Pty Ltd<sup>356</sup> for the supply of chlorine gas and sodium hypochlorite was provided as evidence.

Hunter Water has a list of suppliers for each product<sup>357</sup> and there is a procedure in place for receiving and assessing chemicals delivered to the treatment plants.<sup>358</sup> Details of deliveries are recorded in the plant spreadsheets.

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#### ***Element 5 – Verification of drinking water quality:***

Hunter Water is required to fulfil the requirements of Element 5 of the DWQMS. The ADWG require Hunter Water to prepare a monitoring program to verify the quality of drinking water. Verification is to include customer satisfaction, the evaluation of results and appropriate corrective action to out of specification results. Hunter Water was found to be fully compliant with the requirements of this element.

#### *Drinking Water Quality Monitoring*

Verification monitoring is detailed in the *Water Quality Monitoring Plan*,<sup>359</sup> which has the location, frequency and parameters to be monitored. ALS undertakes verification monitoring on behalf of Hunter Water. Veolia also undertakes some of the verification monitoring at the WTPs. The monitoring plan specifies monitoring undertaken by both ALS and Veolia. This is the minimum requirement; more monitoring may be undertaken if there is a business need. The *Water Quality Monitoring Plan* meets the requirements of the ADWG.

Verification monitoring is stored in the Envirosys database.

#### *Consumer Satisfaction*

Complaints are handled in accordance with the *Customer Complaints Handling Guidelines*<sup>360</sup> by the Customer Care and Complaints Team. Complaints are recorded into AOMS (Asset Operations Maintenance System) with more complex cases being managed under a dedicated Case Management System. A summary of customer complaint information is reported monthly to the Board and to the Water Quality Committee.

#### *Short-term Evaluation of Results*

Under its service contract, ALS is required to contact Hunter Water by email and phone within 2 hours of the results of any health-based exceedances being identified and confirmed. Veolia is also required to notify Hunter Water of any exceedances in accordance with the *CCP Exceedance Response Plan*.<sup>361</sup>

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<sup>353</sup> MS Excel workbook: 3.1.2-ADWG-03-E-015 HW2014-1579 2.004 Data - Grahamstown WTP.XLS.

<sup>354</sup> MS Excel workbook: 3.1.2-ADWG-04-E-003 HW2014-1579 2.001 Data - Nelson Bay WTP.XLS.

<sup>355</sup> MS Excel workbook: 3.1.2-ADWG-03-E-016 HW2014-1579 2.007 Data - Anna Bay WTP.XLS.

<sup>356</sup> Document: 3.1.1-ADWG-04-E-009 HW2006-2247 34 11.001 Agreement - Contract for Supply and Delivery of Bulk Chemicals - CS0525 IXOM.PDF.

<sup>357</sup> Image: 3.1.1-ADWG-04-E-011 Chemical supplier table.JPG.

<sup>358</sup> Document: 3.1.1-ADWG-04-E-012 PRO-6185-2 HW - WTP Bulk Chemical Ordering, Delivery and Quality Management.PDF.

<sup>359</sup> Document: 3.1.1-ADWG-05-E-001 HW2006-2906 2 6.006 Water Quality Monitoring Plan.DOC.

<sup>360</sup> Document: 3.1.1-ADWG-05-E-006 HW2015-1364 1 12.042 Customer Complaints Handling Guidelines.PDF.

<sup>361</sup> Document: 3.1.1-ADWG-05-E-005 HW2014-778 15 2.001 Plan - Veolia CCP Exceedance Response.DOC.

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Veolia prepares a monthly report that contains a summary of water quality data.<sup>362</sup> ALS also provides a monthly summary of water quality exceedances.<sup>363</sup>

The Water Quality Committee meets monthly to review water quality monitoring data, as well as performance, CCPs and incidents.<sup>364</sup> Water quality is also analysed on a quarterly basis for review by the NSW Health Liaison Committee.<sup>365</sup> A quarterly water quality report is prepared for these meetings.<sup>366</sup>

The *Monthly Network Operations Report*<sup>367</sup> provides a summary of water quality supplied to the customer.

Water quality reporting is scheduled through the standing agendas of the meetings at which the report is reviewed.

#### *Corrective Action*

Upon a non-conformance that is treatment related, Veolia follows the *CCP Exceedance Response Plan*,<sup>368</sup> which details the response to treatment issues.

Hunter Water's standard approach for managing incidents (or unexpected events including non-compliant results) specifies that significant incidents are reported to relevant stakeholders internally and externally, recorded and investigated.<sup>369</sup> There is a separate *Procedure to notify NSW Health of events with potential public health impact*.<sup>370</sup> Hunter Water has a procedure for *Water Quality Exception Reporting*,<sup>371</sup> which covers the process of actioning microbial water quality test exceptions. Issues are tracked using Integrum with an example provided.<sup>372</sup>

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#### ***Element 6 – Management of incidents and emergencies:***

Hunter Water is required to fulfil the requirements of Element 6 of the DWQMS. The ADWG require Hunter Water to have a considered and controlled response to incidents or emergencies. Protocols are required for clear internal and external communication and incident and emergency response. Hunter Water was found to be fully compliant with the requirements of this element.

#### *Communication*

The *Corporate Emergency Management Plan* (EMP)<sup>373</sup> provides the corporate level framework for the management and communication required for incidents and emergencies. It contains a list of key contacts for emergencies, internal and Veolia. The contacts in the plan are updated every six months; the review is scheduled in the *Business Resilience Yearly Event Calendar*.<sup>374</sup>

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<sup>362</sup> Document: 3.1.2-ADWG-04-E-021 HW2014-778 10 79.008 Extract from Veolia MCR CS0341 - June 2020.PDF.

<sup>363</sup> Email correspondence: 3.1.2-ADWG-05-E-001 HW2006-1417 33 9.004 Report - WQ Report May 2020.MSG.

<sup>364</sup> Document: 3.1.2-ADWG-12-E-003 HW2006-1417 33 11.011 Minutes - August 2020 Water Quality Committee.DOC.

<sup>365</sup> Document: 3.1.2-ADWG-12-E-005 HW2006-1448 59 3.011 Minutes - Hunter Water NSW Health Liaison Committee Meeting - 3 June 2020.DOC.

<sup>366</sup> Document: 3.1.1-ADWG-10-E-007 HW2006-1448 41 11.008 Report - Quarterly to NSW Health - Drinking Water and Recycled Water Quality Exceptions April to June 2020.DOC.

<sup>367</sup> Document: HW2006-1417 32 8.004 Network Operations Report – July 2019.

<sup>368</sup> Document: 3.1.1-ADWG-05-E-005 HW2014-778 15 2.001 Plan - Veolia CCP Exceedance Response.DOC.

<sup>369</sup> Document: 3.1.1-ADWG-05-E-002 HW2013-421 22.001 Standard - Management of hazards, incidents and non-conformances.DOC.

<sup>370</sup> Document: 3.1.1-ADWG-05-E-004 HW2006-2906 4 6.023 Procedure to notify NSW Health of events with potential public health impact.DOC.

<sup>371</sup> Document: 3.1.1-ADWG-05-E-003 HW2010-1986 8.023 Procedure - Water Quality Exception Reporting.DOC.

<sup>372</sup> Document: 3.1.1-ADWG-05-E-007 Example WQ incident record – Integrum.PDF.

<sup>373</sup> Document: 3.1.1-ADWG-06-E-001 HW2007-900 27 1.013 Corporate Emergency Management Plan.PDF.

<sup>374</sup> MS Excel workbook: SE-021 HW2019-620 21.001 Register - Business Resilience Yearly Event Calendar Schedule 2020.XLSX.

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In addition to the general notification protocols, there is the *NSW Health – notification procedure*<sup>375</sup> and *Notification Criteria*.<sup>376</sup> For issues that arise at the WTPs, Veolia has its emergency management documentation,<sup>377,378</sup> which contains notification requirements.

The *Emergency Response Communications Plan*<sup>379</sup> covers emergencies or major incidents. It identifies how a Communication Coordinator is responsible for handling internal and external communication and acts as a central location for links to useful documents and information required in an incident response.

#### *Incident and Emergency Response Protocols*

The EMP covers all of Hunter Water's area of operations. It includes criteria to determine what constitutes an emergency or major incident and provides guidance to respond. Roles and responsibilities are identified in the plan. It contains links to a number of checklists that would be useful in the instance of an incident or emergency to ensure that important issues do not get overlooked.

The plan steps through the stages of an incident from activation through to demobilisation and debrief. Hunter Water uses Integrum to track and record details of Minor and Moderate incidents. Major incidents and emergencies/crises require the establishment of an Incident Team and setup of the Incident Control Room.

A Business Resilience Training Needs analysis was undertaken for managing incidents and other issues.<sup>380</sup>

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### ***Element 8 – Community involvement and awareness:***

Hunter Water is required to fulfil the requirements of Element 8 of the DWQMS. The ADWG require that Hunter Water has a two-way communication program delivering both education and consultation. Hunter Water was found to be fully compliant with the requirements of this element.

#### *Community Consultation*

Hunter Water's 2017+3 Plan<sup>381</sup> provides a foundation for customer engagement and greater transparency in service provision. The objectives include the need to understand customer, consumer and community needs and expectations, actively participate in the community and be responsive to the needs of customers. In developing its long-term plans Hunter Water has stated that it will undertake a program of engagement to gather insights and guide plans relevant to customer engagement and greater transparency.

Hunter Water's Customer and Community Advisory Group (CCAG) meets four times per year to discuss a range of operational and planning matters. It has representatives from a range of community sectors, including environmental, local government and education. Minutes from these meetings were available on Hunter Water's website.<sup>382</sup>

The Voice of the Customer Initiative is a research program which involves engaging with customers, consumers and the community to inform business planning.

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<sup>375</sup> Document: 3.1.1-ADWG-06-E-003 HW2006-2906 4 6.023 Procedure to notify NSW Health of events with potential public health impact.DOC.

<sup>376</sup> MS Excel workbook: 3.1.1-ADWG-06-E-004 HW2006-2906 4 6.008 Guideline - Criteria for Notification to NSW Health - Drinking Water Quality.XLS.

<sup>377</sup> Document: 3.1.1-ADWG-06-E-006 MAN-2799-3 HW - Incident and Emergency Management Manual.PDF.

<sup>378</sup> Document: 3.1.1-ADWG-06-E-007 PRO-2803-1 HW - Incident and Emergency Response Procedures.PDF.

<sup>379</sup> Document: 3.1.1-ADWG-06-E-002 HW2011-662 14 5.007 Procedure - Emergency Communications Plan.DOC.

<sup>380</sup> MS Excel workbook: 3.1.1-ADWG-06-E-005 HW2007-900 27 28.001 Incident Management Team Analysis.XLS.

<sup>381</sup> Document: 3.1.1-ADWG-08-E-001 HW2015-1055 7.002 Guideline - 2017+3 Strategy.PDF.

<sup>382</sup> Webpage: 3.1.1-ADWG-08-E-009 <https://yourvoice.hunterwater.com.au/ccag>.



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### *Communication*

Hunter Water's communication program with its consumers is managed by the Community and Stakeholder Team.

Hunter Water's website has a 'Water Quality' section,<sup>383</sup> which explains the details of water treatment, catchment management and includes a monthly water quality monitoring report.<sup>384</sup>

Information is made available to the wider community through the Hunter Water website. This includes annual reports, policies, plans and strategies. Hunter Water also utilise social media; an example is the @HunterWater Twitter account.

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### ***Element 10 – Documentation and reporting:***

Hunter Water is required to fulfil the requirements of Element 10 of the DWQMS. The ADWG require that Hunter Water develops an appropriate records and document management system. Also, that effective internal and external reporting is undertaken. Hunter Water was found to be fully compliant with the requirements of this element.

#### *Management of Documentation and Records*

Hunter Water uses HP Records Manager (TRIM) as its record management system. Document control is managed using Integrum. Veolia, the Treatment Operations Service Provider, uses a Google system called BMS, accessible through the Hunter Water Portal. Hunter Water also has a SharePoint site 'Reservoir' that it uses to provide information on its DWQMS. All of these systems were viewed during the audit. It is noted that the DWQMS Manual still references Veolia's 'On Tap' system; this will need to be updated.

The process for document management and control is in the *Procedure – Manage Document Control*.<sup>385</sup> This procedure details the steps required for the creation, review, and retirement of documents.

Many of the documents and records used for the operation of the WTPs are maintained by Veolia. Veolia has its own records management procedure<sup>386</sup> for the Hunter Water contract and uses a corporate document management procedure.<sup>387</sup>

In undertaking the audit, it was apparent that there are appropriate records management systems in place. There are a number of systems used for record keeping and the DWQMS Manual would benefit from having document and record types mapped against the system/location it is stored, to make it clear where relevant information is located.

**OFI-HWC-2020-02:** Update the Drinking Water Quality Management System Manual with the details of Veolia's new document management system.

**OFI-HWC-2020-03:** Consider mapping types of documents and records to the location or records management system used to store them (for example, verification water quality data is stored in Envirosys). This would clarify the location for retained documents and records.

#### *Reporting*

Reporting to IPART and NSW Health is covered in the *Hunter Water Reporting Manual Operating Licence 2017-2022*.<sup>388</sup> The Compliance Calendar<sup>389</sup> is used to track regulatory reporting.

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<sup>383</sup> Webpage: <https://www.hunterwater.com.au/Water-and-Sewer/Water-Supply/Water-Quality/>.

<sup>384</sup> Webpage: <https://www.hunterwater.com.au/documents/assets/src/uploads/documents/Other-Reports/Water-Quality-Monthly-Reports/Monthly-Water-Quality-Summary-October-2020.pdf>.

<sup>385</sup> Document: 3.1.1-ADWG-10-E-002 HW2012-441 9 1.002 Procedure – Manage Document Control.DOC.

<sup>386</sup> Document: 3.1.1-ADWG-10-E-004 PRO-2944-1 HW - Records Management.PDF.

<sup>387</sup> Document: 3.1.1-ADWG-10-E-003 PRO-129-3 Documented Information Procedure.PDF.

<sup>388</sup> IPART, *Hunter Water Reporting Manual; Operating Licence 2017-2022*, July 2018.

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The Veolia Drinking Water Quality Management Plan<sup>390</sup> details reporting to Hunter Water; this includes 'as required' reporting in relation to specific issues and regular monthly contract reports.

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### ***Element 12 – Review and continual improvement:***

Hunter Water is required to fulfil the requirements of Element 12 of the DWQMS. The ADWG require that Hunter Water's senior executive support and are involved in drinking water quality management and there is continual improvement to overall drinking water quality performance. Hunter Water was found to be fully compliant with the requirements of this element.

#### *Review by Senior Executive*

The Hunter Water DWQMS Manual<sup>391</sup> states that an annual Integrated Management System Review Meeting is held annual with the Executive Management Team. The Drinking Water Quality Management System is considered as a subsection of the quality management system.<sup>392</sup> The minutes<sup>393</sup> of the May 2020 meeting provide evidence of the review.

The Water Quality Committee reviews the performance of the DWQMS in greater depth through the monthly committee meetings with minutes for the August 2020 minutes given as evidence.<sup>394</sup>

#### *Drinking Water Quality Management Improvement Plan*

Hunter Water maintains all drinking water quality management improvement actions in the *Drinking Water Quality Improvement Plan (DWQIP)*.<sup>395</sup> The plan is in an MS Excel spreadsheet and has all the required elements.

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### **Recommendations**

There are no recommendations in respect of this obligation.

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### **Opportunities for improvement**

The following opportunities for improvement have been identified in respect of this obligation:

- **OFI-HWC-2020-01:** Revise the Anna Bay WTP CWT outlet turbidity CCP to be consistent with the ADWG requirement of <1NTU or validate disinfection at the higher turbidity, if required.
  - **OFI-HWC-2020-02:** Update the Drinking Water Quality Management System Manual with the details of Veolia's new document management system.
  - **OFI-HWC-2020-03:** Consider mapping types of documents and records to the location or records management system used to store them (for example, verification water quality data is stored in Envirosys). This would clarify the location for retained documents and records.
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### **Supplemental information**

No supplemental information is provided in respect of this obligation.

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<sup>389</sup> MS Excel workbook: 3.1.1-ADWG-01-E-005 HW2012-778 93.001 Compliance Calendar MASTERFILE.XLS.

<sup>390</sup> Document: HW2015-1449 1 11.023 Drinking Water Quality Management Plan – Veolia.

<sup>391</sup> Document: 3.1.1-E-001 HW2015-1303 9.001 Report - Hunter Water Drinking Water Quality Management System.PDF.

<sup>392</sup> PowerPoint presentation: 3.1.1-ADWG-12-E-001 HW2016-790 1 5.030 Presentation - Management System Review - EMT Summary - May 2020.PPT.

<sup>393</sup> Document: 3.1.1-ADWG-12-E-002 HW2013-1447 3 24.002 Minutes - IMS Exec Management Review Meeting - Minutes – 12 May 2020.DOC.


<sup>394</sup> Document: 3.1.1-ADWG-12-E-004 HW2006-1417 33 11.011 Minutes - August 2020 Water Quality Committee.DOC.

<sup>395</sup> Document: 3.1.1-ADWG-12-E-003 DWQIP Extract - Open Actions.PDF.



## 2.4.2 Supply services and performance standards – System performance standards (clause 3.3)

### 2.4.2.1 System performance standards (sub-clause 3.3.1)

Sub-clause	Requirement	Compliance Grade
3.3.1	Water Pressure Standard	 <b>Compliant</b>
	<p>a) Hunter Water must ensure that no more than 4,800 Properties experience a Water Pressure Failure in a financial year (<b>Water Pressure Standard</b>).</p> <p>b) A Property is taken to have experienced a Water Pressure Failure at each of the following times:</p> <ul style="list-style-type: none"> <li>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</li> <li>ii) when Hunter Water’s systems identify that the Property has experienced a Water Pressure Failure.</li> </ul> <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"> <li>i) a Planned Water Interruption or Unplanned Water Interruption;</li> <li>ii) water usage by authorised fire authorities in the case of a fire; or</li> <li>iii) a short term or temporary operational problem (such as a main break) which is remedied within four days of its occurrence.</li> </ul>	

#### Risk

Failure to comply with the requirements of this obligation presents a high risk to public health as it would indicate that Hunter Water has failed to maintain an adequate level of service.

#### Target for Full Compliance

Evidence that Hunter Water has achieved its *Water Pressure Standard* in any financial year within the audit period.

#### Obligation

This obligation requires Hunter Water to ensure that that in any financial year, no more than 4,800 Properties experience a Water Pressure Failure in a financial year. A Water Pressure Failure is defined as a situation in which a Property experiences water pressure of less than 20 metres head for continuous period of 30 minutes or more measured at the point of connection to the Water Supply System, and is subject to defined exclusions for the purposes of assessing compliance with this obligation.

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## Summary of reasons for grade

Hunter Water reported that 787 Properties had experienced a Water Pressure Failure during the 2019/20 financial year and demonstrated that the process used to determine the number of Properties is both robust and consistent with the definitions and exclusions set out in the *Operating Licence*. As the number of Properties that had experienced a Water Pressure Failure was substantially less than the specified limit (4,800 Properties), Hunter Water is assessed to have been compliant with this obligation.

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## Discussion and notes

In its *Compliance and Performance Report*,<sup>396</sup> Hunter Water reported that 787 Properties had experienced a Water Pressure Failure, as defined in the *Operating Licence*, during the 2019/20 financial year. This is significantly below the limit of 4,800 Properties; accordingly, Hunter Water was compliant with this obligation.

In its response to the Audit Questionnaire, Hunter Water provided a detailed explanation of the process for determining the number of Properties that had experienced a Water Pressure Failure. It noted the definition of a Water Pressure Failure, consistent with the *Operating Licence*, and advised that:

*“Hunter Water records properties with low pressure as a result of the following:*

- *Customer contacts*
- *Use of field pressure data loggers*
- *Computer hydraulic modelling of system performance.”*

Hunter Water further advised that:

*“Hunter Water utilises a network of pressure and flow instrumentation to monitor system performance (flow and pressure). This instrumentation streams data via Hunter Water’s SCADA system and alerts the Hunter Water Control Centre via alarms. Advice is provided within SCADA in relation to pressure alarms as to possible system issues and associated responses.*

*We record customers with low pressure in the AOMS database throughout the year. We confirm low-pressure events by field operator visits (in the case of data loggers and customer contacts). The AOMS technical officer audits all confirmed low-pressure events to ensure that the job was processed correctly and that the data recorded accurately. In the case of a discrepancy, the job is corrected, or sent for further investigation to the Water Network Operations team.*

*At the end of financial year, we undertake system modelling to identify known low-pressure areas based on the actual peak day demand experienced in the year. We then add these customers to AOMS.*

*We use the AOMS database to extract all confirmed low-pressure customers for our regulatory reporting (system performance standard).”*

Each of the abovementioned contributions to the recording of pressure failures are discussed further, as follows:

- *Customer contacts* – one-off low pressure events identified by Customers are recorded in the AOMS<sup>397</sup> database. Each case is then confirmed (or otherwise) in the field and the outcome recorded. An investigation in response to a Customer contact may involve conduct of a pressure and flow test at the first tap on the Property (this may indicate whether the problem lies with Hunter Water or within the internal plumbing), or the installation of a temporary pressure monitor with data logger to monitor actual performance. Details are entered into the AOMS database using the appropriate problem (as reported) and solution (based on
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<sup>396</sup> Document: 3.3.1-E-003 *Compliance and performance report 2019-20.pdf*, section 2.3.1.

<sup>397</sup> AOMS (Asset Operations Maintenance System) is the civil maintenance management system in which Customer complaints are also recorded and the action taken into response recorded.

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investigation findings) codes. Problem/solution code “A” is used to denote low water pressure reported by Customer and confirmed by pressure and flow (bucket) test; “AR” is used to denote low water pressure identified or confirmed by a pressure monitor.<sup>398,399</sup>

Hunter Water provided sample AOMS records (screenshots) to demonstrate the response to Customer contacts, including:<sup>400</sup>

- A summary list of Low Pressure AOMS jobs for the period 1 June 2020 to 1 August 2020; twenty one (21) jobs with problem code “A” were recorded.
  - AOMS Work Order No: 608271 – bucket test conducted; problem and solution code recorded as “Low Water Pressure”.
  - AOMS Work Order No: 609448 – problem code recorded as “Low Pressure Failure”; no fault found and solution code “Unconfirmed”.
  - AOMS Work Order No: 608524 – problem code recorded as “Low Pressure Failure”; pressure test conducted on three properties and found to be low; discussed with system controller; pressure subsequently returned to normal; required further investigation and solution code recorded as “Other”.
- Use of field pressure data loggers – to investigate reports of ongoing low pressure incidents, field pressure data loggers can be installed to monitor pressure over a wide area. Results are analysed and used to identify issues in the water network, improve network performance and calibrate hydraulic models. Any affected customers are identified using hydraulic modelling and entered into the AOMS database.

Hunter Water also has a series of permanent pressure monitors located across its system, principally at pumping stations. Low pressure events are alarmed via the SCADA and subsequently investigated in the field. Other SCADA data may contribute to identification of the cause and impact of the problem; hydraulic modelling can again be used to determine the extent of impact.

- Computer hydraulic modelling of system performance – Hunter Water advised that the majority of its Water Pressure Failures are identified by annual hydraulic modelling in accordance with the *Annual Water Pressure Failure Assessment Procedures*.<sup>401</sup> This involves using Hunter Water’s water supply system models (for each supply zone) to determine the minimum pressure at each Property on the peak day of the peak week during the assessment period (financial year). The peak day demand is determined using SCADA records of the bulk supply demand throughout the financial year and may be adjusted to determine the impact when Hunter Water is supplying to Central Coast Council; model calibration is reviewed on the basis of recorded pressures within the network.

The number of Properties that have experienced a Water Pressure Failure is determined using SQL queries to extract a report from each hydraulic model. Properties identified through the modelling process are added to the AOMS (essentially for record purposes).

For reporting purposes, data is extracted from AOMS on the basis of “solution code”, which is used to identify reportable events once they have been investigated and confirmed. The solution code is used to identify where the cause of a Water Pressure Failure is the result of a Planned or Unplanned Water Interruption, water usage by authorised fire authorities in the case of fire, a short term or temporary operational problem, or a daily system demand in excess of 370 ML/day; Water Pressure Failures under these conditions are excluded.

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<sup>398</sup> Document: 3.3.1-E-004 AOMS problem and solution codes (1).pdf.

<sup>399</sup> Document: 3.3.1-E-005 AOMS problem and solution codes (2).pdf [replaced by Document: SE-028 3.3.1-E-005 AOMS Problem and Solution Codes Clear Copy.pdf].

<sup>400</sup> Document: 3.3.1-E-001 Low Pressure - AOMS examples.docx.

<sup>401</sup> Document: 3.3.1-E-002 S1 - File note - Annual Water Pressure Failure Assessment Procedures.docx.

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The CIS (Customer Information System) is used to identify multiple occupancy properties that have been impacted. An adjustment is also made (based on property details) to remove any duplicate records; i.e. where low pressure events have been identified by both hydraulic modelling and either Customer contact and/or pressure monitoring.

As reported above, procedures for determining the number of Properties that have experienced a Water Pressure Failure using Hunter Water's hydraulic models are documented in the *Annual Water Pressure Failure Assessment Procedures*. The procedure for determining performance against the Water Pressure Standard is fully documented in the *Reporting and Monitoring Protocol*.<sup>402</sup>

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### **Recommendations**

There are no recommendations in respect of this obligation.

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### **Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.

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### **Supplemental information**


No supplemental information is provided in respect of this obligation.

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<sup>402</sup> Document: *SE-072 Protocol - IPART Monitoring and Reporting Manual – CURRENT.docx*, section 5.1.

2.4.2.2 System performance standards (sub-clause 3.3.2)

Sub-clause	Requirement	Compliance Grade
3.3.2	<p>Water Continuity Standard</p> <p>a) Hunter Water must ensure that in a financial year:</p> <p>i) no more than 10,000 Properties experience an Unplanned Water Interruption that lasts more than five continuous hours; and</p> <p>ii) no more than 5,000 Properties experience three or more Unplanned Water Interruptions that each last more than one hour,</p> <p><b>(Water Continuity Standard).</b></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:</p> <p>i) whether a Property has experienced an Unplanned Water Interruption; and</p> <p>ii) the duration of the Unplanned Water Interruption.</p> <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>	 <b>Compliant</b>

**Risk**

Failure to comply with the requirements of this obligation presents a high risk to public health as it would indicate that Hunter Water has failed to maintain an adequate level of service.

**Target for Full Compliance**

Evidence that Hunter Water has achieved its *Water Continuity Standard* in any financial year within the audit period.

**Obligation**

This obligation requires Hunter Water to ensure that, in any financial year, no more than 10,000 Properties experience an Unplanned Water Interruption that lasts more than five continuous hours; and no more than 5,000 Properties experience three or more Unplanned Water Interruptions that each last more than one hour. Unplanned Water Interruption caused by a third party are excluded for the purposes of assessing compliance with this obligation.

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## Summary of reasons for grade

Hunter Water reported that during the 2019/20 financial year 5,114 Properties had experienced an Unplanned Water Interruption for more than five continuous hours and that 2,152 Properties had experienced three or more Unplanned Water Interruptions of more than one hour; it also demonstrated that the process used to determine the number of Properties was both robust and consistent with the definitions and exclusions set out in the *Operating Licence*. As the number of Properties that had experienced an Unplanned Water Interruption was less than the specified limits (10,000 Properties and 5,000 Properties respectively), Hunter Water is assessed to have been compliant with this obligation.

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## Discussion and notes

In its *Compliance and Performance Report*,<sup>403</sup> Hunter Water reported during the 2019/20 financial year:

- 5,114 Properties had experienced an Unplanned Water Interruption that lasted for more than five continuous hours; and
- 2,152 Properties had experienced three or more Unplanned Water Interruptions that each lasted more than one hour;

as defined in the *Operating Licence*.

These figures compare favourably with the upper limits of 10,000 Properties and 5,000 Properties respectively; accordingly, Hunter Water was compliant with this obligation.

In its response to the Audit Questionnaire, Hunter Water provided a detailed description of how it identifies and assesses the number of properties that have experienced an Unplanned Water Interruption for the purposes of reporting against this obligation. It notes that:

*“A Water Interruption is defined as 0 m head of water pressure at the first cold water tap of the Property.*

*Unplanned water interruption is when the customer does not receive adequate notice of the interruption (2 days for residential, and 7 days for non-residential) or when a planned interruption extends beyond the notified shutdown time.”*

and that:

*“Hunter Water is initially made aware of potential water discontinuities from a variety of sources:*

- *Schedules and planners planning a job that requires water network shutdown*
- *Notification by field employees*
- *Network monitoring by System Controller or other operations employee (e.g. Water Network Operations Engineer)*
- *Customer call or notification of an issue with water supply (e.g. a ‘no water’ call).”*

Considering network monitoring as a source of identification (for example) in more detail; Hunter Water has a series of pressure monitors and flow meters located across its system, which are used to monitor system performance. Any performance that may be indicative of an interruption to water supply (for example; low pressure, no flow or excessive flow) is alarmed. In the case of pressure alarms, advice is provided regarding possible system issues and associated responses.

All identified Unplanned Water Interruptions are logged and managed in AOMS (Asset Operations Maintenance System). Details as to the source by which the work order (job) was identified (i.e. Customer or Maintenance), the initially assigned “problem” code,<sup>404</sup> the times at

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<sup>403</sup> Document: 3.3.2-E-006 *Compliance and performance report 2019-20.pdf*, section 2.3.2.

<sup>404</sup> Document: 3.3.2-E-007 *AOMS problem and solution codes (1).pdf*.



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which water supply ceased and was reinstated, details of all action taken and the “solution” code<sup>405</sup> assigned upon completion of the job (i.e. when water supply has been reinstated) are all recorded.

This was demonstrated by AOMS Work Order No: 608350,<sup>406</sup> which was provided as an example. In this case, a water leak in a roadway with water flowing at ‘hose strength’ was identified and reported by a Customer. Repair of the water main required shutdown, i.e. an Unplanned Water Interruption.

The extent of impact of a water interruption is determined by undertaking a valve trace in the Hunter Water GIS; hydraulic modelling may also be used for larger shutdowns. Hunter Water provided a *Discontinuity Assessment and Reporting Procedure*,<sup>407</sup> which defines the process for undertaking hydraulic assessment and reporting of failures within the water supply network that have resulted in discontinuity of water supply to customers.

As an example, Hunter Water provided additional documentation in respect of the abovementioned AOMS Work Order No: 608350 for which a more detailed hydraulic assessment had been undertaken to determine the extent of impact. The additional documentation included a *Water Continuity Event Cover Sheet*,<sup>408</sup> which initiates an investigation; maps of the affected area with mark-ups;<sup>409,410</sup> and the resulting *Water Discontinuity Report*<sup>411</sup> that detailed the assessment of the event including the initial call and response, a review of SCADA data, details of hydraulic modelling undertaken to assess impact, and findings in respect of the numbers of properties and the duration for which they had been affected. Once the investigation is completed, details are captured in both AOMS and the GIS.

To demonstrate capture of the information, Hunter Water provided an extract from the *Discontinuity Register*<sup>412</sup> in which a listing of water continuity investigations is maintained. It is noted that the event discussed above (AOMS Work Order No: 608350) was recorded with the number of properties that had experienced a water continuity of more than one hour being consistent with the findings in the *Water Discontinuity Report*.

To determine the numbers of Properties for reporting purposes, data is extracted from both AOMS and the CIS (Customer Information System) using SQL queries, details of which have been provided (but not assessed in detail).<sup>413,414</sup> The procedure for determining performance against the Water Continuity Standard is fully documented in the *Reporting and Monitoring Protocol*.<sup>415</sup>

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## Recommendations

There are no recommendations in respect of this obligation.

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## Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

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## Supplemental information

No supplemental information is provided in respect of this obligation.

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<sup>405</sup> Document: 3.3.2-E-008 *AOMS problem and solution codes (2).pdf* [replaced by Document: SE-028 3.3.1-E-005 *AOMS Problem and Solution Codes Clear Copy.pdf*].

<sup>406</sup> Document: 3.3.2-E-005a *Data - AOMS 608350 - 178 Black Rock Road Martins Creek.docx*.

<sup>407</sup> Document: SE-073 *Form - Discontinuity Assessment and Reporting Procedure.docx*.

<sup>408</sup> Document: 3.3.2-E-005b *Form - HWC Water Continuity Event 608350 Cover Sheet.docx*.

<sup>409</sup> Map: 3.3.2-E-005c *Map - AOMS 608350 - 178 Black Rock Road Martins Creek - Map edited MB.pdf*.

<sup>410</sup> Map: 3.3.2-E-005d *Map - AOMS 608350 - 178 Black Rock Road Martins Creek - Map.pdf*.

<sup>411</sup> Document: 3.3.2-E-005e *Report - WATER DISCONTINUITY REPORT - AOMS 608350.docx*.

<sup>412</sup> MS Excel workbook: 3.3.2-E-004 *Data - Discontinuity Register - HW2020-997.013.XLSX*.


<sup>413</sup> Document: 3.3.2-E-001 *S2 - Unplanned water interruptions 5 continuous hours - Final for 2017-2022 OL.docx*.

<sup>414</sup> Document: 3.3.2-E-002 *S3 - Three or more unplanned water interruptions greater 1 hour - FINAL 2017-2022 OL.docx*.

<sup>415</sup> Document: SE-072 *Protocol - IPART Monitoring and Reporting Manual - CURRENT.docx*, section 5.2.



### 2.4.2.3 System performance standards (sub-clause 3.3.3)

Sub-clause	Requirement	Compliance Grade
3.3.3	<p>Wastewater Overflow Standard</p> <p>a) Hunter Water must ensure that in a financial year:</p> <p>i) no more than 5,000 Properties experience an Uncontrolled Wastewater Overflow in dry weather; and</p> <p>ii) no more than 45 Properties experience three or more Uncontrolled Wastewater Overflows in dry weather,</p> <p><b>(Wastewater Overflow Standard).</b></p>	 <b>Compliant</b>

#### Risk

Failure to comply with the requirements of this obligation presents a high risk to public health and/or the environment as it would indicate that Hunter Water has failed to maintain an adequate level of service.

#### Target for Full Compliance

Evidence that Hunter Water has achieved its *Wastewater Overflow Standard* in any financial year within the audit period.

#### Obligation

This obligation requires Hunter Water to ensure that, in any financial year, no more than 5,000 Properties experience an Uncontrolled Wastewater Overflow in dry weather; and no more than 45 Properties experience three or more Uncontrolled Wastewater Overflows in dry weather.

#### Summary of reasons for grade

Hunter Water reported that during the 2019/20 financial year 2,862 Properties had experienced an Uncontrolled Wastewater Overflow in dry weather and that 8 Properties had experienced three or more Uncontrolled Wastewater Overflow in dry weather. It also demonstrated that the process used to determine the number of Properties was both robust and consistent with the definitions and exclusions set out in the *Operating Licence*. As the number of Properties that had experienced an Uncontrolled Wastewater Overflow(s) was less than the specified limits (5,000 Properties and 45 Properties respectively), Hunter Water is assessed to have been compliant with this obligation.

#### Discussion and notes

In its *Compliance and Performance Report*,<sup>416</sup> Hunter Water reported during the 2019/20 financial year:

- 2,862 Properties had experienced an Uncontrolled Wastewater Overflow in dry weather; and
- 8 Properties had experienced three or more Uncontrolled Wastewater Overflows in dry weather;

as defined in the *Operating Licence*.

These figures compare favourably with the upper limits of 5,000 Properties and 45 Properties respectively; accordingly, Hunter Water was compliant with this obligation.

In its response to the Audit Questionnaire, Hunter Water noted that:

<sup>416</sup> Document: 3.3.3-E-004 *Compliance and performance report 2019-20.pdf*, section 2.3.3.

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*“All reports of sewer surcharges received from public or internally are recorded in the AOMS database.*

*A field operative will respond to a report of a sewer surcharge and verify that an overflow has occurred. The field operative collects data including the asset type, cause, action taken, wet weather and affected properties. This data is logged in the AOMS system.*

*Where it is difficult to identify the precise location of the problem, field staff have been instructed to err on the side of nominating it as a Hunter Water problem and therefore is included in the licence count.*

*The field staff also assess if it is a wet weather overflow. If roots, rags or fats etc contribute to the overflow it is considered a dry weather overflow and therefore is included in the licence count.”*

Most overflows are reported by the public via the Customer Centre. Once entered into AOMS (Asset Operations Maintenance System) database, they are assigned for investigation. The first responder confirms whether there has been an actual sewer overflow and, if so, whether it is deemed a dry weather overflow (caused by a choke). The number of properties is assessed by field staff.

AOMS Work Order No: 599005<sup>417</sup> was provided as an example record. In this case, an overflow had been reported by a Customer and “Blockage in main” identified as the problem code; a sewer choke caused by roots, which was cleared by jetting, was identified as the cause of the surcharge (solution code recorded as “Sewer chokage cleared”). The property affected by the overflow was identified.

For reporting purposes, data is extracted from AOMS using SQL queries for both the number of Properties that had experienced uncontrolled overflows<sup>418</sup> and the number of properties that had experienced multiple overflows<sup>419</sup> based on the “solutions” code.<sup>420</sup> The procedure for determining performance against the Wastewater Overflow Standard is fully documented in the *Reporting and Monitoring Protocol*.<sup>421</sup>

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## Recommendations

There are no recommendations in respect of this obligation.

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## Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

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## Supplemental information

Hunter Water advised that it started using Power BI, an interactive visualisation and analysis tool, to better manage and understand its business performance, including in respect of the defined System Performance Standards. Use of this tool enables access to asset and operational data stored in a ‘data lake’, which is effectively a ‘single source of truth’.

Hunter Water noted that it had used this tool to clarify an initial concern that it had not correctly accounted for multiple occupancy premises when determining numbers of Properties that had experienced Uncontrolled Wastewater Overflow in dry weather.

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<sup>417</sup> Document: 3.3.3-E-003 *Example wastewater overflow job.pdf*.


<sup>418</sup> Document: 3.3.3-E-001 *The query S4 – Uncontrolled Wastewater Overflow (dry Weather) (HW2009-1194144.012).docx*.

<sup>419</sup> Document: 3.3.3-E-002 *The query S5 – 3 or more Uncontrolled Wastewater Overflow (dry Weather) (HW2009-1194144.013).docx*.

<sup>420</sup> Document: Document: 3.3.3-E-006 *AOMS problem and solution codes (2).pdf* [replaced by Document: SE-028 3.3.1-E-005 *AOMS Problem and Solution Codes Clear Copy.pdf*].

<sup>421</sup> Document: SE-072 *Protocol - IPART Monitoring and Reporting Manual – CURRENT.docx*, section 5.2.

#### 2.4.2.4 System performance standards (sub-clause 3.3.4)

Sub-clause	Requirement	Compliance Grade
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><i>[Note: Clause 3.3.4 is not intended to prevent Hunter Water:</i></p> <p>a) <i>surveying its Customers and Consumers for any lawful purpose at such times as it sees fit; or</i></p> <p>b) <i>using the survey required by that clause to survey its Customers and Consumers on topics additional to the topic referred to in that clause.]</i></p>	 <b>Compliant</b>
<b>Risk</b>		<b>Target for Full Compliance</b>
<p>Failure to comply with this obligation presents a moderate risk to Hunter Water's operations. In the absence of effectively representative Customer input, System Performance Standards may not reflect Customers' service (and cost of service) expectations, which may in turn result in high risk to reputation and (potentially) financial viability.</p>		<p>Evidence that Hunter Water has surveyed its Customers for the purpose of informing a review of System Performance Standards and rebates, and that it had done so by 30 June 2020.</p>
<b>Obligation</b>		
<p>This obligation requires Hunter Water to survey its Customers by 30 June 2020 for the purpose of informing a review of System Performance Standards and rebates, and to do so by 30 June 2020. It is understood that the review of System Performance Standards and rebates will in turn inform Hunter Water's next Operating Licence End of Term Review.</p>		
<b>Summary of reasons for grade</b>		
<p>Hunter Water demonstrated that it had surveyed its Customers for the purpose of informing a review of System Performance Standards and rebates and that the survey had been conducted by 30 June 2020. This was evidenced by an initial report on the process and findings of the survey, and submission of the report to IPART.</p>		
<p>Review of the final survey report confirmed that the survey was robust in terms of both the adopted approach and the input sought and is considered to have been appropriate for the purpose of informing a review of System Performance Standards and rebates.</p>		
<p>Accordingly, Hunter Water is assessed to have demonstrated compliance with this obligation.</p>		
<b>Discussion and notes</b>		
<p>Hunter Water demonstrated that it had surveyed its Customers for the purpose of informing a review of System Performance Standards and rebates and that the survey had been conducted by 30 June 2020 by providing an initial <i>Customer Survey Report</i><sup>422</sup> (which included a consultant's report <i>Hunter Water; Service level and attribute customer research</i>) on the survey to IPART on 30 June 2020.<sup>423</sup></p>		

<sup>422</sup> Document: 3.3.4-E-002 *Customer Survey Report to IPART - Reporting Manual Clause 323.pdf*.

<sup>423</sup> Email correspondence: 3.3.4-E-001 *Email - Turner to Luke (IPART) - Hunter Water Customer Survey Report - 30 June 2020.msg* (including attached report).

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A final consultant's report *Hunter Water; Identifying service level and attributes customers value; Customer research*<sup>424</sup> (Survey Final Report) was subsequently provided to IPART on 20 August 2020.<sup>425</sup>

Hunter Water advised that:<sup>426</sup>

*“A phased approach has been taken to informing a review of system performance standards and rebates:*

- 1. Phase 1 aimed to fulfil the requirements of licence clause 3.3.4. Phase 1 sought to provide a contemporary understanding of service qualities that are valued by customers, with participants indicating their priorities across approximately 30 service level attributes. This should assist with determining whether the performance measures (established in 2006) underpinning the system performance standards in Hunter Water's 2017-2022 Operating Licence remain appropriate.*
- 2. Phase 2 (currently being scoped) will seek insights into whether customers would be more satisfied with a higher level of service at a higher cost or lower level of service in return for lower bills; i.e. it will seek insights about customers' willingness to pay (or accept) for improvements (deterioration) in performance. This information will help inform the trade-off between cost and service level.”*

Hunter Water outlined the approach that it had used to ensure that a robust sample of Customers was engaged. It further noted that:<sup>426</sup>

*“Although it was necessary to exclude business customers due to the impact of the COVID-19 restrictions in place, ensuring a meaningful and representative sample of potentially affected household customers has been a cornerstone of this research and has been critical to its success, validity and reliability.”*

A survey approach involving qualitative and quantitative activities was implemented:

- Qualitative – this involved:
  - Online Bulletin Board – 50 household customers engaged over a three day period; 30 nominated independently by the consultant (selected to ensure geographical and customer type representation) and 20 recruited through the Hunter Water customer portal (60 showed interest; 20 selected by the consultant); and
  - In-depth Interviews with 10 household customers that had recently interacted with Hunter Water.
- Quantitative – this involved an Online Survey, which was conducted in May and June 2020. 500 participants (household customers) were nominated independently by the consultant and a further 534 household customers responded to invitations issued to 13,000 email addresses held in Hunter Water's database or via social media (less than 50 respondents). Hunter Water employee responses were 'quarantined' from other responses.

Copies of the Online Bulletin Board discussion guide, the In-depth Interviews discussion guide and the Quantitative Questionnaire are included in the *Survey Final Report*.<sup>427</sup> These demonstrate the level of detail sought through the engagement process. It is noted that the outcomes from the qualitative activities were used to inform finalisation of the survey questionnaire.

Review of the survey questionnaire revealed that it sought input in respect of water supply services, wastewater services, customer service, and community and resource management. In each area, respondents were asked to rank identified aspects of service by importance and to rate Hunter Water's performance against those aspects of service. The identified aspects of service in each area are considered to have been appropriate for the purposes of the survey.

Review of the survey findings as presented in the *Survey Final Report* reveals them to be informative in respect of customers' perception of importance and Hunter Water's performance in its provision of service.

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<sup>424</sup> Document: 3.3.4-E-003 Final Report - FE Kantar for Hunter Water - service level and attributes...pdf.

<sup>425</sup> Email correspondence: 3.3.4-E-004 Email - Turner to Luke (IPART) - Customer survey detailed report.msg (including attached report).

<sup>426</sup> Hunter Water's response to the Audit Questionnaire.

<sup>427</sup> Document: 3.3.4-E-003 Final Report - FE Kantar for Hunter Water - service level and attributes...pdf, appendix 1.

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Furthermore, it is apparent that the survey process has been robust in terms of both the adopted approach and the input sought. It is considered that the survey was appropriate for the purpose of informing a review of System Performance Standards and rebates.

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### **Recommendations**

There are no recommendations in respect of this obligation.

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### **Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.

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### **Supplemental information**

No supplemental information is provided in respect of this obligation.

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## 2.4.3 Organisational systems management – Asset management system (clause 4.1)

### 2.4.3.1 Asset management system (sub-clause 4.1.2)

Sub-clause	Requirement	Compliance Grade
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.	 <b>Compliant</b>

#### Risk

Failure to fully implement its Asset Management System presents a high level of operational risk that Hunter Water may not be able to effectively manage the safe and reliable performance of its assets as required to meet its business objectives.

#### Target for Full Compliance

Evidence that Hunter Water has fully implemented its Asset Management System and that all relevant activities are carried out in accordance with the Asset Management System by 1 July 2018.

#### Obligation

This obligation requires Hunter Water to fully implement its Asset Management System and carry out all relevant activities in accordance with the Asset Management System, i.e. in accordance with the processes and procedures that together comprise the Asset Management System.

#### Summary of reasons for grade

Having achieved certification in June 2018, Hunter Water had its Asset Management System recertified as being consistent with ISO 55001 in July 2020. On the basis of the observations made and evidence reviewed, it is apparent that Hunter Water has continued to fully implement, and undertake its activities in accordance with, the Asset Management System. Furthermore, Hunter Water has continued to implement an extensive range of improvement initiatives during the audit period.

Of particular note is the embedment of risk management principles in all asset management decision making; the significant work undertaken in improving capital portfolio management, and the holistic approach to development planning. This work, together with the increased use of dashboard format monitoring and reporting, and information presentation that has been implemented using Power BI visualisation and analysis tools, is commended.

Accordingly, Hunter Water is considered to have demonstrated compliance with this obligation.

#### Discussion and notes

##### Overview:

Assessment of compliance in respect of this obligation has involved review of Hunter Water's overall approach to the management of its assets under its ISO 55001 certified Asset Management System. This has included review of the system documentation and records of implementation.

In addition to the overall approach, consideration has been given to a sample of the specific improvement initiatives implemented during the audit period and the field implementation of asset management practices. This assessment has been based on observations made during the field verification site visits, an overview of which is provided in **Appendix B**.

It is noted that the arrangement whereby Hunter Water has contracted Veolia to provide operation and maintenance (mechanical and electrical) services at all of its treatment facilities



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remained in place during the audit period. Accordingly, some consideration has been given to these arrangements as they relate to management of the assets.

***Maintenance of Certification:***

Hunter Water's Asset Management System was initially certified as being consistent with AS ISO 55001:2014 *Asset management – Management systems – Requirements* in June 2018. As reported in respect of the 2019 Operational Audit,<sup>428</sup> surveillance audit of the Asset Management System was conducted by Hunter Water's certification agency in May 2019.

On 10 July 2020 (i.e. during the audit period), Hunter Water successfully completed a recertification audit of its Asset Management System.<sup>429</sup> Although recertification is normally required after three years, Hunter Water brought this forward so that recertification of all components of its management systems is aligned.

Review of the certifying auditor's report<sup>430</sup> revealed that the audit identified four asset management related minor non-compliances. These were in respect of:

- alignment of asset management objectives with risk and opportunity mitigation actions in asset management plans for individual asset classes;
- formal definition of how nonconformities are managed in the Asset Management System;
- adequate detail in reflecting the requirements of the Asset Management System when undertaking management review of the Integrated Management System; and
- the need for operational testing of dam emergency management plans.

Several observations were made, and non-compliances identified at the previous audit were either closed or closed with a new (modified) non-compliance being raised. No further opportunities for improvement were identified.

Hunter Water has documented a summary of the minor non-compliances and observations identified by the audit in an *NCR Tracking Register*<sup>431</sup> and developed an action plan in response to the findings. This has included the conduct of a root cause analysis in respect of the non-compliances and identification of the corrective action that is to be undertaken. Responsibility and timelines for implementation have also been identified.

Hunter Water's response/proposed action in respect of each non-compliance was submitted to and accepted by the certifying auditor (Bureau Veritas), and included in the final audit report.

***Asset Management System Overview:***

The Asset Management System documentation is available on the Hunter Water intranet, which provides a framework for the overall management of system implementation. A screenshot<sup>432</sup> showing an overview of the system indicates that the Asset Management System consists of three key categories, as follows:

- Strategy – covers strategic asset management; risk management; strategic planning and leadership;
  - Life Cycle – covers planning; creation; operations; maintenance; and renewal and disposal;
  - People and Information – covers asset standards; asset information; roles and
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<sup>428</sup> Cobbitty Consulting/Viridis Consultants, *2019 Operational Audit of Hunter Water Corporation; Final Audit Report* (Version 3.0), 28 February 2020, section 3.5.1 (table 3.13).

<sup>429</sup> Document: *4.1.2-E-001 Certificate - AU004029-1 HWC - AMS ISO55001.pdf*.

<sup>430</sup> Document: *4.1.2-E-002 Consultant Report - HWC\_BVC\_Audit\_report\_recertification\_June2020.pdf*.

<sup>431</sup> MS Excel workbook: *4.1.2-E-003 Register - NCR Tracking - June 2020.xlsx*.

<sup>432</sup> Image: *4.1.2-E-007 Asset Management System - intranet.JPG*.



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responsibilities; working groups and committees; training and awareness; and customers.

The *Asset Management Policy*<sup>433</sup> and *Strategic Asset Management Plan (SAMP)*<sup>434</sup> remain in place as the principal elements of Hunter Water's strategic asset management documentation. The *Asset Management Policy* was most recently updated in June 2018 and is next scheduled for review in June 2021. The *Strategic Asset Management Plan* was updated with minor amendments in June 2020 (i.e. within the audit period) and is scheduled for periodic review every four (4) years.

The *Asset Management Policy* outlines Hunter Water's approach to managing the physical assets needed to provide services to customers and the community. Importantly, it incorporates a requirement to consider the key risks from Hunter Water's *Enterprise Risk Management (ERM)*<sup>435</sup> framework. The *Strategic Asset Management Plan* is an overarching document, which describes how services are to be provided through the continual planning, delivery and management of assets.

The *Asset Management Policy* and *Strategic Asset Management Plan*, together with the *Asset Management System Manual*<sup>436</sup> form the key governance documents for the Asset Management System. Other important documents relating to the Asset Management System are:

- Standard – Critical Assets;
- Standard – Asset Management Roles and Responsibilities;
- Standard – Asset Class Management;
- Asset Management Plans;
- Asset Class Plans;
- Asset Creation Framework;
- Asset Operation Framework;
- Standard – Maintaining Assets; and
- Standard – Asset Management System Communication and Awareness.

Hunter Water's adopted asset management practices are underpinned by the *Enterprise Risk Management* framework, which includes risk appetite statements that are defined for specific business risks associated with elements of the Asset Management System. Asset-related risks are being managed in accordance with the risk appetite statements, which are reviewed and updated annually to ensure that they align with service and regulatory requirements.

***Strategic Context:***

The *Strategic Asset Management Plan* presents the integrated planning, decision-making and asset life cycle processes required to deliver Hunter Water's 2017+3 Business Strategy, which outlines six strategic priorities to deliver the community's aspirations.. The auditor queried the currency of the 2017+3 Strategy as the basis for ongoing planning, particularly given that planning work was required to underpin Hunter Water's submission to its 2020 Pricing Determination, which covers the period 2020-2024.

Hunter Water advised that the 2017+3 Strategy had been reaffirmed by its 2019-2022 Internal Business Plan; this is as noted in the *Strategic Asset Management Plan*.<sup>437</sup> Furthermore, a new business strategy that, from an overall perspective, maintains the same strategic direction has been developed for submission to Hunter Water's Board for approval.

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<sup>433</sup> Document: 4.1.2-E-004 Policy - Asset Management Policy.pdf.

<sup>434</sup> Document: 4.1.2-E-005 Strategic Asset Management Plan (SAMP).pdf.

<sup>435</sup> Document: 4.1.2-E-008 Standard – Enterprise Risk Management.docx.

<sup>436</sup> Document: 4.1.2-E-006 Manual – Asset Management System.docx.

<sup>437</sup> Document: 4.1.2-E-005 Strategic Asset Management Plan (SAMP).pdf, section 1.

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## ***System Implementation:***

### ***General:***

Hunter Water provided sample documentation to demonstrate ongoing implementation of asset management practices in relation to various aspects of the asset management lifecycle, consistent with its Asset Management System. A review of some of these practices/documentation is set out in the following.

### ***Risk Management:***

As noted above, Hunter Water's asset management practices are underpinned by ongoing assessment of risk in comparison to risk appetite statements. Hunter Water provided the current *Risk Appetite Statement*,<sup>438</sup> which was last updated in November 2018. This identifies the risk appetite against five risks (some of which include multiple elements) relating to the 'Asset management and resilience' strategic risk grouping. Risk appetite in relation to other risk groupings (e.g. 'Water quality and management') also has implications for asset management practices.

Pursuant to the *Enterprise Risk Management* framework,<sup>439</sup> corporate strategic risks are to be reviewed annually by undertaking a Risk Driver Review. Hunter Water provided the *Risk Driver Analysis – Critical Asset Failure*<sup>440</sup> to demonstrate that this strategic risk had been last reviewed in October 2019. The review included the identification and assessment of thirteen (13) risk drivers, assessment against the current risk appetite statements, and detailing of a risk treatment plan covering five (5) potential risk events.

### ***Strategic Planning:***

Hunter Water advised that it has updated its strategic planning functionality through the creation of Strategic Cases, which demonstrate the case for change and the associated future investment objectives and benefits using Investment Logic Maps. These Strategic Cases, which are a relatively new approach being implemented by Hunter Water, are developed in alignment with its 2017+3 Strategy and risk appetite; they explain the programs that will be undertaken to achieve Hunter Water's strategic objectives. The Strategic Cases have been approved by the Board Investment Committee as the basis for future investment planning.

Investment Logic Mapping is a technique to ensure that robust discussion and thinking is done up-front, resulting in a sound problem definition, before solutions are identified and before any investment decision is made. More specifically, the technique is used to test and confirm that the rationale for a proposed investment is evidence-based and sufficiently compelling to justify investment in further investigation and planning. The output of the process is an Investment Logic Map, a simple single-page flowchart that tells the story of an investment and exposes its underpinning logic.<sup>441</sup>

Review of the *Sustainable Wastewater Service Strategic Case*<sup>442</sup> (for example) reveals that it:

- outlines the strategic context within which Hunter Water is required to provide wastewater services;
- identifies three strategic problems/opportunities, including:
  - Current wastewater systems cannot meet the growing region's customers and

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<sup>438</sup> Document: 4.1.2-E-009 *Risk Appetite Statements - Version 3.docx*.

<sup>439</sup> Document: Document: 4.1.2-E-008 *Standard – Enterprise Risk Management.docx*.

<sup>440</sup> Document: 4.1.2-E-010 *HW2013-830112.003 Data - Risk Driver Analysis Summary Table - Critical asset failure – 2019.docx*.

<sup>441</sup> [https://www.treasury.govt.nz/information-and-services/state-sector-leadership/investment-management/better-business-cases-bbc/bbc-methods-and-tools/investment-logic-mapping#:~:text=Investment%20Logic%20Mapping%20\(ILM\)%20is,any%20investment%20decision%20is%20made.](https://www.treasury.govt.nz/information-and-services/state-sector-leadership/investment-management/better-business-cases-bbc/bbc-methods-and-tools/investment-logic-mapping#:~:text=Investment%20Logic%20Mapping%20(ILM)%20is,any%20investment%20decision%20is%20made.)

<sup>442</sup> Document: 4.1.2-E-011 *Strategic Case - Sustainable Wastewater Services.docx*.

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- environmental needs;
  - o Wastewater discharges to the environment miss circular economy opportunities (economic and social); and
  - o Lack of agility in the face of technology and market changes diminishes benefits to customers and creates financial risks;
  - identifies three strategic benefits aligned to the strategic problems:
    - o Compliance and aspirations met;
    - o Improved circular economy; and
    - o Better customer outcomes; and
  - outlines a strategic direction comprising five interventions (programs) for which program plans and investment business cases are to be developed – Effluent management; Dry weather network performance; Wet weather network performance; Biosolids; and Odour and corrosion;

thereby providing a sound basis for wastewater investment planning.

Other Strategic Cases have been developed in respect of: Water Resilience; Safe & Reliable Water Services; Stormwater Services; Enabling Development; Carbon Neutrality; Digital Utility; Enabling Infrastructure; and People.

Service and Asset Planning:

Hunter Water implements planning through its service and asset planning process, under which organisational objectives are assessed and investment programs or projects are identified to implement the outcome. The process includes consideration of growth, regulatory, environmental and service requirements, along with existing asset deterioration or compliance.

Examples of planning undertaken during the audit period include:

- the Asset Management Plan for Grahamstown Dam<sup>443</sup> – which documents the processes being implemented to maintain and operate the dam (and associated major assets) and provides the basis for planning and implementation of day-to-day maintenance activities. It details Hunter Water’s approach to the management of this major asset in a manner that is consistent with legislative and regulatory obligations and corporate policy.

The Plan sets out a detailed description of the assets; identifies corporate objectives (including compliance requirements) that relate to the facility; provides an assessment of the state of the assets; outlines the asset lifecycle management strategy; details an inspection, operation and maintenance plan; acknowledges the operational and planned capital expenditure requirements; outlines requirements in respect of asset records and reporting; and details an improvement plan for management of the facility/assets.

- Facility Plans for Grahamstown WTP,<sup>444</sup> Anna Bay WTP<sup>445</sup> and Nelson Bay WTP<sup>446</sup> – which in each case outlines: “... a prudent and cost-efficient whole-of-life approach to managing the ... [relevant] ... WTP for the FY21-30 period that aligns with Hunter Water’s corporate strategy”. These Plans include: a summary of the assets; identification of corporate objectives (including compliance requirements) that relate to the facility; details of the risks to service levels; roles and responsibilities; an assessment of the state of the assets; details of the asset lifecycle management strategy; the operational and planned capital expenditure requirements; requirements in respect of asset records and reporting; and an improvement plan for management of the facility/assets.

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<sup>443</sup> Document: 4.1.2-E-013 Asset Management Plan (Operations and Maintenance) - Grahamstown Dam.docx.

<sup>444</sup> Document: 4.1.2-E-016 Facility Plan - Grahamstown WTP HW/2018-506 6 1.012.docx.

<sup>445</sup> Document: 4.1.2-E-014 Facility Plan - Anna Bay WTP.docx.

<sup>446</sup> Document: 4.1.2-E-015 Facility Plan - Nelson Bay WTP.docx.

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Review of these documents reveals that appropriate planning has been undertaken to ensure the lifecycle management of these facilities and their components.

Investment Decision Making:

In respect of investment decision making, Hunter Water advised that:

*“Hunter Water governs and prioritises the capital portfolio through a robust gateway approval process. Our gateway process is a modified version of the NSW Treasury process and has matured over a number of years. Individual investment projects or programs are assessed and reassessed throughout their lifecycle to ensure that, at each gate, the proposed investment remains prudent and is delivered in the most cost-efficient manner.”*

Hunter Water further advised that it had submitted the forward capital program (which aligns to the 2020-2024 Pricing Determination) through the gateway approval process, and provided investment approval business cases for the Treatment Asset Renewals 2020 -2024,<sup>447</sup> Black Hill Duplicate Trunk Water Main,<sup>448</sup> Stormwater Amenity Improvement Program<sup>449</sup> and Raymond Terrace WWTW Stage 3 Upgrade<sup>450</sup> as examples.

These business cases were Gateway 2 (G2) submissions for ‘Approval of Business Case & Development Funding’. These standard format business cases all identified their purpose, strategic alignment and a summary of the proposed investment and were underpinned by supporting information in relation to the Strategic case for change; Economic case; Commercial case; Financial case; Management case; Capital funding requirement; and a Recommendation.

These examples demonstrate that appropriate governance is being implemented in respect of Hunter Water’s investment decision making. It is noted that further gateway approvals are required for ‘Approval of Delivery Funding’, ‘Approval to Award Delivery Project’ and ‘Completion’; a project initiation gateway (‘Approval of Preliminary Business Case & Capital Portfolio Allowance’) precedes the Gateway 2 approval.

Asset Standards:

Hunter Water has a mature program for the creation and maintenance of Asset Creation design codes, standard technical specifications, approved products and consultant and contractor competencies. Hunter Water advised that it continues to improve its asset standards and provided the following as examples:

- STS 408 *Water Quality Acceptance for Water Mains* – a new standard technical specification, which was approved in May 2019 (prior to the audit period); and
- STS 600 *General Mechanical Requirements* – which was updated in July 2020.

Asset Creation:

Hunter Water advised that:

*“The asset creation process involves acquiring an asset capable of meeting service requirements at the least long run cost. For Hunter Water, this process commences after the asset planning process has identified an asset solution, and the investment decision-making process (business case) has determined the best way of meeting a current or future service standard at the lowest long run cost.”*

Hunter Water creates its physical assets in accordance with its *Asset Creation Framework*, which is facilitated through the Hunter Water intranet. There are three frameworks tailored for the management of mini, minor and major projects.<sup>451</sup> The framework for major projects consists of

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<sup>447</sup> Document: 4.1.2-E-018 HW2020-40511.001 Business Case - G2.1 - Treatment Renewals Provision 2020-24.docx.

<sup>448</sup> Document: 4.1.2-E-019 Business Case - Black Hill Duplicate Trunk Water Main.docx.

<sup>449</sup> Document: 4.1.2-E-020 Business Case - Stormwater Amenity Improvement.docx.

<sup>450</sup> Document: 4.1.2-E-021 Business Case - G2 - Raymond Terrace WWTW Stage 3 Upgrade - 13 Nov 2019.docx.

<sup>451</sup> Image: 4.1.2-E-024 ACF overview.jpg.

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four phases: Initiation;<sup>452</sup> Development;<sup>453</sup> Delivery;<sup>454</sup> and Completion;<sup>455</sup> these phases align with the previously discussed gateway process for investment decision making.

Asset Operation:

Hunter Water noted that: “*Operation of assets involves controlling the processes and implementing the planned activities that provide a continuity of service while managing the risks to the organisation.*”

Hunter Water’s asset management practices include the operation of water, wastewater, recycled water, and stormwater assets needed to provide services to customers and the community. Water and wastewater network assets are operated and maintained by Hunter Water teams, whilst the operational and maintenance activities for water and wastewater treatment assets are outsourced to Veolia.

Operation of the assets, and more specifically the treatment facilities, is undertaken in accordance with processes/procedures outlined in operating manuals, including (for example) Plant Operating Manuals for the Grahamstown WTP,<sup>456</sup> Nelson Bay WTP,<sup>457</sup> Anna Bay WTP<sup>458</sup> and Lemon Tree Passage WTP.<sup>459</sup> Operation of these facilities is further discussed below.

Veolia prepares Monthly Contract Reports on its Hunter Water operations, which include details of operational performance in respect of water treatment (compliance against drinking water standards and wastewater treatment (compliance against EPA licences). Sample reports for May 2020<sup>460</sup> and August 2020<sup>461</sup> were provided; these revealed (for example) that:

- No water quality critical control points were breached at any of the six water treatment plants in these months (although there were some breaches of contractual limits);
- 18 out of 19 wastewater treatment plants were compliant with EPL conditions in May; 17 out of 19 plants were compliant in August.

Asset Maintenance:

Hunter Water noted that:

*“Maintenance is split into the two main disciplines of civil maintenance and electrical/mechanical maintenance (EMM). Civil maintenance practices are predominantly corrective maintenance – planned and unplanned (breakdown). EMM maintenance tasks are split between both preventative and corrective maintenance. A portion of predictive maintenance is programmed into the condition monitoring of pumps, gearboxes, electric motors, circuit breakers and electrical transformers.*

*The operational and maintenance activities for water and wastewater treatment assets are outsourced to Veolia.”*

Veolia’s performance in respect of maintenance of the treatment facilities is monitored by Hunter Water. This is undertaken by reviewing Veolia’s Monthly Contract Reports and undertaking periodic maintenance audits.

Review of the above referenced Monthly Contract Reports for May 2020 and August 2020 revealed (for example) that:

- 96% of all preventative maintenance work orders scheduled for completion in May had been completed on time and 93% in August against a KPI target of 80%;

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<sup>452</sup> Image: 4.1.2-E-025 ACF - initiation (1).jpg and 4.1.2-E-026 ACF - initiation (2).jpg.

<sup>453</sup> Image: 4.1.2-E-027 ACF – development (1).jpg and 4.1.2-E-028 ACF - development (2).jpg.

<sup>454</sup> Image: 4.1.2-E-029 ACF – delivery.jpg.

<sup>455</sup> Image: 4.1.2-E-030 ACF – completion.jpg.

<sup>456</sup> Document: 4.1.2-E-034 Procedure - Grahamstown WTP Operating Manual – Veolia.pdf.

<sup>457</sup> Document: 4.1.2-E-035 Procedure - Nelson Bay WTP Operating Manual – Veolia.pdf.

<sup>458</sup> Document: 4.1.2-E-036 Procedure - Anna Bay WTP Operating Manual – Veolia.pdf.

<sup>459</sup> Document: 4.1.2-E-037 Lemon Tree Passage WTP Operating Manual – Veolia.pdf.

<sup>460</sup> Document: 4.1.2-E-038 Veolia Monthly Report – Treatment Operations – May 2020.pdf.

<sup>461</sup> Document: 4.1.2-E-039 Veolia Monthly Report – Treatment Operations – August 2020.pdf.



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- 100% of statutory preventative maintenance work orders scheduled for completion in both May and August had been completed on time against a KPI target of 100%;
  - the rolling 12 month completion of all preventative maintenance work orders was 92% in May and 93% in August against a KPI target of 90%;
  - 100% of all breakdown maintenance had been completed on time in both May and August against a KPI target of 85%; 100% of emergency and high priority tasks had been completed on time in both months against a target of 90%; and
  - 90% of all corrective maintenance had been completed on time in May and 83% in August against a KPI target of 80%; 100% of emergency and high priority tasks had been completed on time in both months against a target of 90%.

Review of completed Treatment Plant Audit Forms for both Anna Bay<sup>462</sup> and Nelson Bay<sup>463</sup> WTPs (audits conducted in October 2019, i.e. just prior to the audit period) revealed that they include an assessment as to whether maintenance was in accordance with Hunter Water's expectations in respect of several General Housekeeping and Maintenance Condition criteria; Veolia was assessed to be meeting expectation in all except one criteria at Nelson Bay WTP where a chemical leak was identified. Details of any non-conformances or issues requiring follow-up were also identified; a number of minor issues were recorded at both plants.

#### Asset Renewals:

As evidence that it has continued to implement asset renewal programs and projects during the audit period, Hunter Water provided copies of Project Development Plans for three mini projects: 2020/24 Sewer Main Renewal Batch 2;<sup>464</sup> 2019 Water Main Replacement Program;<sup>465</sup> and 2020/24 Sewer Main Renewal Batch 2 (a second package).<sup>466</sup> In each case the development plan detailed the scope of the proposed work and its justification, an assessment of the associated risks, identification of the options considered, procurement and community consultation plans, and a recommendation (including costs) of the preferred option.

A submission from Veolia (dated May 2020) for replacement of the raw water rapid mixer inlet valve at Grahamstown WTP was also provided.<sup>467</sup> This included details and full justification for the replacement works, which were subject to Hunter Water's approval under the service contractual arrangements; Hunter Water's approval was recorded.

#### Training:

Hunter Water provided an extract from its training records,<sup>468</sup> which indicated that 262 staff members have undertaken Asset Management System Awareness training. Whilst the majority had completed training prior to or in the first couple of months following certification of the Asset Management System, thirty eight (38) staff had done so within the audit period, thereby indicating that this basic training continued to be implemented.

#### Monitoring and Review:

Hunter Water noted that:

*“Hunter Water has multiple parameters that are designed to monitor asset management performance. Performance is centred around the continuity of service for the water network, and the absence of environmental incidents due to breaks or overflows of the wastewater network.”*

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<sup>462</sup> Document: 4.1.2-E-040 Report - Treatment Plant Audit Form Anna Bay Oct 2019.docx.

<sup>463</sup> Document: 4.1.2-E-041 Report - Treatment Plant Audit Form Nelson Bay Oct 2019.docx.

<sup>464</sup> Document: 4.1.2-E-045 PDP for Sewermain renewal Batch 12.docx.

<sup>465</sup> Document: 4.1.2-E-046 File note - PDP Non-Critical Water Main Replacement Program - Batch 11 - October 2019.docx.

<sup>466</sup> Document: 4.1.2-E-046a Memo - PDP Batch 2 sewer lining.docx.

<sup>467</sup> Document: 4.1.2-E-047 HW2014-777 4 724.012 Letter - VP2141 GRA Raw Water Rapid Mixer Inlet Valve VL signed – Approved.pdf.

<sup>468</sup> MS Excel workbook: 4.1.2-E-048 AMS\_Awareness\_Training.xlsx.

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*Hunter Water performance is monitored through the various reporting functions in each group. The key indicators are defined in a range of performance pathways. These include the Business Performance Report, annual corporate reporting, Risk Driver Analysis Summaries, the System Performance Dashboards (e.g. AOMS, Operating Licence), Asset Management Steering Committee, Internal Audits (e.g. IMS, 3 Lines of Defence), Management System Reviews and National Performance Reporting.”*

Hunter Water provided samples of monitoring and reporting mechanisms that it employs, including:

- The annual *Compliance and Performance Report*<sup>469</sup> that it is required to submit to IPART. As reported elsewhere, this in part details asset management activities and programs that have been implemented during the reporting period as well as performance against standards that are dependent upon the effective management of the asset portfolio.
- Minutes of the AMS Steering Committee, which provides strategic direction and a management overview for the Asset Management System.<sup>470,471</sup>
- Report on the annual *Management Systems Review*<sup>472</sup> conducted in May 2020. This report details performance in respect of each component of Hunter Water’s integrated management system and includes (for example): highlights and emerging issues; performance against objectives and targets; details of changes that may impact on the management systems; details of changes to risk and opportunity profiles; performance, effectiveness and trends in relation to each management system; internal and external audit results; the status of any root-cause investigations and preventive and corrective actions; and an assessment of the adequacy of resources.
- An *Internal Audit Report*<sup>473</sup> in respect of Hunter Water’s planning and operational processes for the management of treatment and outsourcing controls relating to the Treatment Operations Contract with Veolia.
- Extracts from the online *System Performance Dashboard*,<sup>474</sup> through which performance against the System Performance Standards (as defined in the *Operating Licence*) is monitored.
- Extracts from the AOMS (Asset Operations Maintenance System) reactive maintenance monitoring dashboard,<sup>475</sup> through which civil maintenance performance is monitored.
- The *Corporate Overview*<sup>476</sup> report to the Board for April 2020, which provides dashboard type reporting against/in respect of: Corporate Scorecard; Customer Service Index; Employee; Safety Health and Wellbeing; Environment; and Delegated Authorities.

Of particular interest is the increased use of dashboard format monitoring and reporting, and information presentation that has been implemented using Power BI<sup>477</sup> visualisation and analysis tools.

**Summary:**

Through the provision of explanations and documentary evidence, Hunter Water demonstrated that it has asset management practices and procedures in place that address all aspects of the asset management lifecycle, and that they continued to be effectively implemented during the audit period.

***Improvement initiatives:***

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<sup>469</sup> Document: 4.1.2-E-049 *Compliance and Performance Report 2019-20.pdf*.

<sup>470</sup> Document: 4.1.2-E-050 *Minutes - AMS Steering Committee - 2 April 2020.docx*.

<sup>471</sup> Document: 4.1.2-E-051 *Minutes - AMS Steering Committee – 7 May 2020.docx*.

<sup>472</sup> Document: 4.1.2-E-052 *Report - Management Systems Review - 1 JULY 2019 – 30 APRIL 2020 - May 2020.docx*.

<sup>473</sup> Document: 4.1.2-E-054 *HW2019-738 3.012 Report - HWC Lines of Defence LA FINAL Report - May 2020.docx*.

<sup>474</sup> Document: 4.1.2-E-055 *HWC Operating Licence Performance Dashboard.docx*.

<sup>475</sup> Document: 4.1.2-E-056 *AOMS Dashboard – Example.docx*.

<sup>476</sup> Document: 4.1.2-E-057 *BPR Corporate Overview - April 2020 Final Version.pdf*.

<sup>477</sup> Power BI is a business analytics service provided by Microsoft.



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General:

In its *Compliance and Performance Report*,<sup>478</sup> Hunter Water outlined a number of initiatives that it had implemented during the audit period (principally during the 2019/20 financial year). A selection of these were discussed during the audit, as follows:

Asset Management System/Capital Portfolio:

Hunter Water conducted an internal audit focussed on its capital portfolio management, which identified a number of improvement opportunities. Improvements/new initiatives that were either previously under development or have been implemented in response include the following:

- *Business case improvements* – business cases lacked clear linkage to strategic objectives. Business cases have been improved; Hunter Water now prepares separate technical, strategic, and program focussed business cases in support of proposed capital investments. Strategic alignment in relation to strategic case, strategic objectives and strategic benefits are now clearly documented in a simple, clearly visible manner.
- *Benefits realisation* – Hunter Water has developed and is implementing a Benefits Realisation Procedure, under which a register that lists benefits on a project basis is to be maintained. Over time, the register will be used to monitor ongoing alignment of investment with Hunter Water’s nine strategic objectives, as defined in its Strategic Cases.
- *Change management* – Hunter Water did not have a clearly defined framework for managing changes to the capital portfolio. A framework that explains the process for portfolio level change, i.e. continuous evaluation of projects’ feasibility, at risk projects and management of deferrals, has now been developed.
- *Risk management* – Hunter Water has revisited its Project Risk Management Standard to ensure that, amongst other things, it aligns with the corporate risk profile. Project risks are identified at the start of each project, mitigation measures identified, and the residual risk tracked through to project completion.

Interim risk management is also implemented in cases where (for example) the need for renewal of an asset has been identified but not yet implemented. Mitigation measures may include (for example) undertaking more regular inspections and continuous online deflection monitoring of a stormwater culvert (see discussion below in respect of asset renewals).

- *Capital portfolio dashboard* – Hunter Water has developed very effective interactive dashboard reporting in respect of its capital portfolio delivery using the functionality of the Power BI visualisation and analysis tool. Reporting is provided at portfolio level, with major/key projects also reported separately; example reports were sighted during the audit interviews.

These improvements are reflective of a significant body of work which will provide real benefit, enabling Hunter Water to proactively manage its capital investments in a timely manner.

Asset Management System/Dams:

Hunter Water is updating and improving its dam safety emergency monitoring procedures and plans as part of implementing a two year program to transition its systems towards the requirements of the new Dams Safety Regulation (*Dams Safety Regulation 2019*).<sup>479</sup> Under the previous legislation, the following were recommended; they are now a regulatory requirement for each dam:

- Operation and Maintenance Plan;
- Emergency Management Plan;

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<sup>478</sup> Hunter Water, *Compliance and Performance Report; September 2020* (Version 1.0), 31 August 2020, section 4.1.

<sup>479</sup> The *Dams Safety Regulation 2019* was proclaimed in support of the *Dams Safety Act 2015*, which replaced the *Dams Safety Act 1978* (which was supported by guidance sheets).

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- Dam Surveillance System; and
  - related Staff Training.

The principal change for Hunter Water is that the now superseded *Dam Safety Act 1978* allowed either a standards (adopted by Hunter Water), or a risk based, approach to dams safety management; the new *Dam Safety Act 2015* requires that a risk based approach is implemented.

Hunter Water's dams include Chichester, Grahamstown and two stormwater retention dams. Documentation for the two stormwater dams has been combined, but must now be presented separately.

As examples of the updated/new documentation, Hunter Water provided the *Grahamstown Asset Management Plan (Operations and Maintenance)*<sup>480</sup> and the *Dam Safety Emergency Plan; Grahamstown Dam*,<sup>481</sup> which were approved in August 2020 and October 2020 respectively.

Hunter Water noted that all dam safety management activities, including office based activities and input by consultants, is being managed (scheduled and recorded) in the Ellipse maintenance management system. Activities will be subject to annual review and update.

It is understood that Dam Safety NSW, the regulator, will be undertaking transitional audits to ensure that the requirements of the new Regulation are being fully implemented.

*Asset Planning/Growth Plan:*

Hunter Water maintains a *Growth Plan; Funding and Delivery of Growth Infrastructure*,<sup>482</sup> which is updated annually to reflect the latest connection growth information and development forecasts. This planning reference, which is available on the Hunter Water website via the "Develop"/"Growth planning" webpages ensures that developers, planners and the broader community can reference up-to-date information. The *Growth Plan* includes detailed maps showing the likely time frame for new developments in the Lower Hunter.

Update of the *Growth Plan* is undertaken in consultation with the Department of Planning, Industry and Environment (which is becoming more involved) and local councils. Hunter Water advised that the 2020 update is currently (at the time of the audit) progressing through the approval process, noting the forward horizon remains quite stable.

*Asset Planning/Master Planning Framework for Future Growth Areas:*

Hunter Water has developed a holistic development servicing planning framework that aims to help Hunter Water, councils and other stakeholders deliver more sustainable and liveable developments in future growth areas. The framework enables Hunter Water and partners to facilitate a collaborative stakeholder process, with the aim to:<sup>483</sup>

- Integrate urban and land-use planning with water planning;
- Identify potential issues, challenges or problems in advance, including gaps in existing planning processes; and
- Identify, assess and recommend servicing opportunities and options.

This master planning approach, which is being led by Hunter Water, is currently focussed on the Hunter-New England growth corridor. Desired objectives for this 'area of interest', as identified through stakeholder workshops, include:

- A healthy and high amenity community, supported by greening and cooling;
  - Enhancing the natural features of the landscape, with a conscious connection to floodplains;
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<sup>480</sup> Document: 4.1.2-E-013 *Asset Management Plan (Operations and Maintenance) - Grahamstown Dam.docx*.

<sup>481</sup> Document: 4.1.2-E-017 *Controlled Document - Grahamstown DSEP - Dam Safety Emergency Plan.pdf*.

<sup>482</sup> Document: 4.1.2-E-012 *Hunter Water Growth Plan 2019.pdf*.

<sup>483</sup> PowerPoint presentation: SE-033 4.1.2 - *Master Planning Framework - November.pptx*.

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and

- Resilient water supplies, reducing impact of restrictions.

Design principles adopted in support of these objectives are focussed on:

- Infrastructure that delivers multiple benefits;
- Cost effective and manageable solutions; and
- Community engagement and co-design (specifically with Traditional Owners).

Incorporation of green corridors, enhanced natural creek lines, multi-use stormwater retarding basins, water sensitive urban design, stormwater harvesting and recycled water options all provide opportunities for improving lifestyle whilst providing services when considered from a whole of community development perspective.

Asset Creation/Asset Renewal:

Asset renewals are managed within the *Asset Creation Framework*, which has been previously discussed. They may be implemented as individual major projects, under asset provision programs (ongoing renewal programs for non-critical water main and sewer assets); or inherently included within capacity upgrades.

Asset renewals implemented through asset provisions are treated as minor works for which a Project Development Plan must be prepared and approved (see previously referenced examples); the asset provision as a whole (e.g. treatment assets provision) is subject to G2 business case and development funding approval. Renewals implemented as Individual Major Projects are subject to the full gateway approval process under the *Asset Creation Framework*.

The need for asset renewals may be identified proactively through routine inspections, condition assessments or compliance/risk assessments; or reactively in response to breakdowns or failures. Risk appetite statements (see previous discussion) are used to drive decision making in respect of asset renewals. During the audit period, Hunter Water reviewed and updated the forecast renewal investment requirements to be consistent with business objectives, including risk appetite.

Examples of asset renewals being implemented as major projects include:

- Black Hill Duplicate Trunk Main:<sup>484</sup>
  - identified as a high risk critical water main with history of major failures, including a 2017 incident that was the result of an accident (not pipe condition);
  - alternative supply is also required to cater for growth, as well as reducing the identified high risk to service continuity and reputation associated with failure;
  - four options were considered as part of the business planning process with duplication being identified as the preferred option;<sup>485</sup>
  - design development is progressing in 2020/21 with construction/commissioning scheduled for 2021/22;
  - there is a contingency plan in place for the interim period, which involves maintaining supply at reduced pressure in combination with water trucking.
- Major Stormwater Rehabilitation/Renewal Program:<sup>486</sup>
  - project involves the replacement of major stormwater culverts in five locations;
  - network wide condition assessment undertaken in 2017; five high priority sites have ‘out of appetite risk’ and were selected for rehabilitation;
  - in some cases, the high failure risk related to location as opposed to condition;

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<sup>484</sup> PowerPoint presentation: *SE-026 4.1.2 - Black Hill Duplicate Watermain.pptx*.

<sup>485</sup> Document: *4.1.2-E-019 Business Case - Black Hill Duplicate Trunk Water Main.docx*.

<sup>486</sup> PowerPoint presentation: *SE-024a 4.1.2 - CP3561 Stormwater Major Rehabilitation Program.pptx*.

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- project development involved identification of preferred rehabilitation options, assessment of both strategic and delivery risks, development of a project timeline taking into account priority ranking of the five locations, and estimation of costs;
  - an interim risk management plan has been developed for the interim period (until structural rehabilitation is completed); this involves the development and implementation of a monitoring plan and control measures, the development and implementation of preventative traffic management plans, and the development of emergency traffic management plans.<sup>487</sup>

Review of these example renewal projects reveals the prevalence of a risk management approach in driving investment in asset renewals.

Summary:

Hunter Water has continued to implement an extensive range of improvement initiatives during the audit period. Based on the above review of a sample of these initiatives, they have resulted /will result in significant benefits in managing Hunter Water's asset portfolio.

**Field Implementation:**

General:

As reported in **Section 1.2.3** (and detailed in **Appendix B**), field verification visits were undertaken to a number of sites/facilities to verify how effectively Hunter Water is implementing the requirements of the *Operating Licence* in practice. The notes presented in **Appendix B** form part of the assessment of compliance with this obligation; the following provides further detail in respect of some specific issues/aspects of implementation:

Farley Recycled Water Treatment Plant:

- Critical spares

At the time of inspection, the Farley Recycled Water Treatment Plant had been commissioned for approximately 12 months, but was off-line (not operating) awaiting delivery of a replacement UVT analyser under defects liability. It is understood that the replacement item had to be sourced from overseas and the delay may have been exacerbated by transport issues related to the COVID-19 situation. This raised concerns in respect of the availability of critical spares.

It was noted that, under the provisions of Veolia's operation and maintenance service contract, it is required to undertake an assessment of critical spare requirements at each site. For new facilities, this is typically undertaken just prior to the end of defects liability and had not yet been completed at the time of the analyser failure (August 2020). It is understood that a spare analyser has subsequently been ordered and the critical spare analysis has been initiated as the defects liability was due to end in mid-November 2020 (i.e. soon after the audit fieldwork).

- Maintenance management

Maintenance activity for all treatment plants is managed through Veolia's Veolia Asset Management System (VAMS). A brief overview was provided, primarily demonstrating functionality.

Preventative maintenance schedules are implemented through VAMS from which work orders are issued via email. Operators use printed work orders and enter details back into VAMS via the site computer; fitters (mechanical and electrical technicians) have tablets

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<sup>487</sup> Document: *SE-024b 4.1.2 - File Note Major Stormwater Rehabilitation Renewal Program - Interim Risk Management Plan Sept 2020.docx*.

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through which they manage their work order responsibilities.

An extract showing the preventative maintenance schedule for the plant was provided.<sup>488</sup> Upon brief review, it appears to address all relevant maintenance requirements including (for example):

- Monthly clean and calibrate turbidity analyser (PM code: HWC-FAR-R-5057) for the raw water turbidity analyser;
- Annual (1 Yearly) performance check pump (PM code: HWC-FAR-R-5005) for the dry mounted centrifugal product water pump (dual reticulation system); and
- Two yearly compliance external vessel inspection (PM code: HWC-FAR-R-0143) for the Accumulator Pressure Vessel.

A work order for a Turbidity Analyser was sighted. It is noted that: maintenance is undertaken on a route which includes a number of analysers, which are all identified on the work order; the work order history and task instructions are also shown.

#### Reservoir Inspections:

Reservoirs, including clear water storages at water treatment plants, are classified as Network Assets and are managed by Hunter Water (as opposed to Veolia). Reservoirs are subject to 2-monthly inspections and 5-yearly structural inspections.

Nonetheless, Veolia also undertakes monthly visual inspections as part of the plant maintenance regime. Records of inspections undertaken at the Grahamstown, Anna Bay and Nelson Bay Clear Water Storages confirmed that inspections had been undertaken each month during the audit period.

Several issues that could affect water quality were affected as a result of these inspections:

- Anna Bay – 6 November 2019 inspection identified the need to reseal gaps around vents. Work order WO1005401018 for repair of the gaps was raised and completed.
- Nelson Bay – 13 March 2020 noted the presence of non-offensive graffiti. It was noted that: “Graffiti has always been an issue. Could paint over it but would act as a blank canvas to graffiti again. P3 - non offensive”. “Usual non-offensive graffiti” was again recorded at the 3 September 2020 inspection.
- Nelson Bay – 11 May 2020 inspection identified a leak from the pipework at the base of the reservoir, with rust around a welded section. A job was logged (referred) to Hunter Water; notes indicate that this had been repaired at the time of the following inspection (1 June 2020).
- Grahamstown – 13 October 2020 inspection revealed that a number of screws were missing from the wall sheeting. Work order WO1005860653 was logged to have missing screws replaced.

A copy of the completed work order WO1005401018 for “*Seal gaps around vents of the clear water tank*” at Anna Bay was provided, demonstrating that the work had been completed. Closing comments indicate that 2 vents needed to be repaired, 3 vents were removed and rotated to prevent water ingress and 32 vents had been “... *brushed, prepped, primed and sealed as required*”.

#### Summary:

On the basis of the field verification visits (as documented in Appendix B) and the preceding discussion, it is apparent that systems are in place and that effective asset management practices are being implemented across the asset portfolio.

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<sup>488</sup> MS Excel workbook: 3.2.2-AGWR-05-E-017 FarleyRWTPWorksheet.xlsx.

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**Recommendations**

There are no recommendations in respect of this obligation.

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**Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.

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**Supplemental information**


No supplemental information is provided in respect of this obligation.

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## 2.4.4 Customer and stakeholder relations – Payment difficulties and actions for non-payment (clause 5.3)

### 2.4.4.1 *Payment difficulties and actions for non-payment (sub-clause 5.3.1)*

Sub-clause	Requirement	Compliance Grade
5.3.1	<p>Hunter Water must maintain and fully implement the following:</p> <ul style="list-style-type: none"> <li>a) a financial hardship policy that assists residential Customers and Consumers experiencing financial hardship to better manage their current and future bills;</li> <li>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;</li> <li>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</li> <li>d) provisions for self-identification, identification by community welfare organisations and identification by Hunter Water of residential Customers and Consumers experiencing financial hardship,</li> </ul> <p>(the <b>Procedure for Payment Difficulties and Actions for Non-payment</b>).</p>	 <b>Compliant</b>

#### Risk

Failure to comply with the requirements of this obligation poses a high risk in respect of Hunter Water’s customer relations and the financial management of its business.

#### Target for Full Compliance

Evidence that Hunter Water has maintained and fully implemented arrangements for assisting residential customers who are experiencing financial hardship to better manage their current and future bills.

#### Obligation

This obligation requires Hunter Water to maintain and implement procedures through which support is provided to Customers or Consumers who are experiencing financial hardship and having difficulty in paying their bills and which detail the actions to be taken for non-payment.

#### Summary of reasons for grade

Hunter Water demonstrated by the provision of policy documents and explanation that it had maintained and implemented arrangements for assisting residential customers who are experiencing financial hardship during the audit period. These arrangements, which are summarised in the *Debt Recovery and Hardship Policy*, *Customer Contract* and *Account Assistance Policy*, include, but are not limited to, payment assistance plans.

The *Debt Recovery and Hardship Policy* and *Customer Contract* identify the circumstances under which Hunter Water may disconnect or restrict the supply of water. It is apparent that all available debt



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recovery approaches are to be exhausted before action is taken to disconnect or restrict a service.

Information in respect of both support for Customers experiencing financial hardship and actions to be taken in response to non-payment of bills is readily available on the Hunter Water website, which also provides accessibility to the available support resources.

It is noted that Hunter Water has been proactive in promoting the availability of assistance programs during the COVID-19 pandemic, and has tailored its debt recovery and support programs accordingly.

Accordingly, Hunter Water is considered to have demonstrated compliance with this obligation.

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### Discussion and notes

Each element of this obligation has been assessed as follows:

- a) *a financial hardship policy that assists residential Customers and Consumers experiencing financial hardship to better manage their current and future bills* – Hunter Water provided copies of the following documents as evidence of its approach to providing assistance to those experiencing residential hardship:
  - *Debt Recovery and Hardship Policy*<sup>489</sup> – is an overarching policy document, which outlines:
    - Hunter Water’s commitment to issuing accurate and timely bills, treating customers fairly and with courtesy, providing options to ensure customers are able to maintain access to essential water services for health and hygiene purposes, and ensuring residential customers have access to payment assistance and other support options;
    - the requirement for customers to pay bills/accounts in accordance with the payment terms, notify Hunter Water if they are unable to pay before the due date, agree and commit to a payment extension plan or other payment assistance, and notify Hunter Water if their financial situation changes;
    - Hunter Water’s commitment not to restrict or disconnect water supply or take other debt recovery action if the customer has an agreed payment plan and payments are being made on the scheduled dates;
    - the actions that Hunter Water may take to collect the debt if payment of an account is overdue; and
    - the support that Hunter Water offers to residential customers experiencing financial hardship under its Account Assistance Program.
  - *Customer Contract*<sup>490</sup> – which reiterates, and provides more specific detail in respect of, the overarching policy arrangements outlined in the *Debt Recovery and Hardship Policy*.
- 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* – Hunter Water provided a copy of its *Account Assistance Policy*,<sup>491</sup> indicating that it: “... highlights the procedures and commitments Hunter Water makes to how we will support our customers experiencing hardship”.

Review of the *Account Assistance Policy* reveals that it provides further information (in addition to that provided in the *Debt Recovery and Hardship Policy*) including identification of the support options available; these include: “*Payment plans which are negotiated in accordance with the customer’s capacity to pay*”.

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<sup>489</sup> Document: 5.3.1-E-001 *Debt Recovery and Hardship Policy.pdf*.

<sup>490</sup> Document: 5.3.1-E-002 *Customer Contract.pdf*.

<sup>491</sup> Document: 5.3.1-E-003 *Account Assistance Fact Sheet.docx*.

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Further information in respect of payment plans is available on the Hunter Water website (“Payment plans and assistance” webpage)<sup>492</sup> which provides information regarding the support options available, including payment plans (for example, ‘Payment extension’ or ‘Easy pay bill smoothing’ plans). Further detail of these programs, including how they are implemented, is available by expanding links on the “Payment plans and assistance” webpage and on the “Request a payment extension” webpage.<sup>493</sup>

Brochures in respect of *Account Assistance* and *Payment Assistance*, both of which are available from the website, provide simple guidance for customers seeking assistance.

- 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* – Hunter Water noted that its *Debt Recovery and Hardship Policy* and *Customer Contract* both provide information regarding circumstances under which it would restrict or disconnect a customer service due to non-payment. The *Customer Contract*<sup>494</sup> fully details the steps to be taken prior to and in the event of a service being restricted or disconnected.

Information is also provided on the Hunter Water website, (“What happens if I don’t pay?” webpage),<sup>495</sup> from which the *Debt Recovery and Hardship Policy* can also be accessed.

Hunter Water advised that the practice of restricting or disconnecting service has been suspended (since March 2020) due to COVID-19 economic impacts (see further discussion below and under Supplemental information).

- d) *provisions for self-identification, identification by community welfare organisations and identification by Hunter Water of residential Customers and Consumers experiencing financial hardship* – Hunter Water noted that:

*“There are many ways a customer can be identified as experiencing financial hardship, including self-identification through our contact centre or website, through our relationship with community partners or through assessment by our credit officers. These processes can be detailed in audit interview to define the best evidence to provide of these mechanisms.”*

Details of how support can be accessed are detailed on Hunter Water’s website and via other previously referenced information such as the *Payment Assistance* brochure which lists contact details for community agencies and free financial counselling services as well as Hunter Water itself. Access to support can be gained by contacting these agencies/services or the Hunter Water Contact Centre, or online via the Hunter Water website.

In its *Compliance and Performance Report*,<sup>496</sup> Hunter Water reported that it had worked to enhance its approaches to identifying Customers and Consumers that are experiencing financial hardship, as follows:

*“In 2019-20, we focused on strengthening partnerships with key stakeholders, such as community service providers, government departments and other utilities. This helps our customer care team identify and locate our most vulnerable customers early. We used our customer segmentation data to identify and target those geographical areas where our most vulnerable customers are located. This data has reinforced information on locations for our ‘Bring Your Bills Day’ (BYBD) initiatives and assists our early engagement campaigns to provide tailored support to those customers that are high needs and utilising Payment Assistance Support (PAS). This enables a wraparound approach to be provided early, avoiding debt growth for those struggling. We have also increased the use of SMS technology for*

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<sup>492</sup> “Payment plans and assistance” webpage on the Hunter Water website at: <https://www.hunterwater.com.au/home-and-business/managing-your-account/help-paying-your-bill/payment-plans-and-assistance>.

<sup>493</sup> “Request a payment extension” webpage on the Hunter Water website at: <https://www.hunterwater.com.au/home-and-business/managing-your-account/help-paying-your-bill/payment-plans-and-assistance/request-a-payment-extension>.

<sup>494</sup> Document: 5.3.1-E-002 *Customer Contract.pdf*, section 11.

<sup>495</sup> “What happens if I don’t pay?” webpage on the Hunter Water website at: <https://www.hunterwater.com.au/home-and-business/managing-your-account/help-paying-your-bill/what-happens-if-i-dont-pay>.

<sup>496</sup> Document: 3.3.3-E-004 *Compliance and performance report 2019-20.pdf*, section 5.3.2.

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*early engagement.”*

It is noted that support programs are not limited to payment plans/payment assistance, but also include:<sup>497</sup>

- pension rebates and/or concessions;
- programs aimed at reducing water use (and therefore cost) such as Water Audits, Essential Plumbing Assistance and Tap Rewashing Services; and
- engaging face-to-face with Customers via Field (Home) Visits and Community Outreach and Events to promote support options.

Implementation of the Procedure for Payment Difficulties and Actions for Non-payment during the majority of the audit period was adjusted in response to the COVID-19 pandemic, with Hunter Water acting proactively to ensure that it maintained support to Customers who were financially impacted. As reported in its *Compliance and Performance Report* (for the 2019/20 financial year):<sup>498</sup>

*“We revised our collection strategies and business rules from mid-March to June 2020 in direct response to COVID-19 to support those customers financially impacted. This saw us cease all pro-active collection measures including restriction of service, include non-residential customers into our hardship programme for the first time, and offer flexible payment arrangement along with PAS to those identified as requiring further support. During the pandemic period we have undertaken an advertising campaign titled ‘All in this Together’ to highlight the assistance options available to those needing support. In collaboration with EWON, we introduced our first ‘virtual’ BYBD event to allow residential customers the chance to digitally connect (via phone or video link) with not only Hunter Water but many other partnering service providers and support agencies within our region. We will continue to review our procedures for customers experiencing payment difficulty and our actions for non-payment on a regular basis to ensure all of our customers have access to support.”*

This approach was encompassed in a *Collection and Vulnerability Resilience Plan*<sup>499</sup> developed in late March 2020 (refer Supplemental information below for further details). This approach was extended (with appropriate adjustments), whilst being closely monitored through the remainder of the audit period.

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## **Recommendations**

There are no recommendations in respect of this obligation.

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## **Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.

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## **Supplemental information**

As reported above (Discussion and notes), the implementation of Hunter Water’s collection strategies and business rules were revised in response to the COVID-19 pandemic during the majority of the audit period. The *Collection and Vulnerability Resilience Plan* implemented from late March 2020 was as follows:

- Phase 1 – Week beginning 23 March 2020:
  - Hold all restriction action until further notice.
  - Restore 95 properties assumed to be still restricted.
  - Suspend all field activity for the team.

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<sup>497</sup> Document: 5.3.1-E-004 *Hunter Water Support Programs.docx*.

<sup>498</sup> Document: 3.3.3-E-004 *Compliance and performance report 2019-20.pdf*, section 5.3.2.

<sup>499</sup> PowerPoint presentation: SE-020g *COVID 19-Collection and Vulnerability Plan.pptx*.

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- Hold all referrals to debt collection agent and legal actions.
  - Cease outbound collection calls.
  - Public Message sent regarding hardship support options.
  - Automatic three month hold on all accounts where customer identifies impact from COVID-19.
  - Phase 2 – Week beginning 30 March 2020:
    - Maintain sending reminder and final notices on accounts; amend wording to reference assistance options and remove collection action wording.
    - Begin pro-active campaign to contact non-residential (small to medium business) customers with an overdue balance to offer three month hold if impacted.
    - Continue to offer automatic 3 month hold for customers self-identifying as impacted.
    - Release of public message targeting tenants to advise of Payment Assistance Vouchers to assist them.
  - Phase 3 – Week beginning 6 April 2020:
    - Maintain sending reminder and final notices on accounts.
    - Begin pro-active campaign to contact residential customers with overdue balance to offer three month hold if impacted.
    - Continue to offer automatic 3 month hold for customers self-identifying as impacted.
    - Release of public message targeting tenants to advise of Payment Assistance Vouchers to assist them.
  - Phase 4 – Week beginning 13 April 2020:
    - Maintain sending reminder and final notices on accounts.
    - Continue pro-active campaign to contact customers with overdue balance to offer three month hold if impacted.
    - Continue to offer automatic 3 month hold for customers self-identifying as impacted.
    - Release of public message targeting tenants to advise of Payment Assistance Vouchers to assist them.
  - Future Horizon (as proposed in late March 2020):
    - Recommend always continuing to send out bills and reminder notices to keep people informed of their debt.
    - If situation remains in July 2020, begin applying PAS vouchers to accounts still impacted and offer holds on next bill to be issued.
    - Consider in July 2020 to hold all interest on overdue accounts, as first accounts impacted by COVID-19 hit the 90 days overdue limit.
    - Continue to speak regularly with Treasury and Ministerial stakeholders about stimulus package options.
    - Revisit plan and forecast each week with Finance and Retail stakeholders.

Key elements and other aspects of Hunter Water’s approach include:

- No proactive collection activities. These will need to be reintroduced in a balanced way, and won’t be until necessary (dependent upon aged debt levels).
- A need for Customers to be aware that they have an overdue balance. Overdue notices were reintroduced but with revised wording.
- Intensive social media and advertising programs were implemented to inform Customers.
- Goodwill calls were made to proactively engage with Customers and gain understanding of their situations.

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- All Customer engagements were personalised to reduce anxiety; bespoke arrangements were introduced to suit individual situations.
  - Trade waste samplers engaged with trade waste customers (general feedback was that they were coping with the situation).
  - Hunter Water engaged with its peers through the Water Services Association of Australia (WSAA) to ensure that its approach remained consistent with that being implemented by other water utilities. Copies of correspondence (and attachments) demonstrated this engagement.<sup>500</sup>

Hunter Water indicated that, as at the time of the audit interviews, the overall economic impact had not been huge. Aged debt (at 90 days) had increased from  $\approx$  \$2.4 million normal to a maximum of a  $\approx$  \$3.4 million before beginning to fall. Further response actions will be dependent on response to the November 2020 billing cycle.

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<sup>500</sup> Email correspondence:

- *SE-020a FW Customer Support Provisions - a summary of what is offered across the country Evelyn Rodrigues posted to Customer Resources.msg.*
- *SE-020b FW Hardship update and Sentiment Monitoring for this week.msg.*
- *SE-020c FW Hunter Customer hardship paper 2 April 2020.msg.*
- *SE-020d FW Update on Hardship Measures.msg.*
- *SE-020e FW Update on sentiment monitoring and customer support provisions.msg.*
- *SE-020f FW Weekly update on sentiment monitoring.msg.*

## 2.4.5 Customer and stakeholder relations – Customer advisory group (clause 5.4)

### 2.4.5.1 Customer advisory group (sub-clause 5.4.1)

Sub-clause	Requirement	Compliance Grade
5.4.1	Hunter Water must maintain and regularly consult with its Customers through a customer advisory group.	 <b>Compliant</b>

#### Risk

Failure to consult with its Customers poses a moderate risk. In the absence of Customer input, Hunter Water may not be aware of Customer perceptions of issues relevant to its performance.

#### Target for Full Compliance

Evidence to demonstrate that Hunter Water has regularly consulted with its Customers through a customer advisory group.

#### Obligation

This obligation requires Hunter Water to maintain a customer advisory group and to regularly consult with its Customers through that group.

#### Summary of reasons for grade

Hunter Water demonstrated that, during the audit period, it had regularly consulted with its Customers through a customer advisory group, specifically its Customer and Community Advisory Group. Meetings were held four (4) times (nominally quarterly) during the audit period, consistent with the requirements of the *Customer and Community Advisory Group Charter*.

Accordingly, Hunter Water is considered to have demonstrated full compliance with this obligation.

#### Discussion and notes

Hunter Water advised that it maintained and regularly consulted with its Customer and Community Advisory Group (CCAG), which fulfils the Licence requirements of a customer advisory group, during the audit period. As evidence that it had done so, Hunter Water referenced copies of meeting agenda and minutes that are available on the “Hunter Water’s Customer and Community Advisory Group” webpage of its “Your Voice” website;<sup>501</sup> copies of meeting presentations and responses to questions on notice are also available.

The CCAG met on four (4) occasions during the period, including 26 November 2019, 3 March 2020, 12 May 2020 and 25 August 2020. This is consistent with the *Customer and Community Advisory Group Charter*,<sup>502</sup> which indicates that:

*“The CCAG will hold at least four (4) regular meetings per annum and such additional meetings as Hunter Water may decide in order to fulfil its duties. Meetings will be held quarterly as a guide.”*

It is noted that minutes for the August 2020 meeting were not yet on the website at the time of the audit interviews as minutes are not published until endorsed at the subsequent meeting. The next CCAG meeting was scheduled for 24 November 2020; the minutes had not yet been uploaded at the time of reporting (4 December 2020).

<sup>501</sup> Webpage: 5.4.1-E-001 <https://yourvoice.hunterwater.com.au/ccag>.

<sup>502</sup> Document: 5.4.1-E-002 <https://yourvoice.hunterwater.com.au/34084/documents/90793>.



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Hunter Water advised that it consults the CCAG on a broad variety of issues of relevance /interest to its customers and community. This is discussed in detail in the assessment of compliance with clause 5.4.2 (refer **Section 2.4.5.2**).

The manner in which Hunter Water and the CCAG complied with the requirements of the *Customer and Community Advisory Group Charter* (refer **Section 2.4.5.4**) during the 2019/20 financial year (part of which falls within the audit period) is reported in the 2019/20 *Compliance and Performance Report*.<sup>503</sup> This indicates that (for example):

- An additional meeting of the CCAG (in excess of the requirement for at least four (4) regular meetings per annum) was held in October 2019 (i.e. just prior to the start of the audit period). This extraordinary meeting was held with Hunter Water’s Board of Directors; matters discussed included Drought Customer Communications; Hunter Water’s Internal Business Plan; and Drought and the LHWP (Lower Hunter Water Security Plan).
- Meetings were held at different locations across Hunter Water’s area of operations. Due to COVID-19 social distancing requirements, the May 2020 meeting was held online via Zoom.
- Consistent with the extension of local government terms due to COVID-19, the term of the CCAG Chair was extended by twelve months from September 2020.
- No working parties or sub-committees of the CCAG were formed during 2019/20.
- Hunter Water ensured appropriate venue and secretarial support was provided for each meeting.
- All CCAG members were provided with an option to collect the sitting fee for each meeting they attended in 2019/20. These fees were paid either into the bank accounts nominated by the members, or where nominated, paid to their organisation or a charity of their choice.

On the basis of the available CCAG meeting minutes, it is apparent that Hunter Water had maintained and regularly consulted with its Customers through the CCAG during the audit period, and that such consultation had been undertaken in accordance with the *Customer and Community Advisory Group Charter*.

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### **Recommendations**

There are no recommendations in respect of this obligation.

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### **Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.

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### **Supplemental information**

No supplemental information is provided in respect of this obligation.


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<sup>503</sup> Hunter Water, *Compliance and Performance Report; September 2020* (Version 1.0), 31 August 2020, section 5.1.1.



### 2.4.5.2 Customer advisory group (sub-clause 5.4.2)

Sub-clause	Requirement	Compliance Grade
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.	 <b>Compliant</b>

#### Risk

Failure to make effective use of the Customer Advisory Group poses a moderate risk to Hunter Water’s operations. In the absence of customer input, Hunter Water may not be aware of customer perceptions of issues relevant to its performance.

#### Target for Full Compliance

Evidence that Hunter Water has used the customer advisory group to obtain advice on the interests of its customers, the Customer Contract and such other key issues related to its planning and operations as it may determine.

#### Obligation

This obligation requires Hunter Water to use the customer advisory group to obtain advice on the interests of its customers, the Customer Contract and such other key issues related to its planning and operations as it may determine.

#### Summary of reasons for grade

Hunter Water demonstrated that, during the audit period, it had used the customer advisory group (Customer and Community Advisory Group) to obtain advice on matters of interest to its Customers and key issues related to planning and operation of the water supply, sewerage and drainage schemes, including for example, input in respect of the review of the Lower Hunter Water Security Plan and management of Hunter Water’s response.

Based on the evidence provided, Hunter Water is considered to have demonstrated compliance with this obligation.

#### Discussion and notes

In its response to the Audit Questionnaire, Hunter Water advised that:

*“Hunter Water consults on a broad variety of issues of relevance/ interest to its customers and community. A detailed summary of items discussed in 2019-20 was provided with Hunter Water’s Compliance and Performance Report. This includes operational and strategic matters, including Hunter Water’s regulatory and pricing process.”*

Hunter Water referenced copies of Customer and Community Advisory Group (CCAG) meeting agenda and minutes that are available on the “Hunter Water’s Customer and Community Advisory Group” webpage of its “Your Voice” website,<sup>504</sup> which detail the matters discussed. Copies of meeting presentations and responses to questions on notice are also available.

In the *Compliance and Performance Report*,<sup>505,506</sup> Hunter Water indicates that:

<sup>504</sup> Webpage: 5.4.1-E-001 <https://yourvoice.hunterwater.com.au/ccag>.

<sup>505</sup> Hunter Water, *Compliance and Performance Report; September 2020* (Version 1.0), 31 August 2020, section 5.1.2.

<sup>506</sup> It is noted that the *Compliance and Performance Report* relates to the 2019/20 financial year, part of which falls within the audit period (1 November 2019 to 31 October 2020); i.e. there is not full alignment between the reporting periods.

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- the CCAG had considered a range of issues, including issues recommended by Hunter Water and self-generated topics that were of interest to members of the CCAG; and
  - in accordance with the *Customer and Community Advisory Group Charter*, matters were raised either for information or to receive feedback from CCAG members.

Review of the *Compliance and Performance Report* reveals that matters in respect of which Hunter Water had consulted with the Customer and Community Advisory Group (CCAG) during the audit period included:

- Drought – including the ‘Love Water’ water conservation program, Water Restrictions (both Level 1 and Level 2), support for business and residential customers, the role of Community Water Officers, drought tankering program with local councils and providing water donations to the broader Hunter community; an update was provided at each meeting.
- Lower Hunter Water Security Plan – an update in respect of the Lower Hunter Water Security Plan was provided at each meeting. More specifically (for example):
  - at the November 2019 meeting, a discussion was held on the role of new technology for water conservation, demand management and source augmentation;
  - at the March 2020 meeting, Hunter Water presented on the importance of water conservation as part of all portfolios; and
  - at the May 2020 meeting, a discussion was held on recycled water opportunities across the Lower Hunter.
- Approach to digital servicing and experience – CCAG members participated in a briefing about Hunter Water’s digital transformation, including customer focused work to improve service and operational performance, at the November 2019 meeting. Information was provided in respect of changing service delivery models and expectations, the opportunities provided by the Internet of Things (IoT) to find leaks and breaks, and Hunter Water’s approach to digital metering.
- Our people – diversity and inclusion – at the March 2020 meeting, CCAG members engaged in a discussion about reconciliation and Hunter Water’s first Reconciliation Action Plan (RAP). The discussion formed part of a broader conversation regarding Hunter Water’s ‘Our People’ business plan goal.
- Customer hardship support – at the May 2020 meeting, which was held online via Zoom, CCAG members participated in a discussion about the impacts of COVID-19 on Hunter Water’s customers, including the efforts underway to support customers experiencing adversity as a result of COVID-19.

Reference to the meeting agenda and minutes confirmed that the abovementioned matters had been discussed. Other matters included (for example):

- Managing Director’s Report – additional issues addressed (each meeting);
- Non-residential customer engagement (November 2019);
- Our Customer Strategic Priority (May 2020);
- Hunter Water Service Levels Research (August 2020); and
- Our Environmental Focus (August 2020).

Hunter Water responded to questions on notice raised by a CCAG member at the March 2020,<sup>507</sup> May 2020<sup>508</sup> and August 2020<sup>509</sup> meetings, including questions on behalf of community groups

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<sup>507</sup> Document: *Responses to Questions on Notice - Mr Dowling and Ms Bowden.pdf* (available at: <https://yourvoice.hunterwater.com.au/48573/widgets/258418/documents/167457>).

<sup>508</sup> Document: *Hunter Water CLG Meeting 12 May 20 - responses - final.pdf* (available at: <https://yourvoice.hunterwater.com.au/48573/widgets/258418/documents/170605>).

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raised on behalf of the Hunter Healthy Rivers Group, Save Chichester Valley Group, Save the Williams River Coalition and Limeburners Creek. These questions all related to matters associated with the review of the Lower Hunter Water Security Plan. Other associated questions were also raised via the Lower Hunter Water Security Plan Community Liaison Group.<sup>510</sup>

Apart from formal response to questions on notice, queries raised/input provided by CCAG members are acknowledged/recorded in meeting minutes, as appropriate.

Hunter Water noted that, during the audit period, it had restructured the agenda for CCAG meetings to make them more effective. The agenda now follows the following format:

- Managing Director’s report;
- Strategic issues; and
- Operational issues (including for example, the recent pricing review and upcoming Operating Licence and Customer Contract reviews).

In response to the auditor’s enquiry, Hunter Water indicated that it does get value from the consultation process through effective engagement with the CCAG members. Some identified high value outcomes include (for example):

- Local government assistance with drought management actions.
- Increasing engagement:
  - CCAG members were asked to complete the Customer Survey prior to the meeting at which results were presented; and
  - Guidance sought from CCAG members to guide Hunter Water’s approach to broader community engagement.

On the basis of the evidence provided, it is apparent that during the audit period, Hunter Water had used the customer advisory group (Customer and Community Advisory Group) to obtain advice on matters of interest to its Customers and key issues related to planning and operation of the water supply, sewerage and drainage schemes.

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### **Recommendations**

There are no recommendations in respect of this obligation.

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### **Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.

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### **Supplemental information**

No supplemental information is provided in respect of this obligation.


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<sup>509</sup> Document: *Responses to Questions for CLG Meeting 24 August 2020.pdf* (available at: <https://yourvoice.hunterwater.com.au/48573/widgets/258418/documents/180701>).

<sup>510</sup> Hunter Water’s “Lower Hunter Water Security Plan Community Liaison Group” webpage at: <https://yourvoice.hunterwater.com.au/LHWP-CLG>.

### 2.4.5.3 Customer advisory group (sub-clause 5.4.3)

Sub-clause	Requirement	Compliance Grade
5.4.3	<p>Hunter Water:</p> <ul style="list-style-type: none"> <li>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;</li> <li>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"> <li>i) business;</li> <li>ii) organisations representing low income;</li> <li>iii) Customers living in rural and urban fringe areas;</li> <li>iv) residential;</li> <li>v) local government;</li> <li>vi) pensioners;</li> <li>vii) Customers with disabilities;</li> <li>viii) Indigenous Australians; and</li> <li>ix) Customers from culturally and linguistically diverse backgrounds; and</li> </ul> </li> <li>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"> <li>i) business Consumers;</li> <li>ii) residential Consumers; and</li> <li>iii) environmental groups.</li> </ul> </li> </ul>	 <b>Compliant</b>

#### Risk

Failure to include representatives of the nominated categories as members of the customer advisory group poses a moderate risk. Hunter Water needs to consult across a cross-section of its customer base to ensure that issues relevant to its performance are fully captured.

#### Target for Full Compliance

Evidence that membership of the customer advisory group is appointed in accordance with the Customer Advisory Group Charter, and that Hunter Water has used its best endeavours to include representatives of the nominated categories.

#### Obligation

This obligation requires Hunter Water to appoint members to the customer advisory group in accordance with the Customer Advisory Group Charter and, in doing so, use its best endeavours to include representatives of the nominated categories.

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## Summary of reasons for grade

Hunter Water demonstrated that the membership of the customer advisory group (Customer and Community Advisory Group) had been appointed and determined by Hunter Water in accordance with the *Customer Advisory Group Charter*, and that it has used its best endeavours to ensure that all nominated interest groups were represented. Full interest group representation was achieved through the appointment of two members representing Indigenous Australians during the audit period

Hunter Water is therefore considered to have demonstrated compliance with this obligation.

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## Discussion and notes

In its response to the Audit Questionnaire, Hunter Water advised that a list of Customer and Community Advisory Group (CCAG) members and the interest groups they represent is available on the CCAG webpage (“Hunter Water’s Customer and Community Advisory Group” webpage of the “Your Voice” website).<sup>511</sup>

Review of the membership list published on the CCAG webpage confirms that:

- all interest groups identified under paragraph (b) are represented;
- of the interest groups identified under paragraph (c), environmental groups are represented.

The website indicates that EOIs are sought from all interest groups identified under paragraph (b) as well as residential consumers and environmental groups, but not business consumers (interest groups identified under paragraph (c)). During the audit interviews, Hunter Water indicated that a number of CCAG members represent multiple interests, so the interest groups identified under paragraph (c) are effectively all represented.

Hunter Water noted that the process for appointing members to the CCAG is as documented in the *Customer and Community Advisory Group Charter*, which requires that:

*“Hunter Water will invite applications from the community via public advertisements and in writing to its customers. Hunter Water may also invite expressions-of-interest from identified stakeholder organisations representing business and community groups.*

*Selections and appointments will be made to the CCAG in a manner consistent with Hunter Water’s recruitment policies and procedures.”*

Appointment of current CCAG members consistent with the *Charter* can be summarised as follows:

- All sitting members of the CCAG were reappointed for a four year term following review at the 22 September 2018 meeting of the Hunter Water Board of Directors (at which the current *Customer and Community Advisory Group Charter* was also endorsed). Letters of appointment were provided as follows:
    - appointment of independent Chair (appointee is a local government representative);<sup>512</sup> and
    - reappointment of all other members.<sup>513</sup>
  - Two additional members representing Customers with disabilities<sup>514</sup> and Pensioners /Residential customers<sup>515</sup> were appointed in June 2019 (prior to the audit period).
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<sup>511</sup> Webpage: 5.4.1-E-001 <https://yourvoice.hunterwater.com.au/ccag>.

<sup>512</sup> Letter: 5.4.3-E-005 HW2011-662 5 38.001 Letter - of appointment - Le Mottee as Chair of CCAG - September 2018.pdf.

<sup>513</sup> Letter: 5.4.3-E-006 HW2011-662 5 38.003 Letter - reappointment of CCAG member following September 2018 Board meeting.pdf.

<sup>514</sup> Letter: 5.4.3-E-007 HW2011-662 5 38.007 Letter - appointment of Joseph Popov to CCAG.pdf.

<sup>515</sup> Letter: 5.4.3-E-008 HW2011-662 5 38.009 Letter - appointment of Sue Johns - National Pensioners Association - to CCAG.pdf.

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- Hunter Water provided extract from the CCAG webpage<sup>516</sup> dated 18 June 2020 which seeks expressions of interest to become a CCAG member under the heading: “Are you interested in helping shape Hunter Water’s strategic direction?”
  - A further two members representing Indigenous Australians<sup>517,518</sup> were subsequently appointed in August 2020 (i.e. within the audit period). In spite of recruitment efforts, this interest group was not previously represented.
  - Hunter Water advised that, whilst terms are not yet due to expire, passive recruitment activity is undertaken on an ongoing basis to fill any vacancies, particularly for interest groups not already represented, and to ensure that the CCAG also remains representative (including from a geographical perspective). These recruitment activities have included:<sup>519</sup>
    - a website news item dated 5 August 2020, which seeks membership expressions of interest: <https://www.hunterwater.com.au/news/are-you-interested-in-helping-shape-hunter-waters-strategic-direction> (this news item replicates the invitation on the CCAG webpage);
    - social channels, for example a post on the Hunter Water Facebook page: <https://www.facebook.com/OurHunterWater/posts/1494782410724245>;
    - Hunter Water’s “Making Waves” newsletter (example not sighted); and
    - advertisements in the local print media, e.g. the Newcastle Herald (example not sighted).

It was noted that the independent Chair, whose term was due to expire in September 2020 (coinciding with the end of their current term as a local government councillor), was reappointed for a further twelve months.<sup>520</sup> This extension was consistent with the extension of local government terms due to COVID-19.

It is therefore apparent that Hunter Water has appointed membership of the CCAG in accordance with the requirements of the *Customer and Advisory Group Charter*, and that it has used its best endeavours to ensure that all nominated interest groups are now represented.

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### **Recommendations**

There are no recommendations in respect of this obligation.

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### **Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.

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### **Supplemental information**

No supplemental information is provided in respect of this obligation.

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<sup>516</sup> Image: 5.4.3-E-009 Screenshot of CCAG advertisement within the audit year provided.jpg.

<sup>517</sup> Letter: 5.4.3-E-002 200820 - CCAG - letter of appointment - Kerindy Clarke.pdf.


<sup>518</sup> Letter: 5.4.3-E-003 200820 - CCAG - letter of appointment - Leroy Wilkinson.pdf.

<sup>519</sup> Document: SE-068 - Clause 5.4.1-5 Customer Advisory Group.docx.

<sup>520</sup> Email correspondence: 5.4.3-E-004 Extension of Cr Le Mottee's term as Chair - CCAG\_membership.msg.



#### 2.4.5.4 Customer advisory group (sub-clause 5.4.4)

Sub-clause	Requirement	Compliance Grade
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"> <li>a) the role of the customer advisory group;</li> <li>b) how members and the Chair of the customer advisory group will be appointed;</li> <li>c) the term for which members are appointed;</li> <li>d) information on how the customer advisory group will operate;</li> <li>e) a description of the type of matters that will be referred to the customer advisory group and how those matters may be referred;</li> <li>f) procedures for communicating the outcomes of the customer advisory group's work to the public;</li> <li>g) procedures for monitoring issues raised at meetings of the customer advisory group and ensuring appropriate follow-up of those issues;</li> <li>h) procedures for amending the charter; and</li> <li>i) funding and resourcing of the customer advisory group by Hunter Water,</li> </ul> <p><b>(Customer Advisory Group Charter).</b></p>	 <b>Compliant</b>

#### Risk

Failure to maintain a charter that addresses the requirements of this obligation poses a moderate risk that the customer advisory group may not be effective in enabling Hunter Water to consult with its Customers.

#### Target for Full Compliance

Evidence that Hunter Water and the customer advisory group have maintained a Customer Advisory Group Charter that addresses all of the nominated issues.

#### Obligation

This obligation requires Hunter Water, together with the customer advisory group, to maintain a Customer Advisory Group Charter that addresses the issues the nominated issues.

#### Summary of reasons for grade

Hunter Water advised that a *Customer and Community Advisory Group Charter* had been maintained throughout the audit period, having last been updated in September 2018. Detailed review of the *Charter* confirmed that it addresses the requisite matters.

Hunter Water is therefore considered to have demonstrated compliance with this obligation.



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## Discussion and notes

Hunter Water advised that the *Customer and Community Advisory Group Charter*<sup>521</sup> was adopted by Hunter Water's Board of Directors on 22 September 2018 after being supported-in-principle by the Customer and Community Advisory Group (CCAG) at its meeting on 14 August 2018 (confirmed by review of the minutes of that meeting).<sup>522</sup> The *Charter* is due to be revised no later than September 2022.

Review of the *Charter* confirms that it addresses all of the requisite issues, as follows:

- a) the role of the customer advisory group – under the heading “*Role of the Customer and Community Advisory Group*” (section 2), which identifies the Purpose and Role (section 2.1), Objectives (section 2.2), and Duties and Responsibilities of the CCAG (section 2.3);
- b) how members and the Chair of the customer advisory group will be appointed – under the heading “*How Members and the Chair of the Customer Advisory Group will be Appointed*” (section 3), which details Membership constituency (section 3.1), requirements of CCAG members (section 3.2), Selection Criteria (section 3.3) and Selection Process (section 3.4), and Membership Vacancies (section 3.5);
- c) the term for which members are appointed – under the heading “*The Term for which Members are Appointed*” (section 4);
- d) information on how the customer advisory group will operate – under the headings “*Operations*” (section 5) and “*Monitoring and Reporting on Issues Raised at the Customer and Community Advisory Group*” (section 6), which details the number of meetings to be held (section 5.1), the appointment and responsibilities of the Chairperson (section 5.2), Attendance at Meetings (section 5.3), the meeting Quorum (section 5.4), the arrangements in respect of Meeting Agendas and Business Papers (section 5.5), Authority of the CCAG which is advisory only (section 5.6), the requirements in respect of any Conflict of Interest (section 5.7), the conditions for forming Sub-Committees or Working Parties (section 5.8), and the requirements in respect of the preparation, endorsement and publication of minutes of meetings (section 6);
- e) a description of the type of matters that will be referred to the customer advisory group and how those matters may be referred – under the heading “*Matters to be Considered by the Customer and Community Advisory Group*” (section 7), which identifies the type of matters that may be referred to the CCAG and the ability of the CCAG Chairperson or members to nominate matters for discussion/presentation;
- f) procedures for communicating the outcomes of the customer advisory group's work to the public – under the heading “*Communicating the Outcomes of the Customer and Community Advisory Group's Work to the Public*” (section 8), which outlines the requirement for publishing adopted CCAG meeting minutes on the Hunter Water website, publishing a summary of the CCAG's work each year in Hunter Water's Annual Report, and publishing CCAG activities in newsletters to Hunter Water employees;
- g) procedures for monitoring issues raised at meetings of the customer advisory group and ensuring appropriate follow-up of those issues – under the heading “*Monitoring and Reporting on Issues Raised at the Customer and Community Advisory Group*” (section 6), which requires that: “*Minutes will include a summary of actions arising to ensure appropriate follow up and reporting back to the CCAG membership*”;
- h) procedures for amending the charter – under the headings “*Charter/ Amendment and Revision*” (section 10) and “*Approvals*” (section 11), which indicate the timing and purpose for reviewing the *Charter* and the requirement for the *Charter* to be approved by the

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<sup>521</sup> Document: 5.4.4-E-001 <https://yourvoice.hunterwater.com.au/34084/documents/90793>.

<sup>522</sup> Document: *CCAG\_minutes\_-\_August\_2018.pdf* (available at: <https://yourvoice.hunterwater.com.au/34084/widgets/194468/documents/92961>).

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Hunter Water Board of Directors (section 10) and record the actual approval of the current *Charter* (endorsement by the CCAG and approval by Hunter Water’s Board of Directors) (section 11); and

- i) funding and resourcing of the customer advisory group by Hunter Water – under the heading “*Funding and Resourcing of the Customer and Community Advisory Group*” (section 9), which details the resources/support to be provided by Hunter Water and the arrangements in respect of the payment of sitting fees and the reimbursement of out-of-pockets expenses incurred by CCAG members.

On the basis of this assessment, it is apparent that the *Charter* addresses all the requisite matters identified under this Licence obligation.

It is, however, noted that although inferred by the recorded endorsement (meeting records confirm that the CCAG reviewed and supported in-principle the current *Charter* at its 14 August 2018 meeting), there is no documented requirement for the CCAG itself to have input to reviewing and amending the *Charter*. Noting that the Licence requires that: “*Hunter Water and members of the customer advisory group must, for the term of this Licence, maintain a charter ...*”, it would seem appropriate to clearly document the CCAG’s role in reviewing and amending the *Charter*; this could be considered at the next scheduled review.

It is therefore suggested, as an opportunity for improvement (**OFI-HWC-2020-12**) that Hunter Water considers revising the *Customer and Community Advisory Group Charter* to specifically acknowledge the role of the Customer and Community Advisory Group in endorsing any proposed changes to the Charter prior to approval by its Board of Directors.

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### Recommendations

There are no recommendations in respect of this obligation.

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### Opportunities for improvement

The following opportunity for improvement has been identified in respect of this obligation:

- **OFI-HWC-2020-12:** it is suggested that Hunter Water considers revising the *Customer and Community Advisory Group Charter* to specifically acknowledge the role of the Customer and Community Advisory Group in endorsing any proposed changes to the Charter prior to approval by its Board of Directors.


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### Supplemental information

No supplemental information is provided in respect of this obligation.

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#### 2.4.5.5 Customer advisory group (sub-clause 5.4.5)

Sub-clause	Requirement	Compliance Grade
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.	 <b>Compliant</b>

#### Risk

Failure to provide information poses a moderate risk. In the absence of suitable information, the customer advisory group would be unable to provide effective input in respect of the issues discussed.

#### Target for Full Compliance

Evidence that Hunter Water has provided information in its possession or under its control necessary to enable the customer advisory council to discharge the tasks assigned to it.

#### Obligation

This obligation requires Hunter Water to provide the customer advisory group with information in its possession or under its control necessary to enable the customer advisory group to discharge the tasks assigned to it, with the exception of information or documents that are confidential.

#### Summary of reasons for grade

Hunter Water demonstrated that it had provided the Customer and Community Advisory Group with information necessary to enable the Group to discharge the tasks assigned to it. Information was provided principally in presentations and briefings at Advisory Group meetings; however, there was also evidence of information provided in documented responses to questions on notice.

Hunter Water indicated that, to date, no information has been withheld from the Advisory Group on the basis that it was deemed confidential.

Based on the evidence provided, Hunter Water is considered to have demonstrated compliance with this obligation.

#### Discussion and notes

In its response to the Audit Questionnaire, Hunter Water advised that:

- “1. Prior to each meeting, members are invited to submit items for consideration on the agenda and Questions on Notice. Where possible, items of interest are scheduled onto the forward agenda, and Questions on Notice are addressed in writing.
2. Information is provided to the CCAG by way of verbal updates (during the MD Report), formal presentations, and written responses
3. To date, nil information has been withheld from the CCAG.”

Review of meeting minutes, presentations and responses to questions on notice indicate that, during the audit period, information was provided to enable the CCAG to discharge the tasks assigned to it. Information provided at meetings included (for example):

- November 2019:
  - Managing Director’s report, which included updates in respect of water storage levels and other drought related operational matters; the Corporate Scorecard; and the IPART pricing review/determination.

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- An update in respect of restrictions, drought response and the Lower Hunter Water Security Plan;
  - Information in respect of non-residential customer engagement activities; and
  - A strategic presentation in respect of Hunter Water’s approach to digital servicing and customer experience.
- **March 2020:**
    - Managing Director’s report, which included updates in respect of water storage levels, water restrictions and the BOM outlook; planning work for the Belmont Drought Response Desalination Plant; and the Corporate Scorecard;
    - An update in respect of restrictions, drought response and the Lower Hunter Water Security Plan;
    - Update on the “Love Water Challenge” water conservation initiative; and
    - A strategic presentation in respect of Hunter Water’s “Our People” business plan theme and its Reconciliation Action Plan.
  - **May 2020:**
    - Managing Director’s report, which included updates in respect of water storage levels and the continuation of drought; water restrictions; planning work for the Belmont Drought Response Desalination Plant; the Corporate Scorecard; and the Lower Hunter Water Security Plan investigations including the results of community consultation.
    - An update in respect of the Lower Hunter Water Security Plan, specifically Hunter Water’s approach to recycled water;
    - Presentations on Hunter Water’s “Our Customer” focus area including an update in respect of the “Love Water” initiative and introduction of the “Respect the Throne” wastewater campaign; an update in respect of Hunter Water’s approach to hardship (including due to the COVID-19 pandemic); and details of “Where’s Our Water?” story books, an educational initiative.
  - **August 2020:**

Minutes for this meeting had not been published at the time of writing; however, the meeting agenda indicated that the information on the following was to be presented/discussed:

    - Managing Director’s report, which was to include Drought and water storage update; LHWS update; COVID-19 update; Hunter Water Corporate Scorecard update; Hunter Water solar power projects; and Pension rebate increase;
    - A strategic presentation in respect of Hunter Water’s service levels research;
    - A strategic presentation in respect of Hunter Water’s environmental focus, including details of the Hunter River Estuary Wastewater Masterplan and Biosolids management (including renewable energy) proposals.

Hunter Water also provided formal (written) response to questions on notice raised by a CCAG member at the March 2020,<sup>523</sup> May 2020<sup>524</sup> and August 2020<sup>525</sup> meetings. These questions all related to matters associated with the review of the Lower Hunter Water Security Plan.

The above summary assessment (and review of both the meeting minutes and the associated presentations) indicates that Hunter Water provided the CCAG with information in respect of a range of strategic and operational matters. It is noted that, with the exception of questions on

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<sup>523</sup> Document: *Responses to Questions on Notice - Mr Dowling and Ms Bowden.pdf* (available at: <https://yourvoice.hunterwater.com.au/48573/widgets/258418/documents/167457>).

<sup>524</sup> Document: *Hunter Water CLG Meeting 12 May 20 - responses - final.pdf* (available at: <https://yourvoice.hunterwater.com.au/48573/widgets/258418/documents/170605>).

<sup>525</sup> Document: *Responses to Questions for CLG Meeting 24 August 2020.pdf* (available at: <https://yourvoice.hunterwater.com.au/48573/widgets/258418/documents/180701>).

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notice, Hunter Water sets the agenda for CCAG meetings, i.e. it identifies the issues in respect of which it seeks input, and provides information accordingly.

Hunter Water indicated that, to date, no information has been withheld from the CCAG on the basis that it was confidential; however, agreed that it would be guided by the provisions of the *Government Information (Public Access) Act* in relation to the disclosure of any such information.

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### **Recommendations**

There are no recommendations in respect of this obligation.

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### **Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.

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### **Supplemental information**

No supplemental information is provided in respect of this obligation.

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## 2.4.6 Customer and stakeholder relations – Memorandum of Understanding with NSW Health (clause 5.9)

### 2.4.6.1 Memorandum of Understanding with NSW Health (sub-clause 5.9.1)

Sub-clause	Requirement	Compliance Grade
5.9.1	<p>Hunter Water must use its best endeavours to:</p> <p>a) maintain a memorandum of understanding with NSW Health; and</p> <p>b) comply with the memorandum of understanding maintained under clause 5.9.1(a).</p> <p><i>[Note: Clause 5.9.1 does not limit the persons with whom Hunter Water may enter into a memorandum of understanding.]</i></p>	 <b>Compliant</b>

#### Risk

Failure to comply with this obligation presents a moderate operational risk. NSW Health is a key stakeholder in respect of Hunter Water's services, with obligations in respect of the protection of public health.

#### Target for Full Compliance

Evidence that Hunter Water has used its best endeavours to maintain and comply with a Memorandum of Understanding with NSW Health.

#### Obligation

This obligation requires Hunter Water to use its best endeavours to develop and enter into a Memorandum of Understanding with NSW Health, and once it has done so, to comply with the provisions of the Memorandum of Understanding.

#### Summary of reasons for grade

Hunter Water demonstrated that, during the audit period, it had maintained a *Memorandum of Understanding* with NSW Health following its agreement in November 2018. Furthermore, Hunter Water demonstrated through the provision of sample meeting minutes and other records that it had continued to implement the requirements of the Memorandum of Understanding during the audit period.

On this basis, Hunter Water is considered to have demonstrated compliance with this obligation.

#### Discussion and notes

Hunter Water advised that it had executed a *Memorandum of Understanding* (MoU)<sup>526</sup> with NSW Health in November 2018.<sup>527</sup> This was demonstrated by provision of a copy of the executed document.

Hunter Water further advised that:

*“Hunter Water and NSW Health have maintained the Joint Operational Group (also referred to as Quarterly NSW Health and Hunter Water Liaison Meeting). The purpose of the meeting includes facilitation of effective implementation of the MoU. Hunter Water and NSW Health have also collaborated in other areas during the audit period, including consultation workshops, risk assessments and incident management.”*

<sup>526</sup> Document: 5.9.1-E-001 HW2006-144867.013 MOU Between NSW Health and Hunter Water Corporation.pdf.

<sup>527</sup> The executed MoU is dated 10 November 2019.



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Continued liaison via a previously established Joint Operations Group is consistent with the provisions of the MoU. The Joint Operations Group is to meet quarterly.<sup>528</sup>

Minutes of the Hunter Water/NSW Health Liaison Committee (Joint Operations Group) meeting held on 3 June 2020<sup>529</sup> demonstrated that matters consistent with the parties' obligations under the MoU were discussed. A review of the attendance record also confirmed that those present aligned with the roles of potential members of the Joint Operational Group as identified in the MoU.<sup>530</sup>

Compliance with the provisions of the MoU is further demonstrated by (for example):

- Pursuant to the MoU,<sup>531</sup> Hunter Water is required to comply with the provisions of the *Operating Licence* and associated *Reporting Manual*.<sup>532</sup> The *Reporting Manual*<sup>533</sup> requires Hunter Water to report quarterly to NSW Health on drinking water and recycled water quality exceptions. As an example, Hunter Water provided a copy of the report in respect of the period 1 April to 30 June 2020.<sup>534</sup>
- NSW Health collaborates with Hunter Water in the conduct of drinking water risk assessments. For example, the report on the *Grahamstown WTP Drinking Water Quality Risk Assessment*<sup>535</sup> conducted on 4/5 June 2020 indicates that representatives of NSW Health participated in the risk assessment workshop together with representatives of Hunter Water and Veolia (Hunter Water service provider).
- Hunter Water provided evidence that it provided regular detailed updates on incidents with potential to impact public health. For example, email correspondence in respect of an ongoing Chichester Algal Event demonstrated that detailed update reports had been provided on 24 July 2020, 31 July 2020 and 7 August 2020.

NSW Health's satisfaction with implementation of/compliance with the MoU is acknowledged in comments provided to IPART in respect of Hunter Water's performance during the audit period, which are as follows:<sup>536</sup>

*“NSW Health and Hunter Water Corporation have a continued committed working relationship underpinned by a Memorandum of Understanding and quarterly Liaison Meetings held between the two organisations. This provides the foundation for both organisations to work together to help Hunter Water Corporation meet its responsibility to achieve safe quality drinking water supplies and recycled water fit for end use purposes. NSW Health is generally satisfied with the performance of Hunter Water Corporation for the 2020 operational audit period. NSW Health expects that Hunter Water Corporation will maintain a process of review and audit to confirm compliance with the Australian Drinking Water Guidelines and Australian Guidelines for Water Recycling.”*

On the basis of the evidence provided, it is assessed that Hunter Water complied with the provision of the MoU between NSW Health and itself during the audit period.

Further evidence of Hunter Water's compliance with the provisions of the MoU are discussed in respect of clause 5.9.3 (refer **Section 2.4.6.2**, Supplemental information).

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<sup>528</sup> Document: 5.9.1-E-001 HW2006-144867.013 MOU Between NSW Health and Hunter Water Corporation.pdf, section 5.2.

<sup>529</sup> Document: 5.9.1-E-002 HW2006-1448593.011 Minutes - Hunter Water NSW Health Liaison Committee Meeting - 3 June 2020.docx.

<sup>530</sup> Document: 5.9.1-E-001 HW2006-144867.013 MOU Between NSW Health and Hunter Water Corporation.pdf, section 5.3.

<sup>531</sup> Document: 5.9.1-E-001 HW2006-144867.013 MOU Between NSW Health and Hunter Water Corporation.pdf, section 8.

<sup>532</sup> IPART, *Hunter Water Reporting Manual; Operating Licence 2017-2022* (Issue No: 2.0), 29 June 2019.

<sup>533</sup> *Ibid.*, section 3.1.3.

<sup>534</sup> Document: 5.9.1-E-003 HW2006-1448 41 11.008 Report - Quarterly to NSW Health - Drinking Water and Recycled Water Quality Exceptions.docx.

<sup>535</sup> Document: 5.9.1-E-004 HW2015-1365 18.010 Grahamstown WTP Risk Assessment Summary Report.pdf.

<sup>536</sup> Letter dated 27 July 2020 from NSW Health Hunter New England Local Health District to IPART (re: *Hunter Water Corporation 2019 Operational Audit*).



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**Recommendations**

There are no recommendations in respect of this obligation.

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**Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.


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**Supplemental information**

No supplemental information is provided in respect of this obligation.

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### 2.4.6.2 Memorandum of Understanding with NSW Health (sub-clause 5.9.3)

Sub-clause	Requirement	Compliance Grade
5.9.3	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.	 <b>Compliant</b>

#### Risk

Failure to comply with this obligation presents a moderate operational risk. In order to develop appropriate responses to events that pose a risk to public health, NSW Health needs to receive timely and accurate reports of such events from Hunter Water..

#### Target for Full Compliance

Evidence that the Memorandum of Understanding between Hunter Water and NSW Health includes details of the arrangements for reporting information on any events in relation to Hunter Water’s systems or Services that might pose a risk to public health.

#### Obligation

This obligation requires the Memorandum of Understanding between Hunter Water and NSW Health to include arrangements in accordance with which Hunter Water is to report to NSW Health information on any events in relation to its systems or Services that might pose a risk to public health.

#### Summary of reasons for grade

Review of the *Memorandum of Understanding* between Hunter Water and NSW Health reveals that it includes details of the 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. Furthermore, Hunter Water demonstrated that it complies with the documented arrangements.

Accordingly, Hunter Water is considered to have demonstrated compliance with this obligation.

#### Discussion and notes

Review of the Memorandum of Understanding (MoU) between Hunter Water and NSW Health<sup>537</sup> reveals that section 10, entitled “Events of public health significance” addresses the requirement of this obligation, i.e. to: “...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.”

This section of the MoU requires:

- Hunter Water to: “... immediately report to NSW Health any information or event within its area of operations including the Water Supply System, Recycled Water Supply System or wastewater reticulation, treatment and disposal operations which may adversely affect public health”. Specific information to be included in the report is identified.
- Hunter Water, in consultation with NSW Health and other government organisations as appropriate, to develop and implement incident management protocols.
- The parties to nominate a 24 hour incident management contact point, which is to be an officer trained in incident management plans (which may contain procedures and protocols

<sup>537</sup> Document: 5.9.3-E-001 HW2006-1448 6 7.013 MOU Between NSW Health and Hunter Water Corporation.pdf.

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for the coordinated management of incidents including media and stakeholder liaison and any notification of public health advice from NSW Health).

- All relevant personnel in the respective organisations to be trained to respond to and execute the incident management plans and that appropriate training exercises are jointly developed and conducted.

Hunter Water advised that, together with NSW Health, it has established criteria for notification and identified the notification actions required, which are detailed in the *Water Quality – Criteria for Notification to NSW Health*.<sup>538</sup> The documented criteria relate to (for example):

- Potentially toxic blue-green algae in raw drinking water;
- Disinfection failure, turbidity and membrane integrity (where relevant) at water treatment plants;
- Water quality characteristics in the distribution/reticulation system downstream of clear water storages including *E. coli* or Protozoa (*Cryptosporidium* or *Giardia*) detection, Fluoride and Free Chlorine levels, Taste and Odour, and other compound exceedances.
- Other issues that may have potential public health consequences including (for example) chemical spills in catchments, backflow from industry and health-related water quality complaints.

It is therefore apparent that the MoU between Hunter Water and NSW Health includes details of the 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. Furthermore, criteria and required actions for notifying NSW Health have been separately documented.

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### Recommendations

There are no recommendations in respect of this obligation.

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### Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

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### Supplemental information

To demonstrate implementation of the arrangements for reporting information on events that might pose a risk to public health, as detailed in Section 10 of the MoU, Hunter Water provided (for example):

- Email correspondence in respect of an *E. coli* Detection at Bellbird Heights 1 Reservoir in January 2020.<sup>539</sup> This correspondence details initial and follow-up reporting in respect of the detection, including details of actions taken (inspections/investigations and testing), recent testing in the area and testing undertaken in response to the detection.
- A quarterly drinking water and recycled water quality exception report for the period 1 April to 30 June 2020.<sup>540</sup>
- Incident management plans/protocols, including (for example) the overarching *Corporate Emergency Management Plan*,<sup>541</sup> the procedure for *Notification of Water Quality Events of Potential*

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<sup>538</sup> MS Excel workbook: 5.9.3-E-002 HW/2006-1448 53 3.003 *Guideline - Criteria for Notification to NSW Health - Drinking Water Quality.xlsx*.

<sup>539</sup> Email correspondence: 5.9.3-E-003 HW/2008-947 10 5.009 *Email - RE E.coli Detect Bellbird Heights 1 Reservoir.msg*.

<sup>540</sup> Document: 5.9.3-E-004 HW/2006-1448 41 11.008 *Report - Quarterly to NSW Health - Drinking Water and Recycled Water Quality Exceptions.docx*.

<sup>541</sup> Document: 3.1.1-ADWG-06-E-001 HW/2007-900 27 1.013 *Corporate Emergency Management Plan.docx*.

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*Public Health Significance to NSW Health*<sup>542</sup> and the *Procedure - Recycled Water Quality Incident Notification and Response*.<sup>543</sup>

- Records of a *Mock Recycled Water Incident Exercise – Dual Reticulation* (training exercise) in respect of recently commissioned recycled schemes, which was undertaken in conjunction with NSW Health on 29 November 2019.<sup>544,545</sup>

Hunter Water confirmed that relevant contact details were available to each party (Hunter Water and NSW Health). Contact details for both Hunter Water and NSW Health are documented in (for example) both the *Corporate Emergency Management Plan* and the *Procedure - Recycled Water Quality Incident Notification and Response*. These include after hours (24 hour) contact points.

It is therefore apparent that Hunter Water has complied with the documented arrangements

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<sup>542</sup> Document: 3.1.1-ADWG-06-E-003 HW2006-2906 4 6.023 Procedure to notify NSW Health of events with potential public health impact.doc.

<sup>543</sup> Document: 3.2.1-AGWR-06-E-010 Recycled Water Quality Incident Response.docx.


<sup>544</sup> Document: 3.2.2-AGWR-06-E-007 Exercise 1 &2 Report.docx.

<sup>545</sup> Document: 3.2.2-AGWR-06-E-008 Attendance Sheet.pdf.

## 2.5 No Requirement

### 2.5.1 Customer and stakeholder relations – Code of Conduct with WIC Act Licensee (clause 5.8)

#### 2.5.1.1 Code of Conduct with WIC Act Licensee (sub-clause 5.8.1)

Sub-clause	Requirement	Compliance Grade
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.	 <b>No Requirement</b>

#### Risk

Failure to comply with the requirements of this obligation presents a high risk that services may not be provided to properties that require them where these services are provided by a WIC Act Licensee. Ultimately, this may present a risk to public health or the environment.

#### Target for Full Compliance

Evidence that Hunter Water has used reasonable endeavours to cooperate with WIC Act Licensees that have sought to establish a code of conduct required under a WIC Act licence.

#### Obligation

This obligation requires Hunter Water to 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 issued pursuant to the WIC Act. Establishment and implementation of a code of conduct is required to ensure that there are agreed responsibility arrangements in place between Hunter Water and the WIC Act Licensee in respect of any interfaces between the two utilities.

#### Summary of reasons for grade

Hunter Water has ‘codes of conduct’ in place with WIC Act Licensees in respect of three schemes within its area of operations, all of which were entered into prior to the audit period.

Hunter Water advised that no WIC Act Licensees had sought to enter into a code of conduct during the audit period. Review of IPART’s website revealed no other schemes within Hunter Water’s Area of Operations for which a WIC Act Licence has recently been granted or is currently being assessed.

Accordingly, there was no requirement for compliance with this obligation during the audit period.

#### Discussion and notes

In its response to the Audit Questionnaire, Hunter Water advised that:

*“Flow Systems and Hunter Water participate in a quarterly meeting designed to discuss water and sewer utility services within Hunter Water area of operations including all matters required under the Utility Service Agreements (USA’s). This includes WICA Scheme and licence status. Other opportunities for further business expansions are also discussed in these meetings.*

*Water Utilities Australia and Hunter Water have established an MoU. Outlined in the agreement is the approach that Water Utilities Australia and Hunter Water [would take in] developing subsequent projects. The MoU has a focus on opportunities to expand the recycled water supply to additional industrial*

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*customers.”*

Hunter Water confirmed that schemes currently operated, or are proposed to be operated, by WIC Act Licensees within its area of operations include:

- Huntlee and Cooranbong drinking water, sewerage and recycled water schemes operated by Flow Systems;<sup>546</sup> and
- Kooragang Recycled Water Scheme, which is owned by Water Utilities Australia (WUA MidCo Pty Ltd) and operated by SUEZ Water and Treatment Solutions (which currently holds the WIC Act Licence).

Hunter Water advised that no other WIC Act Licensees had sought to enter into a code of conduct during the audit period. Review of IPART’s website revealed no other schemes within Hunter Water’s Area of Operations for which a WIC Act Licence has recently been granted or is currently being assessed.

On this basis, there was no requirement for compliance with this obligation during the audit period.

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### **Recommendations**

There are no recommendations in respect of this obligation.

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### **Opportunities for improvement**

No opportunities for improvement have been identified in respect of this obligation.

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### **Supplemental information**

As reported in respect of the 2018 Operational Audit,<sup>547</sup> *Utility Services Agreements* that address the requirements of a code of conduct had been put in place in respect of both the Huntlee and Cooranbong schemes. Review of the Agreements provided at that time reveal that in both cases the initial term of the Agreement was a period of 10 years from the Start Date (i.e. the date of completion of all connection infrastructure (circa 2016) for Huntlee and 14 April 2016 for Cooranbong), unless terminated earlier. Hunter Water confirmed that the Agreements remain in place.

Minutes of a quarterly coordination meeting held between Hunter Water and Flow Systems on 11 June 2020<sup>548</sup> provided evidence that meetings continue to be held pursuant the requirements of the Coordination Protocol that forms part of each Utility Services Agreement.

As also reported in respect of the 2018 Operational Audit,<sup>547</sup> a *Supply Agreement* that addresses the requirements of a code of conduct had been put in place in respect of the Kooragang Recycled Water Scheme. The *Supply Agreement* between Hunter Water, Kooragang Water Pty Ltd<sup>549</sup> and WUA Midco Pty Ltd, the term of which is for a period of 30 years from 28 November 2017, remains in place.

Hunter Water provided a copy of email correspondence from Suez advising Hunter Water of treated effluent requirements for October 2020, which demonstrated that the Operational Protocol that forms part of the *Supply Agreement* in respect of the Kooragang scheme continues to

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<sup>546</sup> The Wyee scheme licensed by Flow Systems subsidiary, Wyee Water Pty Ltd is not currently operational.

<sup>547</sup> Cobbitty Consulting/Viridis Consultants, *2018 Operational Audit of Hunter Water Corporation; Final Audit Report* (Version 3.0), 1 February 2019, section 3.6.1/table 3.18.

<sup>548</sup> Document: *5.8.1-E-001 Flow Systems & Hunter Water minutes from the June meeting.pdf*.

<sup>549</sup> Kooragang Water Pty Ltd is a subsidiary of WUA Midco Pty Ltd.

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be implemented. It also provided a copy of a Memorandum of Understanding between Hunter Water and Water Utilities Australia,<sup>550</sup> which provides the basis for ongoing coordination/liaison between the two parties.

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<sup>550</sup> Document: *5.8.1-E-002 MoU Water Utilities Australia and HWC.pdf*.



## 3. Previous Recommendations

### 3.1 Overview

This section sets out the detailed findings in respect of the status of previous recommendations. In each case the following is provided:

- the reference number for the previous recommendation;
- the previous recommendation;
- the assessed status (Complete, Ongoing or No action taken);
- a summary of the reason for the assessed status;
- discussion of the evidence reviewed and how it demonstrates the assessed status;
- any further recommendations; and
- any identified opportunities for improvement.


A list of the evidence reviewed in assessing the status of each recommendation is presented in **Appendix C**; evidence is listed under the Licence clause to which the recommendation relates.

It is noted that some previous recommendations relate to requirements of the *Hunter Water Corporation Operating Licence 2012-2017*, which was in place at the time the recommendation was made. This is acknowledged by footnote where appropriate.

## 3.2 Detailed Assessment of Status

### 3.2.1 Pricing (clause 1.8)

#### 3.2.1.1 Previous Recommendation 2019-01

Reference	Requirement	Status
2019-01	<p><i>Pricing (clause 1.8.1):</i></p> <p>By 30 June 2020, Hunter Water must report to IPART on the further progress made in contacting past owners of properties affected by the incorrect charging of the Stormwater Drainage Charge, the total of the refunds made compared to the amount overcharged, and any further actions to be undertaken (if necessary) to rectify this non-compliance.</p>	 <b>Completed</b>

#### Anticipated completion date

Not applicable – recommendation has been addressed.

#### Summary of reasons for assessed status

Hunter Water demonstrated that it had prepared and submitted a report to IPART on the further progress made in contacting past owners of properties affected by the incorrect charging of the Stormwater Drainage Charge, the total of the refunds made compared to the amount overcharged, and further actions it proposed to undertake to rectify the non-compliance. Such report was submitted on 30 June 2020, consistent with the requirement of the recommendation.

On this basis, this previous recommendation is considered to have been addressed.

#### Discussion and notes

Hunter Water provided a copy of a file note<sup>551</sup> that constituted a report to IPART in respect of each aspect required by this recommendation; specifically:

- progress made in contacting past owners affected by the incorrect charging of the Stormwater Drainage Charge – Hunter Water has had limited success in locating and convincing previous owners of affected properties of their refund eligibility;
- the total amount of the refunds made compared to the amount overcharged – as at 30 June 2020, seventy six percent (76%) of the total overcharged amount had been refunded; and
- any further actions to be taken to comply with this non-compliance – Hunter Water will continue to attempt to locate previous owners that were overcharged using approaches that proved most effective when addressing previous overcharging respect of its Environmental Improvement Charge.

Email correspondence,<sup>552</sup> to which the file note was attached, demonstrated that the report was submitted to IPART on 30 June 2020. Receipt of the report was confirmed by return email correspondence from IPART,<sup>553</sup> in which IPART sought clarification in respect of a typographical error.

<sup>551</sup> File Note: *Stormwater drainage pricing non-compliance update* (from Hunter Water to IPART) dated 30 June 2020 [attachment to email correspondence: *1.8.1-R 2019-01-E-001a Operational audit recommendation 2019-01-Stormwater Drainage Pricing.msg*].

<sup>552</sup> Email correspondence: *1.8.1-R 2019-01-E-001a Operational audit recommendation 2019-01-Stormwater Drainage Pricing.msg*.

<sup>553</sup> Email correspondence: *1.8.1-R 2019-01-E-001b Operational audit recommendation 2019-01-Stormwater Drainage Pricing.msg*.

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**Further recommendations**

There are no further recommendations arising in respect of this previous recommendation.

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**Opportunities for improvement**

No opportunities for improvement have been identified in respect of this previous recommendation.


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**Supplemental information**

No supplemental information is provided in respect of this obligation.

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### 3.2.1.2 Previous Recommendation 2019-02

Reference	Requirement	Status
2019-02	<p><i>Pricing (clause 1.8.1):</i></p> <p>By 30 June 2020, Hunter Water must correct its application of the sewer discharge allowance within the billing system; determine the number of customers affected and the incorrectly billed amounts; and report these details to IPART together with details of actions and/or further actions proposed.</p>	 <b>Completed</b>

#### Anticipated completion date

Not applicable – recommendation has been addressed.

#### Summary of reasons for assessed status

Hunter Water demonstrated that it had corrected its application of the sewer discharge allowance within the billing system (the allowance is no longer applicable from 1 July 2020); determined the number of customers affected and the incorrectly billed amounts; and had prepared and submitted to IPART a report outlining these details together with details of actions taken and/or further actions proposed. Such report was submitted on 30 June 2020, consistent with the requirement of the recommendation.

On this basis, this previous recommendation is considered to have been addressed.

#### Discussion and notes

Hunter Water provided a copy of a file note<sup>554</sup> that constituted a report to in respect of each aspect required by this recommendation; specifically:

- correct its application of the sewer discharge allowance within the billing system – Hunter Water advised that IPART’s 2020 Price Determination removes the sewer discharge allowance concept from the calculation of non-residential sewer usage charges, effective 1 July 2020. Accordingly, the billing system has been adjusted to remove application of the sewer discharge allowance from 1 July 2020 onwards; check of sample bills for the billing periods ending May 2020<sup>555</sup> and September 2020<sup>556</sup> (Account No: 7480 100 000) confirmed that the sewer discharge allowance had been correctly applied. For further discussion, refer **Section 2.2.1.1** (discussion in respect of Licence clause 1.8.1);
- determine the number of customers affected and the incorrectly billed amounts – Hunter Water determined that the sewer discharge allowance had been incorrectly applied in respect of 10,773 non-residential properties in the period 1 July 2016 to 30 June 2020. The total amount overcharged, which was not evenly distributed across the affected customers and varied from a minimum of \$0.01 to a maximum of \$1.95 for individually metered properties (\$0.01 to \$0.55 for properties with unit entitlements), amounted to \$1,606.19; and
- remedial actions taken – Hunter Water reported that it would credit affected property accounts for the entirety of the under-applied allowance amounts in July 2020. Given the small amount of refunds, and in view of its experience in attempting to locate previous

<sup>554</sup> File Note: *Operating Licence clause 1.8 - Non-compliance: Progress update on incorrect application of sewer discharge allowance* (from Hunter Water to IPART) dated 30 June 2020 [attachment to email correspondence: 1.8.1-R 2019-02-E-001a Audit recommendation 2019-02.msg].

<sup>555</sup> Sample bill: 1.8.1-E-008 *Non-Residential Water Usage and Sewer Service 2019-20.pdf*.

<sup>556</sup> Sample bill: 1.8.1-E-009 *Non-Residential Water Usage and Sewer Service 2020-21.pdf*.

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property owners to issue refunds in respect of its Environmental Improvement Charge, Hunter Water does not consider it appropriate to identify and locate previous property owners to remediate this non-compliance.

Email correspondence,<sup>557</sup> to which the file note was attached, demonstrated that the report was submitted to IPART on 30 June 2020. Receipt of the report was confirmed by return email correspondence from IPART.<sup>558</sup>

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#### **Further recommendations**

There are no further recommendations arising in respect of this previous recommendation.

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#### **Opportunities for improvement**

No opportunities for improvement have been identified in respect of this previous recommendation.

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#### **Supplemental information**

No supplemental information is provided in respect of this obligation.


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<sup>557</sup> Email correspondence: *1.8.1-R 2019-02-E-001a Audit recommendation 2019-02.msg*.

<sup>558</sup> Email correspondence: *1.8.1-R 2019-02-E-001b Audit recommendation 2019-02.msg*.

### 3.2.1.3 Previous Recommendation 2019-06

Reference	Requirement	Status
2019-06	<p><i>Pricing (clause 1.8.1):</i></p> <p>By 31 March 2021, Hunter Water must ensure that the proposed functionality for fully automated tankered waste billing is incorporated into the new corporate billing system.</p>	 <b>Ongoing</b>

#### Anticipated completion date

It is anticipated that this recommendation will be fully addressed by 31 December 2021.

#### Summary of reasons for assessed status

Hunter Water demonstrated that, although some progress had previously been made in respect of automation of tankered waste billing, full automation as part of the billing process has not yet been completed due to delays in implementing Hunter Water’s new billing system.

On this basis, this previous recommendation is considered to remaining ongoing.

#### Discussion and notes

In its response to the Audit Questionnaire, Hunter Water advised that:

*“The 31 March 2021 date for this action was based on a former go-live date (Nov-19) that has since been moved back to go-live Nov-20 plus a 4 month warranty period. This action relies on the new Billing system to be in place and embedded; it is currently planned, pending successful go-live and no issues, to commence this project in second half 2021.”*

As reported in respect of the 2019 Operational Audit,<sup>559</sup> some action had been undertaken in respect of automation of tankered waste billing even though not incorporated into the new corporate billing system. It was further noted that:

*“Full automation of the billing process, and further improvements to the draft bill validation process will not, however, be implemented until after Hunter Water’s new billing system has been implemented and performance proven (i.e. after the first billing cycle). Functional requirements for tankered waste billing have been developed ready for incorporation into the billing system.”*

As a result of these observations, the previous recommendation in respect of tankered waste billing (Recommendation 2018-01) was closed out and this recommendation (Recommendation 2019-06) made in respect of fully automating the process. The timing for completion was based on replacement/upgrade of the Hunter Water billing system being implemented in March 2020.

In practice, Hunter Water’ new billing system was not implemented until it went ‘live’ on 1 November 2020. Accordingly, there has been further delay in fully automating the tankered waste billing process and a completion date of 31 December 2021 is now considered appropriate.

#### Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

<sup>559</sup> Cobbitty Consulting/Viridis Consultants, 2019 Operational Audit of Hunter Water Corporation; Final Audit Report (Version 3.0), 28 February 2020, section 4.2.1 (table 4.1).

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**Opportunities for improvement**

No opportunities for improvement have been identified in respect of this previous recommendation.

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**Supplemental information**


No supplemental information is provided in respect of this obligation.

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### 3.2.2 Recycled Water (clause 3.2)

#### 3.2.2.1 Previous Recommendations 2013/14-03, 2013/14-04, 2013/14-06 and 2013/14-13

Reference	Requirement	Status
2013/14-03, 2013/14-04, 2013/14-06 and 2013/14-13	<p><i>Water Quality; Recycled Water (clauses 2.2.1 &amp; 2.2.2).</i><sup>560</sup></p> <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;</p> <p><i>[Note: other elements of these recommendations, as they apply to Recycled Water, had been fully addressed at the time of the 2019 Operational Audit.]</i></p>	 <b>Ongoing</b>

#### Anticipated completion date

It is anticipated that this recommendation will be fully addressed when appropriate improvement items are added to the *Recycled Water Improvement Plan*. The due date of the action should be within 12 months, considering these plants are operational. However, this recommendation can be closed once the item has been included in the *Improvement Plan*.

#### Summary of reasons for assessed status

Endorsement of the Validation Program was conditional on two items being added to the *Recycled Water Improvement Plan*. Evidence has not been provided to demonstrate that these items have been addressed or added to the *Improvement Plan*.

#### Discussion and notes

The final Validation Program<sup>561</sup> was sent to NSW Health for review and endorsement. NSW Health responded via email<sup>562</sup> endorsing the validation plan on the condition that the following two items are on the *Recycled Water Improvement Plan*:<sup>563</sup>

- *The validation program uses mean concentrations to determine the LRV for treatment processes. Consider if this is appropriate, noting lower 5<sup>th</sup> percentile is typically used and recommended.*
- *Investigate online UVT analysers (with interlocks) for schemes with UV. It appears current UVT monitoring is undertaken weekly and intervention would be manual.*

An improvement item in relation to the first point could not be located in the *Improvement Plan*.

Improvement Item 233 in the *Improvement Plan* addresses the second point, as follows:

*“UVT Monitoring. Consider which schemes rely on UV disinfection to claim a validated log reduction value. Of those, consider whether UVT monitoring is, or should be, monitored online, and what limits should be set on UVT. If UVT isn’t monitored online, or doesn’t have a critical limit, then explain why not (e.g. with reference to the margin of safety between typical plant UVT and the lower bound of the validated range; or reliance not being placed on the UV for a pathogen log reduction).”*

<sup>560</sup> Clause reference relates to the *Hunter Water Corporation Operating Licence 2012-2017*.

<sup>561</sup> Document: 3.2.2-R2013-4-3,4,6,14-E-002 WWTW Recycled Water Existing Schemes Validation Program - June 2019.docx.

<sup>562</sup> Document: 3.2.2-R2013-4-3,4,6,14-E-001 RE WWTW Recycled Water Existing Schemes Validation Program.pdf.

<sup>563</sup> Document: SE-063a - Improvement Plan Water Quality Management System.pdf.

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This is an investigation into UVT analysers, but does not address the intent of NSW Health's comment. It is clear that the intention is that sites that rely on UV for pathogen log reduction credits are required to have an auto shutdown on UVT. This improvement item allows for an investigation to explain why online UVT should not be installed. If Hunter Water disagrees with NSW Health's recommendation, then that should be negotiated prior to an alternative action being entered into the *Improvement Plan*.

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#### **Further recommendations**

There are no further recommendations arising in respect of this previous recommendation.

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#### **Opportunities for improvement**

No opportunities for improvement have been identified in respect of this previous recommendation.


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#### **Supplemental information**

No supplemental information is provided in respect of this obligation.

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### 3.2.2.2 Previous Recommendation 2019-03

Reference	Requirement	Status
2019-03	<p><i>Recycled Water (clause 3.2.1):</i></p> <p>By 30 September 2020, Hunter Water must document the methodology for assessment of water quality data to inform risk assessment to ensure consistency across schemes. The assessment should include methods for trending and identifying problems.</p>	 <b>Completed</b>
<p><b>Anticipated completion date</b></p> <p>Not applicable – recommendation has been addressed.</p>		
<p><b>Summary of reasons for assessed status</b></p> <p>Hunter Water has documented the methodology for assessment of water quality data to inform risk assessments. Accordingly, this previous recommendation is considered to have been addressed.</p>		
<p><b>Discussion and notes</b></p> <p>A briefing paper<sup>564</sup> has been prepared that covers off on this recommendation. It includes the data that should be reviewed and the analysis that should be undertaken to appropriately assess water quality data. It is flexible enough to allow external contractors to undertake the work, but sets out a specification that will provide consistency across schemes. This should be reviewed after use to ensure that contemporary data analysis continues to be provided.</p> <p>The revised methodology is to be used for up and coming risk assessments as indicated in the Briefing Paper<sup>565</sup> for the Thornton North risk assessment.</p>		
<p><b>Further recommendations</b></p> <p>There are no further recommendations arising in respect of this previous recommendation.</p>		
<p><b>Opportunities for improvement</b></p> <p>No opportunities for improvement have been identified in respect of this previous recommendation.</p>		
<p><b>Supplemental information</b></p> <p>No supplemental information is provided in respect of this obligation.</p>		

<sup>564</sup> Document: 3.2.2-R2019-3-E-001 RW Water Quality Data Assessment Methodology IPART Recommendation - Final.DOCX.

<sup>565</sup> Document: 3.2.2-R2019-3-E-004 Thornton North Connection NSW Health Memo.pdf.

### 3.2.2.3 Previous Recommendation 2019-04


Reference	Requirement	Status
2019-04	<p><i>Recycled Water (clause 3.2.1):</i></p> <p>By 30 June 2020, Hunter Water must review the verification monitoring program for the Chisholm and Gillieston Heights recycled water schemes, to ensure microbiological testing is consistent with the advice provided in the AGWR for large high exposure schemes, and include weekly testing of clostridial spores and somatic coliphage, and monthly testing of adenovirus and cryptosporidium oocysts.</p>	 <b>Completed</b>
<p><b>Anticipated completion date</b></p> <p>Not applicable – recommendation has been addressed.</p>		
<p><b>Summary of reasons for assessed status</b></p> <p>Hunter Water has reviewed and updated the monitoring program, and is implementing the required additional testing.</p> <p>Accordingly, this previous recommendation is considered to have been addressed.</p>		
<p><b>Discussion and notes</b></p> <p>The Chisholm and Gillieston Heights RWQMP<sup>566</sup> has been revised to include weekly testing of clostridial spores and somatic coliphage, and monthly testing of adenovirus and cryptosporidium oocysts.</p> <p>The monitoring was commenced on 10 June 2020.<sup>567</sup></p> <p>The monitoring plan should be constantly reviewed and updated to ensure that risks are appropriately monitored and uncertainties are reduced.</p>		
<p><b>Further recommendations</b></p> <p>There are no further recommendations arising in respect of this previous recommendation.</p>		
<p><b>Opportunities for improvement</b></p> <p>No opportunities for improvement have been identified in respect of this previous recommendation.</p>		
<p><b>Supplemental information</b></p> <p>No supplemental information is provided in respect of this obligation.</p>		

<sup>566</sup> Document: 3.2.2-R2019-4-E-002 *Chisholm and Gillieston Heights Recycled Water Quality Management Plan.docx*.

<sup>567</sup> Document: 3.2.2-R2019-4-E-001 *Additional analytes for recycled water dual reticulation sites.pdf*.

### 3.2.3 Provision of information to Customers and the general public (clause 5.7)

#### 3.2.3.1 Previous Recommendation 2019-05

Reference	Requirement	Status
2019-05	<p><i>Provision of information to Customers and the general public (clause 5.7.2):</i></p> <p>By 30 June 2020, Hunter Water must ensure that all information required to be available on its website for downloading, or upon request through the General Enquiry Process, can be readily identified by methods such as menu navigation or using the search function.</p>	 <b>Completed</b>

#### Anticipated completion date

Not applicable – recommendation has been addressed.

#### Summary of reasons for assessed status

Hunter Water provided website links from which all requisite information was available for downloading; as the information is available on the website, it can also be provided upon request through the General Enquiry Process. Furthermore, the auditor confirmed that the requisite information could be readily identified and accessed by either search or navigation from the website “Home” page.

Accordingly, this previous recommendation is considered to have been addressed.

#### Discussion and notes

This recommendation relates to Licence clause 5.7.2, which requires:

*“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:*

- 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.”*

In its response to the Audit Questionnaire, Hunter Water advised that:

*“In April 2020 Hunter Water launched a new website. The new website provides optimised search and menu navigation capability. Action was taken to ensure all information in this clause is readily assessable using the search function and via relevant page content across the site. All information is available upon request via the general enquiry process.”*

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Hunter Water provided evidence with hyperlinks to the webpage for each item, thereby demonstrating that the requisite information is available for downloading.<sup>568</sup> To confirm that each item could be readily located without the respective links, the auditor sought to access the information using the website search function or menu navigation, as follows:

▪ Customer Contract:

Hunter Water advised that the *Customer Contract* is available on its website at: <https://www.hunterwater.com.au/about-us/publications/customer-contract>. This link opens the “Customer Contract” webpage, from where either the *Customer Contract* or a *Customer Contract Summary* brochure can be accessed and downloaded in pdf format.

The auditor confirmed that both the *Customer Contract* and *Customer Contract Summary* brochure can also be found on the website by:

- searching for “Customer Contract” from the site masthead; either document can be accessed from the search response; or
- navigating from the ‘Home’ page: ‘About us’ > ‘Publications and Reports’ > ‘Customer Contract’; this leads to the abovementioned “Customer Contract” webpage.

▪ Pamphlet or pamphlets (as referred to in clause 5.7.1):

Clause 5.7.1 requires the preparation of a pamphlet or pamphlets with a brief explanation of or information about:

- the Customer Contract – this is provided in the *Customer Contract Summary* brochure, which also provides information in respect of Complaints handling, Customers’ rights and obligations, Account Assistance and how to get in touch with Hunter Water;
- the Procedure for Payment Difficulties and Actions for Non-payment – this is provided in the *Account Assistance* brochure;
- the rights of Customers to claim rebates – this is provided in the *Our customer rebates* brochure;
- the General Enquiry Process – this is provided in the *General Enquiries* brochure;
- how to make a complaint under the Internal Complaints Handling Procedure – this is provided in the *Complaints handling* brochure; and
- the external dispute resolution service provided by the Energy and Water Ombudsman NSW – this is also provided in the *Complaints handling* brochure.

Hunter Water advised that these brochures (pamphlets) are available on its website at: <https://www.hunterwater.com.au/about-us/publications/customer-information>. This link opens the “Customer information” webpage, from where each brochure can be accessed and downloaded in pdf format.

The auditor confirmed that the required brochures (pamphlets) can also be found on the website by:

- searching for related terms including (for example) “Customer Contract”, “Complaint”, “Payment difficulty”, “General enquiry process” and “Dispute” from the site masthead; the relevant document (and other related documents) can be accessed from the search response; or
- navigating from the ‘Home’ page: ‘About us’ > ‘Publications and Reports’ > ‘Customer information’; this leads to the abovementioned “Customer information” webpage, from where the various documents can be accessed.

▪ Procedure for Payment Difficulties and Actions for Non-payment:

Hunter Water advised that information about the *Procedure for Payment Difficulties and Actions for*

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<sup>568</sup> Document: 5.7-R-2019-05-E-001 *Operating Licence Compliance - 5.7 Provision of Information to customers and the general public.pdf*.

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*Non-payment* is available on its website at:

<https://www.hunterwater.com.au/documents/assets/src/uploads/documents/Account-Information/Brochures/AccountAssistance.pdf>. This link opens the abovementioned *Account Assistance* brochure which can be downloaded in pdf format.

Hunter Water further advised that additional relevant information is available at:

<https://www.hunterwater.com.au/home-and-business/managing-your-account/help-paying-your-bill/payment-plans-and-assistance>. This link opens the “Payment plans and assistance” webpage, which provides information in respect of assistance options, including a link to the *Account Assistance* brochure from where it can be downloaded in pdf format.

The auditor confirmed that information about the *Procedure for Payment Difficulties and Actions for Non-payment* can also be found on the website by:

- searching for related terms including (for example) “Payment difficulty”, “Payment assistance” and “Non-payment” from the site masthead; the *Account Assistance* brochure and/or “Payment plans and assistance” webpage (as well as other related documents) can be accessed from the search response; or
- navigating from the ‘Home’ page: ‘Home and business’ > ‘Managing your account’ > ‘Support and assistance’ > ‘Payment plans and assistance’; this leads to the abovementioned “Payment plans and assistance” webpage, from where the *Account Assistance* brochure and other relevant information can be accessed.

■ Customer Advisory Group Charter:

Hunter Water advised that the *Customer Advisory Group Charter* is available on its website at: <https://yourvoice.hunterwater.com.au/ccag>. This link opens the “Hunter Water's Customer and Community Advisory Group” webpage on Hunter Water’s ‘Your Voice’ website (<https://yourvoice.hunterwater.com.au/ccag>), from where the *Customer Advisory Group Charter* can be accessed and downloaded in pdf format.

The auditor sought to locate and access the *Charter* on the website as follows:

- searching for “Customer Advisory Group Charter” from the site masthead did not provide a response that linked to the *Charter* (first five pages of response checked);
- searching for “Customer Advisory Group”, “Advisory group” or “Customer group” (for example) from the site masthead provided search results including:
  - a link to the “Are you interested in helping shape Hunter Water's strategic direction?” webpage (news item), which included a link to the “Hunter Water’s Customer and Community Advisory Group” webpage on Hunter Water’s ‘Your Voice’ website from where the *Charter* can be accessed; and
  - a link to the “Our community groups” webpage, which included a link to the “Hunter Water's Customer and Community Advisory Group” webpage on Hunter Water’s ‘Your Voice’ website from where the *Charter* can be accessed; or
- navigating from the ‘Home’ page: ‘Community’ > ‘Community Engagement’ > ‘Our community groups’ > ‘Customer and Community Advocacy Group’, which links to the “Hunter Water's Customer and Community Advisory Group” webpage on Hunter Water’s ‘Your Voice’ website from where the *Charter* can be accessed.

Although the *Customer Advisory Group Charter* was able to be located using either the website search function or menu navigation, it was not located by specifically searching for “Customer Advisory Group Charter”. As an opportunity for improvement (**OFI-HWC-2020-13**), it is suggested that Hunter Water makes appropriate adjustments to its website functionality to ensure that the *Customer Advisory Group Charter* can be directly located using the website search function. It is understood from the audit discussions that this can be readily achieved.

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▪ Customer Advisory Group Minutes:

Hunter Water advised that the Customer Advisory Group Minutes are available on its website at: <https://yourvoice.hunterwater.com.au/ccag>. This link opens the “Hunter Water’s Customer and Community Advisory Group” webpage on Hunter Water’s ‘Your Voice’ website (<https://yourvoice.hunterwater.com.au/ccag>), from where the Customer Advisory Group Minutes can be accessed and downloaded in pdf format.

The auditor confirmed that Customer Advisory Group Minutes can be found on the website by:

- searching for “Customer group minutes” from the site masthead provided search results including a link to the “Our community groups” webpage, which included a link to the “Hunter Water’s Customer and Community Advisory Group” webpage on Hunter Water’s ‘Your Voice’ website from where Customer Advisory Group Minutes can be accessed; or
- navigating from the ‘Home’ page: ‘Community’ > ‘Community Engagement’ > ‘Our community groups’ > ‘Customer and Community Advocacy Group’, which links to the “Hunter Water’s Customer and Community Advisory Group” webpage on Hunter Water’s ‘Your Voice’ website from where Customer Advisory Group Minutes can be accessed.

▪ Internal Complaints Handling Procedure:

Hunter Water advised that the Internal Complaints Handling Procedure is available on its website at:

[https://www.hunterwater.com.au/documents/assets/src/uploads/documents/Customer-Information/Brochures/Complaints\\_Handling\\_and\\_EWON.pdf](https://www.hunterwater.com.au/documents/assets/src/uploads/documents/Customer-Information/Brochures/Complaints_Handling_and_EWON.pdf). This link opens the *Complaints handling* brochure which can be downloaded in pdf format.

The auditor confirmed that information in respect of the Internal Complaints Handling Procedure can be found on the website by:

- searching for “Complaint” from the site masthead, which provides responses including:
  - a direct link to the *Complaints handling* brochure, which can be downloaded in pdf format;
  - a direct link to the *Complaint and enquiry policy* document, which can be downloaded in pdf format; and
  - a link to the “Feedback and complaints” webpage, from where both of the above documents can be accessed; or
- navigating from the ‘Home’ page: ‘Contact us’ > ‘Feedback and complaints’, which links to the “Feedback and complaints” webpage, from where both of the *Complaints handling* brochure and *Complaint and enquiry policy* document can be accessed.

▪ Information about the dispute resolution scheme provided by Energy and Water Ombudsman NSW:

Hunter Water advised that information about the dispute resolution scheme provided by Energy and Water Ombudsman NSW (EWON) is provided on the ‘Feedback and complaints’ webpage at: <https://www.hunterwater.com.au/contact-us/feedback-complaints>. This webpage advises of the service available from EWON, and provides a link to the EWON website. It also provides a link to the abovementioned *Complaints handling* brochure, which also includes information about the service available from EWON and can be downloaded in pdf format.

The auditor confirmed that information about the service provided by EWON can be found on the website by:

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- searching for “EWON” from the site masthead, which provides responses including:
    - a direct link to the *Complaints handling* brochure, which can be downloaded in pdf format; and
    - a link to the “Feedback and complaints” webpage, which provides relevant information /documentation as reported above;
  - searching for “Complaint” from the site masthead, which again provides responses including:
    - a direct link to the *Complaints handling* brochure, which can be downloaded in pdf format;
    - a link to the “Feedback and complaints” webpage, which provides relevant information /documentation as reported above; or
  - navigating from the ‘Home’ page: ‘Contact us’ > ‘Feedback and complaints’, which links to the “Feedback and complaints” webpage, which provides relevant information /documentation as reported above.

- **Map of the Area of Operations:**

Hunter Water advised that a map of the Area of Operations is available on its website at: <https://www.hunterwater.com.au/about-us/our-business/what-we-do>. This link opens the “What we do” webpage on which a map showing the Area of Operations is displayed. A link is provided which enables download of the map in pdf format.

The auditor confirmed that a map of the Area of Operations can be found on the website by:

- searching for “Area of Operations” or “Map” from the site masthead; the “What we do” webpage can be accessed from the search response; or
- navigating from the ‘Home’ page: ‘About us’ > ‘Our business’ > ‘What we do’; this leads to the abovementioned “What we do” webpage, from where (as reported above) the map of the Area of Operations can be accessed.

This assessment confirms that the requisite information is available for downloading on the Hunter Water website; as the information is available on the website, it can also be provided upon request through the General Enquiry Process. Furthermore, the auditor confirmed that the requisite information could be readily identified and accessed by either search or navigation from the website “Home” page, therefore demonstrating that this recommendation has been addressed.

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### **Further recommendations**

There are no further recommendations arising in respect of this previous recommendation.

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### **Opportunities for improvement**

The following opportunity for improvement has been identified in respect of this previous recommendation:

- **OFI-HWC-2020-13:** it is suggested that Hunter Water makes appropriate adjustments to its website functionality to ensure that the *Customer Advisory Group Charter* can be directly located using the website search function.

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### **Supplemental information**

No supplemental information is provided in respect of this obligation.

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## Appendix A Audit Scope

The audit scope, as defined by IPART, is included in this Appendix.

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# 2020 operational audit scope Hunter Water Corporation

## 2020 audit scope

This document sets out the 2020 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 2019 to 31 October 2020. We expect that interviews for the audit will be held in November 2020. However, this is subject to change depending on auditor availability.

## 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 2020 audits 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 2020 audit.
SC	Audit of this clause not required in the 2020 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 2020 Audit scope for Hunter Water Corporation**

Licence clause	Operating Licence obligation	2020 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"> <li>a) provide transparent and auditable terms and conditions for Hunter Water to lawfully undertake its activities at industry good-practice;</li> <li>b) recognise the interests of stakeholders within its Area of Operations; and</li> <li>c) impose the minimum regulatory burden on Hunter Water by avoiding duplication or conflict with other regulatory instruments.</li> </ul>	NR	
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	
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	
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	
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	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
1.3	Term of this 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	
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	
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	
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"> <li>a) in the case of supplying water, the Water Supply System; and</li> <li>b) in the case of providing sewerage services and/or disposing of Wastewater, the Sewerage System.</li> </ul>	SC	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
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"> <li>a) in the case of supplying water, the Water Supply System; and</li> <li>b) in the case of providing sewerage services and/or disposing of Wastewater, the Sewerage System.</li> </ul>	SC	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
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	
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	



Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
1.7	Making copies of this Licence available		
1.7.1	Hunter Water must make this Licence available to any person, free of charge: <ul style="list-style-type: none"> <li>a) on its website for downloading; and</li> <li>b) upon request made through the General Enquiry Process.</li> </ul>	Internal IPART check	This clause is not included in the auditor's scope.
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.	Audit	<p>We audited this clause in 2018 and 2019. We assigned a Non-Compliant Non-Material grade in those audits.</p> <p>We are investigating effective ways to audit this clause. It may not be necessary to include this clause in the auditor's scope.</p> <p>Auditor should check the following recommendations relevant to this clause for completion (see Table 3):</p> <p>2019-01 2019-02 2019-06</p>
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"> <li>a) whether this Licence is fulfilling its objectives; and</li> <li>b) any issues which have arisen during the term of this Licence, which may affect the effectiveness of this Licence,</li> </ul> (End of Term Review)	NR	
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.	NR	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor				
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					
	<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						

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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"> <li>a) in accordance with the memorandum of understanding with the Department of Primary Industries Water referred to in clause 5.10.1(a); or</li> <li>b) if no such memorandum of understanding is in effect, in accordance with a reasonable methodology that Hunter Water considers suitable.</li> </ul>	SC	We last 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	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
2.1.3	The Water Conservation Strategy must include: <ul style="list-style-type: none"> <li>a) identification and documentation of the existing water conservation activities;</li> <li>b) a process for identifying additional options for conserving water;</li> <li>c) a process for comparing these options; and</li> <li>d) a process for selecting options for implementation.</li> </ul>	SC	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
2.1.4	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	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
2.2	Water treatment plants to tap		
2.2.1	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>[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.]</p>	NR	We last audited this clause in 2019. We assigned a Compliant grade in that audit.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
2.2.2	<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"> <li>a) water leakage (within and downstream of its water treatment plants);</li> <li>b) water recycling; and</li> <li>c) water efficiency (including demand management).</li> </ul>	NR	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
2.2.3	<p>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.</p>	NR	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
2.2.4	<p>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.</p>	NR	We last audited this clause in 2019. We assigned a Compliant grade in that audit.
2.2.5	<p>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).</p>	SC	

Licence clause	Operating Licence obligation	2020 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>[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>	Audit	<p>We last audited this clause in 2019. We assigned a Compliant grade in the audit.</p> <p>We intend to only audit Hunter Water's management system against certain elements of the Australian Drinking Water Guidelines each year.</p> <p>This year, we propose to audit elements <b>1, 2, 3, 4, 5, 6, 8, 10 and 12</b>. This includes the elements that we consider higher risk that we intend to audit every year. It also includes lower risk clauses that we will audit periodically through the licence period. The auditor will check close out of shortcomings found in the WQMS against some of these elements in previous audits.</p> <p>We propose to not audit elements 7, 9 and 11 this year. We have audited against these in previous audits. Hunter Water was compliant with these elements and/or has closed out any outstanding recommendations. We will audit these again in future years.</p> <p><b>We will seek NSW Health's comments</b> on Hunter Water's performance against this clause.</p>

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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 last audited this clause in 2019. We assigned a Compliant grade in that audit.</p> <p>We intend to only audit implementation of Hunter Water's management system against elements <b>1, 2, 3, 4, 5, 6, 8, 10 and 12</b> of the ADWG.</p> <p>We propose to not audit elements 7, 9 and 11 this year. We will audit these in future years.</p> <p><b>We will seek NSW Health's comments</b> on Hunter Water's performance against this clause.</p>

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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 last audited this clause in 2019. We assigned a Non-Compliant Non-Material grade in that audit.</p> <p>We intend to only audit Hunter Water's management system against certain elements of the Australian Guidelines for Water Recycling each year. This year we propose to audit elements <b>2, 3, 4, 5, 6, 8 and 12</b>. This includes the elements that we consider higher risk that we intend to audit every year.</p> <p>We propose to not audit elements 1, 7, 9, 10 and 11. We have audited against these in previous audits. Hunter Water was compliant with these elements and/or has closed out any outstanding recommendations. We will audit these again in future years.</p> <p><b>We will seek NSW Health's comments</b> on Hunter Water's performance against this clause.</p> <p>Auditor should check the following recommendations relevant to this clause for completion (see Table 3):</p> <p>2019-03 2019-04 2013-14-03 2013-14-04 2013-14-06 2013-14-13</p>



Licence clause	Operating Licence obligation	2020 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 last audited this clause in 2019. We assigned a Compliant grade in that audit.</p> <p>We intend to only audit implementation of Hunter Water's management system against elements <b>2, 3, 4, 5, 6, 8 and 12</b> of the AGWR.</p> <p>We propose to not audit elements 1, 7, 9, 10 and 11 this year. We will audit these in future years.</p> <p><b>We will seek NSW Health's comments</b> on Hunter Water's performance against this clause.</p> <p>Auditor should check the following recommendations relevant to this clause for completion (see Table 3):  2013-14-03  2013-14-04  2013-14-06  2013-14-13</p>
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> <ol style="list-style-type: none"> <li>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</li> <li>ii. when Hunter Water's systems identify that the Property has experienced a Water Pressure Failure.</li> </ol> <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> <ol style="list-style-type: none"> <li>i. a Planned Water Interruption or Unplanned Water Interruption;</li> <li>ii. water usage by authorised fire authorities in the case of a fire; or</li> <li>iii. iii) a short term or temporary operational problem (such as a main break) which is remedied within four days of its occurrence.</li> </ol>	Audit	We last audited this clause in 2018. We assigned a Compliant grade in that audit.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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"> <li>i. no more than 10,000 Properties experience an Unplanned Water Interruption that lasts more than five continuous hours; and</li> <li>ii. no more than 5,000 Properties experience three or more Unplanned Water Interruptions that each last more than one hour, </li></ul> <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"> <li>i. whether a Property has experienced an Unplanned Water Interruption; and</li> <li>ii. the duration of the Unplanned Water</li> </ul> <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>	Audit	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
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"> <li>i. no more than 5,000 Properties experience an Uncontrolled Wastewater Overflow in dry weather; and</li> <li>ii. no more than 45 Properties experience three or more Uncontrolled Wastewater Overflow in dry weather, </li></ul> <p>(Wastewater overflow Standard).</p>	Audit	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
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"> <li>a) surveying its Customers and Consumers for any lawful purpose at such times as it sees fit; or</li> <li>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.]</li> </ul>	Audit	This is the first audit of this clause in this licence period.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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> <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>	NR	Information clause
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	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
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 2018 and 2019. 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	We last audited this clause in 2018. We assigned a Compliant grade in that audit.

Licence clause	Operating Licence obligation	2020 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 last audited this clause in 2018. We assigned a Compliant grade in that audit.
4.2.2	Hunter Water must fully implement, and carry out all relevant activities in accordance with, the Environmental Management System.	SC	We last audited this clause in 2018. We assigned a Compliant (Minor Shortcomings) grade in that 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	
4.3.2	Hunter Water must fully implement, and carry out all relevant activities in accordance with, the Quality Management System.	SC	
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	
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	
5.2	Consumers		
5.2.1	Hunter Water's obligations under the Customer Contract relating to:  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	

Licence clause	Operating Licence obligation	2020 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"> <li>a) a financial hardship policy that assists residential Customers and Consumers experiencing financial hardship to better manage their current and future bills;</li> <li>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;</li> <li>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</li> <li>d) provisions for self-identification, identification by community welfare organisations and identification by Hunter Water of residential Customers and Consumers experiencing financial hardship,</li> </ul> <p>(the Procedure for Payment Difficulties and Actions for Non-payment).</p>	Audit	This is the first audit of this clause in this licence period.
5.4	Customer advisory group		
5.4.1	Hunter Water must maintain and regularly consult with its Customers through a customer advisory group.	Audit	This is the first audit of this clause in this licence period.
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.	Audit	This is the first audit of this clause in this licence period.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
5.4.3	<p>Hunter Water:</p> <ul style="list-style-type: none"> <li>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;</li> <li>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"> <li>i. business;</li> <li>ii. organisations representing low income</li> <li>iii. Customers living in rural and urban fringe areas;</li> <li>iv. residential;</li> <li>v. local government;</li> <li>vi. pensioners;</li> <li>vii. Customers with disabilities;</li> <li>viii. Indigenous Australians; and</li> <li>ix. Customers from culturally and linguistically diverse backgrounds; and</li> </ul> </li> <li>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"> <li>i. business Consumers;</li> <li>ii. residential Consumers; and</li> <li>iii. environmental groups</li> </ul> </li> </ul>	Audit	This is the first audit of this clause in this licence period.
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"> <li>a) the role of the customer advisory group;</li> <li>b) how members and the Chair of the customer advisory group will be appointed</li> <li>c) the term for which members are appointed</li> <li>d) information on how the customer advisory group will operate;</li> <li>e) a description of the type of matters that will be referred to the customer advisory group and how those matters may be referred;</li> <li>f) procedures for communicating the outcomes of the customer advisory group's work to the public;</li> <li>g) procedures for monitoring issues raised at meetings of the customer advisory group and ensuring appropriate follow-up of those issues;</li> <li>h) procedures for amending the charter; and</li> <li>i) funding and resourcing of the customer advisory group by Hunter Water,</li> </ul> <p>(Customer Advisory Group Charter).</p>	Audit	This is the first audit of this clause in this licence period.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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.	Audit	This is the first audit of this clause in this licence period.
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.
5.7	Provision of information to Customers and the general public		
5.7.1	Hunter Water must prepare a pamphlet or pamphlets with the following information to Customers at least annually with their bills: <ul style="list-style-type: none"> <li>a) a brief explanation of the Customer Contract and a summary of the key rights and obligations of Customers under the Customer Contract;</li> <li>b) a brief explanation of the Procedure for Payment Difficulties and Actions for Non-payment;</li> <li>c) a brief explanation of rights of Customers to claim a rebate and the conditions that apply to those rights;</li> <li>d) information about the General Enquiry Process;</li> <li>e) information about how to make a Complaint under the Internal Complaints Handling Procedure; and</li> <li>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.</li> </ul>	SC	



Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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"> <li>a) the Customer Contract;</li> <li>b) a pamphlet or pamphlets (as referred to in clause 5.7.1);</li> <li>c) the Procedure for Payment Difficulties and Actions for Non-payment;</li> <li>d) the Customer Advisory Group Charter;</li> <li>e) customer advisory group minutes;</li> <li>f) the Internal Complaints Handling Procedure;</li> <li>g) information about the dispute resolution scheme provided by Energy and Water Ombudsman NSW; and</li> <li>h) a map of the Area of Operations.</li> </ul>	Internal IPART check	<p>We last audited this clause in 2019. We assigned a Compliant (Minor Shortcomings) grade in that audit.</p> <p>This clause is not included in the auditor's scope. However, the auditor should still check recommendation 2019-05 relevant to this clause for completion (see Table 3).</p>
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 last audited this clause in 2018. We assigned a Compliant grade in that audit.
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	
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"> <li>a) maintain a memorandum of understanding with NSW Health; and</li> <li>b) comply with the memorandum of understanding maintained under clause 5.9.1(a).</li> </ul> <p>[Note: Clause 5.9.1 does not limit the persons with whom Hunter Water may enter into a memorandum of understanding.]</p>	Audit	<p>This is the first audit of this clause in this licence period.</p> <p><b>We will seek NSW Health's comments on</b> Hunter Water's performance against this clause.</p>
5.9.2	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.	NR	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
5.9.3	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.	Audit	<b>We will seek NSW Health's comments</b> on Hunter Water's performance against this clause.
5.9.4	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.  [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.]	SC	<b>We will seek NSW Health's comments</b> on Hunter Water's performance against this clause.
5.10	Memorandum of Understanding with Department of Primary Industries - Water		
5.10.1	Hunter Water must use its best endeavours to: <ul style="list-style-type: none"> <li>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"> <li>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</li> <li>ii. calculation and reporting of System Yield; and</li> </ul> </li> <li>b) comply with the memorandum of understanding maintained under clause 5.10.1(a).</li> </ul> [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.]	SC	We last audited this clause in 2018. We assigned a Compliant grade.  <b>We will seek the Department of Planning, Industry and Environment's comments</b> on Hunter Water's performance against this clause.
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	
5.11	Memorandum of understanding with Fire and Rescue NSW		
5.11.1	Hunter Water must use its best endeavours to: <ul style="list-style-type: none"> <li>a) develop and enter into a memorandum of understanding with FRNSW by 31 December 2017; and</li> <li>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.</li> </ul> [Note: Clause 5.11.1 does not limit the persons with whom Hunter Water may enter into a memorandum of understanding.]	SC	We last audited this clause in 2019. We assigned a Compliant grade in that audit.  <b>We will seek Fire and Rescue NSW's comments</b> on Hunter Water's performance against this clause.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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"> <li>a) develop the roles and responsibilities of the parties to the memorandum of understanding as they relate to each other;</li> <li>b) identify the needs and constraints of the parties to the memorandum of understanding as they relate to each other; and</li> <li>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.</li> </ul>	NR	
5.11.3	<p>The memorandum of understanding referred to in clause 5.11.1 must require:</p> <ul style="list-style-type: none"> <li>a) the establishment of a working group, comprised of representatives from Hunter Water and FRNSW; and</li> <li>b) the working group to consider the following matters (at a minimum): <ul style="list-style-type: none"> <li>i. arrangements regarding information sharing between Hunter Water and FRNSW;</li> <li>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);</li> <li>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</li> <li>iv. other matters as agreed by both parties to the memorandum of understanding.</li> </ul> </li> </ul>	SC	<p>We last audited this clause in 2019. We assigned a Compliant grade in that audit</p> <p><b>We will seek Fire and Rescue NSW's comments on Hunter Water's performance against this clause.</b></p>
6	Performance monitoring and reporting		
6.1	Operational audits		
6.1.1	<p>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:</p> <ul style="list-style-type: none"> <li>a) this Licence;</li> <li>b) the Reporting Manual; and</li> <li>c) any matters required by the Minister, (Operational Audit).</li> </ul>	NR	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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"> <li>a) access any works, premises or offices occupied by Hunter Water;</li> <li>b) carry out inspections, measurements and tests on, or in relation to, any such works, premises or offices;</li> <li>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;</li> <li>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</li> <li>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.</li> </ul>	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"> <li>a) water conservation;</li> <li>b) supply services and performance standards;</li> <li>c) organisational systems management;</li> <li>d) customer and stakeholder relations; and</li> <li>e) performance monitoring and reporting, including: <ul style="list-style-type: none"> <li>i. IPART performance indicators; and</li> <li>ii. the National Water Initiative Performance Indicators</li> </ul> </li> </ul>	SC	
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	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
6.2.3	<p>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.</p> <p>[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.]</p>	NR	
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	<p>Where this Licence requires Hunter Water to provide information to IPART or an Auditor that is information to which:</p> <ul style="list-style-type: none"> <li>a) Section 24FF of the IPART Act applies; or</li> <li>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</li> </ul> <p>Hunter Water must, to the maximum extent permitted by the law, provide that information even if it is confidential.</p>	Internal IPART check	This clause is not included in the auditor's scope.

**Table 3 Recommendations / outstanding items from previous audits**

Recommendation number	Licence part	IPART's recommendation to the Minister	Previous audit findings	Guidance for 2019 audit
2019-01	Pricing Clause 1.8.1	By 30 June 2020, Hunter Water must report to IPART on the further progress made in contacting past owners of properties affected by the incorrect charging of the Stormwater Drainage Charge, the total of the refunds made compared to the amount overcharged, and any further actions to be undertaken (if necessary) to rectify this non-compliance.	New recommendation from 2019 audit.	Auditor to check for completion.
2019-02	Pricing Clause 1.8.1	By 30 June 2020, Hunter Water must correct its application of the sewer discharge allowance within the billing system; determine the number of customers affected and the incorrectly billed amounts; and report these details to IPART together with details of actions and/or further actions proposed.	New recommendation from 2019 audit.	Auditor to check for completion.
2019-06	Pricing Clause 1.8.1	By 31 March 2021, Hunter Water must ensure that the proposed functionality for fully automated tankered waste billing is incorporated into the new corporate billing system.	New recommendation from 2019 audit. (Recommendation from the 2018 audit revised in the 2019 audit)	Auditor to check for progress.
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 Critical Control Points (CCPs) for each treatment plant, including:</p> <ul style="list-style-type: none"> <li>a) review all CCP critical limits (including alarm delays), and monitoring points to ensure they reflect current practice, as agreed with NSW Health.</li> </ul> <p>(Note: other elements of these recommendations had been fully addressed in previous audits)</p>	<p>Hunter Water is awaiting NSW Health agreement to the final CCP critical limits.</p> <p>Hunter Water is required to provide a report on progress by 12 June 2020.</p>	Auditor to check for completion.
2019-03	Recycled Water Clause 3.2.1	By 30 September 2020, Hunter Water must document the methodology for assessment of water quality data to inform risk assessment to ensure consistency across schemes. The assessment should include methods for trending and identifying problems.	New recommendation from 2019 audit.	Auditor to check for completion.

Recommendation number	Licence part	IPART's recommendation to the Minister	Previous audit findings	Guidance for 2019 audit
2019-04	Recycled Water Clause 3.2.1	By 30 June 2020, Hunter Water must review the verification monitoring program for the Chisholm and Gillieston Heights recycled water schemes, to ensure microbiological testing is consistent with the advice provided in the AGWR for large high exposure schemes, and include weekly testing of clostridial spores and somatic coliphage, and monthly testing of adenovirus and cryptosporidium oocysts.	New recommendation from 2019 audit.	Auditor to check for completion.
2019-05	Provision of information to Customers and the general public Clause 5.7.2	By 30 June 2020, Hunter Water must ensure that all information required to be available on its website for downloading, or upon request through the General Enquiry Process, can be readily identified by methods such as menu navigation or using the search function.	New recommendation from 2019 audit.	Auditor to check for completion.

**a Hunter Water's Status Report on Recommendations - 2019 Operating Licence Audit is due by 12 June 2020.**

**b Licence references are to the Hunter Water Corporation Operating Licence 2017-2022 unless otherwise stated.**



**Table 4 Previous field verification locations for Hunter Water Corporation**

<b>Audit year</b>	<b>Location</b>	<b>Facility</b>
<b>2019</b>	Morpeth	Recycled water plant
	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)
<b>2018</b>	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
<b>2017</b>	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
	Elernmore Vale	Reservoir
<b>2016</b>	Tomago Sandbeds	Borefields
	Lemon Tree Passage	Water Treatment Plant
	Karuah	Wastewater Treatment Plant and the reuse enterprise
	Boulder Bay	Wastewater Treatment Plant
<b>2015</b>	Edgeworth	Wastewater Treatment works
	KIWS (Kooragang Industrial Water Scheme), incl. Mayfield West plant	Advanced Water Treatment Plant (recycled water)
	Grahamstown	Spillway Water Treatment Plant
	Campvale	Pumping station
<b>2014</b>	Chichester	Dam
	Dungog	Water Treatment Plant
	Clarence	Sewage Treatment Plant
	Boags Hill	Inlet
	Seaham	Weir

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



## Appendix B Site Visit Report

### B.1 Overview

As part of this audit, field verification site visits were made to a number of sites/facilities to verify how effectively Hunter Water is implementing the requirements of the Operating Licence in practice. These visits involved inspection of facilities, observation of activities being undertaken and discussions with field personnel.

As indicated in **Section 1.2.3**, the site visits were undertaken virtually due to the coronavirus pandemic. This involved Hunter Water:

- providing pre-recorded video and photographs/drawings/etc. which were in most cases presented as PowerPoint presentations, which were viewed during the audit sessions with Hunter Water /Veolia representatives providing commentary and responding to questions; and
- presenting live video during the audit sessions, although this was limited principally due to time constraints.

Sites/facilities inspected for the purposes of this audit included:

- Farley Recycled Water Scheme, including:
  - Farley Wastewater Treatment Plant;
  - Farley Recycled Water Treatment Plant; and
  - Gillieston Heights Recycled Water Network;
- Tomago Borefield;
- Schroder PAC Dosing Facility;
- Grahamstown Water Treatment Plant;
- Anna Bay Water Treatment Plant; and
- Nelson Bay Water Treatment Plant.

A brief summary of the assets and/or activities inspected at each site, the issues reviewed and/or identified and the observations made are set in the following sections. More detailed discussion of specific aspects or issues is presented in **Section 2**.

It is noted that Hunter Water has contracted Veolia Water Australia (Veolia) to provide operation and maintenance (mechanical and electrical) services at all of its treatment facilities. Accordingly, there is reference to Veolia in the following sections; Veolia representatives were present during the virtual inspections of all treatment facility sites.

For completeness of the audit record, points arising from an overview presentation provided by Hunter Water at the audit opening (inception) meeting are summarised in **Section B.2**.

## B.2 Opening Meeting Notes

### B.2.1 Introduction

Hunter Water provided a brief presentation outlining some of the key issues for the business during the audit period. These included a brief overview of Hunter Water's response to the COVID-19 pandemic and some Customer and Community highlights.

### B.2.2 COVID-19

Hunter Water indicated that the COVID-19 pandemic had no material impact to the continuity of its service provision; however, it was necessary to adapt its delivery model to ensure that performance objectives were achieved. Hunter Water's relationship with its customers is discussed further below.

Hunter Water's response was focussed in four areas, as follows:

- People:
  - key health related guidance was strictly followed to ensure the safety of frontline staff;
  - office based staff moved to working remotely; and
  - the relationship with customers was adapted but maintained.
- Processes:
  - COVID safe practices were implemented across the board (physical distancing, hygiene, number of people in vehicles, etc.);
  - paper based systems were moved to electronic/digital; and
  - supply chain management was adapted to ensure continuity.
- Systems:
  - business continuity plans were updated to reflect the situation; and
  - risk assessments/profiles were updated to reflect the impacts of COVID.
- Technology:
  - connectivity and collaboration were maintained through the use of online platforms (Zoom, WebEx, Teams); and
  - technological innovation and continual improvement were driven by necessity.

More specific aspects of Hunter Water's response to the COVID-19 pandemic have been discussed in the body of this report.

### B.2.3 Customer and Community Highlights

Hunter Water has maintained a strong focus on supporting its customers during the audit period. There have been significant naturally occurring events, the impact of which has had to be managed, during the last 12 months (drought, flood, bushfire and the global pandemic).

Hunter Water noted that:

- It has had to adapt its service delivery model, change the way it interacts with its customers (i.e. move online) and most importantly, support its customers across hardship and water conservation initiatives.

- It has focused on system enhancement and improvements that will improve its customer's experience and provide more efficient, secure and stable business operations (meter reading system, billing system, complaint system, website, digital web applications).

Some specific improvements during the period have included:

- *Customer and Community Advisory Group (CCAG)* – regular consultation with the CCAG has continued in line with the new (2018) Charter, with recent new memberships.
- *Website* – a new website that has improved accessibility and usability for customers, including access to key customer documents and optimised search functionality, has been commissioned.
- *Customer Complaints and Billing:*
  - there has been greater focus on effectiveness and timeliness of customer complaint responses, including the new meter reading system which has reduced customer billing complaints;
  - complaint management has also been enhanced through compliance with the Customer Complaint Management Standard and Guideline (AS/NZS 10002:2014) and ongoing membership of the External Dispute Resolution Scheme, implemented through the Energy and Water Ombudsman of NSW (EWON); and
  - implementation of a new billing system will provide better audit and control functions that will assist Hunter Water in minimising pricing non-compliances.
- *Providing support to vulnerable customers:*
  - a significant presence at community events has been maintained to increase awareness and support for the most vulnerable customers pre COVID-19; and
  - collection strategies and business rules have been revised post COVID-19, to support those customers that have been financially impacted.
- *Improving Recycled Water systems and processes* – an industry recognised leader in recycled water and a certified Recycled Water Quality Auditor have been engaged to provide a new and different perspective on recycled water systems management.

## B.3 Farley Wastewater Treatment Plant<sup>569</sup>

### B.3.1 Facility description

The Farley Wastewater Treatment Works (WWTW) serves parts of the City of Maitland, including Aberglasslyn, Bolwarra, Gillieston Heights, Largs, Lorn, Oakhampton, Phoenix Park and Rutherford. It currently treats 7.2 megalitres of sewage per day and can handle wastewater from a population of up to 50,000 people.

The WWTW treatment processes include:

- Inlet screening (dry weather and wet weather) and grit removal – physical removal of contaminants and debris;
- Nutrient removal and conversion of ammonia using the extended aeration activated sludge process (carousel tank);
- Chemical dosing – ferric chloride dosed at the carousel for phosphorus removal;

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<sup>569</sup> PowerPoint presentation: *SIE-FRWS-E-001 Farley WWTW & RWTP Visual Evidence IPART 2020.pptx*.

- Secondary clarification – separation of solids from the effluent;
- UV disinfection;
- Storm storage – to which raw sewage is diverted during wet weather; and
- Sludge dewatering of waste activated sludge in sludge lagoons.

Effluent (recycled water) is used on site for grit and screening washing and for general wash down. It is also discharged to the Farley Recycled Water Treatment Plant (located on site) for further treatment and subsequent reuse in the nearby suburb at Gillieston Heights where 770 homes have dual reticulation. In both cases, effluent is pumped from the tail end of the UV disinfection system channel.

Any remaining effluent is discharged to Fishery Creek which flows into Wallis Creek and then eventually into the Hunter River.

The plant is currently (at the time of the audit) being upgraded to replace the carousel system with membrane bioreactors for nutrient removal; associated chemical dosing facilities are included. On-site sludge dewatering equipment is also being provided to facilitate biosolids disposal, thereby replacing the sludge lagoons.

### B.3.2 Inspection overview

The Farley WWTW was inspected principally as it provides the source water (effluent) for the Farley Recycled Water Treatment Plant, which is located on the same site. The inspection involved a review of the pre-assembled information and live video inspection at the tail end of the UV disinfection channel.

No observations of significance were made in respect of this facility.

## B.4 Farley Recycled Water Treatment Plant<sup>570</sup>

### B.4.1 Facility description

The Farley Recycled Water Treatment Plant (RWTP) is located adjacent to the Farley WWTW. The plant provides tertiary treatment of effluent (secondary treated wastewater) from the WWTW.

The RWTP treatment processes include:

- Pre-chlorination;
- Pre-screening;
- Flocculation;
- Membrane filtration using ultrafiltration (UF);
- UV Disinfection;
- Chlorine disinfection; and
- Product water storage.

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<sup>570</sup> PowerPoint presentation: *SIE-FRWS-E-001 Farley WWTW & RWTP Visual Evidence IPART 2020.pptx*.



Recycled water is supplied from the Product Water Tank and distributed to Gillieston Heights for predominantly residential use. At the time of inspection, the plant had been commissioned for approximately 12 months, but was off-line (not operating) awaiting delivery of a replacement UV intensity analyser under defects liability. Potable water supplied as top-up into the clear water storage was being discharged into the distribution/reticulation network.

#### B.4.2 Inspection overview

The inspection involved a review of the pre-assembled information followed by a live video inspection, which was undertaken by generally following the flow path through the plant. This was followed by a brief review of Veolia's asset management practices; a review of critical control point settings in the SCADA system was undertaken during an online interview session the following day.

#### B.4.3 Asset management

Observations from an asset management perspective included the following:

- The plant had only been in operation for approximately twelve months, so generally appeared to be in good condition.
- Pipework and equipment was generally well labelled; lilac colour coding (for recycled water) had been used where appropriate.
- Safety equipment such as showers and eye washes were in place.
- Chemical storage bunding was in place. The chemical delivery area was also appropriately bunded with discharge to the site waste tank. A spill response station was available on site.
- As previously noted, the plant was not operating at the time of the inspection due to delays in the supply of a replacement UV intensity analyser under defects liability. It is understood that the replacement item had to be sourced from overseas and the delay may have been exacerbated by the COVID-19 situation. Nonetheless, this raised concerns in respect of the availability of critical spares, reported in respect of Licence clause 4.1.2 (refer **Section 2.4.3.1**).

#### B.4.4 Water quality

Observations from a water quality perspective included the following:

- As noted above, the plant had been off-line since August 2020. In order to maintain the equipment, membranes and instruments, alterations were made to maintain flowing water to them. These changes will all need to be reverted back to the normal (design) state once operation commences.
- The process flowchart was reviewed and found to be accurate for the site.
- Unlike the Morpeth WWTW, bypass of the Farley WWTW does not affect the treated effluent supplied to the RWTP.
- The RWTP was designed to use ferrous chloride as the flocculent. However, this has been changed to ACH (aluminium chlorohydrate) as it is less harmful to the UF (ultrafiltration) membranes and should increase the useful life.
- If the plant has a failure it is capable of operating in 'off-spec' mode by diverting the product water to waste until instruments come into the normal operating range.
- Chemical storages and fill points were observed and seemed to be in order.

- Chemical dosing pumps were all duty/standby and switch every 4 hours.
- Only top-up chlorine is being used at the moment, so there was very little chlorine on site.
- Sodium hypochlorite is usually stored for up to 2.5 months. This may deteriorate in summer months. Chlorine is monitored after dosing and the dose is adjusted if the strength of the chemical reduces.
- Drop tests are undertaken on dosing pumps and this is scheduled in the weekly task list.
- ‘Off-spec’ water can be released from the bottom of the product water tanks to the wet weather storage.
- The potable water top-up is triggered on demand and has a physical air gap to prevent backflow.
- Operational notes are made on the daily maintenance sheets and are also made on the Plant Spreadsheet.
- Operators access documents using the WWTW computers; they do not have mobile computing. Observations and monitoring data are written on a paper sheet and transferred to the electronic version in the office. This is double handling and increases the risk of transcription errors.
- Monthly work orders are printed off VAMS and are worked through.
- VAMS was viewed on a shared screen and the calibration routines were reviewed.

## **B.5 Gillieston Heights Recycled Water Network**<sup>571,572,573</sup>

### **B.5.1 Facility description**

The Gillieston Heights Recycled Water Network comprises approximately 1,800 metres DN250 distribution pipeline (from the clear water tank at the recycled water treatment plant) and a reticulation network servicing more than 700 predominantly residential properties.

### **B.5.2 Inspection overview**

The inspection involved a review of the pre-assembled information that addressed specific auditor requests.

### **B.5.3 Observations**

The following observations were made in respect of the Gillieston Heights Recycled Water Network:

- There is currently no signage at entry points to the serviced area to advise that recycled water is in use. The erection of signage is awaiting Council approval, and will be installed as part of proposed extension works.
- There are potable and recycled water monitoring points at fourteen (14) locations within the serviced area. A monitoring point at 12 Oakes Circuit has been identified as the critical location as the highest water age in the network occurs at this point (based on hydraulic

<sup>571</sup> Document: *SIE-FRWS-E-002 HW2015-1364 1 12.033 Report - Site Inspection Evidence - Questionnaire Gillieston Heights Network.docx*.

<sup>572</sup> PowerPoint presentation: *SE-035 4.1.2 Presentation - Recycled Water Network IPART Meeting Update - November 2020.pptx*.

<sup>573</sup> Drawing: *Gillieston Heights May 2020.pdf*.

modelling). Compliant water quality parameters (free residual chlorine) at this point are considered to be indicative of compliance across the network.

- Evidence of cross-connection testing taken prior to the system 'going live' (which was undertaken early in the audit period) was provided. It is planned to conduct system checks every two years.
- Hunter Water is aiming to maintain a pressure differential of 10 metres between the potable and recycled water networks.
- Photographic evidence confirmed that:
  - valve and hydrant covers are appropriately identified (lilac coated and 'recycled water' markings);
  - water meters are lilac coated; and
  - external on-property taps are lilac coated with adjacent signage.
- Hunter Water advised that hydrants are clamped to prevent unauthorised use.
- Hunter Water advised that in some cases, removable handles had been left attached to on-property taps. It sends out reminder notices with any communication to its customers.
- Envirosys was demonstrated and some of the network verification data was reviewed.

## B.6 Tomago Borefield<sup>574,575</sup>

### B.6.1 Facility description

The Tomago Borefield comprises a network of more than 500 individual bores covering 100 square kilometres extending from Lemon Tree Passage west to Tomago. The bores draw water from an aquifer located below the Tomago Sandbeds.

The Tomago Borefield operates as a backup to Grahamstown Dam as a source of water. After treatment at Grahamstown Water Treatment Plant (WTP), water from the western Tomago Sandbeds is piped to consumers in Newcastle and the Lower Hunter regions.

Water is extracted from the aquifer using either pumps or vacuum systems, which can be briefly described as follows:

- Both submersible and line shaft (dry) bore pumps are used. Submersible pumps (including motor) are fully submerged at the base of the bore; line shaft pumps comprise a pump located at the base, a vertical drive shaft and a dry mounted motor at the head of the bore. In both cases the pumps discharge directly into the delivery pipeline.
- In a vacuum system, water is drawn from the bore into a pressure vessel/tank by maintaining a vacuum (suction pressure) in tank using a vacuum pump(s). Water is then pumped from the tank into the delivery pipeline using a second pump(s).

Water is then delivered to the raw water storage at the Grahamstown WTP via a network of pipelines. The bore field also supplies the Lemon Tree Passage WTP.

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<sup>574</sup> PowerPoint presentation: *SIE-TBF-E-002 Tomago Borefields.pptx*.

<sup>575</sup> Map: *Tomago Borefields.pdf*.

This source is used for drought mitigation and can supply up to 80 ML/day. The trigger level is 70% of full level in Grahamstown Dam (currently at 80%). The borefield can only replace approximately 20% of the Grahamstown Dam source. There is an extraction licence for 25,000ML/annum.

### B.6.2 Inspection overview

The inspection involved a review of the pre-assembled information which included a number of pre-recorded video clips. An overview of each bore type was provided.

### B.6.3 Asset management

At the time of inspection, the borefield was being maintained in “caretaker mode”; it was not operating as a water source. It is noted that when required to be operational, bores are operated manually by the Mechanical and Electrical Service Group.

The preventative maintenance regime implemented in respect of the borefield remains relatively consistent whether bores are operating or in caretaker mode. There is usually increased reactive and corrective maintenance when they are operating. Based on the imagery sighted, assets appear (visually) to have been maintained in good condition.

Information provided by Hunter Water indicates that a condition assessment of all borefield assets was undertaken in June 2019 as part of a drought preparation program. This resulted in the identification of capital investment requirements to rehabilitate or re-establish a number of bores.

Asset records were reviewed briefly, as reported in respect of Licence clause 4.1.2 (refer **Section 2.4.3.1**).

### B.6.4 Water quality

The following observations were made in respect of the Tomago Bores:

- The condition of the aquifer is monitored and during extreme drought conditions the extraction was limited to 40ML/day.
- There is a slow-moving plume of PFAS in the aquifer and this is constantly being monitored. Hunter Water liaises with NSW Health in respect of this issue. Operational bores are monitored: if PFAS reaches levels  $>0.01\mu\text{g/L}$ , an investigation is undertaken; if levels exceed  $0.07\mu\text{g/L}$ , bore use is stopped immediately and investigated.
- As well as production bores there are also observation bores used to detect saltwater intrusion.
- Climate change will alter the nature of the aquifer. As sea levels rise it will increase the prospect of saltwater intrusion and may further reduce the amount of water that can be harvested.
- Some of the bores have a high level of manganese from the grey sands and pyritic material. This leads to aesthetic water quality complaints when this source is used.
- As the bore field is isolated there are high instances of vandalism and theft. Equipment is design to combat this as much as possible.

## B.7 Schroder PAC Dosing Facility

### B.7.1 Facility description

The PAC (Powdered Activated Carbon) dosing facility is located at the George Schroder Pumping Station, the facility that delivers water from Grahamstown Dam to the Grahamstown Water Treatment Plant (WTP). Dosing at this location enables mixing in the transfer pipelines prior to the water entering the treatment plant, which is located approximately 6 kilometres away.

The dosing facility comprises the following, which is accommodated within a single building:

- Capacity for bulk storage of PAC in bulk bags on pallets;
- Bag unloader, consisting of a bag trolley, crane and screw feeder;
- Dry storage hopper;
- Mixing tanks; and
- Dosing pumps.

Bags are lifted onto the trolley from where the screw feeder lifts the powder to the top of the storage hopper. Powder is then dispensed into the mixing tanks where it is mixed with process water drawn from the raw water pipeline to create a PAC-slurry. The slurry is then pumped by positive displacement pumps to the injection points on the raw water pipelines.

### B.7.2 Inspection overview

The inspection involved a review of the pre-assembled information which included a number of pre-recorded video clips. A description of the facility operation was provided.

### B.7.3 Asset management

The facility appeared (visually) to be maintained in good working condition. Control panels were clearly labelled; pipework was also labelled.

With the exception of a safety shower and eyewash station located adjacent to the bag unloading equipment, all safety equipment was located in a switchboard room that was adjacent to but fully isolated from the process building.

### B.7.4 Water quality

PAC is added to the raw water as required to manage taste and odour (geosmin) and algal toxins. It is used intermittently depending upon raw water characteristics.

Algal blooms appear to be coming more frequent and more intense. Hunter Water has started using the 'Cyanolakes' tool to help map blooms. There is some concern that if the blooms get too severe, it could impact the ability to supply water.

There are two mains running to the Grahamstown WTP; PAC can be dosed into both mains. The Tomago bores feed into the east main, so that is not dosed if the bores are running.

The Veolia operators have formal taste test training, and the PAC is turned on based on a taste test. The dose rate for the PAC is documented in the Blue-Green Algae Contingency Plan; it is normally dosed at ~10mg/L. The dose rate was optimised during the last large algae event using jar tests.

There are turbidity meters on the mains to the WTP to provide early warning should dosing fail. There are also scales on the feed hopper and feedback on the pumps and impellers.

## **B.8 Grahamstown Water Treatment Plant<sup>576</sup>**

### **B.8.1 Facility description**

The Grahamstown Water Treatment Plant (WTP) is located at Tomago, approximately north of the Newcastle CBD. The plant, which has a peak capacity of 280 ML/day, can treat water from Grahamstown Dam (the primary source) and/or Tomago Sandbeds. It is the primary source of water supply for Newcastle and the Lower Hunter region.

Grahamstown Water Treatment plant uses conventional treatment comprised of the following processes:

- coagulation/flocculation;
- sedimentation;
- filtration;
- pH correction;
- disinfection; and
- fluoridation.

The plant operates via two stages (separate process trains), each having a capacity of approximately 280 ML/day. Both stages are served by a common raw water tank.

Pre-treatment for Stage 1 comprises two circular clarifiers with central mechanical flocculation, whilst Stage 2 has four rectangular sedimentation tanks. Alum and coagulant aid polymer are dosed prior to clarifiers/sedimentation tanks for both stages; pre-lime is also dosed prior to the Stage 1 clarifiers when treating Tomago groundwater.

Stage 1 has ten (10) rapid gravity duplex mono-media sand filters; backwash comprises combined air/water and water wash. Stage 2 has six (6) rapid gravity duplex dual media filters; backwash comprises air scour and water wash. Filter aid polymer can be dosed for both stages. Backwash recovery is pumped to the clarifier/sedimentation inlets respectively.

Product water is dosed with lime, chlorine and fluoride post sedimentation, prior to entry into the clear water storage. Chlorine can also be added into the supply pipeline downstream of the clear water storage and discharge pumping station.

The clear water storage comprises a predominantly in-ground concrete lined basin that has been covered with a lightweight aluminium sheeted roof subsequent to its original construction. It has a capacity of approximately 15 megalitres.

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<sup>576</sup> PowerPoint presentation: *SIE-GWTP-E-001 Grahamstown WTP Visual Evidence - IPART 2020.pptx*.

## B.8.2 Inspection overview

The inspection involved a detailed review of the pre-assembled information, which included a series of pre-recorded video clips together with process diagrams, photographs and explanatory notes; the presentation followed the flow path through the plant. This was followed by a brief live video inspection of the plant laboratory.

## B.8.3 Asset management

Observations from an asset management perspective included the following:

- One of the Stage 2 flocculation tanks was removed from service for cleaning/maintenance. Timber mixing paddles appeared to be in good condition.
- A Stage 2 filter tank was also off-line for maintenance, thereby demonstrating that required maintenance continues to be implemented.
- A spill kit and breathing apparatus were in place in the backwash gallery.
- Chemical storage for alum and hydrofluosilicic acid is accommodated within a standalone building. The building provides secure bunded storage for the chemicals; the truck standing area is also bunded. Safety provisions including signage, safety data sheets and safety shower/eye wash stations were evident.
- Roof sheeting on the clear water storage appeared to be effectively sealed at joints and around access hatches, roof penetrations and the central roof vent. Perimeter sealing of the roof sheeting had a gap of approximately 1 centimetre at one location; this is within the limit of 2 centimetres documented in the *Hunter Water Reservoir Inspection Form*.<sup>577</sup>
- Internal reservoir inspection was being conducted at the time the audit information was being prepared.
- Overall, the assets appeared to have been maintained in generally good condition.

## B.8.4 Water quality

Observations from a water quality perspective included the following:

- The process flow diagram was checked and appears to be accurate other than the temporary pre-lime dosing is not shown. It is shown on the P&ID (Piping and Instrumentation Diagram).
- When the bores operate, they can only supply one stage; however, it can be either Stage 1 or Stage 2.
- Backwash waste can be returned to the head of the plant after treatment, unless there is a risk; if so, it can be diverted to waste. It is normally returned to the plant flow to reduce wastage.
- The Stage 1 backwash return pumps operate on a VSD (variable speed drive) which can be controlled by SCADA to restrict flow to 10% of total plant flow, which is used as an upper limit of plant flow to reduce the risk of pathogen break-through.
- Stage 2 backwash return pumps cannot be restricted to 10% of plant flow. During high risk periods and wet weather events, backwash is set to waste.
- Only one filter can be backwashed at a time.

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<sup>577</sup> Requirement noted during the 2019 Operational Audit.



- Wasted water goes to the sludge lagoons. If too much water is sent to them, they can overflow, which could cause issues with neighbours. There is no environmental discharge licence.
- Online instrumentation is calibrated weekly on the weekly Preventative Maintenance Schedule. If tolerances are exceeded the instrument will be sent to the manufacture for calibration.

## **B.9 Anna Bay Water Treatment Plant**

### **B.9.1 Facility description**

Anna Bay Water Treatment Plant (WTP) treats water from the Anna Bay Sandbeds. It has a peak supply capacity of 12 ML/day.

The treatment plant uses the following processes:

- aeration;
- pH correction;
- disinfection; and
- fluoridation.

Raw water is dosed with hydrated lime to correct pH (to approximately pH 7.5) prior to passing through two parallel slatted aerators which liberate any entrained gases (e.g. carbon dioxide). Fluoride is dosed post aeration followed by chlorine prior to the clear water storage. All dosing is flow paced based on raw water inflow; there is PID control feedback from the clear water storage inlet for pH/inlet or outlet (by selection) for free chlorine residual, thereby providing further control and stability.

The clear water storage, which has a capacity of 0.5 megalitres, provides chlorine contact for disinfection prior to delivery into supply. The storage comprises a reinforced concrete tank with concrete cover, which is predominately in-ground. Three submersible pumps discharge treated water into the supply network.

### **B.9.2 Inspection overview**

The inspection involved a review of the pre-assembled information, which included a series of pre-recorded video clips together with process diagrams, photographs and explanatory notes; the presentation followed the flow path through the plant.

### **B.9.3 Asset management**

Observations from an asset management perspective included the following:

- Site manifest and safety data available in cabinet at site entrance; wind sock on site as part of chlorine safety measures.
- Lime dosing facility comprises an elevated storage hopper and a slurry dosing system in duty/standby configuration (dual mixing tanks and dosing pumps).

- Fluoridation system comprises IBC bulk storage, transfer pump to day tank on scale (to monitor usage) and dosing pumps in a duty/standby configuration, all accommodated within the site building (dedicated room).
- Chlorination system comprises bottled chlorine and dosing pumps in a duty/standby configuration. The chlorination room within the site building is ventilated and fitted with a ChlorGuard safety system, which automatically shuts down the chlorination system if chlorine leakage is detected.
- CCP instrumentation is accommodated within the laboratory/control room.
- Appropriate signage, including conditions of entry, and safety data sheets in place adjacent to entry to all chemical storage areas. Safety shower/eye wash stations appear to be appropriately located. A spill kit and breathing apparatus are available on site.
- Access covers on the reinforced concrete clear water tank appeared to be well sealed. There is a series of vents around the perimeter at the top of the tank wall; these are screened.
- Overall, the assets appeared to have been maintained in good condition.

#### B.9.4 Water quality

Observations from a water quality perspective included the following:

- The plant is located within the Tomaree National Park.
- Water is extracted from the Tomaree aquifer via 21 bores.
- Raw water quality is good; it has low levels of iron and manganese.
- Although the plant has capacity to treat up to 12 ML/day, demand is typically much less.
- Raw water turbidity is consistent at ~0.1 NTU. It spikes to 1.5-2 NTU on plant start-up, but this is considered to be mostly the result of bubbles in the meter. It settles down quickly and there is an auto shutdown on the raw water inflow at 1 NTU for 20 minutes.
- If the final chlorine concentration is low, *C.t* is calculated. If *C.t* is less than 15 min.mg/L it is notifiable to NSW Health. Anna Bay was one of the first plants to change the disinfection requirement from 4 min.mg/L to 15 min.mg/L.

### B.10 Nelson Bay Water Treatment Plant

#### B.10.1 Facility description

Nelson Bay Water Treatment Plant (WTP) treats water from the Anna Bay Sandbeds. It has a peak supply capacity of 12 ML/day.

The treatment plant uses the following processes:

- aeration;
- pH correction;
- disinfection; and
- fluoridation.

Raw water is dosed with sodium hydroxide (caustic soda) to correct pH (to approximately pH 7.5) and fluoride prior to passing through two parallel slatted aerators which liberate any entrained gases (e.g. carbon dioxide). Chlorine is dosed prior to the clear water storage (post aeration). All

dosing is flow paced based on raw water inflow; there is PID feedback from the clear water storage inlet for both pH and free chlorine residual, thereby providing further control and stability.

The clear water storage, which has a capacity of 4 megalitres, provides chlorine contact for disinfection prior to delivery into supply. The storage comprises a ground level welded steel tank with lightweight aluminium sheeted roof.

### B.10.2 Inspection overview

The inspection involved a review of the pre-assembled information, which included a series of pre-recorded video clips together with process diagrams, photographs and explanatory notes; the presentation followed the flow path through the plant.

### B.10.3 Asset management

Observations from an asset management perspective included the following:

- Site manifest and safety data available in cabinet at site entrance; wind sock on site as part of chlorine safety measures.
- Sodium hydroxide storage is within a separate enclosure which is well bunded. The storage tank also serves as a day tank. Dosing pumps are in duty/standby configuration.
- Fluoridation system comprises IBC bulk storage, transfer pump to day tank on scale (to monitor usage) and dosing pumps in a duty/standby configuration, all accommodated within the site building (dedicated room).
- Chlorination system comprises bottled chlorine and dosing pumps in a duty/standby configuration. The chlorination room within the site building is ventilated and fitted with a ChlorGuard safety system.
- CCP instrumentation is accommodated within the laboratory/control room.
- Appropriate signage, including conditions of entry, and safety data sheets in place adjacent to entry to all chemical storage areas. Safety shower/eye wash stations appear to be appropriately located. A spill kit and breathing apparatus are available on site.
- The perimeter of the roof was fitted with expanded metal grating. The roof appeared to be vermin proof.
- Roof sheeting appeared to be effectively sealed at joints and around access hatches, roof penetrations and the central roof vent.
- Protective coating on the stairway, perimeter walkway and handrails was starting to deteriorate with discolouration and some surface corrosion.
- There is extensive graffiti on the walls of the clear water storage tank, probably due to the isolation. There is a motion sensor with an audible alarm at the top of the roof access stairway, and gates and hatches alarm in SCADA.
- There are many trees around the site and the prospect of a bushfire has been discussed with the Fire Service. Over hanging tress are lopped.
- Overall, the assets appeared to have been maintained in good condition. Although coatings of pipework/valves and the clear water storage appeared aged/worn; however, the location within a heavy vegetated are of the National Park has obviously contributed to discolouration.

#### B.10.4 Water quality

Observations from a water quality perspective included the following:

- The plant is located within the Tomaree National Park.
- Water is extracted from the Tomaree aquifer via 5/6 bores.
- Raw water quality is good; it has low levels of iron and manganese.
- There is a difference between the P&ID and the plant flow chart. There are two reservoirs onsite, but only one is in use. Based on the Nelson Bay O&M Manual<sup>578</sup> it would appear that only Reservoir #2 is in use.
- There is currently a clear water tank bypass, which presents a potential risk to public health. There is an item in the DWQIP for it to be removed.
- The service area can also be supplied from either the Anna Bay or Grahamstown WTPs if there is an issue at the plant, thereby ensuring security of supply.

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<sup>578</sup> Document: *3.1.1-ADWG-04-E-003 MAN-2970-1 HW - Nelson Bay WTP Plant Operating Manual.pdf*.



## Appendix C List of Evidence

### C.1 Introduction

A list of the evidence sighted in undertaking the audit is presented in this Appendix.

Evidence initially provided is as referenced in Hunter Water's response to the *Audit Questionnaire* (filename: #20010 - 2020 Hunter Water Audits - Questionnaire (Completed-2020-10-16).docx) and listed in the file: *HWC 2020 IPART Evidence List.xlsx*. This evidence is listed by filename for each audited clause in the following sections. An evidence identification code at the start of each filename identifies the specific sub-clause or previous recommendation to which the item of evidence relates. For evidence related to clause 3.1 (Drinking Water) and clause 3.2 (Recycled Water), the identification code also references the *Australian Drinking Water Guidelines* (ADWG) or *Australian Guidelines for Water Recycling* (AGWR) element to which the evidence relates.

Evidence provided subsequent to the audit interviews is separately coded, as listed in the file: *RFI register - IPART Audit 2019-20.xlsx*. The specific sub-clause and ADWG/AGWR element (where applicable) to which the supplementary evidence relates is shown bracketed following the filename in the following sections, if not apparent in the filename.

### C.2 Audit Inception Meeting

- SE-027 Presentation - Day 1 Stream 2 Operational audit - Opening Slides 2019-20.PPTX

### C.3 Licence context and authorisation – Pricing (clause 1.8)

- 1.8.1-E-001 2020 Final Determination - HWC - Maximum prices for water sewerage stormwater drainage.pdf
- 1.8.1-E-002 Report - Price schedule 2020-21\_Final Determination.XLSX
- 1.8.1-E-003 Report - Price schedule 2020-21\_Final Determination Trade Waste.XLSX
- 1.8.1-E-004 Working Paper - Price Schedule 2019-20 MASTER FINAL.XLSX
- 1.8.1-E-005 pricing schedule endorsements.PNG
- 1.8.1-E-006 Report - PP20 - Test Summary Report.DOCX
- 1.8.1-E-007 Report - PP20 - Go Live Test Summary Report.DOCX
- 1.8.1-E-008 Non-Residential Water Usage and Sewer Service 2019-20.pdf
- 1.8.1-E-009 Non-Residential Water Usage and Sewer Service 202--21.pdf
- 1.8.1-E-010 Residential Water Usage and Sewer Service 2019-20.pdf
- 1.8.1-E-011 Residential Water Usage and Sewer Service 2020-21.pdf
- 1.8.1-E-012 Major Permit Est Fee + Service 19\_20.pdf
- 1.8.1-E-013 Major Permit Est Fee 20\_21.pdf
- 1.8.1-E-014 Major Permit Renewal Fee 19\_20.pdf
- 1.8.1-E-015 Major Permit Renewal Fee 20\_21.pdf
- 1.8.1-E-016 *No evidence available*
- 1.8.1-E-017 Receipt created 30 July, 2020.doc
- 1.8.1-E-018 Report - IPART 2019\_2020 Test Summary Report

- 1.8.1-R 2019-01-E-001 Operational audit recommendation 2019-01-Stormwater Drainage Pricing.-2 email chains
- 1.8.1-R 2019-02-E-001 Audit recommendation 2019-02 email chains
- 1.8.1-R 2019-03-E-001 *No evidence submitted*
- SE-029 1.8.1 Technical Paper 09 - Pricing of other services.pdf
- SE-036 1.8.1 2020-21 Final price schedule – QA.msg
- SE-037 1.8.1 FW 2020 CPI Compliance Hunter Water Corporation - Price Schedule Input Template.msg
- SE-038 1.8.1 FW Trade Waste price schedule - 1 July 2020 to 30 June 2021.msg

#### **C.4 Supply services and performance standards – Drinking Water (clause 3.1)**

- 3.1.1-E-001 HW2015-1303 9.001 Report - Hunter Water Drinking Water Quality Management System.PDF
- 3.1.1-E-002 HW2006-1448 59 3.011 Minutes - Hunter Water NSW Health Liaison Committee Meeting - 3 June 2020
- 3.1.1-E-003 HW2015-1443 1 6.005 Report - Drinking Water Quality Improvement Plan - NSW Health Update June 2020.DOC
- 3.1.1-ADWG-01-E-001 HW2006-2968 41 44.001 Policy - Drinking Water Policy.PDF
- 3.1.1-ADWG-01-E-002 HW2012-441 23 1.029 Procedure - Managing Legal and Other Requirements.DOC
- 3.1.1-ADWG-01-E-003 HW2013-421 9.007 Register - Summary of Corporate Reporting Requirements.XLS
- 3.1.1-ADWG-01-E-004 HW2013-421 9.006 Register - Legal and Other Requirements – Quality.XLS
- 3.1.1-ADWG-01-E-005 HW2012-778 93.001 Compliance Calendar MASTERFILE.XLS
- 3.1.1-ADWG-01-E-006 HW2007-900 27 1.013 Corporate Emergency Management Plan.PDF
- 3.1.1-ADWG-01-E-007 HW2011-662 14 5.007 Procedure - Emergency Communications Plan.DOC
- 3.1.1-ADWG-01-E-008 HW2019-620 21.001 Business Resilience Yearly Event Calendar Schedule 2020.XLS
- 3.1.1-ADWG-01-E-009 HW2014-778 35.005 Data - Veolia Staff Contact Details.XLS
- 3.1.1-ADWG-01-E-010 HW2015-108 4.001 Register - ALS Mayfield West - Contact Details.DOC
- 3.1.1-ADWG-01-E-011 HW2015-1303 9.001 Report - Hunter Water Drinking Water Quality Management System.PDF
- 3.1.1-ADWG-02-E-001 HW2015-705 1.003 Plan - Grahamstown WTP - Flow Diagram.PDF
- 3.1.1-ADWG-02-E-002 HW2015-705 1.001 Plan - Anna Bay WTP - Flow Diagram.PDF
- 3.1.1-ADWG-02-E-003 HW2015-705 1.006 Plan - Nelson Bay WTP - Flow Diagram.PDF



- 3.1.1-ADWG-02-E-004 HW2015-1365 18.010 Grahamstown WTP Risk Assessment Summary Report.PDF
- 3.1.1-ADWG-02-E-005 HW2015-1365 18.006 Anna Nelson Bay WTP Risk Assessment Summary Report.PDF
- 3.1.1-ADWG-02-E-006 HW2015-1365 1.002 Register - Grahamstown WTP Risk Assessment.XLS
- 3.1.1-ADWG-02-E-007 HW2015-1365 1.013 Register – Anna Nelson Bay WTP Risk Assessment.XLS
- 3.1.1-ADWG-02-E-008 HW2008-704 17.004 Procedure Enterprise Risk Management Framework.DOC
- 3.1.1-ADWG-02-E-009 HW2015-1303 6.002 Report - Catchment to Tap Water Quality Risk Assessment Guideline.DOC
- 3.1.1-ADWG-02-E-010 HW2006-2906 8 33.014 Drinking Water Quality Risk Assessment Calendar.XLS
- 3.1.1-ADWG-03-E-001 HW2015-1365 18.010 Grahamstown WTP Risk Assessment Summary Report.PDF
- 3.1.1-ADWG-03-E-002 HW2015-1365 18.006 Anna Nelson Bay WTP Risk Assessment Summary Report.PDF
- 3.1.1-ADWG-03-E-003 HW2014-778 15 2.006 Register - Grahamstown WTP CCP Limit Table.PDF
- 3.1.1-ADWG-03-E-004 HW2014-778 15 2.004 Register – Anna Bay WTP CCP Limit Table.PDF
- 3.1.1-ADWG-03-E-005 HW2014-778 15 2.009 Register – Nelson Bay WTP CCP Limit Table.PDF
- 3.1.1-ADWG-03-E-006 HW2014-778 15 2.001 Plan - Veolia CCP Exceedance Response.PDF
- 3.1.1-ADWG-04-E-001 MAN-2963-3 HW - Grahamstown WTP Plant Operating Manual.PDF
- 3.1.1-ADWG-04-E-002 MAN-2951-2 HW - Anna Bay WTP Plant Operating Manual.PDF
- 3.1.1-ADWG-04-E-003 MAN-2970-1 HW - Nelson Bay WTP Plant Operating Manual.PDF
- 3.1.1-ADWG-04-E-004 Screenshot OurSafety Intranet Page.JPG
- 3.1.1-ADWG-04-E-005 Asset Operation Intranet Page.JPG
- 3.1.1-ADWG-04-E-006 WIS-3180-3 HW - Water Treatment Sampling.PDF
- 3.1.1-ADWG-04-E-007 HW2014-778 15 2.001 Plan - Veolia CCP Exceedance Response.PDF
- 3.1.1-ADWG-04-E-008 <https://www.hunterwater.com.au/building-and-developing/drawings-plans-and-specifications/approved-products-and-manufacturers>
- 3.1.1-ADWG-04-E-009 HW2006-2247 34 11.001 Agreement - Contract for Supply and Delivery of Bulk Chemicals - CS0525 IXOM.PDF
- 3.1.1-ADWG-04-E-010 COA log spreadsheet screenshot.JPG
- 3.1.1-ADWG-04-E-011 Chemical supplier table.JPG

- 3.1.1-ADWG-04-E-012 PRO-6185-2 HW - WTP Bulk Chemical Ordering, Delivery and Quality Management.PDF
- 3.1.1-ADWG-05-E-001 HW2006-2906 2 6.006 Water Quality Monitoring Plan.DOC
- 3.1.1-ADWG-05-E-002 HW2013-421 22.001 Standard - Management of hazards, incidents and non-conformances.DOC
- 3.1.1-ADWG-05-E-003 HW2010-1986 8.023 Procedure - Water Quality Exception Reporting.DOC
- 3.1.1-ADWG-05-E-004 HW2006-2906 4 6.023 Procedure to notify NSW Health of events with potential public health impact.DOC
- 3.1.1-ADWG-05-E-005 HW2014-778 15 2.001 Plan - Veolia CCP Exceedance Response.DOC
- 3.1.1-ADWG-05-E-006 HW2015-1364 1 12.042 Customer Complaints Handling Guidelines.PDF
- 3.1.1-ADWG-05-E-007 Example WQ incident record – Integrum.PDF
- 3.1.1-ADWG-05-E-008 HW2008-947 10 5.009 Email - RE E.coli Detect Bellbird Heights 1 Reservoir.MSG
- 3.1.1-ADWG-05-E-009 HW2008-947 10 5.005 Email - FW Bellbird Heights 1 Reservoir 8-1-20 2nd reply.MSG
- 3.1.1-ADWG-06-E-001 HW2007-900 27 1.013 Corporate Emergency Management Plan.PDF
- 3.1.1-ADWG-06-E-002 HW2011-662 14 5.007 Procedure - Emergency Communications Plan.DOC
- 3.1.1-ADWG-06-E-003 HW2006-2906 4 6.023 Procedure to notify NSW Health of events with potential public health impact.DOC
- 3.1.1-ADWG-06-E-004 HW2006-2906 4 6.008 Guideline - Criteria for Notification to NSW Health - Drinking Water Quality.XLS
- 3.1.1-ADWG-06-E-005 HW2007-900 27 28.001 Incident Management Team Analysis.XLS
- 3.1.1-ADWG-06-E-006 MAN-2799-3 HW - Incident and Emergency Management Manual.PDF
- 3.1.1-ADWG-06-E-007 PRO-2803-1 HW - Incident and Emergency Response Procedures.PDF
- 3.1.1-ADWG-06-E-008 WT-GRA-HAZCHEM Gas Leak Emergency Drill.PDF
- 3.1.1-ADWG-06-E-009 Emergency Scenario Debrief Report.DOC
- 3.1.1-ADWG-08-E-001 HW2015-1055 7.002 Guideline - 2017+3 Strategy.PDF
- 3.1.1-ADWG-08-E-002 HW2020-82 5.002 Report - Final Report - FE Kantar - Service level and attributes customer research - July 2020.PDF
- 3.1.1-ADWG-08-E-003 HW2020-82 4 1.003 Article - Service Levels Phase 1 - Online Bulletin Board 1 page summary.PDF
- 3.1.1-ADWG-08-E-004 HW2020-82 4 1.002 Report - Bulletin Board topline summary – FINAL
- 3.1.1-ADWG-08-E-005 HW2020-82 4 2.002 Article - Service Levels Phase 1 - Depth Interviews 1 page summary.DOC

- 3.1.1-ADWG-08-E-006 HW2020-82 4 2.001 Report - Depth interviews topline summary – FINAL.DOC
- 3.1.1-ADWG-08-E-007 WSAA National Customer Perception Study 2019 - Hunter Water results – WQ.DOC
- 3.1.1-ADWG-08-E-008 <https://yourvoice.hunterwater.com.au/>
- 3.1.1-ADWG-08-E-009 <https://yourvoice.hunterwater.com.au/ccag>
- 3.1.1-ADWG-10-E-001 Screenshot of TRIM Workspace.JPG
- 3.1.1-ADWG-10-E-002 HW2012-441 9 1.002 Procedure – Manage Document Control.DOC
- 3.1.1-ADWG-10-E-003 PRO-129-3 Documented Information Procedure.PDF
- 3.1.1-ADWG-10-E-004 PRO-2944-1 HW - Records Management.PDF
- 3.1.1-ADWG-10-E-005 HW2012-807 21.038 Report - Monthly Water Quality Summary - June 2020.PDF
- 3.1.1-ADWG-10-E-006 HW2007-1642 43 3.012 Report - Hunter Water - Monthly Fluoride Report - June 2020.MSG
- 3.1.1-ADWG-10-E-007 HW2006-1448 41 11.008 Report - Quarterly to NSW Health - Drinking Water and Recycled Water Quality Exceptions April to June 2020.DOC
- 3.1.1-ADWG-12-E-001 HW2016-790 1 5.030 Presentation - Management System Review - EMT Summary - May 2020.PPT
- 3.1.1-ADWG-12-E-002 HW2013-1447 3 24.002 Minutes - IMS Exec Management Review Meeting - Minutes - 12 May 2020.DOC
- 3.1.1-ADWG-12-E-003 DWQIP Extract - Open Actions.PDF
- 3.1.1-ADWG-12-E-004 HW2006-1417 33 11.011 Minutes - August 2020 Water Quality Committee.DOC
- 3.1.1-ADWG-12-E-005 PRO-120-2 Management Review Procedure.PDF
- 3.1.2-ADWG-01-E-001 HW2015-1449 1 9.040 Drinking Water Quality Awareness Training Material.PDF
- 3.1.2-ADWG-01-E-002 Training Calendar - July 2020.PDF
- 3.1.2-ADWG-01-E-003 Training Calendar - October 2020.PDF
- 3.1.2-ADWG-01-E-004 Training Calendar - December 2020.PDF
- 3.1.2-ADWG-01-E-005 Training Calendar - February 2021.PDF
- 3.1.2-ADWG-01-E-006 HW2012-778.062 Controlled Document - Standard - Compliance Calendar – CURRENT.PDF
- 3.1.2-ADWG-01-E-008 HW2013-421 9.007 Register - Summary of Corporate Reporting Requirements.XLS
- 3.1.2-ADWG-01-E-009 HW2013-421 9.006 Register - Legal and Other Requirements – Quality.XLS
- 3.1.2-ADWG-01-E-010 HW2012-441 23 1.029 Procedure - Managing Legal and Other Requirements.DOC
- 3.1.2-ADWG-01-E-011 HW2006-1448/59/3.011 Minutes - Hunter Water NSW Health Liaison Committee Meeting - 3 June 2020.DOC

- 3.1.2-ADWG-02-E-001 HW2015-705 1.003 Grahamstown WTP Flow Diagram.PDF
- 3.1.2-ADWG-02-E-002 HW2015-705 1.001 Anna Bay WTP.PDF
- 3.1.2-ADWG-02-E-003 HW2015-705 1.006 Nelson Bay WTP.PDF
- 3.1.2-ADWG-02-E-004 HW2015-1365 18.010 Grahamstown WTP Risk Assessment Summary Report.PDF
- 3.1.2-ADWG-02-E-005 HW2015-1365 18.006 Anna Nelson Bay WTP Risk Assessment Summary Report.PDF
- 3.1.2-ADWG-02-E-006 HW2015-1444 8.001 Checklist - DWQMS Flow Diagram.DOC
- 3.1.2-ADWG-02-E-007 HW2006-2906 8 33.014 Drinking Water Quality Risk Assessment Calendar.XLS
- 3.1.2-ADWG-03-E-001 HW2014-778 15 2.006 Register - Grahamstown WTP CCP Limit Table.PDF
- 3.1.2-ADWG-03-E-002 HW2014-778 15 2.004 Register – Anna Bay WTP CCP Limit Table.PDF
- 3.1.2-ADWG-03-E-003 HW2014-778 15 2.009 Register – Nelson Bay WTP CCP Limit Table.PDF
- 3.1.2-ADWG-03-E-004 HW2014-778 10 79.008 Extract from Veolia MCR CS0341 – June 2020.PDF
- 3.1.2-ADWG-03-E-005 MAN-2963-3 HW - Grahamstown WTP Plant Operating Manual.PDF
- 3.1.2-ADWG-03-E-006 MAN-2951-2 HW - Anna Bay WTP Plant Operating Manual.PDF
- 3.1.2-ADWG-03-E-007 MAN-2970-1 HW - Nelson Bay WTP Plant Operating Manual.PDF
- 3.1.2-ADWG-03-E-008 HW2014-778 27 2.538 Form - SC0570-W-ANN.PDF
- 3.1.2-ADWG-03-E-009 Critical Limit Alarm SCADA Screenshots.DOC
- 3.1.2-ADWG-03-E-010 Grahamstown WTP Reservoir Inspection Report.PDF
- 3.1.2-ADWG-03-E-011 Anna Bay WTP Reservoir Inspection Report.PDF
- 3.1.2-ADWG-03-E-012 Nelson Bay WTP Reservoir Inspection Report.PDF
- 3.1.2-ADWG-03-E-013 Nelson Bay 2 Reservoir Inspection Report.PDF
- 3.1.2-ADWG-03-E-014 Additional Reservoir Inspection Example.PDF
- 3.1.2-ADWG-03-E-015 HW2014-1579 2.004 Data - Grahamstown WTP.XLS
- 3.1.2-ADWG-03-E-016 HW2014-1579 2.007 Data - Anna Bay WTP.XLS
- 3.1.2-ADWG-03-E-017 HW2014-1579 2.001 Data - Nelson Bay WTP.XLS
- 3.1.2-ADWG-03-E-018 Grahamstown WTP Daily Datasheet.PDF
- 3.1.2-ADWG-03-E-019 Grahamstown WTP Daily WQ Test Sheet.PDF
- 3.1.2-ADWG-03-E-020 Grahamstown WTP Instrument Calibration List.PDF
- 3.1.2-ADWG-03-E-021 Anna Bay WTP Daily Datasheet.PDF
- 3.1.2-ADWG-03-E-022 Anna Bay WTP Daily WQ Test Sheet.PDF
- 3.1.2-ADWG-03-E-023 Anna Bay WTP Instrument Calibration List.PDF
- 3.1.2-ADWG-03-E-024 Nelson Bay WTP Daily Datasheet.PDF
- 3.1.2-ADWG-03-E-025 Nelson Bay WTP Daily WQ Test Sheet.PDF

- 3.1.2-ADWG-03-E-026 Nelson Bay WTP Instrument Calibration List.PDF
- 3.1.2-ADWG-03-E-027 HW2006-1448 58 14.003 Email Chlorine Critical Control Point (CCP) Breach - North Lambton Chlorinator.MSG
- 3.1.2-ADWG-03-E-028 HW2006-1448 58 14.005 Email - Follow-up Email to NSW Health.MSG
- 3.1.2-ADWG-03-E-029 Incident record for CCP exceedance RMAL-7D83C6.PDF
- 3.1.2-ADWG-04-E-001 HW2014-1579 2.004 Data - Grahamstown WTP.XLS
- 3.1.2-ADWG-04-E-002 HW2014-1579 2.007 Data - Anna Bay WTP.XLS
- 3.1.2-ADWG-04-E-003 HW2014-1579 2.001 Data - Nelson Bay WTP.XLS
- 3.1.2-ADWG-04-E-004 Grahamstown WTP Weekly PMT Duties.PDF
- 3.1.2-ADWG-04-E-005 Grahamstown WTP Daily Datasheet.PDF
- 3.1.2-ADWG-04-E-006 Grahamstown WTP Daily WQ Test Sheet.PDF
- 3.1.2-ADWG-04-E-007 Grahamstown WTP Instrument Calibration List.PDF
- 3.1.2-ADWG-04-E-008 Anna Bay WTP Weekly PMT Duties.PDF
- 3.1.2-ADWG-04-E-009 Anna Bay WTP Daily Datasheet.PDF
- 3.1.2-ADWG-04-E-010 Anna Bay WTP Daily WQ Test Sheet.PDF
- 3.1.2-ADWG-04-E-011 Anna Bay WTP Instrument Calibration List.PDF
- 3.1.2-ADWG-04-E-012 Nelson Bay WTP Weekly PMT Duties.PDF
- 3.1.2-ADWG-04-E-013 Nelson Bay WTP Daily Datasheet.PDF
- 3.1.2-ADWG-04-E-014 Nelson Bay WTP Daily WQ Test Sheet.PDF
- 3.1.2-ADWG-04-E-015 Nelson Bay WTP Instrument Calibration List.PDF
- 3.1.2-ADWG-04-E-016 Grahamstown WTP Maintenance Work orders.XLS
- 3.1.2-ADWG-04-E-017 Anna Bay WTP Maintenance Work orders.XLS
- 3.1.2-ADWG-04-E-018 Nelson Bay WTP Maintenance Work orders.XLS
- 3.1.2-ADWG-04-E-019 HW2015-1365 18.010 Grahamstown WTP Risk Assessment Summary Report.PDF
- 3.1.2-ADWG-04-E-020 HW2015-1365 18.006 Anna Nelson Bay WTP Risk Assessment Summary Report.PDF
- 3.1.2-ADWG-04-E-021 HW2014-778 10 79.008 Extract from Veolia MCR CS0341 - June 2020.PDF
- 3.1.2-ADWG-04-E-022 HW2006-1417 33 11.004 Email - Zone Mean Trends - Update for July 2020.MSG
- 3.1.2-ADWG-04-E-023 HW2006-1417 33 11.008 Network Operations Report – July 2020.DOC
- 3.1.2-ADWG-04-E-024 COA log spreadsheet Screenshot.JPG
- 3.1.2-ADWG-04-E-025 Certification of Analysis Example - Fluoride.PDF
- 3.1.2-ADWG-04-E-026 Certification of Analysis Example - Lime - Boral.PDF
- 3.1.2-ADWG-04-E-027 Certification of Analysis Example - Alum.PDF
- 3.1.2-ADWG-04-E-028 Certification of Analysis Example - Lime - Graymont.PDF
- 3.1.2-ADWG-04-E-029 PRO-6185-2 HW - WTP Bulk Chemical Ordering, Delivery and Quality Management.PDF

- 3.1.2-ADWG-05-E-001 HW2006-1417 33 9.004 Report - WQ Report May 2020.PDF
- 3.1.2-ADWG-05-E-002 HW2006-1417 33 9.003 Email - WQ Report Data May 20
- 3.1.2-ADWG-05-E-003 HW2006-1448 41 11.008 Report - Quarterly to NSW Health - Drinking Water and Recycled Water Quality Exceptions April to June 2020.MSG
- 3.1.2-ADWG-05-E-004 HW2015-1364 1 12.042 Customer Complaints Handling Guidelines.PDF
- 3.1.2-ADWG-05-E-005 HW2006-1417 33 11.008 Network Operations Report – July 2020.DOC
- 3.1.2-ADWG-05-E-006 HW2008-947 10 5.005 Email - FW: Bellbird Heights 1 Reservoir 8-1-20 2nd reply.MSG
- 3.1.2-ADWG-05-E-007 HW2013-421 22.001 Standard - Management of hazards, incidents and non-conformances.DOC
- 3.1.2-ADWG-05-E-008 HW2010-1986 8.023 Procedure - Water Quality Exception Reporting.DOC
- 3.1.2-ADWG-05-E-009 HW2006-2906 4 6.023 Procedure to notify NSW Health of events with potential public health impact.DOC
- 3.1.2-ADWG-05-E-010 HW2014-778 15 2.001 Plan - Veolia CCP Exceedance Response.DOC
- 3.1.2-ADWG-05-E-011 Example WQ incident record – Integrum.PDF
- 3.1.2-ADWG-06-E-001 HW2007-900 29 53.249 Email - FW Update on Chichester Algal Event - 7th August
- 3.1.2-ADWG-06-E-002 HW2020-998 4 3.002 Report - Situation Report (SITREP) 1
- 3.1.2-ADWG-06-E-003 HW2006-1448 41 11.008 Report - Quarterly to NSW Health - Drinking Water and Recycled Water Quality Exceptions April to June 2020.DOC
- 3.1.2-ADWG-08-E-001 <https://yourvoice.hunterwater.com.au/ccag>
- 3.1.2-ADWG-08-E-002 HW2020-82 5.002 Report - Final Report - FE Kantar - Service level and attributes customer research - July 2020.PDF
- 3.1.2-ADWG-08-E-003 HW2020-82 4 1.003 Article - Service Levels Phase 1 - Online Bulletin Board 1 page summary.PDF
- 3.1.2-ADWG-08-E-004 HW2020-82 4 1.002 Report - Bulletin Board topline summary – FINAL
- 3.1.2-ADWG-08-E-005 HW2020-82 4 2.002 Article - Service Levels Phase 1 - Depth Interviews 1 page summary.DOC
- 3.1.2-ADWG-08-E-006 HW2020-82 4 2.001 Report - Depth interviews topline summary – FINAL.DOC
- 3.1.2-ADWG-08-E-007 WSAA National Customer Perception Study 2019 - Hunter Water results – WQ.DOC
- 3.1.2-ADWG-10-E-001 Article – document review date from Integrum – example 1.JPG
- 3.1.2-ADWG-10-E-002 Article - document review date from Integrum – example 2.JPG
- 3.1.2-ADWG-10-E-003 Article - Record Management Workspace.JPG



- 3.1.2-ADWG-10-E-004 HW2009-1194 16 5.013 Report - Hunter Water - Compliance and Performance Report 2019-20
- 3.1.2-ADWG-10-E-005 HW2006-1448 41 11.008 Report - Quarterly to NSW Health - Drinking Water and Recycled Water Quality Exceptions April to June 2020
- 3.1.2-ADWG-12-E-001 HW2016-790 1 5.030 Presentation - Management System Review - EMT Summary - May 2020.PPT
- 3.1.2-ADWG-12-E-002 HW2013-1447 3 24.002 Minutes - IMS Exec Management Review Meeting - Minutes - 12 May 2020.DOC
- 3.1.2-ADWG-12-E-003 HW2006-1417 33 11.011 Minutes - August 2020 Water Quality Committee.DOC
- 3.1.2-ADWG-12-E-004 HW2015-1443 1 6.005 Report - Drinking Water Quality Improvement Plan - NSW Health Update June 2020 .PDF
- 3.1.2-ADWG-12-E-005 HW2006-1448 59 3.011 Minutes - Hunter Water NSW Health Liaison Committee Meeting - 3 June 2020.DOC
- 3.1.2-ADWG-12-E-006 DWQIP Extract - New Actions Added During Audit Period.PDF
- 3.1.2-ADWG-12-E-007 DWQIP Extract - Open Actions.PDF
- 3.1.2-ADWG-12-E-008 DWQIP Extract - Actions Completed During Audit Period.PDF
- 3.1.2-ADWG-12-E-009 HW2012-1566 8 1.001 File note - Chichester Source Manganese Management Strategy.DOC
- 3.1.2-ADWG-12-E-010 HW2014-778 27 2.538 Form - SC0570-W-ANN
- 3.1.2-ADWG-12-E-011 Dungog-WFP Commissioning Report.PDF
- 3.1.2-ADWG-12-E-012 Dungog-WFP Training Register.PDF
- SE-001 *Comment only provided* [3.1.1-ADWG-01]
- SE-002 Work Order Report 202054037,39,41,42,43.xlsx [3.1.1-ADWG-03]
- SE-003 - Example Work Order - AOMS Planned Flushing job.JPG [3.1.1-ADWG-03]
- SE-004 - Example Letter - Water main flushing program advice to customers.pdf [3.1.1-ADWG-03]
- SE-005a - CWT Inspection Register (AN-NB-GR).xlsx [3.1.1-ADWG-03]
- SE-005b - WO1005401018 AB CWT Gap Sealing.pdf [3.1.1-ADWG-03]
- SE-006 *Comment only provided* [3.1.1-ADWG-03]
- SE-007 File note - NorthLambtonChlorinatorCCP\_CriticalLimitExceedance200313.DOCX [3.1.1-ADWG-03]
- SE-008a - 03 Water Treatment Performance (April 2020).docx [3.1.1-ADWG-03]
- SE-008b - 03 Water Treatment Performance (June 2020).docx [3.1.1-ADWG-03]
- SE-008c - 03 Water Treatment Performance (May 2020).docx [3.1.1-ADWG-03]
- SE-009a - Corporate Mail - Data Check - Grahamstown WTP-22Oct2020.pdf [3.1.1-ADWG-04]
- SE-009b - Corporate Mail - Exceedance Notification for Metals Analysis 08-Jul-2020.pdf [3.1.1-ADWG-04]
- SE-009c - Corporate Mail - Grahamstown WTP Alum Stock.pdf [3.1.1-ADWG-04]
- SE-009d - Grahamstown WTP Data Check-22Oct2020.xls [3.1.1-ADWG-04]



- SE-010 and SE-012 Gresford THM Exceedance.docx [3.1.1-ADWG-05]
- SE-010 Email - RE Elevated Trihalomethanes at Gresford - results from follow-up samples.MSG [3.1.1-ADWG-05]
- SE-011 *refer to SE-014* [3.1.1-ADWG-05]
- SE-013 DOS Plans.docx [3.1.1-ADWG-05]
- SE-014 FW Tabular Results Data.msg [3.1.1-ADWG-05]
- SE-015 Element 6 Memo - Desktop Exercise - Operational Incident Update.DOCX [3.1.1-ADWG-06]
- SE-016a Plan - Incident Management Team Analysis.xlsx [3.1.1-ADWG-06]
- SE-016b Element 6 Course Attendance Sheet L2 Incident Controller.pdf [3.1.1-ADWG-06]
- SE-017 - Method for extracting Affected Customers and Type.docx [3.1.1-ADWG-06]
- SE-018 - Nelson Bay WTP Gas Leak Scenario (March 2020).pdf [3.1.1-ADWG-06]
- SE-019a - Completed Attendance & Feedback IEMM Awareness 19-07-09.pdf [3.1.1-ADWG-06]
- SE-019b - Completed Attendance & Feedback IEMM Awareness 19-08-20.pdf [3.1.1-ADWG-06]
- SE-020a FW Customer Support Provisions - a summary of what is offered across the country Evelyn Rodrigues posted to Customer Resources.msg [3.1.1-ADWG-06]
- SE-020b FW Hardship update and Sentiment Monitoring for this week.msg [3.1.1-ADWG-06]
- SE-020c FW Hunter Customer hardship paper 2 April 2020.msg [3.1.1-ADWG-06]
- SE-020d FW Update on Hardship Measures.msg [3.1.1-ADWG-06]
- SE-020e FW Update on sentiment monitoring and customer support provisions.msg [3.1.1-ADWG-06]
- SE-020f FW Weekly update on sentiment monitoring.msg [3.1.1-ADWG-06]
- SE-020g COVID 19-Collection and Vulnerability Plan.pptx [3.1.1-ADWG-06]
- SE-021 HW2019-620 21.001 Register - Business Resilience Yearly Event Calendar Schedule 2020.XLSX [3.1.1-ADWG-10]
- SE-022 3.1.1 Element 10 Email - Compliance Calendar Updates Due - October 2020.MSG [3.1.1-ADWG-10]
- SE-023 Report - Management Systems Review - 1 JULY 2019 – 30 APRIL 2020 - May 2020.DOCX [3.1.1-ADWG-12]
- SE-064 to SE-067 Disinfection CCP and CWT outlet Turbidity Correspondence.docx
- SE-075 SCADA Screenshot of Anna Bay WTP CWTin Fluoride Analyser.PNG
- SE-076 FW EXTERNAL - RE Exceedance.msg

## **C.5 Supply services and performance standards – Recycled Water (clause 3.2)**

- 3.2.1-E-001 Recycled Water Policy 2017-2020
- 3.2.1-E-002 Corporate Recycled Water Quality Management Plan
- 3.2.1-E-002a Recycled Water Improvement Plan
- 3.2.1-E-003 Chisholm and Gillieston Heights Recycled Water Quality Management Plan

- 3.2.1-E-004 Chisholm and Gillieston Heights Recycled Water Scheme HACCP report
- 3.2.1-E-005 NSW Health Correspondence regarding amendments and approval
- 3.2.1-E-006 RWQMP\_Chisholm Gillieston Heights (Rev 9) 24 June 2019\_WU
- 3.2.1-E-007 Verification Report Chisholm Rev3 Comdain Response
- 3.2.1-E-008 Verification Report Chisholm
- 3.2.1-E-009 Report - Verification Report Chisholm 21 5 19\_WU
- 3.2.1-E-010 CGH Verification Plan (Rev 4) RM Comments 190328
- 3.2.1-E-010 CGH Verification Plan (Rev 4) RM Comments 190328
- 3.2.1-E-011 CS0801 - CGH RWS Verification Plan (Rev 6)
- 3.2.1-E-012 Dual Reticulation Verification Plan 3
- 3.2.1-E-014 Dual Reticulation Verification Plan 2
- 3.2.1-E-015 CS0801 - CGH RWS Verification Plan (Rev 5)
- 3.2.1-E-016 Dual Reticulation Verification Plan 1
- 3.2.1-E-017 Chisholm and Gillieston Heights Verification Plan (Rev 4)\_WU
- 3.2.1-E-018 CCP v COP
- 3.2.1-E-019 RWQMP & HACCP workshop minutes
- 3.2.1-E-020 MAN13925-2 HW – Farley RWTP – Gillieston Heights Scheme RWQMP
- 3.2.1-E-021 MAN2962-2 HW – Farley WWTW Plant Operating Manual
- 3.2.1-AGWR-02-E-001 Chisholm and Gillieston Heights Recycled Water Quality Management Plan
- 3.2.1-AGWR-02-E-002 Chisholm and Gillieston Heights Recycled Water Scheme HACCP report
- 3.2.1-AGWR-02-E-003 Hunter H2O Design Report Chisholm and Gillieston Height
- 3.2.1-AGWR-02-E-004 Concept Design Report (Final, Revised)\_Chisholm and Gillieston Heights Recycled Water Schemes
- 3.2.1-AGWR-02-E-005 Enterprise Risk Management (.jpeg)
- 3.2.1-AGWR-02-E-006 Corporate Recycled Water Quality Management Plan
- 3.2.1-AGWR-03-E-001 Chisholm and Gillieston Heights Recycled Water Quality Management Plan
- 3.2.1-AGWR-03-E-002 Establishment and Review of Recycled Water CCPs
- 3.2.1-AGWR-03-E-003 Chisholm and Gillieston Heights Recycled Water Scheme HACCP report
- 3.2.1-AGWR-03-E-004 Recycled Water Monitoring Points Gillieston Heights Map
- 3.2.1-AGWR-03-E-005 Dual Reticulation Sampling Schedules
- 3.2.1-AGWR-03-E-006 RWQMP\_Chisholm Gillieston Heights (Rev 6)
- 3.2.1-AGWR-03-E-007 Dual Reticulation Recycled Water Quality Exception Reporting
- 3.2.1-AGWR-03-E-008 SCADA WWTW Alarms CCP and EPA Compliance 20200721 Report
- 3.2.1-AGWR-03-E-009 SCADA WWTW Alarms CCP and EPA Compliance 20200721 Email
- 3.2.1-AGWR-03-E-010 Farley RWTP SCADA Screenshots OV and CCPs - SCADA

- 3.2.1-AGWR-03-E-011 Corporate Mail - FW\_ scada change RWTPs
- 3.2.1-AGWR-03-E-012 Farley and Morpeth CCP Site Acceptance Test
- 3.2.1-AGWR-04-E-000 Corporate Recycled Water Quality Management Plan
- 3.2.1-AGWR-04-E-001 Chisholm and Gillieston Heights Recycled Water Quality Management Plan
- 3.2.1-AGWR-04-E-002 Example of Recycled Water Management System Workspace
- 3.2.1-AGWR-04-E-003 Recycled Water Quality Monitoring and Communication
- 3.2.1-AGWR-04-E-004 Hunter Water Approved Products Website (link) (internet shortcut)
- 3.2.1-AGWR-04-E-005 PN110 - Recycled Water Standards - v5 Aug 2019
- 3.2.1-AGWR-04-E-006 Veolia Document Control and Access for Operators 0 Hunter Water Portal (.docx (shows image))
- 3.2.1-AGWR-04-E-007 Farley RWTP SCADA Screenshot OV and CCPs
- 3.2.1-AGWR-04-E-008 MAN2962-2 HW – Farley WWTW Plant Operating Manual
- 3.2.1-AGWR-04-E-009 WIS-2985-2 HW - Sodium Hydroxide (Caustic Soda) Solution Ordering, Delivery, Testing
- 3.2.1-AGWR-04-E-010 WIS-2978-2 HW - Citric Acid 50% Solution Ordering, Delivery, Testing
- 3.2.1-AGWR-04-E-011 WIS-13935-1 HW - Aluminium Chlorohydrate Ordering, Delivery, Testing
- 3.2.1-AGWR-04-E-012 WIS-2986-2 HW - Sodium Hypochlorite Chemical Ordering, Delivery, Testing
- 3.2.1-AGWR-04-E-013 TEM-3152 HW - Farley WWTW Weekly Duties
- 3.2.1-AGWR-04-E-014 Farley RWTP PMs.xls
- 3.2.1-AGWR-05-E-001 Chisholm and Gillieston Heights Recycled Water Quality Management Plan
- 3.2.1-AGWR-05-E-002 Integrum Screenshot (.png)
- 3.2.1-AGWR-05-E-003 Integrum RW Export Report
- 3.2.1-AGWR-05-E-004 Dual Reticulation Recycled Water Quality Exception Reporting procedure
- 3.2.1-AGWR-05-E-005 Dual Reticulation Recycled Water Call Centre Guideline
- 3.2.1-AGWR-05-E-006 Notification of WQ Events of Potential Public Health Significance to NSW Health
- 3.2.1-AGWR-05-E-007 Water Quality Criteria for Notification to NSW Health
- 3.2.1-AGWR-05-E-008 Additional analytes for recycled water dual reticulation sites
- 3.2.1-AGWR-05-E-009 Guideline - Customer Complaints Management - April 2020
- 3.2.1-AGWR-05-E-010 Corporate Mail - Monthly Recycled Water Meeting - May 2020
- 3.2.1-AGWR-05-E-011 HW RWM - Agenda and Minutes May 2020
- 3.2.1-AGWR-05-E-012 HWC Monthly Report Section - 12 Biosolids and Effluent Reuse April 2020
- 3.2.1-AGWR-05-E-013 Corporate Mail - Dual Reticulation Weekly Recycled Water Report 08\_07\_2020

- 3.2.1-AGWR-05-E-014 Dual Reticulation Recycled Water Report 20200708
- 3.2.1-AGWR-05-E-015 Corporate Recycled Water Quality Management Plan
- 3.2.1-AGWR-05-E-016 Recycled Water Quality Incident Response
- 3.2.1-AGWR-06-E-001 Dual Reticulation Recycled Water Quality Exception Reporting procedure
- 3.2.1-AGWR-06-E-002 Corporate Recycled Water Quality Management Plan – Current
- 3.2.1-AGWR-06-E-003 Water Quality Criteria for Notification to NSW Health
- 3.2.1-AGWR-06-E-004 Notification of Water Quality Events of Potential Public Health Significance to NSW Health
- 3.2.1-AGWR-06-E-005 Dual Reticulation Recycled Water Call Centre Guideline
- 3.2.1-AGWR-06-E-006 State emergency exercise proposal
- 3.2.1-AGWR-06-E-007 Guideline - Water Quality - Chlorine - RW
- 3.2.1-AGWR-06-E-008 Guideline - Water Quality - Discoloured Water - RW
- 3.2.1-AGWR-06-E-009 MAN-2799 HW - Incident and Emergency management manual
- 3.2.1-AGWR-06-E-010 Recycled Water Quality Incident Response
- 3.2.1-AGWR-06-E-011 Corporate Emergency Management Plan (Intranet Version)
- 3.2.1-AGWR-06-E-012 Management of Hazards, Incidents and Non-Conformances
- 3.2.1-AGWR-06-E-013 Thornton North Stakeholder list
- 3.2.1-AGWR-06-E-014 Thornton North Government stakeholder list
- 3.2.1-AGWR-06-E-015 Dora Ck WWTW CCP Breach 9-2-20 - HW Report
- 3.2.1-AGWR-06-E-016 Dora Ck WWTW CCP Breach 9-2-20 - Veolia Report
- 3.2.1-AGWR-06-E-017 Emergency Communications Plan\_Sept 2020
- 3.2.1-AGWR-08-E-001 SCREENSHOT – Consultant Manager
- 3.2.1-AGWR-08-E-002 CSE PLAN\_ Chisholm to Thornton pipeline\_FINAL - 2020-09-09
- 3.2.1-AGWR-08-E-003 FAQ - Letter - Recycled Water - Second letter to connecting customers - FAQs - FINAL - 2020-09-10
- 3.2.1-AGWR-08-E-004 Recycled Water Community Education (3 of 3)
- 3.2.1-AGWR-08-E-005 Recycled Water school education Community Engagement Plan
- 3.2.1-AGWR-08-E-006 Pages from Hunter Water's Pricing Proposal 2019 recycled water
- 3.2.1-AGWR-08-E-007 Pages from Technical Paper 09 - Pricing of recycled water dual retic
- 3.2.1-AGWR-08-E-008 Recycled Water Customer Compliant Log AOMS
- 3.2.1-AGWR-08-E-009 Recycled Water Customer Compliant Log AOMS - IPART Reporting Period
- 3.2.1-AGWR-08-E-010 Recycled Water Community Education and Engagement Plan
- 3.2.1-AGWR-08-E-011 TRIM folder for reminder communication sent 2020 - screenshot (.jpeg)
- 3.2.1-AGWR-08-E-012 Recycled Water Customer Compliant SMS Spreadsheet
- 3.2.1-AGWR-08-E-013 Letter - Chisholm - Critical customers - RW Supply Interruption 14 October 2020 - 2020-10-01

- 3.2.1-AGWR-08-E-014 Letter - Gillieston Heights - RW Supply Interruption  
14 October 2020
- 3.2.1-AGWR-08-E-015 Letter - Chisholm - RW Supply Interruption 14 October 2020
- 3.2.1-AGWR-08-E-016 Letter - Gillieston Heights Only - RW Supply Interruption  
2-3 September 2020 - 2020-08-19
- 3.2.1-AGWR-08-E-017 TRIM folder for reminder communication sent November 2019  
- screenshot (.png)
- 3.2.1-AGWR-08-E-018 Customer Annual Check - Letter Address Log
- 3.2.1-AGWR-08-E-019 Service Level - recycled water
- 3.2.1-AGWR-12-E-001 Management Systems Review - 1 JULY 2019 – 30 APRIL 2020  
- May 2020
- 3.2.1-AGWR-12-E-002 Management System Review - EMT Summary - May 2020 (.pptx)
- 3.2.1-AGWR-12-E-003 Hunter Water NSW Health Liaison Committee Meeting  
3 June 2020
- 3.2.1-AGWR-12-E-004 Hunter Water NSW Health Liaison Committee Meeting Dec 2019
- 3.2.1-AGWR-12-E-005 Hunter Water NSW Health Liaison Committee Meeting  
March 2020
- 3.2.1-AGWR-12-E-006 Recycled Water Improvement Plan
- 3.2.1-AGWR-12-E-007 RWQMP & Risk Assessment Review Calendar
- 3.2.2-AGWR-02-E-001 Chisholm and Gillieston Heights Recycled Water Quality  
Management Plan
- 3.2.2-AGWR-02-E-002 Corporate Recycled Water Quality Management Plan
- 3.2.2-AGWR-02-E-003 Chisholm and Gillieston Heights Recycled Water Scheme  
HACCP report
- 3.2.2-AGWR-02-E-004 Hunter H2O Design Report Chisholm and Gillieston Height
- 3.2.2-AGWR-02-E-005 Concept Design Report (Final, Revised)\_Chisholm and  
Gillieston Heights Recycled Water Schemes
- 3.2.2-AGWR-02-E-006 FW Thornton North - Addition to Chisolm & Gillieston Heights  
RW Scheme
- 3.2.2-AGWR-02-E-007 RWQMP & Risk Assessment Review Calendar
- 3.2.2-AGWR-02-E-008 Thornton North Connection NSW Health Memo
- 3.2.2-AGWR-02-E-009 Screenshot - Enterprise Risk Management
- 3.2.2-AGWR-03-E-001 Chisholm and Gillieston Heights Recycled Water Quality  
Management Plan
- 3.2.2-AGWR-03-E-002 Establishment and Review of Recycled Water CCPs
- 3.2.2-AGWR-03-E-003 Chisholm and Gillieston Heights Recycled Water Scheme  
HACCP report
- 3.2.2-AGWR-03-E-004 SCADAWWTW Alarms CCP and EPA Compliance 20200721  
Report
- 3.2.2-AGWR-03-E-005 SCADA WWTW Alarms CCP and EPA Compliance 20200721  
Email

- 3.2.2-AGWR-03-E-006 Change Request Farley RWTP. Corporate Mail - FW\_ scada change RWTPs
- 3.2.2-AGWR-03-E-007 Farley and Morpeth CCP Site Acceptance Test
- 3.2.2-AGWR-03-E-008 Dora Ck WWTW CCP Breach 9-2-20 - HW Report
- 3.2.2-AGWR-03-E-009 Dora Ck WWTW CCP Breach 9-2-20 - Veolia Report
- 3.2.2-AGWR-03-E-010 Integrum Screenshot (.png)
- 3.2.2-AGWR-03-E-011 Integrum RW report export
- 3.2.2-AGWR-03-E-012 Guideline - Customer Complaints Management - April 2020
- 3.2.2-AGWR-03-E-013 Combined Gillieston Heights Recycled Water Dual Reticulation Valve Hydrant Checklist Actions 15 September 2020
- 3.2.2-AGWR-03-E-014 Report - Dual Reticulation Trends - March 2020
- 3.2.2-AGWR-03-E-015 Report - Dual Reticulation Trends - August 2020
- 3.2.2-AGWR-03-E-016 Recycled Water - Gilleston Heights Goes Live (follow up actions)
- 3.2.2-AGWR-03-E-017 Recycled Water Monitoring Points Gillieston Heights
- 3.2.2-AGWR-03-E-018 Recycled Water Cross Connection Investigation - Guideline
- 3.2.2-AGWR-03-E-019 Recycled Water Quick Guide
- 3.2.2-AGWR-03-E-020 Suspected Cross Connection 4 Les Cct Gillieston Heights 21 May 2020
- 3.2.2-AGWR-03-E-021 Recycled Water Dual Reticulation Sampling Results Suspected Cross Connection - 4 LES CCT GILLIESTON HEIGHT (21-05-2020)
- 3.2.2-AGWR-03-E-022 Emailing gillieston-chisholm 21-5-20 - Resampling Required
- 3.2.2-AGWR-03-E-023 Recycled Water Dual Reticulation Sampling Results - Suspected Cross Connection (AOMS Job No 605882)
- 3.2.2-AGWR-03-E-024 RE Recycled Water Dual Reticulation Sampling Results - Suspected Cross Connection (AOMS Job No 605882)
- 3.2.2-AGWR-03-E-025 RE 4 LES CCT GILLIESTON HEIGHTS
- 3.2.2-AGWR-03-E-026 AOMS Response
- 3.2.2-AGWR-04-E-001 Chisholm and Gillieston Heights Recycled Water Quality Management Plan
- 3.2.2-AGWR-04-E-002 Corporate Recycled Water Quality Management Plan
- 3.2.2-AGWR-04-E-003 Example of Recycled Water Management System Workspace
- 3.2.2-AGWR-04-E-004 Recycled Water Quality Monitoring and Communication
- 3.2.2-AGWR-04-E-005 Hunter Water Approved Products Website (link) (internet shortcut)
- 3.2.2-AGWR-04-E-006 PN110 - Recycled Water Standards - v5 Aug 2019
- 3.2.2-AGWR-04-E-007 Farley RWTP Operational Spreadsheet Image (.png)
- 3.2.2-AGWR-04-E-008 Farley WWTW Operational Spreadsheet Image (.png)
- 3.2.2-AGWR-04-E-009 Veolia Document Control and Access for Operators – Hunter Water Portal (.docx (shows image))
- 3.2.2-AGWR-04-E-010 Farley RWTP SCADA Screenshots OV and CCPs



- 3.2.2-AGWR-04-E-011 FarleyRWTPWorksheet
- 3.2.2-AGWR-04-E-012 MAN-2962-2 Farley WWTW Plant Operating Manual Draft
- 3.2.2-AGWR-04-E-013 WIS-2985-2 HW - Sodium Hydroxide (Caustic Soda) Solution Ordering, Delivery, Testing
- 3.2.2-AGWR-04-E-014 WIS-2978-2 HW - Citric Acid 50% Solution Ordering, Delivery, Testing
- 3.2.2-AGWR-04-E-015 WIS-13935-1 HW - Aluminium Chlorohydrate Ordering, Delivery, Testing
- 3.2.2-AGWR-04-E-016 WIS-2986-2 HW - Sodium Hypochlorite Chemical Ordering, Delivery, Testing
- 3.2.2-AGWR-04-E-017 Farley RWTP PMs
- 3.2.2-AGWR-05-E-001 Chisholm and Gillieston Heights Recycled Water Quality Management Plan
- 3.2.2-AGWR-05-E-002 Recycled Water Quality Monitoring and Communication
- 3.2.2-AGWR-05-E-003 Dual Reticulation Recycled Water Exception Reporting procedure
- 3.2.2-AGWR-05-E-004 PN110 - Recycled Water Standards - v5 Aug 2019
- 3.2.2-AGWR-05-E-005 Farley RWTP Operational Spreadsheet Image (.png)
- 3.2.2-AGWR-05-E-006 Farley WWTW Operational Spreadsheet Image (.png)
- 3.2.2-AGWR-05-E-007 Additional analytes for recycled water dual reticulation sites
- 3.2.2-AGWR-05-E-008 Guideline - Customer Complaints Management - April 2020
- 3.2.2-AGWR-05-E-010 Procedure - Gillieston Heights Cross Connections Removal - Final Combined 2 Step Verification - No Flow Confirmation at Hydrants - 1 of 2 (.jpeg)
- 3.2.2-AGWR-05-E-011 Procedure - Gillieston Heights Cross Connections Removal - Final Combined 2 Step Verification - No Flow Confirmation at Hydrants - 2 of 2 (.jpeg)
- 3.2.2-AGWR-05-E-012 Procedure - Gillieston Heights - Final Cross Connection Removal - Combined Documents - Signed Shutdown Plan
- 3.2.2-AGWR-05-E-013 Email - Recycled Water Monitoring Points Gillieston Heights
- 3.2.2-AGWR-05-E-014 Report - Gillieston Heights Reactive Flushing Jobs
- 3.2.2-AGWR-05-E-015 Corporate Mail - Dual Reticulation Weekly Recycled Water Report 08\_07\_2020.pdf
- 3.2.2-AGWR-05-E-016 Dual Reticulation Recycled Water Report 20200708.xlsx
- 3.2.2-AGWR-05-E-017 FarleyRWTPWorksheet.xlsm
- 3.2.2-AGWR-05-E-018 Recycled Water Quality Monitoring Plan
- 3.2.2-AGWR-06-E-001 Thornton North Stakeholder list
- 3.2.2-AGWR-06-E-002 Thornton North Government stakeholder list
- 3.2.2-AGWR-06-E-003 Integrum Screenshot (.png)
- 3.2.2-AGWR-06-E-004 Integrum spreadsheet export
- 3.2.2-AGWR-06-E-005 Dora Ck WWTW CCP Breach 9-2-20 - HW Report
- 3.2.2-AGWR-06-E-006 Dora Ck WWTW CCP Breach 9-2-20 - Veolia Report
- 3.2.2-AGWR-06-E-007 Exercise 1 &2 Report



- 3.2.2-AGWR-06-E-008 Attendance Sheet
- 3.2.2-AGWR-06-E-009 Presentation # 2\_Recycled Water Mock Incident Exercise (Customer Notification) (.pptx)
- 3.2.2-AGWR-06-E-010 Presentation #1\_ Recycled Water Mock Incident Exercise (Dual Reticulation Recycled Water Quality Micro (.pptx)
- 3.2.2-AGWR-06-E-011 Guideline - Water Quality - Chlorine - RW
- 3.2.2-AGWR-06-E-012 Guideline - Water Quality - Discoloured Water - RW
- 3.2.2-AGWR-08-E-001 SCREENSHOT – Consultant Manager
- 3.2.2-AGWR-08-E-002 Letter - Gillieston Heights Only - RW Supply Interruption 2-3 September 2020
- 3.2.2-AGWR-08-E-003 Letter - Early Work advice to community \_ Thornton Recycled Pipeline\_FINAL - Recycled Water owners - 2020-08-21
- 3.2.2-AGWR-08-E-004 Letter - Early Work advice to community \_ Thornton Recycled Pipeline\_FINAL - Properties on route owners - 2020-08-21
- 3.2.2-AGWR-08-E-005 Letter - Early Work advice to community \_ Thornton Recycled Pipeline\_FINAL - Occupiers Recycled water - 2020-08-26
- 3.2.2-AGWR-08-E-006 Letter - Early Work advice to community \_ Thornton Recycled Pipeline\_FINAL - Occupiers on route - 2020-08-26
- 3.2.2-AGWR-08-E-007 Letter - Early Work advice to community \_ Thornton Recycled Pipeline\_FINAL - Construction Impact customers - ~ 21
- 3.2.2-AGWR-08-E-008 Letter - Recycled Water - Introduction letter to customers on route from Mullanes - FINAL - 2020-09-11
- 3.2.2-AGWR-08-E-009 Letter - Recycled Water - Second letter to connecting customers - FINAL - 2020-09-10
- 3.2.2-AGWR-08-E-010 CSR Building Products Limited - Licence Agreement for Recycled Water Main
- 3.2.2-AGWR-08-E-011 Letter Construction Licence acquisition of easement in favour of Hunter Water - CSR Building
- 3.2.2-AGWR-08-E-012 Access and Activities Licence (with easement provisions) - CSR Building Products Limited
- 3.2.2-AGWR-08-E-013 EFT or Cheque Request for Licence Agreements
- 3.2.2-AGWR-08-E-014 CSR - Thornton North Recycled Water pipeline construction - impact for 487 RAYMOND TERRACE RD CHISHOLM
- 3.2.2-AGWR-08-E-015 HW Recycled Water Website
- 3.2.2-AGWR-12-E-001 Management Systems Review - 1 JULY 2019 – 30 APRIL 2020 - May 2020
- 3.2.2-AGWR-12-E-002 Management System Review - EMT Summary - May 2020
- 3.2.2-AGWR-12-E-003 Hunter Water NSW Health Liaison Committee Meeting 3 June 2020
- 3.2.2-AGWR-12-E-004 Hunter Water NSW Health Liaison Committee Meeting Dec 2019
- 3.2.2-AGWR-12-E-005 Hunter Water NSW Health Liaison Committee Meeting March 2020
- 3.2.2-AGWR-12-E-006 Recycled Water Improvement Plan

- 3.2.2-R2013-4-3,4,6,14-E-001 RE WWTW Recycled Water Existing Schemes Validation Program
- 3.2.2-R2013-4-3,4,6,14-E-002 WWTW Recycled Water Existing Schemes Validation Program - June 2019
- 3.2.2-R2013-4-3,4,6,14-E-003 BRA CCP Review DP.pdf
- 3.2.2-R2013-4-3,4,6,14-E-004 CES CCP EPL Review DP.pdf
- 3.2.2-R2013-4-3,4,6,14-E-005 CLA CCP Review DP.pdf
- 3.2.2-R2013-4-3,4,6,14-E-006 DOR CCP Review DP.pdf
- 3.2.2-R2013-4-3,4,6,14-E-007 DUN CCP Review DP.pdf
- 3.2.2-R2013-4-3,4,6,14-E-008 EDG CCP Review DP.pdf
- 3.2.2-R2013-4-3,4,6,14-E-009 KAR CCP Review DP.pdf
- 3.2.2-R2013-4-3,4,6,14-E-010 KUR CCP Review DP.pdf
- 3.2.2-R2013-4-3,4,6,14-E-011 MOR CCP Review DP.pdf
- 3.2.2-R2019-3-E-001 RW Water Quality Data Assessment Methodology IPART Recommendation - Final
- 3.2.2-R2019-3-E-002 RWQMP & Risk Assessment Review Calendar
- 3.2.2-R2019-3-E-003 FW Thornton North - Addition to Chisolm & Gillieston Heights RW Scheme
- 3.2.2-R2019-3-E-004 Thornton North Connection NSW Health Memo
- 3.2.2-R2019-3-E-005 Corporate Recycled Water Quality Management Plan
- 3.2.2-R2019-4-E-001 Additional analytes for recycled water dual reticulation sites
- 3.2.2-R2019-4-E-002 Chisholm and Gillieston Heights Recycled Water Quality Management Plan
- SE-043 - Element 2 RW Reporting Spreadsheet.xlsm [AGWR-02]
- SE-044 - RWLTT Farley RWTP.xlsx [AGWR-02]
- SE-045 - On notice - is there a trigger to reassess risks in response to an incident or non-compliance.docx [AGWR-02]
- SE-046a - Plumbing Inspection Fair Trading Follow Up WNO.pdf [AGWR-03]
- SE-046b - Plumbing Inspection Fair Trading.docx [AGWR-03]
- SE-047 - Element 3 FAR Weekly Duties and Daily Test Results.pdf [AGWR-03]
- SE-048 - Envirosys 1 Nov 2019 - 31 Oct 2020 for Farley scheme.xlsx [AGWR-05]
- SE-049 TO 055 - Supporting Evidence for both Clostridium Detects.docx [AGWR-06]
- SE-049 TO 055 - Supporting Evidence for both Clostridium Detects.pdf [AGWR-06]
- SE-049 TO 055 Additional-b Email - RW Exception Report - 19 Settlers Blde Chisholm (Recycled) 30-1...docx [AGWR-06]
- SE-049 TO 055 Additional-c Exception Report Investigations Chisholm.msg [AGWR-06]
- SE-049 TO 055 Additional-d Integrum RCHA-7466AB.pdf [AGWR-06]
- SE-049 TO 055 Additional-e RE 19 Settlers Blde Chisholm (Recycled) 30-1-20 (003) (002).msg [AGWR-06]
- SE-049 TO 055 Additional-f RE Chisholm Recycled Water - E.coli Detect (19 Settlers Boulevard Chisholm) (1).msg [AGWR-06]

- SE-049 TO 055 Additional-g RE Chisholm Recycled Water - E.coli Detect (19 Settlers Boulevard Chisholm).msg [AGWR-06]
- SE-049 TO 055 Additional-h RW Exceptions Report 19 Settlers Boulevard Chisholm 5-02-2020 - E.coli Finger Print Genome.msg [AGWR-06]
- SE-049 TO 055 Farley PWT-a 1st Clostridium sampled by Veolia.msg [AGWR-06]
- SE-049 TO 055 Farley PWT-b Email - Integrum incident required to be logged for Farley RWTP exceptio....eml [AGWR-06]
- SE-049 TO 055 Farley PWT-c Farley RWTP - detection for Clostridium spores and LRV.msg [AGWR-06]
- SE-049 TO 055 Farley PWT-d Farley RWTP Clostridium Perfringen Detect in Product Water Tank.msg [AGWR-06]
- SE-049 TO 055 Farley PWT-e Farley RWTP clostridium perfringen detect.msg [AGWR-06]
- SE-049 TO 055 Farley PWT-f FW Farley RWTP Clostridium Perfringen Detect in Product Water Tank - Resample 2.msg [AGWR-06]
- SE-049 TO 055 Farley PWT-g KDEL-3D241D.pdf [AGWR-06]
- SE-049 TO 055 Farley PWT-h Presentation - Recycled Water Network Health Liaison Meeting Update - August 2020.PPTX [AGWR-06]
- SE-049 TO 055 Farley PWT-i RE Farley RWTP Clostridium Perfringen Detect in Product Water Tank (1).msg [AGWR-06]
- SE-049 TO 055 Farley PWT-j RE Farley RWTP Clostridium Perfringen Detect in Product Water Tank.msg [AGWR-06]
- SE-049 TO 055 Farley PWT-k Morpeth HW Report - attached report to Integrum.oxps [AGWR-06]
- SE-049 TO 055 Morpeth PWT-a 0605-RW-MOR.PDF [AGWR-06]
- SE-049 TO 055 Morpeth PWT-b CLAN-5D80AA.pdf [AGWR-06]
- SE-049 TO 055 Morpeth PWT-c Clostridium Detect Morpeth RWTP 22 July 2020 Report.pdf [AGWR-06]
- SE-049 TO 055 Morpeth PWT-d Hand Over Dual Reticulation Morpeth RWTP Product Water Tank Detect - Clostridium perfringen.msg [AGWR-06]
- SE-049 TO 055 Morpeth PWT-e Handover Notes 27 - 28 July 2020.msg [AGWR-06]
- SE-049 TO 055 Morpeth PWT-f Morpeth RWTP Product Water Tank Detect - Clostridium perfringen (Update 1).msg [AGWR-06]
- SE-049 TO 055 Morpeth PWT-g RE EXTERNAL - Gillieston-Chisholm Report Exceedance 13-9-2020.msg [AGWR-06]
- SE-049 TO 055 Morpeth PWT-h RE Morpeth RWTP Product Water Tank Detect - Clostridium perfringen (Update 2).msg [AGWR-06]
- SE-049 TO 055 Morpeth PWT-i RE Positive Clostridium.msg [AGWR-06]
- SE-049 TO 055 Morpeth PWT-j RE Positive Clostridium Morpeth RWTP product water tank 22720.msg [AGWR-06]
- SE-049 TO 055 Morpeth PWT-k Re Positive Clostridium.msg [AGWR-06]
- SE-056 - Example LWP Complaint.msg [AGWR-06]
- SE-057 - FW\_ Dora Ck WWTW CCP Breach 9-2-20.msg [AGWR-06]

- SE-058 - Element 6 Rivo Evidence Screenshot and Report.pdf [AGWR-06]
- SE-059a - Full list of recycled water events for the audit period.docx [AGWR-06]
- SE-059b - 38 Mistfly Chisholm Recycled 16-4-20 first reply.docx [AGWR-06]
- SE-059c - Email - 12 Oak Circuit Gillieston Heights (Recycled) 30-1-20.docx [AGWR-06]
- SE-059d - Email - 12 Oak Circuit Recycled 28-3-20 second reply.docx [AGWR-06]
- SE-059e - Email - RW Exception Report - 38 Mistfly St Chisholm (Recycled) 7-2-20 (...).docx [AGWR-06]
- SE-059f - Chisholm 19 settlers blde recycled 191219.docx [AGWR-06]
- SE-059g - INTEGRUM Events for Audit Period.xlsx [AGWR-06]
- SE-060a - CLAN-5D80AA.pdf [AGWR-06]
- SE-060b - CLAN-6DF521.pdf [AGWR-06]
- SE-060c - CLAN-87BCD7.pdf [AGWR-06]
- SE-060d - CLAN-A80F6E.pdf [AGWR-06]
- SE-060e - CLAN-F10DDF.pdf [AGWR-06]
- SE-060f - KDEL-3D241D.pdf [AGWR-06]
- SE-060g - MROS-D58B2D.pdf [AGWR-06]
- SE-060h - RCHA-7466AB.pdf [AGWR-06]
- SE-060i - RCHA-09005C.pdf [AGWR-06]
- SE-060j - RCHA-91510D.pdf [AGWR-06]
- SE-060k - RCHA-701234.pdf [AGWR-06]
- SE-060l - RCHA-B2B202.pdf [AGWR-06]
- SE-061a - Evidence of communication for Chisholm and Gillieston.docx [AGWR-08]
- SE-061b - Copy of HW2015-1364 5 7.097 Data - School list - Recycled Water - Chisholm, Gillieston Heights and Thronton North - 2020-10-29.XLSX [AGWR-08]
- SE-061c - FW SMS for recycled water customers.msg [AGWR-08]
- SE-061d - Hunter Water Recycled Water Educational Safety Message (additional).msg [AGWR-08]
- SE-061e - Recycled Water Educational Safety Message.msg [AGWR-08]
- SE-061f - HW2015-1364 5 7.087 Letter - Reminder key messages RW owner occupiers and tenants.PDF [AGWR-08]
- SE-061g - HW2015-1364 5 7.089 Letter - RW reminder to managing agents.PDF [AGWR-08]
- SE-061h - HW2015-1364 5 7.090 Letter - Recycled Water letter to new property connections owner-occupiers and landlords October 2020.PDF [AGWR-08]
- SE-061i - HW2015-1364 5 7.091 Letter - Recycled Water letter to new property purchasers in RW precincts in Chisholm and Gillieston Heights.PDF [AGWR-08]
- SE-062 - FW Recycled water including Incident Plan and ChisholmGillieston Heights Schemes.msg [AGWR-08]
- SE-063a - Improvement Plan Water Quality Management System.pdf [AGWR-12]
- SE-063b - Improvement Plan Water Quality Management System.docx [AGWR-12]

## C.6 Supply services and performance standards – System performance standards (clause 3.3)

- 3.3.1-E-001 Low Pressure - AOMS examples
- 3.3.1-E-002 S1 - File note - Annual Water Pressure Failure Assessment Procedures
- 3.3.1-E-003 Compliance and performance report 2019-20
- 3.3.1-E-004 AOMS problem and solution codes (1)
- 3.3.1-E-005 AOMS problem and solution codes (2)
- 3.3.2-E-001 S2 - Unplanned water interruptions 5 continuous hours - Final for 2017-2022 OL.docx
- 3.3.2-E-002 S3 – Three or more unplanned water interruptions greater 1 hour - FINAL 2017-2022 OL.docx
- 3.3.2-E-003 Form - Discontinuity Assessment and Reporting Procedure.DOCX
- 3.3.2-E-004 Data - DiscontinuityRegister -HW2020-997.013.XLSX
- 3.3.2-E-005a AOMS 608350 - Martins Creek
- 3.3.2-E-005b AOMS 608350 - Martins Creek
- 3.3.2-E-005c AOMS 608350 - Martins Creek
- 3.3.2-E-005d AOMS 608350 - Martins Creek
- 3.3.2-E-005e AOMS 608350 - Martins Creek
- 3.3.2-E-006 Compliance and performance report 2019-20
- 3.3.2-E-007 AOMS problem and solution codes (1)
- 3.3.2-E-008 AOMS problem and solution codes (2)
- 3.3.3-E-001 The query “S4 – Uncontrolled Wastewater Overflow (dry Weather) (HW2009-1194/14/4.012)
- 3.3.3-E-002 The query “S5 – 3 or more Uncontrolled Wastewater Overflow (dry Weather) (HW2009-1194/14/4.013)
- 3.3.3-E-003 Example wastewater overflow job.pdf
- 3.3.3-E-004 Compliance and performance report 2019-20
- 3.3.3-E-005 AOMS problem and solution codes (1)
- 3.3.3-E-006 AOMS problem and solution codes (2)
- 3.3.4-E-001 Email - Turner to Luke (IPART) - Hunter Water Customer Survey Report - 30 June 2020
- 3.3.4-E-002 Customer Survey Report to IPART - Reporting Manual Clause 323
- 3.3.4-E-003 Final Report - FE Kantar for Hunter Water - service level and attributes...
- 3.3.4-E-004 Email - Turner to Luke (IPART) - Customer survey detailed report
- 3.3.4-E-005 Service levels phase 1 customer engagement presentation to IPART
- SE-028 3.3.1-E-005 AOMS Problem and Solution Codes Clear Copy.pdf
- SE-073 Form - Discontinuity Assessment and Reporting Procedure [updated item 3.3.2-E-003]

## C.7 Organisational systems management – Asset management system (clause 4.1)

- 4.1.2-E-001 Certificate - AU004029-1 HWC - AMS ISO:55001 - Jul 2020 (HW2013-1447/18/4.007)
- 4.1.2-E-002 Consultant Report - HWC\_BVC\_Audit\_report\_recertification\_June2020\_Integrated\_55kQHSE\_FINAL - 1 Jul 2020
- 4.1.2-E-003 Register - NCR Tracking - June 2020
- 4.1.2-E-004 Policy - Asset Management Policy (S09-3/4/5/10.002)
- 4.1.2-E-005 Asset Management Strategy (Strategic Asset Management Plan (SAMP) (S09-3/4/5/1.002)
- 4.1.2-E-006 Manual – Asset Management System
- 4.1.2-E-007 Asset Management System - intranet.JPG
- 4.1.2-E-008 Standard – Enterprise Risk Management
- 4.1.2-E-009 Risk Appetite Statements - Version 3
- 4.1.2-E-010 HW2013-830112.003 Data - Risk Driver Analysis Summary Table - Critical asset failure – 2019.docx
- 4.1.2-E-011 Strategic Case - Sustainable Wastewater Services
- 4.1.2-E-012 Hunter Water Growth Plan 2019
- 4.1.2-E-013 Asset Management Plan (Operations and Maintenance) - Grahamstown Dam
- 4.1.2-E-014 Facility Plan - Anna Bay WTP
- 4.1.2-E-015 Facility Plan - Nelson Bay WTP
- 4.1.2-E-016 Facility Plan - Grahamstown WTP HW2018-506 6 1.012
- 4.1.2-E-017 Controlled Document - Grahamstown DSEP - Dam Safety Emergency Plan.pdf
- 4.1.2-E-018 HW2020-40511.001 Business Case - G2.1 - Treatment Renewals Provision 2020-24.docx
- 4.1.2-E-019 Business Case - Black Hill Duplicate Trunk Water Main
- 4.1.2-E-020 Business Case - Stormwater Amenity Improvement
- 4.1.2-E-021 Business Case - G2 - Raymond Terrace WWTW Stage 3 Upgrade - 13 Nov 2019
- 4.1.2-E-022 STS 408 – Water Quality Acceptance for Water Mains
- 4.1.2-E-023 STS 600 - General Mechanical Requirements
- 4.1.2-E-024 ACF overview.JPG
- 4.1.2-E-025 ACF - initiation (1).JPG
- 4.1.2-E-026 ACF - initiation (2).JPG
- 4.1.2-E-027 ACF – development (1).JPG
- 4.1.2-E-028 ACF - development (2).JPG
- 4.1.2-E-029 ACF - delivery.JPG
- 4.1.2-E-030 ACF - completion.JPG
- 4.1.2-E-034 Procedure - Grahamstown WTP Operating Manual – Veolia
- 4.1.2-E-035 Procedure - Nelson Bay WTP Operating Manual – Veolia



- 4.1.2-E-036 Procedure - Anna Bay WTP Operating Manual – Veolia
- 4.1.2-E-037 Lemon Tree Passage WTP Operating Manual - Veolia
- 4.1.2-E-038 Veolia Monthly Report – Treatment Operations - May 2020
- 4.1.2-E-039 Veolia Monthly Report – Treatment Operations- August 2020
- 4.1.2-E-040 Report - Treatment Plant Audit Form Anna Bay Oct 2019
- 4.1.2-E-041 Report - Treatment Plant Audit Form Nelson Bay Oct 2019
- 4.1.2-E-042 Data - Anna Bay Aug Monthly Report KPI Maint for Audit
- 4.1.2-E-043 Data - Nelson Bay Aug Monthly Report KPI Maint for Audit
- 4.1.2-E-044 Business Case - PP20 Active Leak Control Business Case
- 4.1.2-E-045 PDP for Sewermain renewal Batch 12
- 4.1.2-E-046 File note - PDP Non-Critical Water Main Replacement Program - Batch 11  
- October 2019
- 4.1.2-E-046a Memo - PDP Batch 2 sewer lining
- 4.1.2-E-047 HW2014-777 4 724.012 Letter - VP2141 GRA Raw Water Rapid Mixer Inlet  
Valve VL signed - Approved
- 4.1.2-E-048 AMS\_Awareness\_Training
- 4.1.2-E-049 Compliance and Performance Report 2019-20
- 4.1.2-E-050 Minutes - AMS Steering Committee - 2 April 2020
- 4.1.2-E-051 Minutes - AMS Steering Committee – 7 May 2020
- 4.1.2-E-052 Report - Management Systems Review - 1 JULY 2019 – 30 APRIL 2020  
- May 2020
- 4.1.2-E-053 IMS\_Audit\_Report\_(Planning\_&\_\_Ops\_Management)\_2019-11\_Final (1)
- 4.1.2-E-054 HW2019-738 3.012 Report - HWC Lines of Defence IA FINAL Report  
- May 2020
- 4.1.2-E-055 HWC Operating Licence Performance Dashboard
- 4.1.2-E-056 AOMS Dashboard – Example
- 4.1.2-E-057 BPR Corporate Overview - April 2020 Final Version
- 4.1.2-E-058 Template - NPR Data 2019-20
- SE-024a 4.1.2 - CP3561 Stormwater Major Rehabilitation Program.pptx
- SE-024b 4.1.2 - File Note Major Stormwater Rehabilitation Renewal Program - Interim Risk  
Management Plan Sept 2020.docx
- SE-025 4.1.2 - Stormwater Major Rehabilitation Program.pptx
- SE-026 4.1.2 - Black Hill Duplicate Watermain.pptx
- SE-031 4.1.2 Audit question re Risk Appetite Statements.msg
- SE-033 4.1.2 - Master Planning Framework – November.pptx
- SE-034 4.1.2 - Operational Audit 2019-20 - Asset Management System.pptx



## **C.8 Customer and stakeholder relations – Payment difficulties and actions for non-payment (clause 5.3)**

- 5.3.1-E-001 Debt Recovery and Hardship Policy
- 5.3.1-E-002 Customer Contract
- 5.3.1-E-003 Account Assistance Fact Sheet
- 5.3.1-E-004 Hunter Water Support Programs
- SE-020a FW Customer Support Provisions - a summary of what is offered across the country Evelyn Rodrigues posted to Customer Resources
- SE-020b FW Hardship update and Sentiment Monitoring for this week.msg
- SE-020c FW Hunter Customer hardship paper 2 April 2020.msg
- SE-020d FW Update on Hardship Measures.msg
- SE-020e FW Update on sentiment monitoring and customer support provisions.msg
- SE-020f FW Weekly update on sentiment monitoring.msg
- SE-020g COVID 19-Collection and Vulnerability Plan.pptx
- SE-042 - IC18 FW Assessing Customers Capacity to Pay - COVID19.msg

## **C.9 Customer and stakeholder relations – Customer advisory group (clause 5.4)**

- 5.4.1-E-001 <https://yourvoice.hunterwater.com.au/ccag>
- 5.4.1-E-002 <https://yourvoice.hunterwater.com.au/34084/documents/90793>
- 5.4.1-E-003 <https://yourvoice.hunterwater.com.au/ccag>
- 5.4.2-E-001 <https://yourvoice.hunterwater.com.au/ccag>
- 5.4.3-E-001 <https://yourvoice.hunterwater.com.au/ccag>
- 5.4.3-E-002 200820 - CCAG - letter of appointment - Kerindy Clarke
- 5.4.3-E-003 200820 - CCAG - letter of appointment - Leroy Wilkinson
- 5.4.3-E-004 Extension of Cr Le Mottee's term as Chair - CCAG\_membership
- 5.4.3-E-005 HW2011-662 5 38.001 Letter - of appointment - Le Mottee as Chair of CCAG - September 2018
- 5.4.3-E-006 HW2011-662 5 38.003 Letter - reappointment of CCAG member following September 2018 Board meeting
- 5.4.3-E-007 HW2011-662 5 38.007 Letter - appointment of Joseph Popov to CCAG
- 5.4.3-E-008 HW2011-662 5 38.009 Letter - appointment of Sue Johns - National Pensioners Association - to CCAG
- 5.4.3-E-009 Screenshot of CCAG advertisement within the audit year provided
- 5.4.4-E-001 <https://yourvoice.hunterwater.com.au/34084/documents/90793>
- SE-068 - Clause 5.4.1-5 Customer Advisory Group.docx

### **C.10 Customer and stakeholder relations – Provision of information to Customers and the general public (clause 5.7)**

- 5.7-R-2019-05-E-001 Operating Licence Compliance - 5.7 Provision of Information to customers and the general public

### **C.11 Customer and stakeholder relations – Code of Conduct with WIC Act Licensee (clause 5.8)**

- 5.8.1-E-001 Flow Systems & Hunter Water minutes from the June meeting
- 5.8.1-E-002 MoU Water Utilities Australia and HWC
- SE-030 5.8.1 Monthly update on Forecast Volume.docx

### **C.12 Customer and stakeholder relations – Memorandum of Understanding with NSW Health (clause 5.9)**

- 5.9.1-E-001 HW2006-1448/6/7.013 MOU Between NSW Health and Hunter Water Corporation.PDF
- 5.9.1-E-002 HW2006-1448/59/3.011 Minutes - Hunter Water NSW Health Liaison Committee Meeting - 3 June 2020.DOC
- 5.9.1-E-003 HW2006-1448 41 11.008 Report - Quarterly to NSW Health - Drinking Water and Recycled Water Quality Exceptions April to June 2020.DOC
- 5.9.1-E-004 HW2015-1365 18.010 Grahamstown WTP Risk Assessment Summary Report.PDF
- 5.9.1-E-005 HW2007-900/29/53.249 Email - FW Update on Chichester Algal Event - 7th August.MSG
- 5.9.3-E-001 HW2006-1448/6/7.013 MOU Between NSW Health and Hunter Water Corporation.PDF
- 5.9.3-E-002 HW2006-1448 53 3.003 Guideline - Criteria for Notification to NSW Health - Drinking Water Quality.XLS
- 5.9.3-E-003 HW2008-947/10/5.009 Email - RE: E.coli Detect Bellbird Heights 1 Reservoir.MSG
- 5.9.3-E-004 HW2006-1448 41 11.008 Report - Quarterly to NSW Health - Drinking Water and Recycled Water Quality Exceptions April to June 2020.DOC
- SE-069 - 5.9.1 MoU with NSW Health v2.pptx

### **C.13 Virtual Site Inspections**

- SIE-FRWS-E-001 Farley WWTW & RWTP Visual Evidence IPART 2020.pptx
- SIE-FRWS-E-002 HW2015-1364 1 12.033 Report - Site Inspection Evidence - Questionnaire Gillieston Heights Network.docx
- SIE-TBF-E-002 Tomago Borefields.pptx
- SIE-TBF-E-001 Tomago Borefields Map.pdf
- SIE-GWTP-E-002 Schroder PAC - Presentation for Hunter Water Corporation Virtual Site Audit Visit 2020.pptx
- SIE-GWTP-E-001 Grahamstown WTP Visual Evidence - IPART 2020.pptx

- SIE-ABWTP-E-001 Anna Bay - Presentation for Hunter Water Corporation Virtual Site Audit Visit 2020.pptx
- SIE-NBWTP-E-001 Nelson Bay - Presentation for Hunter Water Corporation Virtual Site Audit Visit 2020.pptx
- SIE-MSE-E-001 Critical Limit Alarm SCADA Screenshots.docx
- SE-035 4.1.2 Presentation - Recycled Water Network IPART Meeting Update - November 2020.pptx
- SE-039 D2 Tomago Borefields Drought & Capital.pptx
- SE-074 D2 Tomago Borefield IPART Vacuum Pumps.msg

## Appendix D Hunter Water Representatives

A list of Hunter Water representatives that attended audit interviews and/or field verification visits is presented in this Appendix.



## Day 1 – Interview sessions part 1

### Inception Meeting

- \*Darren Cleary (Managing Director)
- \*Laura Hails (General Counsel & Company Secretary)
- \*Clint Thomson (Executive Manager Service Delivery for Customers)
- \*Victor Prasad (Executive Manager Customer Strategy and Retail)
- Matthew Wickens (Manager Audit and Assurance)
- Lynn Haining (Integrated Systems Manager)
- (\*Members of the Executive Management Team)

### Supply Services and Performance Standards

#### – Drinking water

- Wade Delforce (Water Resources Engineer)
- Colin Hancock (Group Manager Water Operations)
- Dave Turner (Acting Manager Water Network Operations)
- Ashley Sneddon (Manager Water Treatment Operations)
- John Stanmore (Manager Water Planning)
- Abigail Morrow (Water Quality Scientist)
- Rhys Blackmore (Manager Catchment Operations)
- Brett Healey (Manager Civil Maintenance)
- David Appleby (Manager Electrical and Mechanical Maintenance)
- Vikas Shah (Treatment Engineer)
- Sally Drayton (Business Continuity Manager)
- Karen Arkininstall (Veolia – Manager Systems Reporting Risk & Compliance)
- Brock McPhee (Veolia – Technical Manager)
- Harry Gibson (Veolia – Water Process Engineer)
- Lynn Haining (Integrated Systems Manager)

### Organisational systems management

#### – Asset management system

- Simon Groves (Manager Planning Systems)
- Penny Craig (Manager Portfolio and Project Controls)
- Kirby Morrison (Manager Investment Planning)
- Rowan Lonergan (Manager Asset Planning)
- Daniel Turnbull (Dam Safety Engineer)
- Rajesh Khadka (Engineer)
- Jarrold Wynn (Manager Civil Engineering)
- Matthew Wickens (Manager Audit and Assurance)

## **Licence context and authorisation**

### **– Pricing**

Ben Silberberg (Senior Economist)  
Dane Linde (Team Leader Meters and Billing)  
Ian McKensey (Manager Retail Services)  
Kylie Bennett (Team Leader Collections)  
Ardie Morris (Manager Revenue)  
Matthew Wickens (Manager Audit and Assurance)

## **Customer and stakeholder relations**

### **– Code of Conduct with WIC Act Licensee**

Ardie Morris (Manager Revenue)  
Tony McClymont (Manager Sustainable Growth)  
Matthew Wickens (Manager Audit and Assurance)

## **Supply Services and Performance Standards**

### **– Service performance standards**

Dave Turner (Acting Manager Water Network Operations)  
Erin Erinawati (Manager Service Planning)  
Shayne Humphreys (Manager Operational Information)  
Simone Griffiths (Technical Officer AOMS)  
Nathan Hays (Manager Wastewater Network Operations)  
Anna Grant (Information Analyst)  
Michael Nugent (Team Leader GIS)  
Emma Turner (Senior Economist)  
Matthew Wickens (Manager Audit and Assurance)



## Day 2 – Site Visits

### **Farley Wastewater Treatment Plant and Farley/Gillieston Heights Advanced Water Treatment Plant**

***On-site:***

Lachlan King (Manager Wastewater Treatment Operations)

Deanne Pope (Veolia – Biosolids & Reuse Officer)

Scott Agnew (Veolia – Assets & Maintenance Manager)

***In-office:***

Colin Hancock (Group Manager Water Operations)

Ardie Morris (Manager Revenue)

Clara Laydon (Revenue Contractors)

Dave Turner (Acting Manager Water Network Operations)

Renny Chivunga (Water Network Engineer)

Anna Mollergren (Treatment Engineer)

Rhys Watson (Manager Electrical Mechanical Engineering)

Matthew Wickens (Manager Audit and Assurance)

Lynn Haining (Integrated Systems Manager)

### **Gillieston Heights Recycled Water Network**

***In-office:***

Colin Hancock (Group Manager Water Operations)

Ardie Morris (Manager Revenue)

Clara Laydon (Revenue Contractors)

Dave Turner (Acting Manager Water Network Operations)

Renny Chivunga (Water Network Engineer)

Anna Mollergren (Treatment Engineer)

Rhys Watson (Manager Electrical Mechanical Engineering)

Matthew Wickens (Manager Audit and Assurance)

Lynn Haining (Integrated Systems Manager)

## **Tomago Borefield**

### ***In-office:***

Colin Hancock (Group Manager Water Operations)  
Wade Delforce (Water Resources Engineer)  
Ashley Sneddon (Manager Water Treatment Operations)  
Pam O'Donaghue (Treatment Engineer)  
Rhys Blackmore (Manager Catchment Operations)  
Dave Appleby (Manager Electrical and Mechanical Maintenance)  
Rhys Watson (Manager Electrical Mechanical Engineering)  
Matthew Wickens (Manager Audit and Assurance)  
Lynn Haining (Integrated Systems Manager)

## **Schroder PAC Dosing Facility**

### ***In-office:***

Colin Hancock (Group Manager Water Operations)  
Wade Delforce (Water Resources Engineer)  
Ashley Sneddon (Manager Water Treatment Operations)  
Pam O'Donaghue (Treatment Engineer)  
Rhys Watson (Manager Electrical Mechanical Engineering)  
Brock McPhee (Veolia – Technical Manager)  
Harry Gibson (Veolia – Water Process Engineer)  
Matthew Wickens (Manager Audit and Assurance)  
Lynn Haining (Integrated Systems Manager)

## **Grahamstown Water Treatment Plant**

### ***On-site:***

Brock McPhee (Veolia – Technical Manager)  
Harry Gibson (Veolia – Water Process Engineer)

### ***In-office:***

Colin Hancock (Group Manager Water Operations)  
Wade Delforce (Water Resources Engineer)  
Ashley Sneddon (Manager Water Treatment Operations)  
Pam O'Donaghue (Treatment Engineer)  
Rhys Watson (Manager Electrical Mechanical Engineering)  
Matthew Wickens (Manager Audit and Assurance)  
Lynn Haining (Integrated Systems Manager)

## **Anna Bay Water Treatment Plant**

### ***On-site:***

Brock McPhee (Veolia – Technical Manager)

Harry Gibson (Veolia – Water Process Engineer)

### ***In-office:***

Colin Hancock (Group Manager Water Operations)

Wade Delforce (Water Resources Engineer)

Ashley Sneddon (Manager Water Treatment Operations)

Pam O'Donaghue (Treatment Engineer)

Rhys Watson (Manager Electrical Mechanical Engineering)

Matthew Wickens (Manager Audit and Assurance)

Lynn Haining (Integrated Systems Manager)

## **Nelson Bay Water Treatment Plant**

### ***In-office:***

Colin Hancock (Group Manager Water Operations)

Wade Delforce (Water Resources Engineer)

Dave Turner (Acting Manager Water Network Operations)

Ashley Sneddon (Manager Water Treatment Operations)

Pam O'Donaghue (Treatment Engineer)

Rhys Watson (Manager Electrical Mechanical Engineering)

Matthew Wickens (Manager Audit and Assurance)

Lynn Haining (Integrated Systems Manager)

## Day 3 – Interview sessions part 2

### **Supply Services and Performance Standards**

#### **– Recycled water**

Ardie Morris (Manager Revenue)  
Clara Laydon (Revenue Contractors)  
Renny Chivunga (Water Network Engineer)  
Jen Pritchard (Community Engagement Coordinator)  
Deanne Pope (Veolia – Biosolids & Reuse Officer)  
Lynn Haining (Integrated Systems Manager)

### **Customer and stakeholder relations**

#### **– Customer advisory group**

Declan Clausen (Executive Officer to the MD)  
Matthew Wickens (Manager Audit and Assurance)

### **Customer and stakeholder relations**

#### **– Payment difficulties and actions for non-payment**

Ian McKensey (Manager Retail Services)  
Kylie Bennett (Team Leader Collections)  
Matthew Wickens (Manager Audit and Assurance)

### **Customer and stakeholder relations**

#### **– Provision of information to Customers and the general public**

Keiran Smith (Group Manager Communication and Engagement)  
Renee Fedder (Team Leader External Communication)  
Matthew Wickens (Manager Audit and Assurance)

### **Customer and stakeholder relations**

#### **– Memorandum of Understanding with NSW Health**

Wade Delforce (Water Resources Engineer)  
Colin Hancock (Group Manager Water Operations)  
Dave Turner (Acting Manager Water Network Operations)  
Ashley Sneddon (Manager Water Treatment Operations)  
Matthew Wickens (Manager Audit and Assurance)

### **Organisational systems management**

#### **– Asset management system (*Field verification follow-up session*)**

Simon Groves (Manager Planning Systems)  
Rowan Lonergan (Manager Asset Planning)  
Rhys Watson (Manager Electrical Mechanical Engineering)  
Jarrod Wynn (Manager Civil Engineering)  
Matthew Wickens (Manager Audit and Assurance)






### **Close-out Meeting**

- \*Darren Cleary (Managing Director)
- \*Laura Hails (General Counsel & Company Secretary)
- \*Clint Thomson (Executive Manager Service Delivery for Customers)
- Colin Hancock (Group Manager Water Operations)
- Dave Turner (Acting Manager Water Network Operations)
- Wade Delforce (Water Resources Engineer)
- Karen Arkininstall (Veolia – Manager Systems Reporting Risk & Compliance)
- Matthew Wickens (Manager Audit and Assurance)
- Lynn Haining (Integrated Systems Manager)
- (\*Members of the Executive Management Team)













## E IPART's checks for the 2020 operational audit – Hunter Water

**Table E.1 Clauses that IPART checked as part of the 2020 operational audit**

Operating licence clause	Compliance grade
1.7.1 Hunter Water must make this Licence available to any person, free of charge: <ul style="list-style-type: none"> <li>a) on its website for downloading; and</li> <li>b) upon request made through the General Enquiry Process.</li> </ul>	
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.	
5.7.2 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"> <li>a) the Customer Contract;</li> <li>b) a pamphlet or pamphlets (as referred to in clause 5.7.1);</li> <li>c) the Procedure for Payment Difficulties and Actions for Non-payment;</li> <li>d) the Customer Advisory Group Charter;</li> <li>e) customer advisory group minutes;</li> <li>f) the Internal Complaints Handling Procedure;</li> <li>g) information about the dispute resolution scheme provided by Energy and Water Ombudsman NSW; and</li> <li>h) a map of the Area of Operations.</li> </ul>	
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.	
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.	



Operating licence clause	Compliance grade
<p>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:</p> <ul style="list-style-type: none"> <li>a) access any works, premises or offices occupied by Hunter Water;</li> <li>b) carry out inspections, measurements and tests on, or in relation to, any such works, premises or offices;</li> <li>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;</li> <li>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</li> <li>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.</li> </ul>	
<p>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.</p>	
<p>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.</p>	
<p>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.</p>	
<p>6.3.4 Where this Licence requires Hunter Water to provide information to IPART or an Auditor that is information to which:</p> <ul style="list-style-type: none"> <li>a) Section 24FF of the IPART Act applies; or</li> <li>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</li> </ul> <p>Hunter Water must, to the maximum extent permitted by the law, provide that information even if it is confidential.</p>	

**Note:**  = Compliant;  = Compliant (minor shortcomings);  = Non-Compliant (non-material);  = Non-Compliant (material);  = No Requirement.

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## F Hunter Water's statement of compliance



Hunter Water Corporation  
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27 August 2020

Our Ref: HW 2009-1194/16-7

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

compliance@ipart.nsw.gov.au

Dear Ms Livingstone,

**Statement of Compliance 2019-20**

For 2019-20

Submitted by Hunter Water Corporation

Hunter Water reports as follows:

1. This statement documents compliance during 2019-20 with all obligations to which Hunter Water is subject by virtue of its Operating Licence.
2. This report was prepared by Hunter Water with all due care and skill, including 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 2019-20.
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:

Handwritten signature of Darren Cleary in black ink.

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

Date: 27 August 2020

Handwritten signature of Terry Lawler in black ink.

NAME: TERRY LAWLER  
Title: **Chair**

Date: 27 August 2020



## 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.
		I. Date or period of non-compliance	II. Nature and extent of non-compliance (including whether and how many customers have been affected)
		III. Results of any monitoring (where applicable)	IV. Reasons for non-compliance
		V. Remedial actions taken	VI. Actual/anticipated date of full compliance

1	<p><b>Operating Licence clause 1.8</b></p> <p>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.</p>	<p>During 2019-20, Hunter Water remained non-compliant with Operating Licence clause 1.8 by incorrectly levying charges in two ways:</p> <ul style="list-style-type: none"> <li>• Application of wastewater usage charges, due to a 'rounding error' in applying the sewer discharge allowance. This non-compliance was initially identified/reported in December 2019 during IPART's 2018-19 Operational Audit.</li> <li>• Application of stormwater drainage charges by applying incorrect charges to a number of properties. This non-compliance was initially reported in Hunter Water's 2018-19 Statement of Compliance.</li> </ul> <p>Each of these non-compliances is described separately below.</p> <p><b><u>Sewer discharge allowance non-compliance</u></b></p> <p>The matter was identified and investigated during IPART's 2018-19 Operational Audit, resulting in an Audit Recommendation (2018-19-02). Hunter Water provided an update to IPART in relation to this recommendation on 30 June 2020.</p>
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- I. 1 July 2016 to 30 June 2020.
- II. Hunter Water estimates that it incorrectly billed 10,773 non-residential properties for wastewater usage charges in the period from 1 July 2016 to 30 June 2020.

In total the 10,773 properties were overcharged \$1606.19, as shown below. The overcharges were applied in increments ranging from \$0.01c as a minimum, up to \$1.95 as a maximum.

Property type	Number of properties affected	Total \$value of overcharged amounts since 1 July 2016
Individually Metered non-residential	8781	\$1,527.54
Unit Entitlement non-residential	1992	\$78.65
<b>Total</b>	<b>10,773</b>	<b>\$1,606.19</b>

The extent of the overcharged amounts is not evenly distributed across the affected customers, as shown below.

Summary statistic	\$value overcharged for property	
	Individually Metered	Unit Entitlement
Minimum	\$0.01	\$0.01
Maximum	\$1.95	\$0.55
Median	\$0.14	\$0.03
Mean	\$0.17	\$0.04



5 <sup>th</sup> percentile	\$0.05	\$0.01
95 <sup>th</sup> percentile	\$0.39	\$0.11

III. N/A

IV. We applied the incorrect discharge allowance due to a rounding error. The reason for the rounding error is as follows:

- IPART's 2012 Price Determination (page 56, replicated in Appendix A) specified a per annum volumetric discharge allowance that we were required to pro-rate to a daily amount. This pro-rata calculation was automated in our billing system.
- IPART's 2016 Price Determination (page 54, replicated in Appendix B) detailed an approach to rounding of the charge which was different to previous determinations and the draft determination. IPART specified a per day volumetric discharge allowance to three decimal places.
- Our calculated daily amount was not rounded (extending to nine decimal places) and therefore, differs to IPART's-determined sewer discharge allowance. This rounding error results in minor underestimation of the sewer discharge allowance, and therefore potential overcharging for sewer usage in the case that the property's sewer discharge volume is higher than the discharge allowance.

V. In July 2020, Hunter Water credited the affected property accounts for the entirety of the under-applied allowance amounts. The total amount credited was \$1,606.19 across 10,773 affected properties.

Due to the small quantum of the refunds, Hunter Water did not propose to try reconciling refund amounts to factor in changes in ownership of affected properties throughout the period. Attempts to contact previous property owners to issue refunds for the Environmental Improvement Charge pricing non-compliance had mixed success and this process was costly to administer. We consider that it would be administratively inefficient to identify and locate previous property-owners to remediate this non-compliance - the costs of doing so would outweigh the refund values and benefits achieved.

VI. IPART's 2020 Price Determination for Hunter Water removed the *sewer discharge allowance* concept from the calculation of non-residential sewer usage charges, effective 1 July 2020. As such, from this date, Hunter Water is levying all charges in accordance with the new determination, including charging non-residential customers based on their actual estimated volume of wastewater discharge.

### **Stormwater drainage non-compliance**

This non-compliance was previously self-reported in Hunter Water's 2018-19 Statement of Compliance. The matter was investigated during IPART's 2018-19 operational audit, resulting in an Audit Recommendation (2018-19-01). Hunter Water provided an update to IPART for this recommendation on 30 June 2020.

I. 1 July 2006 to 30 June 2020

II. A total of 537 properties were overcharged stormwater drainage charges. Overcharged properties were categorised into two groups:

- Category 1 - Overcharging properties that were not eligible to receive stormwater drainage charges.
- Category 2 - Overcharging properties by using an incorrect charging category (i.e. land size category).

A total of 2241 properties were undercharged.

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- III. After reporting the non-compliance, a due diligence and quality assurance exercise was undertaken to continue to investigate possible incidence of incorrect charging of stormwater drainage charges. A further 20 properties were identified that were incorrectly charged. These latter identified properties are included in the numbers provided under section II and V.
- IV. The billing errors were caused by mismatches between property information and billing practice. Many of these issues stemmed from the transfer of property and billing data from Hunter Water's previous billing system into the current billing system when it was first implemented in 2006. These errors were broadly one of two types:
- The underlying property details from Geographic Information System that were migrated to the billing system were incorrect.
  - Manual entry and creation of new customers leading to billing practice being inconsistent with correct underlying property details – due to human error.
- V. The table below provides a summary of the total extent of overcharging and the credited/refunded amounts. In total, \$656,540 was overcharged and \$499,226 has been credited/refunded. There remains \$157,314 not yet refunded to previous owners of 221 properties. Undercharged amounts were not backdated.

Overcharged category	Total properties	Overcharged (\$Total)	Refunded (\$Total)
Category 1 - no ownership change	275	448,547	448,547
Category 1 - previous owners	231	161,897	4,583
Category 2	31	46,096	46,096
<b>TOTAL</b>	<b>537</b>	<b>656,540</b>	<b>499,226</b>

We will continue to attempt to locate previous owners that were overcharged through the use of our dedicated webpage and periodic communications to our entire customer base about their potential eligibility for a refund.

Actions to prevent reoccurrence were previously described in the 2018-19 Statement of Compliance and further described during IPART's 2018-19 Operational Audit.

- VI. 1 July 2020. All stormwater drainage charges are now being applied correctly.
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- i See section 18A of the Act.
  - ii IPART, *Hunter Water Reporting Manual Operating Licence 2017–2022*, July 2018.
  - iii Available on our [website](#). The latest version of the Audit Guidelines was released in July 2019.