

# **Hunter Water Corporation Operational Audit 2010/11**

Report to the Minister

**Water — Compliance Report**  
November 2011



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## Executive Summary

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) has completed the audit of Hunter Water Corporation's (Hunter Water) compliance with the requirements of its 2007 to 2012 operating licence (the licence). This audit covers the period from 1 July 2010 to 30 June 2011. The auditor engaged by IPART to assist with the 2010/11 operational audit of Hunter Water was t-cAM Consulting (t-cAM).

### Overview of audit findings

Historically Hunter Water has achieved a very good level of compliance with its operating licence. This performance is reflected in its annual operating licence audit grades (see section 3 of this report for an overview of its historical compliance). This year Hunter Water has demonstrated that it continues to manage its resources and operations well. The auditor awarded full compliance for 66 out of the 70 obligations audited this year.

The auditor noted the progress made by Hunter Water towards implementing its quality assurance, knowledge management and asset management processes. In addition the auditor was impressed with Hunter Water's efforts in relation to a number of activities undertaken in the current audit period. These included leak detection, flow monitoring and mains rehabilitation improvement projects.

Hunter Water's focus on compliance was commended, as was its development of reciprocal arrangements with other utilities to provide auditing and peer review, encouraging information sharing and identification of common concerns. The audit also demonstrated Hunter Water's commitment and proactive attitude with respect to customer issues and environmental performance.

In summary, for the audited clauses, we found that Hunter Water achieved:

- ▼ High to full compliance with requirements relating to water quality.
- ▼ High to full compliance with its requirements relating to infrastructure performance. This included meeting all system performance standards for water continuity, water pressure and sewer overflows.
- ▼ Full compliance with all requirements relating to customer and consumer rights.
- ▼ Full compliance with its obligations relating to complaints and dispute handling.

- ▼ Full compliance with requirements relating to the management of supply and demand.
- ▼ Full compliance with requirements relating to payment of compensation requirements.

Hunter Water's compliance with audited licence clauses for the audit period is illustrated in the following table.

**Table 1 Summary of Hunter Water's 2010/11 Compliance**

Licence Clause	No. of Auditable Obligations	Compliance grade awarded	
		Full	High
Part 3 – Water Quality	20	17	3
Part 4 – Infrastructure Performance	9	8	1
Part 5 – Customer and Consumer Rights	2	2	-
Part 6 – Complaints and dispute handling	16	16	-
Part 7 – Environment – Indicators and Management	9	9	-
Part 9 – Managing Supply and demand	13	13	-
Part 11 – Damage and Compensation	1	1	-
<b>Total</b>	<b>70</b>	<b>66</b>	<b>4</b>

A copy of the auditor's report forms Appendix A.

## IPART's Recommendations

The auditor has made a number of recommendations relating to what are mainly minor breaches of the licence in the areas of water quality and infrastructure performance.

The aim of these recommendations is to ensure that water delivered to customers is always of a suitable quality for its intended purpose. While there is no evidence that existing water quality has been compromised, the recommendations identify gaps in existing processes and procedures. This could result in water quality incidents given a combination of circumstances. The auditor has suggested amendments to existing procedures, processes, criteria and timeframes to minimise this risk.



We support the key recommendations made by the auditor and advocate that Hunter Water:

- 1 Implement automated rapid response processes for all plants to prevent water being supplied to consumers if not treated to within critical limit specifications as recommended in the ADWG 2011. (Refer to section 2.1)
- 2 Review and address, where necessary, the criteria used to define adequate integrity of storage tanks and reservoirs to ensure that there is no entry of vermin and no unacceptable water ingress into these tanks. It should validate inspection regimes and amend maintenance procedures to inspect and maintain tanks in the future (Refer to section 2.1)
- 3 Develop more robust practices for rehabilitation and renewals of water mains to prevent/ reduce the potential for debris and ingress from depressurised water mains during rehabilitation or replacement processes. Hunter Water should consult with other utilities (including Sydney Water) to compare Hunter Water's current practices with the rehabilitation and renewals of water mains practices of other utilities. Hunter Water should amend work procedures in this area and train staff to reflex the new preventative measures that should be adopted (Refer to section 2.1)
- 4 Develop an agreed timetable with NSW Health for the full implementation of the framework outlined in the Australian Guideline for Water Recycling, including validation of critical limits and the development of notification criteria to NSW Health for existing recycled water schemes (Refer to section 2.1)

In addition to the auditor's key recommendations above, we have added the following recommendation:

- 5 Hunter Water provides to IPART, an updated summary of progress against its strategy and implementation plan for adopting a quality management system across the business.

This last recommendation acknowledges the need to monitor Hunter Water's progress in implementing integrated quality management systems. This was a key recommendation from the 2009/10 audit. In this year's audit we assessed that Hunter Water is making satisfactory progress in implementing this recommendation, which because of its nature will take several years to complete (see Section 3 for further details).

The auditor has also identified a number of opportunities where compliance with the licence could be enhanced, or where Hunter Water's practices and procedures could be improved (for a full list of these opportunities see Appendix C).

In response to the recommendations Hunter Water will be requested to provide us with a status report by 31 March 2012. The status report will set out its actions and timelines to address the above key recommendations, as well as the improvement opportunities. We will also review Hunter Water's progress in addressing the key recommendations as part of the 2011/12 operational audit.

For those clauses not audited this year, Hunter Water has provided us with a statement of compliance signed by Hunter Water's Acting Managing Director and Chairman. This statement outlines Hunter Water's compliance with the licence obligations not subject to the audit for the period 2010/11 (Appendix B). The statement of compliance indicates that Hunter Water, with the exception of several obligations related to the Integrated Water Resource Plan (IWRP), has generally complied with the requirements of the unaudited clauses.

Hunter Water's H<sub>2</sub>50 water plan, which was published in 2008, addressed the requirements of the clauses requiring an IWRP. The plan included the construction of the Tillegra Dam, which at the time was considered an important measure to address water security. With the decision not to proceed with the Tillegra Dam project, Hunter Water is no longer in compliance with all the clauses related to the development and implementation of the IWRP. To address water supply planning we note that the Department of Finance and Services, in collaboration with Hunter Water, will soon commence developing the Lower Hunter Water Plan (LHWP). The LHWP will replace the H<sub>2</sub>50 water plan. We therefore do not recommend that any additional requirements be imposed on Hunter Water by the Minister as a result of this non-compliance which, in effect, has been overtaken by events.

# 1 Introduction

Hunter Water is a State Owned Corporation (SOC) wholly owned by the NSW Government. Its primary role is to manage potable water supply and wastewater systems to protect public health and the environment for the benefit of the Hunter and surrounding urban areas. These roles and responsibilities, as well as Hunter Water's objectives, are prescribed by the *State Owned Corporations Act 1989*, the *Hunter Water Act 1991* (the Act) and the operating licence issued to Hunter Water under Part 5 of the Act.

We conduct annual operating audits to monitor Hunter Water's compliance with its licence obligations. A risk-based approach has been adopted for auditing. The risk-based auditing process assesses the risk associated with non-compliance of a licence obligation. Those clauses deemed as 'high risk' are audited more frequently. Higher risk clauses include those relating to water quality, infrastructure and the environment. Other clauses, such as those dealing with customer contracts, have been assessed as low risk and are therefore audited less frequently.

The adoption of the risk-based approach improves the effectiveness and efficiency of the auditing process without increasing the risks to the community. It allows audit resources to be targeted to areas of higher risk while reducing the overall burden of compliance.

All requirements of the licence are audited at least once during the 5-year term of the licence. The 2010/11 audit is the fourth compliance audit during the current term of the licence.

## **Purpose and structure of this report**

IPART has completed its annual audit of Hunter Water's compliance with the requirements of the licence. The purpose of this report is to inform the Minister of Finance and Services of our findings in relation to Hunter Water's performance against its audited licence obligations for the audit period and to set out our recommendations in response to these findings.

- ▼ Chapter 1 explains the scope of the audit review, and the process followed in undertaking the audit.
- ▼ Chapter 2 presents a summary of the audit findings and recommendations.
- ▼ Chapter 3 summarises the progress by Hunter Water to address and implement recommendations from previous audits.

## Audit scope

This audit covers the period from 1 July 2010 to 30 June 2011. The 2010/11 audit scope required a review of the following sections of the licence:

- ▼ Water Quality (section 3) – requirements relating to planning, monitoring, reporting, incident management and wastewater and water recycling operations.
- ▼ Infrastructure Performance (section 4) – Hunter Water’s compliance with, and reporting of, performance standards for water continuity, water pressure and sewage overflows. Also audited are requirements relating to service quality and system performance indicators, and asset management.
- ▼ Customer and Consumer Rights (section 5) – obligations relating to the customer service indicators.
- ▼ Compliant and Dispute Handling (section 6) – Hunter Water’s obligations in establishing and maintaining dispute resolution and complaints handling processes, as well as its complaints reporting obligations.
- ▼ Environment – Indicators and Management (section 7) – Hunter Water’s monitoring and reporting obligations with respect to environmental performance indicators, environmental management and catchment activities.
- ▼ Managing Supply and Demand (section 9) – Hunter Water’s water conservation and demand management strategy.
- ▼ Liability Issues (section 11) – Hunter Water’s obligations relating to compensation awarded to persons who suffer damage as a result of Hunter Water exercising its functions according to the requirement of section 22 of the Act.

For those clauses not included in the audit scope, Hunter Water provided us with a statement of compliance outlining their compliance with the unaudited obligations. The statement of compliance was signed by the Acting Managing Director and the Chairman (Appendix B).

Finally, it should be noted that we have limited the scope of the audit to not re-assess systematic issues related to quality assurance, including records management, that were identified in the 2009/10 compliance audit.

Hunter Water is currently addressing these issues by developing an integrated management system across the whole organisation. This will take several years to complete and at this stage Hunter Water is still in the planning stages of this important project.

The decision not to revisit the quality assurance and record management issues identified in 2009/10 at the individual clause level may result in higher compliance grades in some areas than what would have otherwise been granted.

## The audit process

We engaged t-cAM Consulting, in conjunction with Water Futures and iConnexx, (t-cAM) as the auditor to assist with the 2010/11 audit of Hunter Water. The auditor was required to undertake the following tasks:

1. liaise with NSW Health to obtain that agency's views on Hunter Water's licence compliance and whether any licence obligations should receive special focus as part of the audit;
2. prepare an information request (questionnaire) for Hunter Water setting out all information requirements prior to the audit interviews;
3. conduct audit interviews to discuss the audit clauses and supporting information with Hunter Water staff;
4. assess the level of compliance achieved by Hunter Water against each of the obligations of the licence set out in IPART's risk-based audit scope, providing supporting evidence for this assessment and reporting compliance according to IPART's established compliance scoring methodology;
5. assess and report on progress by Hunter Water in addressing any comments made by the relevant Minister and/or recommendations endorsed by IPART from previous audits, providing supporting evidence for these assessments;
6. verify the calculation of performance indicators associated with requirements of the relevant operating licence and undertake an assessment of any underlying trends in performance arising from these indicators;
7. provide drafts of the audit report to IPART and seek and address comments from Hunter Water and IPART regarding the draft audit findings; and
8. prepare a final report on the findings of the audit.

As part of the audit process, we sought submissions from the public on any matter related to the licence prior to commencement of the audit interviews. We advertised for public submissions in the Sydney Morning Herald, Daily Telegraph, Newcastle Herald and The Land on 3 August 2011. We did not receive any submissions from the public.

t-cAM held a phone conference with NSW Health prior to the audit interview. The auditor also consulted NSW Health about the findings of the audit. NSW Health confirmed it was satisfied with the consultation undertaken during the audit and accepted the findings of the report as the independent auditor's findings.

The auditor adopted an audit methodology consistent with ISO 14011 "Guidelines for Environmental Auditing" for this audit. These guidelines set out a systematic approach to defining the requirements of the audit, which ensure that it is conducted in accordance with an established and recognised audit protocol.

We held an inception meeting with the auditors and Hunter Water representatives on the first day of the audit on 19 September 2011. At this meeting a mutual understanding of the requirements of the audit was reached and protocols for the conduct of the audit were also set out. All parties adhered to the agreed protocols throughout the audit.

Audit interviews were conducted on 19 and 20 September 2011 at Hunter Water's offices. Field visits were also undertaken as part of the audit process on Wednesday 21 September 2011.

Hunter Water's compliance with the relevant requirements of the licence was assessed according to the compliance grades outlined in chapter 1 of the t-cAM report (Appendix A).

## 2 Overview of audit findings and recommendations

Presented below is a summary of the auditor's findings and recommendations for each of the audited clauses and sub-clauses of the licence.

For each of the clauses, we have included a table comparing Hunter Water's performance in audits since the commencement of its current licence. Following the table, we discuss those clauses where Hunter Water received less than full compliance and the auditor's reasoning for the grade. Finally, we outline the recommendations to address the issues that have resulted in less than full compliance.

### Water Quality

Part 3 of the licence outlines the obligations for managing water quality. It includes requirements relating to planning, monitoring, reporting and incident management. Part 3 also includes obligations dealing with wastewater and water recycling. Under the risk-based auditing framework, that IPART employs, we consider this section of the licence to be one that poses a high risk in terms of the likelihood and consequence of non-compliance with licence obligations.

The auditor found Hunter Water continued to deliver drinking water of an excellent standard to its customers throughout 2010/11. Hunter Water improved its performance from the 2009/10 audit in the areas of water quality monitoring and incident management.

Hunter Water achieved full compliance with 17 out of the 20 audited sub-clauses associated with water quality. High compliance was awarded for the remaining 3 clauses. The reasons for the award of a less than full compliance grade are discussed below.

**Table 2.1 Summary of compliance with the water quality section**

Clause	Summary of requirement	2007/08	2008/09	2009/10	2010/11
<b>3 Water Quality</b>					
3.1	Drinking water quality – planning	High- Full	Full	Full	Full
3.2	Drinking water quality – standards	Full	Full	Full	High – Full
3.3	Water quality – monitoring	High-Full	High-Full	High-Full	Full
3.4	Water quality – reporting	Full	Full	Full	Full
3.5	Water – incident management plan	High- Full	Full	High- Full	Full
3.6	Waste water and recycling operations	Full	Full	Full	High – Full
3.7	Other grades of water	High- Full	Full	Full	High – Full
3.8	Environmental water quality	-	-	-	Full

**Note:** (Full = Full Compliance; High = High Compliance; Mod = Moderate Compliance; Low = Low Compliance; NC = Non Compliance; Insuff = Insufficient information; - = No requirement/not audited, NA= non-auditable clause).

### Drinking water quality – standards (clause 3.2)

The auditor awarded **high to full compliance** for the obligations audited under this clause of the licence. The high compliance (sub-clause 3.2.1) was awarded due to the following findings:

- ▼ Issues raised by the auditor regarding the need to introduce automated rapid response processes in water treatment plants. It is the auditor's opinion that the absences of these processes may result in a delayed or inadequate response in the event of a filter failure.
- ▼ Issues relating to the integrity of water storages were raised by the auditor following a site visit that noted areas of the reservoir roof inspected had insufficient protection around corrugations and holes in the roof, which the auditor considered may allow ingress of rain water or possibly access to birds.
- ▼ A water main rehabilitation process was observed by the auditor. The auditor expressed concern regarding the reliance on the judgement and experience of individual personnel rather than referring to established target criteria to aid the process of renewals.



In relation to these matters the auditor has recommended that Hunter Water:

- 1 Implement automated rapid response processes for all plants to prevent water being supplied to consumers if not treated to within critical limit specifications as recommended in the ADWG 2011. (Recommendation 1; clause 3.2.1)
- 2 Review and address, where necessary, the criteria used to define adequate integrity of storage tanks and reservoirs to ensure that there is no entry of vermin and no unacceptable water ingress into these tanks. Validate inspection regimes and amend maintenance procedures to inspect and maintain tanks in the future (Recommendation 2; clause 3.2.1)
- ▼ Develop more robust practices for rehabilitation and renewals of water mains by:
  - Undertaking a benchmarking exercise involving discussions with other water agencies to develop explicit preventative measures and target criteria for the preventative measures that remove debris and ingress from depressurised water mains during rehabilitation or replacement processes (clause 3.2.1)
  - Amend work procedures to meet the resulting criteria and implement the preventative measures (clause 3.2.1)

We support the auditor's recommendations, with minor amendments to the third recommendation:

- 3 Develop more robust practices for rehabilitation and renewals of water mains to prevent/ reduce the potential for debris and ingress from depressurised water mains during rehabilitation or replacement processes. Hunter Water should consult with other utilities (including Sydney Water) to compare Hunter Water's current practices with the rehabilitation and renewals of water mains practices of other utilities. Hunter Water should amend work procedures in this area and train staff to reflex the new preventative measures that should be adopted (Recommendation 3; clause 3.2.1)

### **Wastewater and recycling operations (clause 3.6)**

Four sub-clauses were audited under this section of the operating licence. The auditor awarded **high to full compliance** for the audited obligations. Sub-clause 3.6.3 requires the wastewater and recycling operations plan to provide for monitoring, reporting and incident management procedures. The auditor awarded a high compliance to this clause because "at this stage, incident triggers and procedures are not fully developed for recycled water schemes." The auditor made a recommendation regarding the development of timeframes for completing this work, which we support (see recommendation 4 below).

### Other grades of water (clause 3.7)

Three clauses were audited with Hunter Water achieving **high to full compliance** grades. High compliance was awarded to the sub-clause (3.7.1) that requires Hunter Water to supply other grades of water according to the Australian Guidelines for Water Recycling (AGWR) or relevant guidelines specified by NSW Health, DECC (now the Office of Environment and Heritage) and DWE (now NSW Office of Water).

The auditor reviewed Hunter Water's document 'Recycled Water Quality Management Plan Current Recycled Water Schemes'. The auditor considered that the document was high level and did not include key information including agreed critical limits and monitoring programs to manage the quality of the recycled water, within the report. The auditor also found that there was insufficient detail on the timeframes to carry out the actions in the plan, and some milestones within the plan had not been met. For these reasons the auditor felt that a high compliance grade should be awarded.

In response to the issues the auditor recommended that:

- ▼ For existing recycled water schemes Hunter Water should develop an agreed timeframe with NSW Health for the implementation of the core of the AGWR Framework, this should include validated critical limits and associated protocols for existing recycled water schemes.
- ▼ Develop an agreed timeframe with NSW Health for the development of notification criteria and associated protocols for existing recycled water schemes.

We support the auditor's recommendations, which we have summarised as follows:

- 4 **Develop an agreed timetable with NSW Health for the full implementation of the framework outlined in the Australian Guideline for Water Recycling, including validation of critical limits and the development of notification criteria to NSW Health for existing recycled water schemes (Recommendation 4, clause 3.6.3).**

### Infrastructure performance

Part 4 of the licence outlines the performance standards for water continuity, water pressure and sewage overflows. It also includes obligations relating to service quality and system performance indicators, and asset management. Under the risk-based auditing framework, we consider this section of the licence to be one that poses a high risk in terms of the likelihood and consequence of non-compliance.

This year's audit included a more comprehensive audit of the infrastructure and performance clauses of the licence than has been previously undertaken. Hunter Water achieved full compliance with 8 out of the 9 audited sub-clauses associated with infrastructure performance. High compliance was awarded for the remaining clause. The reason for the award of a less than full compliance grade is discussed below.

**Table 2.2 Summary of compliance with the infrastructure performance section**

Clause	Summary of requirement	2007/08	2008/09	2009/10	2010/11
<b>4 Infrastructure Performance</b>					
4.1	Water pressure standard <sup>a</sup>	Full	Full	Full	Full
4.2	Water continuity standard <sup>a</sup>	Full	Full	Full	Full
4.3	Sewage overflows on private property standard <sup>a</sup>	Full	Full	Full	Full
4.4	Compliance with system performance standards	Full	Full	Full	Full
4.5	Reporting on system performance standards	Full	-	-	Full
4.6	Review of system performance standards	-	-	-	Full
4.7	Service quality and system performance indicators	Full	-	-	Full
4.8	Asset management obligation	-	Full	-	High – Full
4.9	Reporting on the asset management plan	-	Full	-	Full
4.10	Auditing the asset management plan	NA	NA	NA	NA-

<sup>a</sup> Clause was audited as part of clause 4.4.

**Note:** (Full = Full Compliance; High = High Compliance; Mod = Moderate Compliance; Low = Low Compliance; NC = Non Compliance; Insuff = Insufficient information; - = No requirement/not audited, NA= non-auditable clause).

### Asset management obligation

The auditor awarded **high compliance** for the clause 4.8 relating to how Hunter Water's assets must be managed. The main reason for the award of 'high' rather than 'full' compliance was the auditor's concern raised previously as part of the water quality clauses. The concern specifically related to the asset management work practices for water main renewals and rehabilitation (see recommendation 2 in the water quality section (clause 3.2) above).

### Customer and consumer rights

Part 5 of the licence deals with the customer contract, the code of practice on debt and disconnection and the consultative forum. It also includes requirements for measuring and reporting of customer service indicators. We consider that many parts of this section of the licence pose a low to moderate risk in terms of the likelihood and consequence of non-compliance and, as such, the clauses do not warrant independent audit every year.

Hunter Water's compliance with its customer and consumer rights obligations has shown continual improvements over the last 4 years. This year Hunter Water achieved full compliance with the 2 audited sub-clauses.

**Table 2.3 Summary of compliance with the customer and consumer rights section**

Clause	Summary of requirement	2007/08	2008/09	2009/10	2010/11
<b>5 Customer and Consumer rights</b>					
5.1	Customer Contract	-	-	-	-
5.2	Consumers	-	Full	-	-
5.3	Code of practice and procedure on debt and disconnection	-	High-Full	Full	-
5.4	Consultative forum	-	Full	-	-
5.5	Customer service indicators	Mod-High	High	-	Full

**Note:** (Full = Full Compliance; High = High Compliance; Mod = Moderate Compliance; Low = Low Compliance; NC = Non Compliance; Insuff = Insufficient information; - = No requirement/not audited, NA= non-auditable clause).

## Complaints and dispute handling

Part 6 of the licence deals with the Hunter Water's internal and external dispute resolution processes. It also outlines obligations relating to customer complaints made about Hunter Water to other bodies. We consider that many parts of this section of the licence pose a low to moderate risk in terms of the likelihood and consequence of non-compliance and, as such, the clauses do not warrant audit every year.

This year all sub-clause of this section were audited. Hunter Water achieved full compliance with all 16 audited sub-clauses.

**Table 2.4 Summary of compliance with the complaints and dispute handling**

Clause	Summary of requirement	2007/08	2008/09	2009/10	2010/11
<b>6 Complaint and Dispute Handling</b>					
6.1	Internal dispute resolution process	High-Full	-	-	Full
6.2	External dispute resolution scheme	-	-	-	Full
6.3	Complaints to other bodies	-	-	-	Full

**Note:** (Full = Full Compliance; High = High Compliance; Mod = Moderate Compliance; Low = Low Compliance; NC = Non Compliance; Insuff = Insufficient information; - = No requirement/not audited, NA= non-auditable clause).

## Environment – indicators and management

Part 7 of the licence outlines the monitoring and reporting obligations for the environmental performance indicators, environmental management and catchment activities. We consider this section of the licence to be one that poses a moderate risk in terms of the likelihood and consequence of non-compliance and, as such, does not warrant audit every year.

Hunter Water achieved full compliance with all 9 of the audited sub-clauses.

**Table 2.5 Summary of compliance with environmental – indicators and management**

Clause	Summary of requirement	2007/08	2008/09	2009/10	2010/11
<b>7 Environment – indicators and management</b>					
7.1	Environmental performance indicators	Mod- Full	High	-	Full
7.2	Environmental management	-	High-Full	-	Full
7.3	Catchment report	Mod-Full	High-Full	High-Full	Full

**Note:** (Full = Full Compliance; High = High Compliance; Mod = Moderate Compliance; Low = Low Compliance; NC = Non Compliance; Insuff = Insufficient information; - = No requirement/not audited, NA= non-auditable clause).

## Pricing

Part 8 of the licence outlines Hunter Water's obligations regarding setting fees and charges for its services. We consider this section of the licence to be one that poses a low risk in terms of the likelihood of non-compliance and, as such, the clause does not warrant audit every year.

This clause has not been audited during this term of the licence and was not subject to audit this year.

## Managing supply and demand

Part 9 of the licence outlines Hunter Water's obligations regarding water conservation and the demand management strategy. It also includes the water demand and supply indicators and the reporting requirements related to the indicators. We consider non-compliance with elements of this part of the licence would constitute a moderate to high risk in terms of meeting the water needs of Hunter Water's customers.

Hunter Water achieved full compliance with all 13 of the audited sub-clauses.

**Table 2.6 Summary of compliance with managing supply and demand**

Clause	Summary of requirement	2007/08	2008/09	2009/10	2010/11
<b>9 Managing Supply and Demand</b>					
9.1	Water Conservation Target	Full	-	-	Full
9.2	Demand Management strategy	Full	Mod-Full	High	Full
9.3	Water Demand and supply indicators	High-Full	Full	Mod-Full	Full
9.4	Annual reporting on water demand and supply indicators	Full	-	-	-

**Note:** (Full = Full Compliance; High = High Compliance; Mod = Moderate Compliance; Low = Low Compliance; NC = Non Compliance; Insuff = Insufficient information; - = No requirement/not audited, NA= non-auditable clause).

## Liability issues

Part 11 of the licence outlines Hunter Water's obligations regarding contracting out, damage and compensation and competitive neutrality. We consider this section of the licence to be one that poses a low risk in terms of the likelihood of non-compliance and, as such, the clause does not warrant audit every year.

Hunter Water achieved full compliance for the audited sub-clause.

**Table 2.7 Summary of compliance with liability issues**

Clause	Summary of requirement	2007/08	2008/09	2009/10	2010/11
<b>11 Liability Issues</b>					
11.1	Contracting out	-	-	-	--
11.2	Damage and compensation to persons	-	-	-	Full
11.3	Competitive neutrality	-	-	-	-

**Note:** (Full = Full Compliance; High = High Compliance; Mod = Moderate Compliance; Low = Low Compliance; NC = Non Compliance; Insuff = Insufficient information; - = No requirement/not audited, NA= non-auditable clause).

## Opportunities for improvement

The auditor has identified a number of potential opportunities where Hunter Water's compliance with the licence could be enhanced, or its practices and procedures could be improved. These opportunities are considered in Appendix C.

We expect Hunter Water to consider all recommendations and suggestions in the auditor's report. Hunter Water will be requested to consider the benefits of implementing such actions and to provide a status report to us by 31 March 2012.

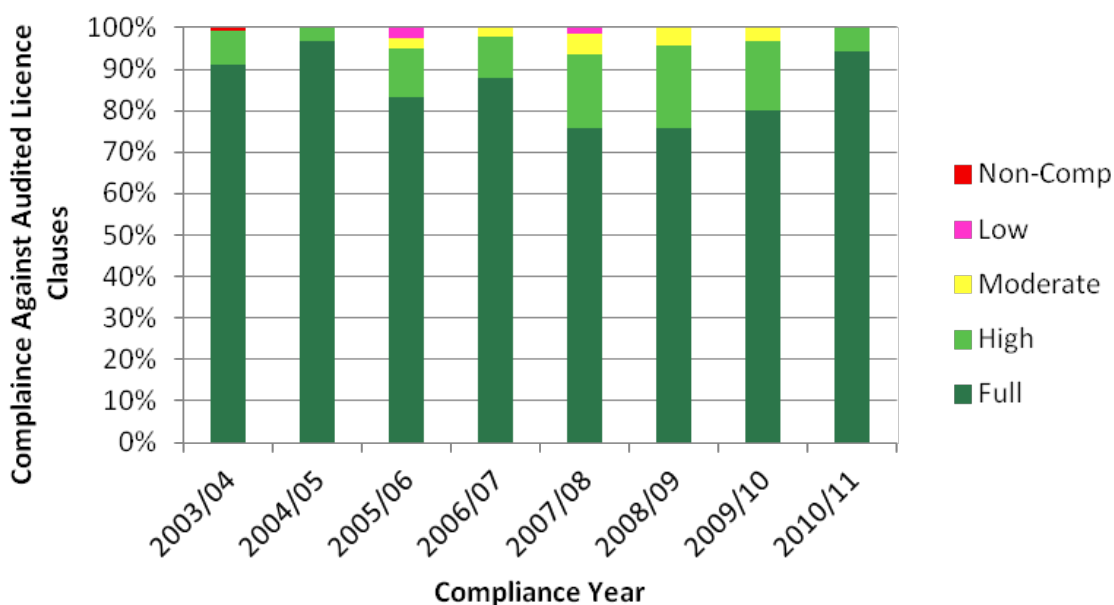
The status report will also set out the actions and timelines to address the key recommendations detailed in this report. We will review Hunter Water's progress in addressing the key recommendations as part of the 2011/12 operating licence audit.

### 3 Historical performance

#### Comparison with previous years performance

Hunter Water's overall performance in 2010/11 audit demonstrated that it continues to manage its resources and operations well. Figure 3.1 below gives an overview of Hunter Water's compliance with the audited clauses.

**Figure 3.1 An overview of Hunter Water's compliance history**



Although figure 3.1 demonstrates an improvement in compliance history over the last 4 years, care should be given to interpreting the data. Under our risk-based audit approach, the number and type of obligations audited will differ from year-to-year. Some obligations are audited every year, while others are audited less frequently. This means that the data does not provide a direct comparison of year-to-year compliance.

Further, the decision not to revisit the quality assurance and record management issues identified in 2009/10 (see discussion in section 1 - Audit Scope) may have resulted in higher compliance grades being granted this year at an individual obligation level than what would have otherwise been granted.

## Recommendations from previous audits

The 2009/10 audit report identified areas where Hunter Water's performance could be improved. At that time, we made recommendations to address these areas and assessed Hunter Water's progress in implementing these recommendations in this year's audit.

We note Hunter Water's progress in implementing the recommendations for the 2009/10 and we will continue to monitor their progress. We recommend that:

- 5 Hunter Water provide to IPART, by 1 September 2012, an updated summary of progress against its strategy and implementation plan for adopting a quality management system across the business.

**Table 3.1 Summary of progress to address previous recommendations**

	Recommendation	Progress
R1(a)	Implement an appropriate continual improvement and quality assurance management strategy with supporting processes and practices.	<p>Progress was audited only in the context of the strategy and the implementation plan developed under point (b).</p> <p>It was noted to implement a quality management system will take until 2013/14 to be completed.</p> <p>Progress to date has been satisfactory.</p>
R1(b)	<p>Hunter Water is to provide to IPART by 30 June 2011:</p> <ul style="list-style-type: none"> <li>▼ A strategy for adopting knowledge management, quality assurance and continual improvement across the business in accordance with, or equivalent to, ISO 9001 and its derivatives.</li> <li>▼ An implementation plan outlining the resources to be applied, objectives, responsibilities, action plans and deliverables over the next years.</li> </ul>	<p>The report was provided to IPART by the due date.</p> <p>The auditor tested the adequacy of the plan in terms of individual licence requirements.</p> <p>The auditor utilised the response to inform discussions of individual licence requirements during the audit.</p>
R1(c)	Hunter Water is to provide IPART, by 1 September 2011, with a summary of progress against the strategy and plan, cross-referenced to Licence parts.	Hunter Water provided a report by the due date which is currently being assessed.
R2	Consider that all non-compliance matters represent an incident and result in activation of appropriate procedures under Hunter Water's Incident Management Plan and associated procedures. Hunter Water's Incident Management Plan and associated procedures should, where necessary, be modified to handle or address such incidents by 30 June 2011.	<p>Hunter Water's Emergency Management Guidelines have now been modified.</p> <p>Definitions relating to incident categorisation have been revised, in particular, incidents requiring regulatory notification and/or involvement of a regulator in the incident are now classified as a 'Significant Incident' as a minimum and, where necessary, elevated to other categories. The matter is now resolved.</p>



Recommendation	Progress
<p>Improve management, operating, monitoring, actioning and reporting on dam asset management issues, including:</p>	
<p>R3(a) Demonstrate that risk analysis and management processes are robust and holistic, integrated with business risk exposure and the work and monitoring processes and practices of staff and contractors by 1 September 2011.</p>	Not auditable – ongoing project.
<p>R3(b) Conduct a business wide security threat assessment and gap analysis (making use of appropriately experienced and knowledgeable resources). Hunter Water should engage IPART and appropriate external resources in an exercise to develop a project scope and the project scope phase should be completed by 30 March 2011.</p>	<p>Hunter Water reported carrying out activities to address the issues of security threats as follows:</p> <p>Security threat assessments of critical infrastructure sites by peer review panel conducted in August 2011.</p> <p>Establishing an internal working group to consider security threats, near misses and evaluations of risks, including cyber attacks and head office security.</p> <p>Trials of remotely monitored security units utilising motion sensors and high definition cameras.</p> <p>We consider that satisfactory progress has been made.</p>
<p>R3(c) Re-design of condition monitoring checklists by 1 September 2011.</p>	<p>Hunter Water has reviewed their condition monitoring checklist and has made minor changes. This will be re-assessed at a future audit.</p>
<p>R3(d) Include an independent participant in dam safety audits. A representative from another agency under the purview, or with membership of, the Dam Safety Committee would be considered to be sufficiently independent. This involvement could be considered under a mutual exchange of services arrangement by 1 September 2011.</p>	<p>The auditor was satisfied that the dam safety audit was conducted with an independent inspector.</p> <p>Matter has now been resolved.</p>
<p>R3(e) Development of asset management plans for dams by 2012 audit.</p>	<p>Work on the asset management plan for dams is continuing. Satisfactory progress has been made.</p>





## Appendices



## A Auditors Audit report





**t-cAM Consulting**

in association with



and



## **Final Report**

# **Hunter Water Corporation Operational Audit 2010/11**

prepared for the

**Independent Pricing & Regulatory Tribunal**

**November 2011**





# Final Report

## Hunter Water Corporation Operational Audit 2010/11

prepared for the  
Independent Pricing & Regulatory Tribunal

November 2011

Rev No.	Date	Title	QA checked by	Authorised by
1	14 Oct 2011	First Draft		
2	18 Oct 2011	First Draft	DD, AD, CB	TC
3	4 Nov 2011	Second Draft	DD, AD, CB	TC
4	14 Nov 2011	Third Draft	DD, AD, CB	TC
5	28 Nov 2011	Final Report	DD, AD, CB	TC

t-cAM Consulting, in association with Water Futures Pty Ltd and iConneXX Pty Ltd, has prepared this report in response to specific instructions from its client, the Independent Pricing and Regulatory Tribunal of NSW. The report is intended for the sole and specific uses established in those instructions. Any other person who uses any information contained in this report does so at their own risk.

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# Executive Summary

## Introduction

t-cAM Consulting, in association with Water Futures Pty Ltd and iConneXX Pty Ltd (t-cAM team), conducted a detailed audit of Hunter Water's compliance against nominated clauses of its Operating Licence for the 2010/11 year ending 30 June 2011 on behalf of the Independent Pricing and Regulatory Tribunal of NSW (IPART).

IPART provided instructions on the nominated sections of Hunter Water's licence for audit (complete listing of the audit scope is in Appendix 13 – Audit Scope). IPART selected the clauses to be audited in 2011 using its risk based audit scope methodology (details of the risk-based methodology are in Audit Scope section of Chapter 1 – Introduction). IPART also instructed that a number of Ministerial Requests arising from the 2009/10 operational audit should be audited.

A Glossary and Dictionary of terms used in this report is provided in Appendix 1.

## Overall Performance

Hunter Water has managed its resources in 2010/11 to achieve predominantly **Full Compliance** with the Operating Licence, although some clauses were assigned as **High compliance**, as discussed below.

Hunter Water's approach to the audit was professional and the Corporation's performance was a marked improvement on that of 2009/10. Hunter Water clearly went to great lengths to improve their Licence compliance. These efforts were then reinforced by attending to details when presenting information to support compliance and conducting audit interviews in a very professional manner. The result was an audit process that was streamlined and effective.

## Response to issues from the 2009/10 audit

The 2009/10 audit report included extensive over-arching recommendations in the areas of continuous improvement, quality assurance, knowledge management and asset management processes (Recommendations 3.4, 4.1, 4.2, 7.6, 9.4, 7.4 and 7.5 from t-cAM Consulting audit report for 2009/10). Hunter Water chose to manage these recommendations with an integrated whole-of-business response.

The amount of work involved is considerable and Hunter Water has therefore embarked on a 5-year program to address these matters. During 2010/11 urgent matters have been addressed and other, more complex matters, have been carefully scoped and their implementation is underway. Details of our findings on Hunter Water's response to these, and the other Licence part specific recommendations from the 2009/10 audit, are presented in Appendix 2.

Following discussions with IPART and Hunter Water, the auditor considered that as the five year program was under way, compliance with the relevant 2009/10 recommendations would be evaluated on (a) appropriate progress to date, (b) project planning for the subsequent years of the implementation program. Further, the 2010/11 audit would be carried out within the context of, or while being cognisant of, the overall program being undertaken.

## Key Findings and Recommendations by Licence Part

The Key Findings and Key Recommendations, against each Licence part are set out in the following paragraphs. A number of Secondary Recommendations have been developed. These do not relate directly to compliance, rather they constitute opportunities for improvements and are discussed in the body of this report.

### Water Quality - Part 3

Under the risk-based audit scope, all clauses in this part of the Licence were subject to audit. Hunter Water achieved **Full to High Compliance** in meeting its Licence requirements for the quality of water supplied to its customers. The drinking water quality supplied is generally of an excellent standard and complies with the requirements of the Australian Drinking Water Guidelines (ADWG) and the requirements of NSW Health.

**High compliance** was assigned to address the following shortcomings:

- The need to introduce automated rapid response processes in water treatment plants (clause 3.2.1 and field study). This has been addressed in Recommendation R 3.1.
- Inadequately specified criteria relating to the integrity of drinking water storages to protect against potential ingress of vermin and untreated roof runoff (clause 3.2.1 and field study), addressed in Recommendation R 3.2.
- Inadequately specified preventive measures and target criteria for debris removal and disinfection during mains rehabilitation or replacement processes (clauses 3.2.1, clause 4.8.1 (a) and field study), addressed in Recommendation R 3.3.
- The absence of an agreed timeframe for implementing the core of the AGWR Framework for existing recycled water schemes (clauses 3.6.3 and 3.7.1), addressed in Recommendation R 2.4 and R 2.5.
- The absence of agreed notification criteria and associated protocols for existing recycled water schemes and the absence of an agreed timeframe by when such criteria and protocols would be in place (clauses 3.6.3 and 3.7.1), addressed in Recommendation R 2.4 and R 2.5.

### ***Water Quality Key Recommendations***

We recommend that Hunter Water

- R 3.1            Implement automated rapid response processes for all plants to prevent water being supplied to consumers if not treated to within critical limit specifications as recommended in the ADWG 2011.
- R 3.2            Review and address, where necessary, the criteria used to define adequate integrity of storage tanks and reservoirs to ensure that there is no entry of vermin and no unacceptable water ingress into these tanks. Validate inspection regimes and amend maintenance procedures to inspect and maintain tanks in the future.
- R 3.3            Develop more robust practices for rehabilitation and renewals of water mains by:
  - 1     Undertaking a benchmarking exercise involving discussions with other water agencies to develop explicit preventive measures and target criteria for the preventive measures that remove debris and ingress from depressurised water mains during mains rehabilitation or replacement processes.
  - 2     Amend work procedures to meet the resulting criteria and implement the preventive measures.
- R 3.4            For existing recycled water schemes develop an agreed timeframe with NSW Health for the implementation of the core of the AGWR Framework, including validated critical limits and associated monitoring and response procedures.
- R 3.5            Develop an agreed timeframe with NSW Health for the development of notification criteria and associated protocols for existing recycled water schemes.

### **Infrastructure Performance - Part 4**

Under the risk-based audit scope, all clauses in this part of the Licence were considered in the audit except those related to the asset management obligation, clauses 4.9 and 4.10. Hunter Water achieved **Full to High Compliance** in meeting its Licence requirements for the audited infrastructure performance requirements for delivering water and sewage services to its customers. Performance is well within the level required to meet the System Performance Standards for water pressure, water continuity and sewage overflows.

High Compliance was assessed for Licence requirement 4.8 relating to cleaning, flushing and disinfecting mains during rehabilitation or renewal work. This is related to the matter described in the water quality discussion above and addressed through R 3.3.



### ***Infrastructure Performance Key Recommendations***

There are no key recommendations for this section.

### **Customer and Consumer Rights - Part 5**

In the Customer and Consumer Rights section of the licence, only clauses dealing with customer service indicators were considered in the risk-based audit scope. Hunter Water achieved **Full Compliance** in meeting these Licence requirements.

### ***Customer and Consumer Rights Key Recommendations***

There are no key recommendations for this section.

### **Complaints and Dispute Handling - Part 6**

The risk-based audit scope included all clauses in this part of the licence. Hunter Water achieved **Full Compliance** in meeting these Licence requirements.

### ***Customer and Consumer Rights Key Recommendations***

There are no key recommendations for this section.

### **Environment – Indicators and Management - Part 7**

The risk-based audit scope included most of the substantive clauses in this part of the licence. Hunter Water achieved **Full Compliance** in meeting these Licence requirements.

### ***Environment – Indicators and Management Key Recommendations***

There are no key recommendations for this section.

### **Managing Supply and Demand - Part 9**

The risk-based audit scope included clauses related to the water conservation target, the development and reporting of targets and indicators for the demand management strategy. Hunter Water achieved **Full Compliance** in meeting these Licence requirements.

### ***Managing Supply and Demand Recommendations***

There are no key recommendations for this section.

### **Damage and Compensation to Persons - Part 11**

The risk-based audit scope included the one clause in this part of the licence. Hunter Water achieved **Full Compliance** in meeting these Licence requirements.

### ***Damage and compensation to persons Recommendations***

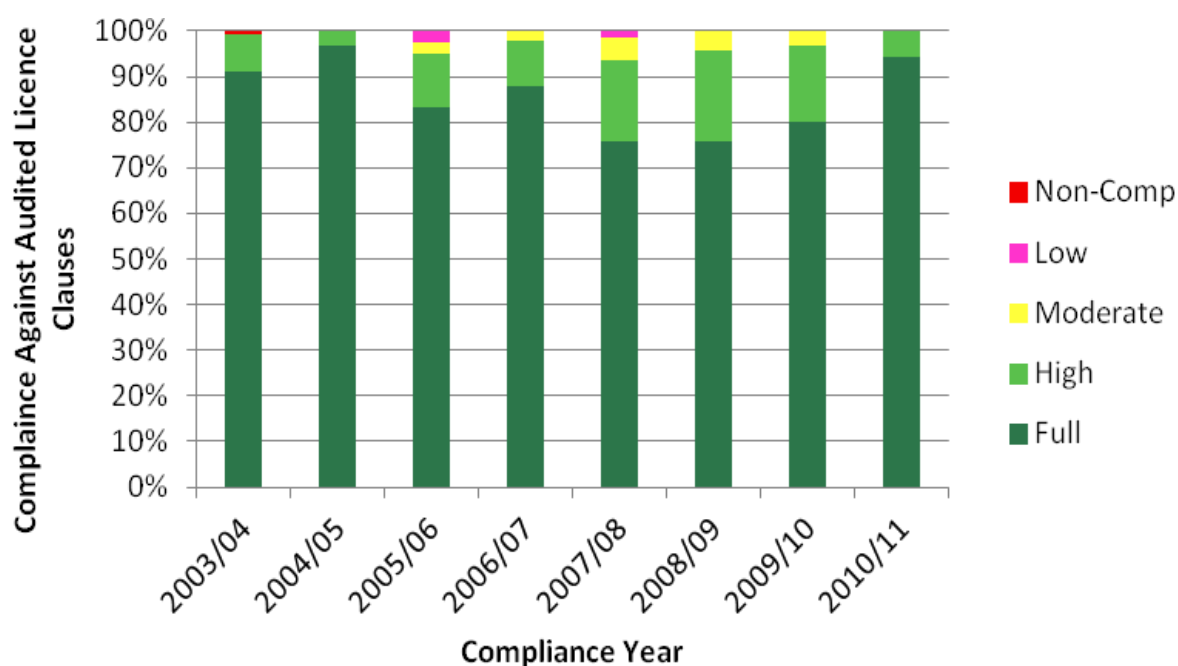
There are no key recommendations for this section.

## Comparison with Performance in Previous Years

Figure ES-1 shows Hunter Water's overarching compliance performance over the last eight years. As shown, the agency's overall performance in 2010/11 is a significant improvement on its performance in recent audits.

Under IPART's risk-based audit scope methodology, the number of clauses audited in a given year may be different to the number of clauses audited in another year. For years when relatively fewer clauses were audited, the relative impact of any particular audit compliance grade shown as a percentage in Figure ES-1 will be higher than for years when more Licence clauses are included in the audit scope and the resulting impact of an audit grade against any particular clause is diluted. For this reason, care needs to be used in strictly comparing performance over time.

Figure ES-1 An overview of Hunter Water's Compliance History



However, Figure ES-1 does allow some general comments about Hunter Water's performance over time. The general improvement in compliance over the period from 2007/08 is quite evident. We have presented further discussion of historical performance in Appendix 11.

# 1 Introduction

## Hunter Water Corporation

Hunter Water Corporation is a State Owned Corporation established under the State Owned Corporations Act 1989 (NSW). Hunter Water provides water and wastewater services to over half a million people in the lower Hunter region of New South Wales. Its area of operations is shown schematically in Figure 1-1; it covers 5,366km<sup>2</sup> encompassing the local government areas of Cessnock, Lake Macquarie, Maitland, Newcastle, Port Stephens, small parts of Singleton and, since 1 July 2008, the Shire of Dungog.

There are approximately 225,000 properties connected to the water network and over 213,000 to the wastewater network. The total written down value of the assets Hunter Water utilises to deliver services to its customers is approximately \$2.8 billion.

Hunter Water also supplies bulk water to small parts of the Great Lakes area, has the capability to supply up to 35 megalitres of water per day to the Central Coast, and provides some bulk stormwater services to Cessnock, Newcastle and Lake Macquarie.

Figure 1-1 Hunter Water's Areas of Operation



Source: Hunter Water Corporation

## Regulatory Structure

Hunter Water's water supply and wastewater service operations are variously regulated by State Government agencies as outlined below:

- The NSW Government has granted an Operating Licence to Hunter Water under the Hunter Water Act 1991.
- The Independent Pricing and Regulatory Tribunal (IPART) recommends the conditions of Hunter Water's Operating Licence to the NSW Government, conducts periodic audits of performance against the Operating Licence and establishes Hunter Water's prices for providing services.
- NSW Health regulates Water Quality in the State of New South Wales. Hunter Water has entered into a Memorandum of Understanding with NSW Health to facilitate effective interaction.
- The NSW Office of Water (NoW) regulates water use in NSW. NoW was formerly part of the former Department of Environment, Climate Change and Water (DECCW). Before that, NoW was the Department of Water and Energy (DWE).
- The Office of the Environment and Heritage (OEH) administers Environmental Protection Legislation and Regulations in NSW. OEH was formerly the Department of Environment, Climate Change and Water (DECCW).

## Operating Licence

Hunter Water's first Operating Licence was issued in 1992 for a period of five years. The current licence came in to effect on 1 July 2007 and applies until 30 June 2012. The Operating Licence specifies the minimum standards of service or performance that must be met by Hunter Water in relation to its operations. During 2010, IPART completed a review of the system performance standards and targets, other than those relating to drinking water quality. The new standards and targets were approved by the Governor on 7 July 2010 following the Minister for Water's endorsement.

A copy of the licence is available from Hunter Water's website:

<http://www.hunterwater.com.au/Resources/Documents/Legislation-and-Governance/Operating-Licence-2007-2012.pdf>

Part 12 of the Licence provides that IPART (or its appointee) may undertake an Operational Audit of Hunter Water's performance against the requirements of the Licence each year.

The performance of Hunter Water for 2010/11 was audited against the specific requirements of the Licence identified by IPART in its audit scope. Although the new standards were not approved until 7 July 2010, IPART advised that Hunter Water's operating licence performance against these new standards was to be audited for the full 2010/11 audit year.

## Audit Scope

IPART operates a risk-based approach to licence auditing. This approach matches the frequency of audit of each clause in the Licence to the level of risk (likelihood and consequence) of a

potential breach of that clause. This report details Hunter Water's compliance with those clauses nominated by IPART as requiring independent auditing in 2010/11.

The report also documents consideration of any follow up from the prior year audit findings. These comprise Ministerial Requests to Hunter Water and key issues nominated by IPART and NSW Health. For the 2010/11 audit, the key issue was consistency with the Australian Drinking Water Guidelines and Australian Guidelines for Water Recycling. Discussion of these matters has been included in relevant sections of this report.

The complete list of clauses nominated by IPART for audit in 2010/11 is shown at Appendix 13 of this report and summarised in the table below.

#### **Auditable clauses for the 2010/11 Operational Audit of Hunter Water Corporation**

<b>Licence Part</b>	<b>Description</b>	<b>Section/Clauses</b>
3	Water Quality	3.1 - 3.8
4	Infrastructure performance	4.4 – 4.8
5	Customer and Consumer Rights	5.5
6	Complaints and Dispute Handling	6.1 – 6.3
7	Environmental – Indicators and Management	7.1 – 7.3
9	Managing Supply and Demand	9.2 – 9.3
11	Liability Issues	11.2

## **Audit Methodology**

It was a requirement of this assignment that the auditor apply an appropriate audit methodology consistent with an accepted specification or Standard. t-cAM Consulting's methodology is consistent with the requirements of ISO 14011 'Guidelines for Environmental Auditing'. These guidelines provide a systematic approach to defining the requirements of the audit, planning, interpreting Licence Conditions, collecting audit evidence, objectively assessing the evidence, and reporting in a clear and accurate manner. It also ensures that the audit has been conducted in accordance with an established and recognised audit protocol. The audit methodology that we have applied is discussed further at Appendix 12.

Change to our audit process

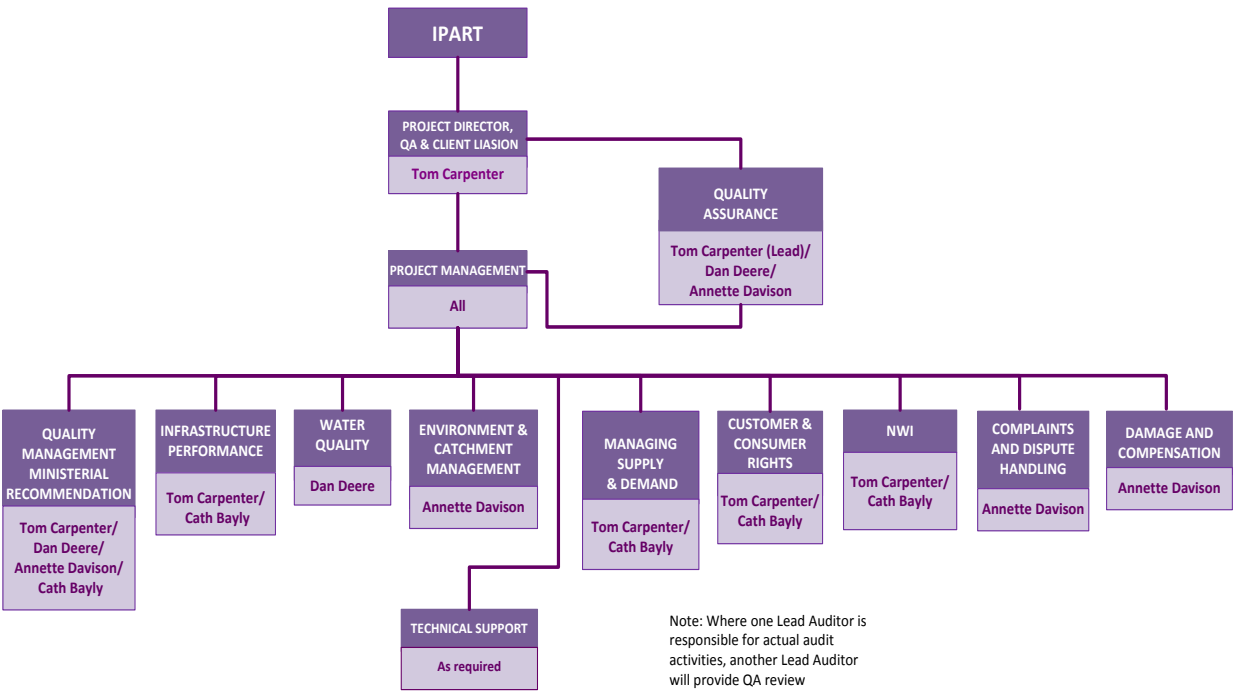
We constantly seek to improve our auditing performance. Last year our entire audit team sat in on all audit meetings, bringing multiple skill sets to our audits. Using this approach, we identified some utility-wide overarching issues in the utilities that we audited, that had not been apparent previously.

This year we have included an international auditor in our team to improve the perspective of the team and bring international experience to our audits. We have also expanded the audit program to include a site visit and interviews with Hunter Water field staff. This activity considered water quality (both drinking water and recycled water); the operation of Water Treatment Plants; renewals/replacement of water infrastructure and customer management issues.

Audit Team

The audit team consisted of IPART accredited auditors drawn from *t-cAM Consulting*, *Water Futures Pty Ltd* and *iConneXX Pty Ltd* as shown in Figure 1-2.

Figure 1-1 Structure and Responsibilities of the Audit Team



## Compliance Assessment Grades

The table below sets out the ratings used to grade compliance in this audit. These grades are consistent with compliance grades provided by IPART.

Term	Meaning
Full Compliance	All requirements of the condition have been met.
High Compliance	Most requirements of the condition have been met with some minor technical failures or breaches.
Moderate compliance	The major requirements of the condition have been met.
Low compliance	Key requirements of the condition have not been met but minor achievements regarding compliance have been demonstrated.
Non compliance	The requirements of the condition have not been met.
Insufficient information	Relevant, suitable or adequate information to make an objective determination regarding compliance was not available to the auditor.
No requirement	The requirement to comply with this condition does not occur within the audit period or there is no requirement for the utility to meet.
Statement of Compliance (S of C)	Statement of Compliance. Clauses marked "S of C" are not subject to independent audit this year.

## Structure of this Report

This chapter provides some background and information on Hunter Water, the scope of this audit and a discussion of audit methodology. Chapters 2 to 10 discuss compliance for each of the Licence parts assessed.

In the appendices, we have provided:

- A Glossary of abbreviations, terms used and definitions (Appendix 1).
- Hunter Water's responses to issues raised at the 2009/10 audit (Appendix 2).
- Detailed audit findings for each section of the Licence that we audited (Appendices 3-10).
- A comparison of overarching performance against past audits (Appendix 11).
- Our audit methodology (Appendix 12).
- The 2010/11 Audit Scope (Appendix 13).

## Licence Part Compliance Reporting

The reporting of compliance for each Licence part is structured as follows:

### (1) Within the body of this report:

Summary of Licence Part Requirements	Comment on the objective of the Licence part.
Factors Affecting Compliance	A synopsis of factors that may have impacted compliance but were not within the control or influence of utility. These may be ongoing, or one-off events that resulted in a discontinuity between historical performance and the performance reported in this audit period.
Licence Part Compliance	Summary of compliance against the Licence part.
Discussion	A discussion of conclusions drawn, key sources of evidence or other information that provides insight into the reasoning for the level of compliance assigned, especially where this relates to more than one Licence clause.
Recommendations	
– Key Recommendations	These recommendations focus on improvements related to compliance with the conditions specified in the Licence part. They may also relate to conditions which, in the auditor's view, threaten future compliance with the licence requirement.
– Secondary Recommendations	Secondary Recommendations address alternative or improved methodologies, processes or practices that could lead to gains in efficiency or effectiveness in compliance. Hunter Water is expected to give due consideration to these secondary recommendations within the context of continuous improvement management principles.



**(2) Within the Table of Detailed Audit Findings for the 2009/10 Recommendations in Appendix 2**

Rec. Ref. No.	The number of the Recommendation in the t-cAM Audit Report for 2009/10.
Recommendation from 2009/10 Audit	The wording of the clause and (where relevant) any specific aspect that was the subject of audit or 'Requirement'.
Risk	An indication of the possible consequence (in grade and nature) if the requirements of the clause were not met.
Target for Full Compliance	An indication, or target, of the performance or information required for Full Compliance.
2010/11 Audit Grade	The auditor's assessment of the level of compliance achieved by the agency.
Auditor Commentary	Auditor commentary and supporting evidence on the reported level of compliance.

**(3) Within the Tables of Detailed Audit Findings in Appendices 3, 4, 6-10**

Clause/Scope	The number of the clause in the Licence part and, where appropriate, the audit scope status: (NR – No requirement, Audit – subject to this audit, SC – Statement of Compliance).
Operating Licence Obligation	The wording of the clause and (where relevant) any specific aspect that was the subject of audit or 'Requirement'.
Risk	An indication of the possible consequence (in grade and nature) if the requirements of the clause were not met.
Target for Full Compliance	An indication, or target, of the performance or information required for Full Compliance.
2010/11 Audit Grade	The auditor's assessment of the level of compliance achieved by the agency.
Auditor Commentary	Auditor commentary and supporting evidence on the reported level of compliance.

## **2 Response to issues from the 2009/10 audit**

### **Issues from the 2009/10 audit**

The 2009/10 audit recommended that Hunter Water implement some over-arching recommendations. These represent a significant body of work that will probably involve a 5-year program to complete. In this audit, we were tasked to assess progress of this program for the first year.

The recommendations were that Hunter Water should:

- (1) Implement an appropriate continuous improvement and quality assurance management strategy and the supporting processes and practices. Strategic areas for improvement in addition to the specific items identified against each Licence Part include but are not limited to:
  - Embedding document control information into key documents.
  - Establishing document review processes and timetables to assist in maintaining information currency.
  - Investigation of improved information management processes for field staff.
  - Documenting of key knowledge, processes and practices and performance targets for the operation, maintenance and asset management of Hunter Water's assets and delivery of services in a form (or forms) appropriate for the needs of all relevant staff.
  - Expanding analysis of performance data to clearly evidence utilisation of the results in continuous improvement plans.
  - Documenting key data analysis processes, with integrated integrity and assurance checks.
- (2) Provide to IPART by 30 June 2011:
  - A strategy for adopting knowledge management, quality assurance and continuous improvement across the business in accordance with, or equivalent to, ISO 9000.
  - An implementation plan outlining the resources to be applied, objectives, responsibilities, action plans and deliverables over the next five years.
- (3) Provide IPART, by 1 September 2011, with a summary of progress against the strategy and plan, cross-referenced to Licence parts
- (4) Incident Management – consider that all non-compliance matters represent an incident and result in activation of appropriate procedures under Hunter Water's Incident Management Plan and associated procedures. Hunter Water's Incident Management Plan and associated procedures should, where necessary, be modified to handle or address such incidents by 30 June 2011.
- (5) Improve the management, operating, monitoring, actioning and reporting on asset management issues (recommendation R 7.5 from the 2009/10 audit), including:
  - Demonstrating that risk analysis and management processes are robust and holistic, integrated with business risk exposure and the work and monitoring processes and practices of staff and contractors.
  - Conducting a business wide security threat assessment and gap analysis.
  - Re-designing of condition monitoring checklists.
  - Incorporating an independent participant in dam safety audits.
  - Development of asset management plans for dams.

## **Hunter Water's response to these issues**

Given that this was the first year of implementation of a multiyear program, IPART, the auditor and Hunter Water agreed that the audit team would review the completed research and development and project planning phases of the project. Hunter Water has taken a number of actions in response to these matters. These are summarised in the following paragraphs.

### *Knowledge Management*

Corporate Services are responsible for knowledge management across the organisation. The improvement of knowledge management has been underway for the last twelve months with a new position being established with the specific focus of developing and implementing a revised Knowledge Management Strategy. The strategy will incorporate the information and records management program to be developed for the organisation as a whole.

### *Quality Management*

A project has been undertaken to gauge the health of the organisation through the lens of formal quality management systems and to scope the needs for an integrated Quality System. This involved the engagement of external expertise, with considerable experience and expertise in both quality systems and the water industry, to undertake investigations and provide an independent view.

A range of interviews were held with key stakeholders to understand the business requirements for the project. Operating Licence obligations have also been taken into consideration. Both of these approaches have provided a general health check for quality systems and auditability in the organisation.

### *System Integration*

A five year planning process has been developed with key areas being addressed first. Hunter Water has liaised with Sydney Water and other utilities to discuss various processes and to identify the most appropriate solutions for its context.

A key objective of the project is to ensure ease of use and interaction of the systems across the various functions of the organisation. Hunter Water is keen to avoid adding 'another layer' of complexity and aims to implement an outcome that will add value to staff rather than act as a barrier. Hunter Water intends to implement a change management process and undertake engagement with staff to identify the best options for work flow, thereby ensuring buy in to the process. This approach will help to improve staff acceptance of the reasoning behind the project and prospects for its success. Management recognises that training is also a critical component of success.

A systems based approach relating to the operating licence is being worked through with IPART. Hunter Water is considering a cost/benefit analysis to licence matters. A key requirement is to ensure Hunter Water embeds practicality as a criterion for all improvements and that adopted solutions add value to the business and improve the useability of systems.

Hunter Water is seeking acknowledgement of this project from IPART so that the costs associated with the implementation of this entire project can be properly considered in the pricing determination.

## **Discussion**

We understand that the overarching recommendations from the 2009/10 audit report represented a major undertaking for Hunter Water - a task that would take a number of years to complete.

Over the 2010/11 year, Hunter Water has set out a solid grounding for this project. The concepts that have been considered in scoping out future work and the immediate projects that have been completed or are underway indicate that Hunter Water has fully embraced the intent behind these recommendations.

Supporting commentary on the individual issues is outlined in Appendix 2.

## **Recommendations**

### **Key Recommendations**

There are no key recommendations for this section.

### **Secondary Recommendations**

There are no secondary recommendations for this section.

## 3 Water Quality – Part 3

### Summary of Licence Part Requirements

Part 3 of the Operating Licence provides a comprehensive quality framework within which Hunter Water is required to provide its customers and consumers with drinking water and recycled water of an adequate quality that is safe to use and fit for purpose. The risk-based audit program called for a detailed audit of almost all substantive clauses in this part.

At IPART's request, we conducted an in depth examination of selected aspects of the ADWG and AGWR for selected sites. The objective of the in depth audits was to field test the practical implementation of Hunter Water's NSW Health-endorsed interpretation of the ADWG and AGWR.

### Factors Affecting Compliance

There were no known external issues that may have substantially impacted on Hunter Water's performance with respect to this Licence part.

### Water Quality – Compliance

Overall, we assessed Hunter Water to have demonstrated **Full to High Compliance** with the requirements of this part of the Licence. The areas of High Compliance relate to:

- the need to introduce automated rapid response processes in water treatment plants (clause 3.2.1 and site visit). This has been addressed in Recommendation R 3.1.
- inadequately specified criteria relating to the integrity of drinking water storages to protect against potential ingress of vermin and untreated roof runoff (clause 3.2.1 and site visit). This has been addressed in Recommendation R 3.2.
- inadequately specified preventive measures and target criteria for debris removal and disinfection during mains rehabilitation or replacement processes (clause 3.2.1 and site visit). This has been addressed in Recommendation R 3.3.
- the absence of an agreed timeframe for implementing the core of the AGWR Framework for existing recycled water schemes (clause 3.6.3 and 3.7.1). This has been addressed in Recommendation R 2.4 and R 3.5.
- the absence of agreed notification criteria and associated protocols for existing recycled water schemes and the absence of an agreed timeframe by when such criteria and protocols would be in place (clause 3.6.3 and 3.7.1). This has been addressed in Recommendation R 3.4 and R 3.5.

Compliance and supporting commentary for specific Clauses in this Licence part are shown in Appendix 3.

### Discussion

In most areas that we audited, we found that Hunter Water's water quality practice was meeting the criteria set out in the NSW Health-endorsed documents. We consider that Hunter Water is to be commended for its drinking water and recycled water quality management. However, we have some concerns about the following matters.

## **Monitoring at Water Treatment Plants**

The reliable operation of filters at Water Treatment Plants is a key element of water quality management. It is usual practice that filter performance is continuously monitored by the computer-controlled SCADA system. Performance that is measured as outside pre-determined specifications is detected and initiates a sequence of automated response processes. These arrangements permit 24-hour operation including periods when the plant is not staffed.

During our site visit, we noted that plants have continuous (24 hr/day) monitoring of filter operation. However, in one instance we observed that when critical levels are found, the alarms do not cause automatic shut-down. Additionally, since the plant was not staffed on a 24 hours/day basis, the alarms only alerted plant staff and did not register at the Call Centre (used by Hunter Water as the control centre for Treatment Plant operations). This means that if an out-of-specification condition occurred when the plant was not staffed, no response would be implemented for up to 16 hours. Our recommendation is that the existing alarms be better configured to match the requirements of the plants in which they operate and automated rapid response processes be in place for all plants to prevent water being supplied to consumers if not treated to within critical limit specifications as recommended in the ADWG 2011.

## **Integrity of water storages**

We examined service reservoirs and storages. We found that one reservoir was lacking some mechanisms, present elsewhere, to help control the entry of birds and while the apertures appeared to be very small, there were no clear criteria against which to assess the acceptability of the situation. When we examined the inspection and test sheet, we found it to be quite brief to the extent that monitoring of preventive measures could easily be missed. Our recommendation is that Hunter Water should develop better defined target criteria for preventive measures associated with tank integrity and have test sheets that ensure that operators are alerted when corrective actions are required.

## **Water quality maintenance during water mains rehabilitation/renewals**

During our site visit, we were concerned that reliance was placed on the professional judgement and experience of the operators to maintain water quality during the rehabilitation and renewal of water mains. Target criteria and procedures for preventive measures to ensure that pipes are laid in a clean condition (such as capping) and the finished work is cleaned, flushed and disinfected could be better defined and possibly improved.

## **Compliance with the core of the Australian Guidelines for Water Recycling Framework**

The excellent approach that is being adopted to implementing the AGWR Framework, and that is being rolled out across the recycled water schemes, is being carried out in a diligent and appropriate manner. However, at the time of audit, the approach hasn't been fully implemented for all schemes and firm timeframes are not in place for finalising the roll out. It is acknowledged that implementation of a risk-based framework, such as the AGWR Framework, is always a "work in progress". However, the core of the AGWR Framework would need to be implemented at the operational level in order to reach an acceptable level of compliance with this licence requirement. These core elements centre around having completed a comprehensive risk assessment and then implemented operational monitoring of critical control points against validated, agreed, critical limit operating criteria. Therefore, it is recommended that a timeframe be agreed with NSW Health by when the core of the AGWR Framework will be implemented for all existing schemes.

## **Incident notification triggers and protocols for recycled water schemes**

Building on the above point about the Framework, the core elements would include having agreed incident triggers and associated procedures. Therefore, it is recommended that a timeframe be agreed with NSW Health by when the incident triggers and associated procedures would be developed.

## **Recommendations**

### **Key Recommendations**

We recommend that Hunter Water:

- R 3.1 Implement automated rapid response processes for all plants to prevent water being supplied to consumers if not treated to within critical limit specifications as recommended in the ADWG 2011.
- R 3.2 Review and address, where necessary, the criteria used to define adequate integrity of storage tanks and reservoirs to ensure that there is no entry of vermin and no unacceptable water ingress into these tanks. Validate inspection regimes and amend maintenance procedures to inspect and maintain tanks in the future.
- R 3.3 Develop more robust practices for rehabilitation and renewals of water mains by:
  - a) Undertaking a benchmarking exercise involving discussions with other water agencies to develop explicit preventive measures and target criteria for the preventive measures that remove debris and ingress from depressurised water mains during mains rehabilitation or replacement processes.
  - b) Amend work procedures to meet the resulting criteria and implement the preventive measures.
- R 3.4 For existing recycled water schemes develop an agreed timeframe with NSW Health for the implementation of the core of the AGWR Framework, including validated critical limits and associated monitoring and response procedures.
- R 3.5 Develop an agreed timeframe with NSW Health for the development of notification criteria and associated protocols for existing recycled water schemes.

### **Secondary Recommendations**

We recommend that Hunter Water consider:

- SR 3.1 As a priority, ensure that the most current incident response contingency plans are readily recoverable by all staff from the intranet using the updated KMS rather than isolated on individual computers, subject to the need to maintain access to the plans if there are communication failures.
- SR 3.2 Review the consequences of having undefined notification limits to NSW Health for disinfection failure and inconsistency with ADWG 2011 for filter operation.
- SR 3.3 Amend the water quality incident response protocol to include a general catch-all for any other suspected contamination event.
- SR 3.4 Formalise the inclusion of at least one water quality practice incident per period.

## 4 Infrastructure Performance – Part 4

### Summary of Licence Part Requirements

Hunter Water has extensive assets and the requirements of Part 4 of the licence are designed to ensure that these assets are adequately provided, constructed, operated, managed and maintained. This part also sets out service standards for the operation of these assets and a requirement to collect and report indicators of infrastructure performance. The risk-based audit program called for a detailed audit of all clauses except those relating to reporting on the asset management framework.

### Factors Affecting Compliance

The Hunter area experienced some very hot (more than 40°C) weather during January /February. This resulted in very high demand on system resources. Otherwise, climatic conditions, especially rainfall, have been relatively favourable and stable during 2010/11. This has meant that with the exception of the impact of the high temperatures on their ability to maintain water pressure, climate had a neutral impact on Hunter Water's ability to meet performance requirements.

Hunter Water has improved its analysis methodology for determining the number of properties affected by pressure problems, this methodology has also been used to re-calculate historical performance, so historical values reported in this audit report differ from those in previous reports.

### Infrastructure Performance – Compliance

Overall the Corporation is achieving good progress and has a clear idea of where it is heading with asset management and infrastructure performance. The results for compliance with System Performance Standards were:

Standard	Target	Result
Pressure less than 20 metres	4,800 properties	2,334 properties
Unplanned Water Interruption exceeding 5 hours	10,000 properties	5,845 properties
3 or more unplanned interruptions exceeding 1 hours	5,000 properties	2,200 properties
Uncontrolled dry weather sewage overflow	5,000 properties	3,723 properties
3 or more uncontrolled dry weather sewage overflow	45 properties	26 properties

Accordingly, Hunter Water achieved Full compliance with meeting its licence standard obligations. Overall, we assessed Hunter Water's performance as demonstrating **Full to High Compliance** with the full set of audited requirements of this section of the Licence in 2010/11.

One **High Compliance** was awarded against Licence requirement 4.8. This related to the work practices that did not take adequate precaution to remove debris during pipe rehabilitation/renewals. This matter, and a corresponding recommendation (R 3.3), has already been discussed in the water quality section of this report.

Supporting commentary for specific clauses in part 4, Infrastructure Performance, are provided in Appendix 4.



## Discussion

Hunter Water has improved its infrastructure and asset management performance within the context of both embracing the organisation wide quality management initiative and maintaining continuous improvement in infrastructure performance management.

Some of the work that impressed us was:

- Proactive improvement projects and pilots, such as leak detection, flow monitoring, targeted wastewater main rehabilitation and innovative approaches to security.
- Revitalised information management system with robust historical data capture which allows comparison of performance against previous years utilising the new performance indicators.
- Co-operative working relationship with the main contractor.
- A focus on compliance and development of clear ideas around the reasons for performance and a way forward to maintain and improve performance.
- Development of reciprocal arrangements with other utilities to provide auditing and peer review functions therefore resulting in pragmatic approaches to any identified concerns, sharing knowledge, the ability to determine best appropriate practice and maintaining industry contacts.
- Development of an asset management framework, supported by senior management.

Further opportunities for improvement were identified during this audit.

## Water mains rehabilitation and renewals

In the Water Quality section we mentioned the need for better practice for water mains rehabilitation and renewal. From an asset management perspective, there is a need to ensure that service levels are defined and maintained during maintenance work.

## System Performance Standards

In regard to system performance standards (SPS), we compared Hunter Water's 2010/11 performance against the required target, that recorded for the 2009/10 year, and the trend over the last 9 years.

The Pressure SPS decreased from the 3062 properties of 2009/10 (64% of the target) to 2,334 properties (49% of the target), well below the target of 4,800 properties.

A similar situation exists with the Unplanned Interruptions SPS for properties affected by unplanned water interruptions greater than 5 hrs continuous duration. Performance against this measure increased from 1,929 properties (19% of the target) in 2009/10 to 5,845 properties (58% of the target) this year. Despite the increase, these results are well below the target of 10,000 properties and the performance trendline for the last nine years is still positive. Hunter Water explained that it experienced five significant continuity incidents this year after a run of several years without any such events. Hunter Water has a dispersed network which joins areas of substantial customer concentration with long water mains. This makes Hunter Water particularly vulnerable against this SPS. Hunter Water is, therefore, cognisant of the need to constantly review efficient and effective options for minimising the likelihood and/or consequence of these events occurring. Hunter Water seems to have managed the events appropriately and addressed the 'lessons learned'.

The increase in unplanned interruptions was mirrored in Hunter Water's performance against the new multiple event unplanned interruption standard, and for the same reason. Performance recorded against

this measure showed a large increase from 1,250 properties affected by 3 or more unplanned water interruptions greater than 1hr in 2009/10 (25% of target) to 2,200 (44% of target). The positive performance trend of the last nine years is evident.

Hunter Water now has two sewer overflow SPS; firstly, that no more than 5,000 properties should experience an uncontrolled sewer overflow in dry weather and secondly that no more than 45 properties should experience three or more uncontrolled sewer overflows in dry weather per year. The previous SPS referred to the number of sewer overflow events, rather than the number of properties affected. Hunter Water's internal data suggests that performance against the two sewer overflow SPSs this year is similar to last year:

- 3,723 properties experienced a sewer overflow in 2010/11 (74% of target) compared with 3555 in 2009/10 (71% of target).
- 26 properties experienced 3 or more sewer overflows (57%) in 2010/11, while a significant increase on the 9 properties in both 2008/09 and 2009/10, it is approximately similar to previous results over the previous six years.

## **System Performance Indicators**

The current licence requires that Hunter Water maintain record systems that are sufficient to enable it to measure accurately its performance against the Service Quality and System Performance Indicators, Indicators used in the National Performance Report and any other indicators determined by IPART. We investigated the systems and procedures used by Hunter Water to capture data and direct work flow to record the asset management data from which the Indicators are derived. We are satisfied that all of the Operating Licence performance measures audited were well compiled with robust evidence to track from data origination to final reporting.

We are not aware that there has been any inconsistency between any of the indicators in clause 4.7.2 or their application. Clause 4.7.3 of the Licence requires that IPART will determine which indicators are to apply. We have observed nothing that suggests that any determination by IPART has not been accepted by Hunter Water.

We have set out historical trends for the System Performance Standards and System Performance Indicators in Appendix 5.

## **Ministerial Requests**

The Minister made a number of requests for action arising from the 2009/10 Audit Report. Hunter Water's responses that relate to infrastructure performance have been addressed as an integrated package. This is discussed in Appendix 2.

## Recommendations

### Key Recommendations

There are no key recommendations for this section.

### Secondary Recommendations

We recommended that Hunter Water consider:

- SR 4.1            Update reservoir condition checklists to include an item for “roof integrity” and “bird proofing” to ensure that assets are more extensively and consciously inspected.
- SR 4.2            Ensure that the Dam Management Processes are based on more than just the Dam Act being the main driver.
- SR 4.3            Ensure that the corporate system storing Standard Operating Procedures and other procedures is sufficiently secure to prevent staff implementing standalone material to amend the official procedures, thereby endangering version integrity.

## 5 Customer and Consumer Rights – Part 5

### Summary of Licence Part Requirements

Part 5 of the Licence requires Hunter Water to consult with customers; satisfy the rights of both consumers and customers; and measure and report against Customer Service Indicators. The scope of the risk-based audit of this part of the Licence was limited to investigation of the clauses associated with the customer service indicators.

### Factors Affecting Compliance

We consider that no external factors substantially impacted on Hunter Water's ability to comply with the requirements of this Licence part.

### Customer and Consumer Rights – Compliance

We assessed that Hunter Water exhibited **Full Compliance** for both audited clauses of this Licence part for 2010/11. Compliance and supporting commentary for specific clauses of this part may be found in Appendix 6.

### Discussion

Generally, Hunter Water is managing the area of customer and consumer rights effectively. It has appointed a hardship manager to help manage the ongoing increase in numbers of customers in hardship and to manage credit issues. In managing this area of its activities, Hunter Water has a strong management focus on customer issues, has adapted to changes in customer behaviour and circumstances and has developed a proactive process to resolve payment and hardship issues.

### Recommendations

#### Key Recommendations

There are no key recommendations for this section

#### Secondary Recommendations

We recommend that Hunter Water:

- |        |  |
|--------|--|
| SR 5.1 | Review the linkages between customer hardship and water efficiency, Sydney Water is also working in this area and may share knowledge and experience to more efficiently implement any programs. |
|--------|--|

## 6 Complaints and Dispute Handling – Part 6

### Summary of Licence Part Requirements

Part 6 of the Licence requires Hunter Water to establish and maintain robust complaint handling procedures and effective dispute resolution processes. The risk-based audit scope included all clauses in this part of the Licence.

### Factors Affecting Compliance

There are no substantive factors that have impacted on Hunter Water's performance against part 6 of the Licence in 2010/11.

### Complaints and Dispute Handling – Compliance

We assessed Hunter Water's performance against this part of the Licence as **Full Compliance** for 2010/11. Compliance and supporting commentary for the individual clauses in this part are outlined in Appendix 7.

### Discussion

At the end of June 2011, Hunter Water moved to a new Call Centre at Maitland for managing customer requests. Evidence so far suggests that this Call Centre has been well-received by customers. This will need to be reviewed for consistency in service in future audits.

In managing customer and consumer rights, we found that Hunter Water has:

- A strong management focus on customer issues.
- Good systems for capturing information and following up on issues.
- Very good training and staff awareness.

That said, we believe that there are some minor points that may warrant consideration.

### Recommendations

#### Key Recommendations

There are no key recommendations for this section.

## **Secondary Recommendations**

We recommend that Hunter Water:

- SR 6.1 To improve communication within the synthesised information, Table 2.3 (Customer Service Report 2010-2011) could benefit from the inclusion of an additional column after 'Number of Complaints and Detail', before 'Comments', with an explanation of 'Type' of water quality complaint i.e. Health and/or Aesthetic.
- SR 6.2 To improve communication within the synthesised information, Table 2.10 (Customer Service Report 2010-2011) could benefit from the inclusion of additional columns after 'Number of Complaints or Properties Affected - issue', before 'Comments', with 'Number' and 'Type (wet/dry)'.

## **7 Environment – Indicators and Management – Part 7**

### **Summary of Licence Part Requirements**

In the exercise of its functions, Hunter Water has a considerable impact on the environment. It also contributes to the management of its water supply catchments. Part 7 of the Licence requires the publication of Environmental Indicators; the development and maintenance of an Environment Plan; and the publication of a Catchment Report. The risk-based audit scope included most of the substantive clauses of this part.

### **Factors Affecting Compliance**

There are no substantive factors that have impacted on Hunter Water's performance against Part 7 of the Licence in 2010/11.

### **Environment – Indicators and Management – Compliance**

We assessed all clauses requiring audit under this part as **Full Compliance** for 2010/11. Compliance and supporting commentary for individual Clauses in Part 7, Environment – Indicators and Management, are outlined in Appendix 8.

### **Discussion**

While some very minor issues were noted, Hunter Water appears to have a very strong performance in the area of environmental and catchment management. There have been some major improvements. In 2010-11, Hunter Water managed to reach its target of 100% compliance for the percentage of sewage treated that was compliant.

We consider the Greenprint for Sustainable Urban Water Management to be an important innovation, as it helps to set out the overarching environmental framework for the organisation. As well as helping to give effect to the licence conditions, the Greenprint provides a basis for the implementation of environmental measures across the business.

With the development and implementation of its Source Water Improvement Support System (SWISS) approach to catchment management, Hunter Water is at the cutting edge of drinking water catchment understanding and risk-based prioritisation of catchment controls.

Overall the Environment Management Plan (EMP) is a well-articulated response to the Licence requirement. We note that the EMP provides an overarching context for corporate to coalface implementation of actions to achieve goals. It is clear that Hunter Water (from corporate to coalface) takes its environmental responsibilities seriously. As an example, even though the EMP is not due for review until 2013, a review of the EMP has already commenced because of the increasing importance of environmental issues such as greenhouse gases.

We also find it pleasing to witness strong support from the Corporation's Board for drinking water catchment understanding and management.

## Recommendations

### Key Recommendations

There are no key recommendations for this section

### Secondary Recommendations

We recommend that Hunter Water:

- SR 7.1 Place a note at the front of the Performance Indicator Report (or where Hunter Water considers appropriate), saying that unless otherwise stated in table legends, data in tables represent an historical time series. In this report, 10 years' data was not available for all indicators and it was not always clear whether this was due to:
- only a portion of data is presented in the tables for clarity
  - the truncation of data pertains to incomplete datasets
  - indicators have changed for the reporting period and, therefore, it is not possible to compare the indicator for this reporting period with the previous dataset.



## 8 Managing Supply and Demand – Part 9

### Summary of Licence Part Requirements

Part 9 of the Licence requires Hunter Water to meet a water conservation target, develop and report on a demand management strategy, and report demand and supply indicators. The risk-based audit scope includes clauses related to the water conservation target and the development and reporting of targets and indicators for the demand management strategy.

### Factors Affecting Compliance

Although Hunter Water encourages water conservation, this is in part driven by consumer demand. We consider that there are no other substantive factors that have impacted on Hunter Water's performance against Part 9 of the Licence in 2010/11.

### Managing Supply and Demand – Compliance

We assessed **Full Compliance** for Hunter Water's performance against the audited clauses of part 9 of the Licence in 2010/11. Compliance and supporting commentary for the individual clauses in this part are outlined in Appendix 9.

### Discussion

Following the Government's decision not to proceed with Tillegra Dam, Hunter Water has shown an openness to innovative ideas and concepts in managing future supply and demand.

The Government intends that the Metropolitan Water Directorate, supported by NOW and Hunter Water, formulate a Lower Hunter Water Plan (LHWP) as a long term strategy to address water supply and demand in the Hunter region. While the LHWP is being developed, Hunter Water has been working on pragmatic approaches to drought management and is formulating an Interim Drought Management Plan. This will consider what alternatives are available and will develop triggers to indicate when additional infrastructure would be required to meet any increase in customer demand in excess of current supply capacity.

### Recommendations

#### Key Recommendations

There are no key recommendations for this section.

#### Secondary Recommendations

We suggest that Hunter Water:

- SR 9.1 prepare a strategy report identifying the implication of no supply augmentation on the likely changes to restriction trigger points
- SR 9.2 The report to IPART on performance against the IWRP should include a succinct summary of achievements against targets

## 9 Damage and Compensation to Persons – Part 11

### Summary of Licence Part Requirements

Part 11 of the Licence requires Hunter Water to minimise damage when exercising its functions and to compensate persons who suffer such damage. The risk-based audit scope for 2010/11 included the one clause in this part.

### Factors Affecting Compliance

There have been no external factors that have significantly impacted on Hunter Water's ability to meet its obligations under this part of the Licence.

### Damage and Compensation to Persons – Compliance

We assessed **Full Compliance** for Hunter Water's performance against the clause of section 11 of the Licence in 2010/11. Compliance and supporting commentary for the individual clauses in this part are outlined in Appendix 10.

### Discussion

The requirements of this clause mirror section 22 of the *Hunter Water Act 1991*.

In managing the liability area of the licence, Hunter Water exhibits:

- obvious staff diligence
- good staff understanding and management of this area
- good understanding of the liability implications of contractors for Hunter Water.

### Recommendations

#### Key Recommendations

There are no key recommendations for this section.

#### Secondary Recommendations

There are no secondary recommendations for this section.

# Appendix 1 Glossary and Dictionary

## Abbreviations/Acronyms

Abbreviations/Acronym	Description
Act	<i>Hunter Water Act 1991 (NSW).</i>
ADWG (2004)	Australian Drinking Water Guidelines (2004), National Health and Medical Research Council and Natural Resources Management Ministerial Council
AGWR (2006)	Australian Guidelines for Water Recycling (2006), The Environment Protection and Heritage Council, the Natural Resources Management Ministerial Council and the National Health and Medical Research Council.
AOMS	Assets and Operations Maintenance System
AS	Australian Standard
AWQC	Australian Water Quality Centre
CCTV	Closed Circuit Television
CDSS	Catchment Decision Support System
CIS	Customer Information System
CMS	Complaints Management System
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DA	Development Application
DAL	Department of Analytical Laboratories (Lidcombe)
DEC	Department of Environment and Conservation – now DECCW
DECC	Department of Environment and Climate Change– now DECCW
DECCW	Department of Environment, Climate Change and Water
DEUS	Department of Energy, Utilities and Sustainability – covered part of the old DLWC
DLWC	Former Department of Land and Water Conservation (NSW) then changed to DWE
DIPNR	Former Department of Infrastructure, Planning and Natural

Abbreviations/Acronym	Description
	Resources (NSW) – now covered by Department of Planning, DECCW (NSW Office of Water) and Industry and Investment NSW
DWE	Department of Water and Energy – now covered by Division of Minerals and Energy within Industry & NSW Office of Water, in the Department of Environment, Climate Change and Water
EMP	Environmental Management Plan
EPA	Environment Protection Authority (NSW) – Now part of the DECCW
ESD	Ecologically Sustainable Development
EWON	Energy and Water Ombudsman NSW
GEMP	Government Energy Management Plan
GIS	Geographical Information Systems
GL	Gigalitre
Hunter Water, HWC	Hunter Water Corporation
HPC	Heterotrophic plate count bacteria
HWC	Hunter Water Corporation
HWA	Hunter Water Australia (consulting arm of HWC)
IPART	Independent Pricing and Regulatory Tribunal (NSW)
ISO	International Standards Organisation
IT	Information Technology
IWRP	Integrated Water Resources Plan
kL	Kilolitre
km	Kilometre
ML	Megalitre (1 million litres)
MOU	Memorandum of Understanding
MNF	Minimum Night Flows
M&R	Monitoring and Reporting
NATA	National Analytical Testing Authority
NoW	NSW Office of Water, within DECCW

Abbreviations/Acronym	Description
NPR	National Performance Report (published by the National Water Commission/Water Services Association of Australia)
NSW Health	NSW Department of Health
pa	Per annum
PAC	Powdered Activated Carbon
pH	A measure of the acidity of a solution in terms of activity of hydrogen
QA	Quality Assurance
RAAF	Royal Australian Air Force
RFQ	Request for Scope of Work and Quote (sent by IPART on 5 July 2011)
SCADA	Supervisory Control and Data Acquisition
SEDA	Sustainable Energy Development Authority
SLC	Strategic Liaison Committee
WML	Water Management Licence
WRAPP	Waste Reduction and Purchasing Policy
WSAA	Water Services Association <i>of Australia</i>
WTP	Water Treatment Plant

## General Terms and Definitions

Term	Meaning
the Act	<i>Hunter Water Act 1991 (NSW)</i>
Area of Operations	As specified in Section 16 of the Act and described in Schedule 1 of the Operating Licence.
Audit period	1 July 2010 to 30 June 2011.
Auditor	t-cAM Consulting, supported by Water Futures Pty Ltd and iConneXX Pty Ltd
Commencement Date of Operating Licence	1 July 2007.
End of Term Review	A review of the Operating Licence to be commenced on or about 1 January 2012.
Function	Means a power, authority or duty.
Minister	The Minister responsible for administering the provisions of the <i>Hunter Water Act 1991 (NSW)</i> .
Operating Licence	The Licence issued by IPART to Hunter Water for provision of services between 1 July 2007 and 30 June 2012.
S of C	Statement of Compliance signed by the Chief Executive and the Chairman of the Board of Hunter Water, submitted to IPART attesting that Hunter Water was compliant with the relevant clause in the licence. Clauses marked "S of C" are not subject to independent audit this year.
Water Management Licence	A Water Management Licence granted to Hunter Water by the DNR (now Office of Water) under the <i>Water Act, 1912 (NSW)</i> and the <i>Water Management Act 2000 (NSW)</i> issued on 26 December 1998, amended 1 July 2004 to expire on 25 December 2023.

## Appendix 2 Recommendations from 2009/10 audit Detailed Audit Findings

Appendix 2a Overarching Recommendations from 2009/10 audit Detailed Audit Findings					
Rec. Ref No.	Recommendation from 2009/10 Audit	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
R3.4 R4.1 R4.2 R7.6 R9.4 (Aggr-egated)	<p>Hunter Water is to</p> <p>(a) Implement an appropriate continuous improvement and quality assurance management strategy and the supporting processes and practices. Strategic areas for improvement in addition to the specific items identified against each Licence Part include but are not limited to:</p> <ul style="list-style-type: none"> <li>• Embedding document control information into key documents</li> <li>• Establishing document review processes and timetables to assist in maintaining information currency</li> <li>• Investigation of improved information management processes for field staff</li> <li>• Documenting of key knowledge, processes and practices and performance targets for the operation, maintenance and asset management of Hunter Water's assets and delivery of services in a form (or forms) appropriate for the needs of all relevant staff</li> <li>• Expanding analysis of performance data to clearly evidence utilisation of the results in continuous improvement plans</li> </ul>	<p>Very High Risk</p> <p>The overarching recommendation related to a number of important management issues that spanned several licence sections.</p>	<p>Provide IPART by 30 June 2011 with:</p> <ul style="list-style-type: none"> <li>• A strategy for adopting knowledge management, quality assurance and continuous improvement across the business in accordance with, or equivalent to, ISO 9000 and its derivatives.</li> <li>• An implementation plan outlining the resources to be applied, objectives, responsibilities, action plans and deliverables over the next five years.</li> </ul> <p>Provided IPART by 1 September 2011 with a summary of progress against the strategy and plan, cross- referenced to Licence Parts, for use of IPART and the Licence auditor.</p> <p>The plan is valid, based on both its overall conception and the specific scoping of individual licence requirement needs (for example, Quality Management improvement of water quality</p>	Full	<p>Corp Services – Knowledge Management (KM) last 18 months implementing QA using knowledge management group.</p> <p>HWC put investigation of quality system as integrated system – common way of doing things.</p> <p>External assistance – QEM – work with Sydney Water for last few years. Depth helped and experience with water.</p> <p>Existing siloed development throughout org to be brought in to alignment. Then produced report to IPART</p> <p>Talked to Sydney Water identified Sydney Water needed to bring together their disparate systems.</p> <p>System based approach to operating licence – look at cost benefit analysis.</p> <p>Talked to Gold Coast Water re their integrated system.</p> <p>Ease of use and interaction is an objective. Want to avoid 'another layer' scenario.</p> <p>Will have to do interviews to determine best options for work flow.</p> <p>Recognise training as critical.</p> <p>Using new Sharepoint intranet system and Trim document management system.</p> <p>Have forced file titling in Trim. Includes search capability and requirement on staff to provide supplementary data for searching.</p> <p>Establishing cost-benefit analysis. \$5million in capital plus ongoing maintenance. Assurance from IPART re price path.</p> <p>Hunter Water Australia is ISO9001 accredited – operate HWC treatment plants, etc some relevance at interface points and will utilise where relevant. Focus within Hunter Water.</p>

Appendix 2a Overarching Recommendations from 2009/10 audit Detailed Audit Findings					
Rec. Ref No.	Recommendation from 2009/10 Audit	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
	<ul style="list-style-type: none"> <li>Documenting key data analysis processes, with integrated integrity and assurance checks.</li> </ul> <p>(b) Hunter Water is to provide to IPART by 30 June 2011:</p> <ul style="list-style-type: none"> <li>A strategy for adopting knowledge management, quality assurance and continuous improvement across the business in accordance with, or equivalent to, ISO 9000 and its derivatives.</li> <li>An implementation plan outlining the resources to be applied, objectives, responsibilities, action plans and deliverables over the next five years.</li> </ul> <p>Hunter Water is to provide IPART, by 1 September 2011, with a summary of progress against the strategy and plan, cross-referenced to Licence parts</p>		<p>may be less than asset management due to the pre-existing need to be in accordance with the Quality Management System approach required under the ADWG). This response will inform discussions at the individual licence Section level during audit of those Sections.</p> <p>The audit is concerned with the strategy and plan as currently conceived, not implementation.</p>		Will be looking at Hunter Water Corporation as overarching regardless of where input has been garnered from other places.
See R7.4 below	Incident Management – consider that all non-compliance matters represent an incident and result in activation of appropriate procedures under Hunter Water’s Incident Management Plan and associated procedures. Hunter Water’s Incident Management Plan and associated procedures should, where necessary, be modified to handle or address such incidents by 30 June 2011.	Very High Risk Incident management is a key area of risk management across the corporation.	Hunter Water has provided IPART by 30 June 2011 with an incident management plan and associated procedures that consider all non-compliance matters to represent an incident and result in activation of appropriate procedures.		Addressed at R7.4 below
See R7.5 below	Dam Asset Management		This matter is addressed by questions in section 4.8		Addressed at R7.5 below



<b>Appendix 2b Recommendations for Licence Parts from 2009/10 audit Detailed Audit Findings</b>					
<b>Rec. Ref No.</b>	<b>Recommendation from 2009/10 Audit</b>	<b>Risk</b>	<b>Target for Full Compliance</b>	<b>2010/11 Audit Grade</b>	<b>Auditor Commentary</b>
R3.1	Clause 3.3.1: Regarding information queries from the previous audit, QA/QC information has been received from ANSTO regarding the radiological parameters. However, there is still a need to change the wording in the M&R Protocol (HWC Monitoring and Reporting Protocol v1.2_July 2010.doc) under 'Analysis' section (top of page 9) as not all tests are done by NATA accredited tests, which the wording still implies.	High Risk. If water quality is not monitored, stakeholders cannot be kept abreast of the performance of Hunter Water in supplying quality water.	The Monitoring and Reporting Protocol has been updated to reflect that not all tests done are NATA accredited	<b>Full</b>	Comments at clause 3.3.1 in Appendix 3.
R3.2	Clause 3.5.1: Formalise the envelope of information around the notification criteria e.g. >X NTU for Y minutes.	High Risk. If water quality poses a potential risk to public health and an adequate response is not undertaken, there could be adverse health impacts on consumers.	Enough information is included in the notification criteria, eg, > x NTU for Y minutes	<b>Full</b>	Comments at Clause 3.5.1 in Appendix 3.
R3.3	Clause 3.7.1: Ensure that the handover point for recycled water is clearly articulated on all recycled water agreements.	High Risk. If recycled water quality does not meet relevant guidelines, there may be adverse public health or environmental consequences	The handover point for recycled water is clearly articulated in all recycled water agreements	<b>Full</b>	Comments at Clause 3.7.1 in Appendix 3.
R7.1	Implement the following improvements by 30 June 2011, with respect to the Catchment Management Plan and associated documents:	High Risk. Adequate management of	With respect to the Catchment Management Plan and associated documents,	<b>Full</b>	<b>Evidence:</b> Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Environment and Sustainability Manager, Cadet Civil Engineer, Team

Appendix 2b Recommendations for Licence Parts from 2009/10 audit Detailed Audit Findings					
Rec. Ref No.	Recommendation from 2009/10 Audit	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
	<p>(a) Seek input, feedback and discussion opportunities with other catchment authorities to benchmark their Catchment Management Plan and document this process.</p> <p>(b) Request approval and support from the Board of the Catchment Management Plan and Catchment Report (due to timing issues, evidence of Board submission and outcomes to be assessed as part of the following year's audit).</p> <p>(c) Link the Catchment Management Plan and CDSS with relevant risk assessment, corrective action, incident management and continual improvement procedures of Hunter Water</p> <p>(d) Document and implement an appropriate periodic review process.</p>	catchments is a key element of water quality management.	<p>implement the following improvements by 30 June 2011:</p> <p>(a) Seek input, feedback and discussion opportunities with other catchment authorities to benchmark the Catchment Management Plan and document this process.</p> <p>(b) Request approval and support from the Board for the Catchment Management Plan and Catchment Report.</p> <p>(c) Link the Catchment Management Plan and CDSS with relevant risk assessment, corrective action, incident management and continual improvement procedures</p> <p>(d) Document and implement an appropriate periodic review process.</p>		<p>Leader for Dams and Catchment and Water Quality Scientist.</p> <p>Hunter Water – Port Stephens Council Liaison Meeting 28 April 2011 MINUTES (R7.1 - Hunter Water PSC Liaison 280411 (2).doc)</p> <p>Presentation to CMA on Hunter Water's Catchment Management Plan February 2011 (R7.1 - CMA presentation.pdf)</p> <p>CI 7 - Catchment Management Plan Presentation.ppt</p> <p>R7.1 - FW Meeting notes SCA - Hunter Water PSAT Liaison Meeting.htm (although outside of scope as July 2011)</p> <p>Open Board Paper TRIM HW2010-1108/1/9.001 Cleaner Catchments and Better Water Quality 25/11/10 (CI 7.3 - Draft Open Board Paper - Catchment Report &amp; Catchment Management Plan - November 2010.DOC).</p> <p>Report to the Board of Directors TRIM HW2009-1627/2 'Development of the Hunter Water Source Water Improvement Support System (SWISS)' 27/01/11 CI 7.3 - Board Report &amp; Approval - 27 Jan 2011.PDF</p> <p>Presentation on SWISS Outputs (CI 7.3 - Presentation on SWISS outputs.ppt)</p> <p><b>Comments:</b></p> <p>The Catchment Management Plan recommendations are dealt with individually below as follows</p> <p>(a) Various bodies have been consulted in relation to this recommendation. For instance, the CMA, Department of Primary Industries, relevant councils, the Office of Environment and Heritage and the NSW Office of Water. Comments from these organisations will be used to help inform the Catchment Improvement Program of works for 2013-2017. Evidence of liaison was sought and minutes from the Port Stephens Council-Hunter Water liaison meeting were provided and viewed. The minutes were found to be consistent with the requirements of this sub-recommendation. Meetings with the PSC are scheduled quarterly. A presentation delivered to the CMA in February 2011 was also provided and viewed and considered to represent the requirements of this sub-recommendation.</p>

Appendix 2b Recommendations for Licence Parts from 2009/10 audit Detailed Audit Findings					
Rec. Ref No.	Recommendation from 2009/10 Audit	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>(b) Staff members have presented papers and reports to HWC's board on the importance of maintaining catchments for sustaining the provision of safe, good quality drinking water. As a result of the communications, HWC's board has approved a sum of \$388K to fund the Source Water Improvement Support System (SWISS).</p> <p>(c) It is HWC's intention that the Catchment Management Plan, the Catchment Improvement Plan and SWISS will be reviewed for each price path and therefore, provide a sound risk basis for evidence in price determination requests. Catchment rectification action funds are to be requested within the next price path submission. This approach is considered by the auditor to more than address this recommendation.</p> <p>(d) Because the plan is not currently implemented in practice, a formal review has not yet taken place. However, it is HWC's intention that a periodic review process for prioritization of actions will at least mirror the price path process or be carried out 5-yearly noting that the Catchment Management Plan and the Catchment Improvement Program are within the next price path.</p>
R7.2	Catchment Decision Support System – continue to conduct the CDSS across all Hunter Water catchments on a risk-based approach, ensuring this inputs to the risk assessment process as an ongoing activity.	High Risk. Adequate management of catchments is a key element of water quality management.	Continue to conduct the CDSS across all catchments on a risk-based approach, ensuring this inputs to the risk assessment process as an ongoing activity.	Full	<p><b>Evidence:</b> Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Environment and Sustainability Manager, Cadet Civil Engineer, Team Leader for Dams and Catchment and Water Quality Scientist. Presentation on SWISS Outputs (CI 7.3 - Presentation on SWISS outputs.ppt)</p> <p><b>Comments:</b> The auditor was presented with a succinct and targeted overview of SWISS developments to date. The contaminants of most priority that have been chosen as parameters for inputting into SWISS are pathogens (represented by <i>Cryptosporidium</i>), nitrogen, suspended solids and phosphorus – these parameters have been validated previously by the Sydney Catchment Authority and the availability of data to feed into the model. SWISS has been used to prioritise areas representing key inputs of the chosen parameters to allow for a sound risk-basis of control measure choice and location and therefore, for helping to inform the</p>

Appendix 2b Recommendations for Licence Parts from 2009/10 audit Detailed Audit Findings					
Rec. Ref No.	Recommendation from 2009/10 Audit	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>price path. The Catchment Improvement Program is now being developed as the next step forward for developing and implementing controls. It is also HWC's intention to request more funding for SWISS in the next price path submission.</p> <p>Also in this session of the interview, a request raised by NSW Health pertaining to the following issue, was discussed:</p> <p>"Catchment protection with respect to exclusion of stock from waterways and storages - progress and plan for pathway forward. Specific concern to risk of cryptosporidium contamination."</p> <p>In particular, HWC discussed health issues related to cattle access to waterways in the upper Chichester catchment. HWC noted that farming practices on properties in the catchment had been less than ideal and land that had previously been leased to the farmers from HWC was either back in HWC management, or would soon be after farm vacation. Further, as part of SWISS and a soon to be developed multi-criteria analysis tool, pathogen inputs into all of HWC's catchment waterways will be assessed and managed as part of the Catchment Improvement Program. HWC is also looking to undertake more event-based monitoring to get better information on pathogen inputs This comment is therefore considered addressed and HWC fully compliant.</p>
R7.3	NOW protocol – develop a mutually agreed protocol with regard to compliance notification and categorisation by 30 June 2011.	High Risk. Adequate management of catchments is a key element of water quality management.		High	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Environment and Sustainability Manager, Cadet Civil Engineer, Team Leader for Dams and Catchment and Water Quality.</p> <p>Email from Office of Water to Hunter Water 24/08/11 2:35 pm stating Incident Reporting changes in the new Water Supply Work and Water Use Approvals (in Catchment Report presentation by Manager Network Operations (<i>CI 7.3 Catchment Report.ppt</i>)).</p> <p><b>Comments:</b></p> <p>It was noted (email from NSW Office of Water to Hunter Water) that incident reporting protocols will be formalised in the new Water Supply Work and Water Use Approvals. The protocol will contain details on reporting and notification as well as specifying details of the level of risk</p>

Appendix 2b Recommendations for Licence Parts from 2009/10 audit Detailed Audit Findings					
Rec. Ref No.	Recommendation from 2009/10 Audit	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					by the NSW Office of Water. While this matter is therefore considered addressed for now, it is noted that the date of the email is post 30 June 2011 as per the recommended date and therefore the audit grade is assessed as high compliance. Further review of the content of the NSW Office of Water protocol should be undertaken in future audits.
R7.4	Incident Management – consider that all non-compliance matters represent an incident and result in activation of appropriate procedures under Hunter Water’s Incident Management Plan and associated procedures. Hunter Water’s Incident Management Plan and associated procedures should, where necessary, be modified to handle or address such incidents by 30 June 2011.	Very High Risk Incident management is a key area of risk management across the corporation.	Hunter Water has provided IPART by 30 June 2011 with an incident management plan and associated procedures that consider all non-compliance matters to represent an incident and result in activation of appropriate procedures.	Full	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Environment and Sustainability Manager, Cadet Civil Engineer, Team Leader for Dams and Catchment and Water Quality Scientist.</p> <p>Procedure Emergency Management Guidelines Effective Date: 13 May 2011. TRIM HW2007/900/27/1 (R7.4 - Incident Management - Procedure - Latest - HWC_EM_Guidelines_MAY2011_03.DOC)</p> <p><b>Comments:</b></p> <p>HWC’s Emergency Management Guidelines have now been modified. Definitions relating to incident categorisation have been revised in particular such that incidents requiring regulatory notification and/or involvement of a regulator in the incident are now classified as a ‘Significant Incident’ as a minimum and where necessary, elevated to other incident categories.</p>
R7.5	<p>Improve management, operating, monitoring, actioning and reporting on (dam) asset management issues, including:</p> <p>(a) Demonstration that risk analysis and management processes are robust and holistic, integrated with business risk exposure and the work and monitoring processes and practices of staff and contractors.</p> <p>(b) Conduct a business wide security threat assessment and gap analysis, (making use of appropriately experienced and knowledgeable resources). It is suggested that this improvement activity could</p>	High Risk. Adequate management of catchments is a key element of water quality management.	Incident Management - consider that all non-compliance matters represent an incident and result in activation of appropriate procedures under Hunter Water's Incident Management Plan and associated procedures. Hunter Water's Incident Management Plan and associated procedures should, where necessary, be modified to handle or address such incidents by 30 June 2011.	Full	Comments at clause 4.8 in Appendix 4.

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Rec. Ref No.	Recommendation from 2009/10 Audit	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
	<p>involve full engagement with IPART with a view to establishing a model for application to other regulated agencies and in recognition that consequent liability issues are a risk for both organisations). Hunter Water should engage IPART and appropriate external resources in a project scoping exercise by 28 February 2011.</p> <p>(c) Re-design of condition monitoring checklists.</p> <p>(d) Incorporation of an independent participant in dam safety audits (independence being considered as adequately achieved by inclusion of a representative from another agency under the purview, or with membership of, the Dam Safety Committee). Note: This involvement could be considered under a mutual exchange of services arrangement.</p> <p>(e) Development of asset management plans for dams.</p>				
R9.1	Table E1 – provide yield estimate and actual data, provide a comment where there is a significant difference between budget and expenditure, include targets and how yield and activities have impacted the achievement of the target	Low Risk. This report is overseen by IPART.	In Table E1 – provide yield estimate and actual data, provide a comment where there is a significant difference between budget and expenditure, include targets and how yield and activities have impacted the achievement of the target	Full	<p>Table E1 has been moved to Appendix 1 in the 2011 report. The main purpose of the appendix 1 is to demonstrate what has been achieved with the available budget and how forecast budget went against actual expenditure.</p> <p>The table in Appendix 1 is a summary table. Discussion budget versus expenditure is provided in Section 2.</p> <p>Achievement against indicator targets is presented in the 2010/11 Environmental Performance Indicators Report. Hunter Water believes that the EPI Report is the most appropriate report to measure performance against targets and that this is consistent with clause 9.4 of the Operating Licence.</p> <p><b>Audit Comments:</b></p>

Appendix 2b Recommendations for Licence Parts from 2009/10 audit Detailed Audit Findings					
Rec. Ref No.	Recommendation from 2009/10 Audit	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					Financial and previous year's information is provided in the appendix. The discussion around variances is in the body of the text, performance against target shown in the EPI report.
R9.2	Executive Summary – provide more discussion as to associated targets and how activities have compared to meeting those targets	Low Risk. This report is overseen by IPART.	In Executive Summary – provide more discussion as to associated targets and how activities have compared to meeting those targets	Full	As discussed above the EPI Report is the most appropriate document to assess how activities have compared to targets and commentary has been provided within this report for 2010/11. Hunter Water has attempted to avoid duplication in the way that the Operating Licence regulatory reports present information.  <b>Audit Comments:</b> Mostly shown in the EPI report Report was reviewed and the feedback was to reduce the executive summary size.
R9.3	Section 3 – provide discussion when there is a significant difference between budget and expenditure, including how this has been approved/endorsed, how it can impact targets, and if this is related to relevant risk assessments and priorities of Hunter Water	Low Risk. This report is overseen by IPART.	In Section 3 – provide discussion when there is a significant difference between budget and expenditure, including how this has been approved/endorsed, how it can impact targets, and if this is related to relevant risk assessments and priorities of Hunter Water	Full	The layout of the report has changed, with Section 3 now falling under Section 2. Differences between budget and expenditure are discussed throughout Section 2, for example: Section 2.1.1. Section 2.2.2.  <b>Audit Comments:</b> A number of the capital projects etc have been underspent, some sections do put time against projects but this is not widespread across the organisation. It is noted that there is lack of clarity in the procedures for recording the costs associated with utilisation of internal resources in the execution of capital works and hence some inconsistency in reporting total costs of programs or projects.

## Appendix 3 Water Quality Detailed Audit Findings (Part 3)

Appendix 3 Water Quality Detailed Audit Findings (Part 3)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
<b>3.1</b>	<b>Drinking Water Quality – Planning</b>				
<b>3.1.1 NR</b>	Hunter Water must prepare, to the satisfaction of NSW Health, a five-year Water Quality Management Plan (Five-Year Plan) within 6 months of the Commencement Date. Hunter Water must provide a copy of the Five-Year Plan to IPART and NSW Health upon its preparation. Hunter Water must release to the public a discussion paper in relation to the Five-Year Plan within 3 months of the Commencement Date and must engage in Public Consultation on the discussion paper.				
<b>3.1.2 NR</b>	The Five-Year Plan should be based on the framework for management of Drinking Water quality in the Australian Drinking Water Guidelines.				
<b>3.1.3 Audit</b>	The Five-Year Plan must reflect the following: (a) the Annual Water Quality Monitoring Plan; and (b) the Incident Management Plan.	Moderate Risk: While of key importance, the Plan must be approved and overseen by NSW Health.	The Five-Year Plan reflects: (a) the Annual Water Quality Monitoring Plan (audited under clause 3.3); and (b) the Incident Management Plan (audited under clause 3.5).  Both Plans have been updated during 2010/11.	<b>Full</b>	<b>Overview.</b>  The <i>Five-Year Water Quality Management Plan 2008-2013</i> (5-Yr DWQMP) was checked against the <i>Water Quality Monitoring Plan 2011_2012</i> and the Incident Management Plan (viewed on site).



Appendix 3 Water Quality Detailed Audit Findings (Part 3)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
3.1.3 (a)	(a) the Annual Water Quality Monitoring Plan			Full	<p><b>Water Quality Monitoring Plan</b></p> <p>With respect to the Annual Water Quality Monitoring Plan (AWQMP), the 5-Yr DWQMP sets out words to the effect that HWC will develop an AWQMP that is informed by the ADWG and by risk assessments. The AWQMP was reviewed and the document carefully extracts key clauses from the ADWG and demonstrates how these are applied by HWC to ensure compliance with the recommendations of the ADWG. Some monitoring takes place that is beyond the recommendations of the ADWG where a need for such monitoring has been identified by HWC, from risk assessments or other triggers. The AWQMP is comprehensive and addresses the intent of what is stated in the 5-Yr DWQMP. The current version of the AWQMP is consistent with the example extract given as an attachment to the 5-Yr DWQMP document that was initially endorsed by NSW Health.</p>
3.1.3 (b)	(b) the Incident Management Plan.			Full	<p><b>Incident Management Plan</b></p> <p>With respect to the Incident Management Plan (IMP), the 5-Yr DWQMP states that “The incident emergency plan is a comprehensive plan, covering:</p> <ul style="list-style-type: none"> <li>• Operational contingency plans for various water quality scenarios</li> <li>• Notification flow diagram</li> <li>• Escalation Levels &amp; Triggers</li> <li>• Crisis Management Team Structure and Roles</li> <li>• Layout for Crisis Control Centre</li> <li>• Roles of Internal and External Stakeholders (including NSW Health)</li> <li>• Contact details for the relevant agencies and departments</li> <li>• Key Communication Guidelines (Media, Customer, Stakeholders)</li> <li>• Recovery / Debrief following incidents”</li> </ul> <p>The 5-Yr DWQMP and IMP, actually termed the <i>Emergency Management Guidelines</i> (EMG), appeared to be reflective of one another. For instance:</p> <ul style="list-style-type: none"> <li>• The EMG did not include “Operational contingency plans for various</li> </ul>

Appendix 3 Water Quality Detailed Audit Findings (Part 3)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>water quality scenarios". However, such contingency plans were found outside of the EMG. For instance, the Blue-Green Algae Contingency Plan for Potable Water provided a high level HWC corporate example of a contingency plan. At the next level down, contingency plans were available for a range of scenarios, such as specific treatment plant defects at the Grahamstown Dam site. At Grahamstown Dam there were problems downloading the plans using the ISD and the ISD does not appear to have active links. However, operators had developed work-arounds and could still find the documents. These issues will apparently be addressed in the move from the ISD to the KMS.</p> <ul style="list-style-type: none"> <li>• With respect to "Notification flow diagram" and "Escalation Levels &amp; Triggers", Criteria for Notification to NSW Health (Agreed by NSW Health / Hunter Water at 30th June 2011) were sighted at the head office as a stand-alone document, as a section within the current EMG and on the wall at Grahamstown WTP. HWC showed a copy of a spreadsheet and copies of e-mail notifications to NSW Health for 2010/11 showing the use of the protocol in practice. There was a copy of Minutes from the NSW Health / HWC Liaison meeting from 30th June 2011 – noting NSW Health's agreement with the revised notification criteria. Flow diagrams for incident management and notification triggers were included in the main EMG and the relevant criteria.</li> <li>• The EMG covered "Roles of Internal and External Stakeholders (including NSW Health)", "Contact details for the relevant agencies and departments", "Key Communication Guidelines (Media, Customer, Stakeholders)" and "Recovery / Debrief following incidents". Draft media releases had been developed for a range of scenarios, such as boil orders or algal toxins, in liaison with Health.</li> </ul> <p>Two desktop emergency management exercises were conducted during 2010/11. The exercises were used to validate the revised Emergency Management Guidelines. The first training exercise was conducted during August 2010 utilising the members of the Resilience Working Group. The second exercise was conducted during October 2011 for the</p>

Appendix 3 Water Quality Detailed Audit Findings (Part 3)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					General Management Team (GMT). Refer to the following documents: <b>Opportunity for improvement:</b> As a priority, ensure that the most current incident response contingency plans are readily recoverable by all staff using the updated KMS rather than isolated on individual computers, subject to the need to maintain access to the plans if there are communication failures.
<b>3.1.4 Audit</b>	Hunter Water must implement the Five-Year Plan according to the timeframes specified by NSW Health.	High Risk: Failure to meet NSW Health requirements would potentially mean higher health risks for consumers.	The Five-Year Plan has been implemented according to the timeframes specified by NSW Health.	<b>Full</b>	<p>The Five-Year Drinking Water Quality Management Plan 2008-2013 (5-Yr DWQMP) states that:</p> <p>"It is planned that a broad alignment to the framework for the entire system will be achieved by the end of June 2008. Hunter water's focus over the remainder of the five year period will be to:</p> <ul style="list-style-type: none"> <li>• Maintain existing multiple barrier approach</li> <li>• Further refine and improve our alignment with the framework</li> <li>• Effectively address any emerging water quality issue that may arise"</li> </ul> <p>The 5-Yr DWQMP is implemented along the lines of the ADWG Framework. Implementation progress is reported annually to NSW Health (Annual Report on the Implementation of the Five-Year Water Quality Management Plan December 2010). HWC is actively implementing the ADWG Framework at the detailed 'action' level and reporting on progress using the WSAA Aquality tools. Aquality audits are undertaken at annual intervals as a series of workshops to keep a track on implementation of the ADWG Framework and to highlight improvements. A sighted worksheet Aquality update file Aquality Audit Revision Sept to Nov 2010 was seen and revealed that the process involves multiple workshops each year with some including NSW Health. With respect to specific improvements, of all kinds of processes to track improvements. There are two main registers that keep a corporate memory on the recommended improvements. HWA Treatment Ops hold working spreadsheets on their treatment systems and HWC Treatment Ops holds working spreadsheets on all aspects of water quality. These are reviewed annually, in response to issues or at intervals. The events register may raise other improvement</p>

Appendix 3 Water Quality Detailed Audit Findings (Part 3)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>requirements.</p> <p>The HWC file was sighted, Risk Assessment Action Plans, and this covers each of the major systems and captures the action ideas. The file is updated from time to time. This links to the risk assessments.</p> <p>The HWA file was sighted, 1107_WT_CapitalForecast_V2 which is linked more directly to the capital program, but is further prioritised. An example was seen of the rectification works undertaken in 2010 to 2012, e.g. for the Dungog CWT bypass risk.</p> <p>Water quality improvements become rolled up into corporate planning and price path provision for minor water treatment plant upgrades. That process includes assessment as part of the Enterprise Risk Management system which is used to try to prioritise water quality improvement actions against other corporate actions.</p> <p>There is a Water Quality Committee (WQC) at which Emerging Issues is covered and recorded using the Emerging Technology Matrix worksheet. HWC is involved in WQRA, WSAA, has its own R&amp;D, has a HWA arm with a wide reach and has good university linkages. HWA is involved in the WQC and Aquality audits. As an example HWC showed its strategy for handling chlorate as an emerging issue (File Note Storage of Hypochlorite Solution).</p>
<b>3.2</b>	<b>Drinking Water Quality – Standards</b>				
<b>3.2.1 Audit</b>	Hunter Water must ensure that the Drinking Water supplied to Customers and Consumers meets the performance requirements for Drinking Water specified in the Australian Drinking Water Guidelines or such other standard as directed by NSW Health.	Very High Risk. If water quality does not meet health-related requirements, there could be adverse health impacts on consumers.	<p>Drinking Water supplied to Customers and Consumers meets the performance requirements for Drinking Water specified in the Australian Drinking Water Guidelines or such other standard as directed by NSW Health.</p> <p>Chlorine residuals in distribution network are maintained as far as</p>	<b>High</b>	<p><b>Treatment plants</b></p> <p>SCADA alarms were configured for critical limits (e.g. filter effluent turbidity, clear or filtered water turbidity, clear water tank chlorine residual, fluoride concentration, inferred dose alarms, alum dosing, chlorine dosing, etc). All HWC supplies now have individual filter effluent monitoring and combined filter effluent monitoring. All are monitored continually and alarmed to the Call Centre. An example was viewed of the Dungog WTP SCADA. The turbidity alarms were set at 0.5 NTU High and 1 NTU High High. The combined filter effluent alarms and also individual filtered water turbidity alarms go to call centre. The High alarm has a delay of around 1 hour before the signal goes to the call centre, the High High alarm has no delay. Dungog filtration plant</p>

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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
			<p>practicable, especially at the extremes of the network.</p> <p>Planned works have been done to improve maintenance of such residuals in future.</p> <p>Critical limits and target criteria set under Elements 2 and 3 of the Framework have been validated based on objective evidence as being appropriate to control significant hazards, as indicated under Element 9 of the Framework.</p> <p>Excursions from critical limits lead to automated processes to protect the public from receiving unfit water.</p> <p>Chemicals and materials that could impact water quality comply with AS 4020 and Chapter 8 of the ADWG, as applicable.</p> <p>Operations staff are familiar with the target criteria and critical limits applying to the process that they operate.</p>		<p>automatically backwashes if filtered effluent exceeds 0.6 NTU. Grahamstown and Lemon Tree Passage have alarms but do not have automated shut off in the event of a High High alarm. There is an action in train to make it possible to have automated shut down for these plants. In some cases there are dual analysers on important control parameters – this is a valuable initiative to provide extra surety in relation to this critical parameter. The basis for setting critical limits is recorded on worksheets, e.g. “Grahamstown System CCPs 0.1”. The worksheets cover both the internal targets for plant operators and the limits that alarm out.</p> <p>An inspection of the Grahamstown water filtration plant revealed that the operation in the field complied with the operation described in the documentation and the information communicated to NSW Health. The fluoride reading on the on line analyser during the day of audit was 0.96 mg/L, well within the safe range. The clear water tank turbidity analyser read 0.22 NTU, consistent with good water quality. Filter 14 was inspected. The individual filter effluent turbidity meter was receiving water sampled from an acceptable location and was reading 0.15 NTU (consistent with the SCADA reading of 0.13 NTU read approximately 30 min later). The alarm limits on individual filter effluent were set at 0.2 NTU High with 30 minute delay, and 0.5 NTU High High with no delay. These alarm limits are consistent with the anticipated filtered water turbidity targets in the 2011 update to the ADWG of 0.2 NTU target and 0.5 NTU maximum. These alarms would be sent to operators at the plant as priority 1 alarms, but would not alert the Call Centre at the same levels. Alarms for individual filtered water were set on Head Office SCADA at 0.5 NTU High with a 60 minute delay and 1 NTU High High with no delay. The plant was manned during normal working hours seven days per week but not outside normal working hours. Therefore, the Head Office SCADA alarms for individual filter turbidity alarms would be detected outside of normal working hours but at different levels to those used when the plant was manned. During the inspection the combined filter effluent turbidity meter read 0.14 and 0.12 on stages 1</p>

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					<p>and 2 of the plant, respectively. The alarm limits for the combined filter effluent were 0.3 NTU High which created a priority 1 alarm with 1 hour and 1 NTU High High which created an instant priority 1 alarm. In no case was there an automated shut off or backwash triggered for this system but staff stated that they intended to complete actions to enable automated responses.</p> <p>The ADWG sets out the need to set appropriate critical limits for critical control points (which would include filtration plants), to monitor those critical limits on line where possible, and to ensure rapid response to breaches of those critical limits. In this case, the critical limits set at individual filters were monitored on line and the critical limits set at the plant were appropriate and were consistent with the ADWG 2011. The alarm limit levels set within the plant were different to the levels set at Head Office and were higher than those set at the plant. Furthermore, automated systems were not in place to rapidly respond outside of normal hours – an operator would need to manually attend the plant to shut down a filter or switch it to backwash.</p> <p><b>Recommendation:</b></p> <p>Implement automated rapid response processes for all plants to prevent water being supplied to consumers if not treated to within critical limit specifications as recommended in the ADWG 2011.</p>
				High	<p><b>Service reservoirs</b></p> <p>An inspection took place at two reservoir sites. It was possible to get onto the roof of the reservoirs but to inspect the bird proofing around the edges of the reservoirs was difficult as there was no inspection walkway and inspection involved viewing from the ground and surrounding high points. In both cases the ladder hatches and roof hatches were locked and the passive infra red detection systems appeared to be functional. The rooves and bird-mesh appeared to be fully intact to the extent that these could be inspected from the ground. There was no evidence of systematic or ongoing loss of system integrity</p>

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					<p>or asset maintenance, on the roof of the first tank inspected (Cardiff No. 2) and no holes large enough to enable vermin entry were seen. On the first reservoir the bird mesh was strong metal and the ends of the corrugations were sealed with tight-fitting metal end caps. On the second reservoir, the bird mesh was plastic and not as strong, but was intact. However, on the second reservoir end caps were not placed below the corrugations of the roof near to the entry hatch and it wasn't clear why these end caps were not in place. The corrugations were small given the choice of roof sheet provided and the holes were probably too small to facilitate bird entry. There were no end caps to prevent possible beading of water back into the tank but the distance from the end of the roof to the tank probably meant that beading back would not occur. However, it was noted that there was no maximum tolerable hole size 'standard' or target value was set that related to bird entry. The ADWG recommend setting target criteria and critical limits for preventive measures. Exclusion of birds is a preventive measure that is required at water storages. Some target criteria need to be defined for such preventive measures, including tolerable hole sizes to exclude bird entry and a position on whether or not corrugations should be capped to reduce both runoff from beading and other forms of ingress.</p> <p>The inspection and test recording forms for the service reservoirs were quite brief and didn't contain much guiding detail. It would be useful to include the target criteria for the preventive measures on the forms to remind operators of what is considered a trigger for action.</p> <p><b>Recommendation:</b></p> <p>Develop explicit target criteria for the preventive measures that control vermin and runoff entry into service reservoirs and include those criteria on the inspection forms.</p>
				High	<p><b>Distribution system</b></p> <p>An inspection took place at two work sites: a scheduled mains replacement and burst main repair. The procedures used to control the materials on site involved having approved materials purchased through approved suppliers. However, pipes were not stored or transported</p>

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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>capped. Flushing was used to remove debris that entered water pipes during construction or repair but neither swabbing nor chlorinating was used and there was no water quality test/hold point for any of the works. The ADWG recommend target criteria be determined for all important preventive measures. The preventive measures in place for mains repair and replacement involved minimising ingress during construction followed by flushing following charging of mains. The lack of capping of mains combined with the impracticality of keeping out all debris during construction and backflow during loss of pressure mean that of these controls, flushing is the most important preventive measure being applied by HWC. However, there were no agreed target criteria for the flushing preventive measure, e.g. no flushing times, no minimum throw from hydrants, no agreed number of hydrants for particular main sizes. Furthermore, for larger mains, flushing is sometimes not sufficient to generate a flushing velocity that can remove debris or backflow ingress and swabbing and/or chlorination may be required. It would have been possible to comply with the HWC procedures merely by flushing a single hydrant at a low velocity until the air had been removed and the water running from the hydrant appeared clear to the eye. Experienced operators would have a good understanding of how many hydrants to flush, how hard and for how long, but there were no explicit target criteria. To be compliant with the ADWG it is necessary to have clearer target criteria relating to how to flush the systems following new installations or repairs and when to use swabbing and/or super-chlorination.</p> <p>Options to reduce the chlorine demand and to improve residual penetration are being assessed in detail by HWC. The strategy proposed by HWC to improve residual maintenance appears appropriate but will need to be funded if it is to be successful – at present the strategy is unfunded. NSW Health is specifically interested in seeing improved residual in the HWC system and it is recommended that HWC support the implementation of the strategy</p>



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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<b>Recommendation:</b> Develop explicit target criteria for the preventive measures that remove debris and ingress from depressurised water mains. HWC should be commended for developing its residual disinfection strategy and the organisation should implement the strategy.
<b>3.2.2 Audit</b>	If the results do not comply with the Health Guideline Values, Hunter Water must provide NSW Health with an appraisal of the inconsistency, and indicate the action to be taken to resolve any non-compliance.	High Risk. If water quality does not meet health-related requirements, and an adequate response is not undertaken, there could be adverse health impacts on consumers.	Where monitoring results do not comply with the Health Guideline Values, an appraisal of any inconsistency, and the action to be taken to resolve any non-compliance has been provided to NSW Health. Monitoring records and other documents show that all water quality exceptions and exceedances have been identified and addressed.	<b>Full</b>	HWC showed a spreadsheet entitled Data - Notifications to NSW Health 2010 -11.XLS and provided copies of e-mail notifications to NSW Health for 2010/11. These demonstrated reporting to NSW Health in the event of inconsistencies. Matters are discussed in more detail at Health/HWC Liaison Committee meetings (minutes were provided for the example meeting held 30th June 2011). Notifications are submitted in accordance with inconsistencies arising based on agreed notification criteria (document title Water Quality – Criteria for Notification to the Department of Health).
<b>3.3</b>	<b>Drinking Water Quality – Monitoring</b>				
<b>3.3.1 Audit</b>	Hunter Water must prepare, to the satisfaction of NSW Health, a comprehensive annual water quality monitoring plan (Annual Water Quality Monitoring Plan) for the Water Supply System by 31 March each year, for the duration of the Licence. This Annual Water Quality Monitoring Plan must: (a) include monitoring of Bulk Water and Drinking Water quality and details of laboratory testing and reporting processes to ensure quality control; (b) have regard to the concepts of good practice set out in the Australian	High Risk. If water quality is not monitored, stakeholders cannot be kept abreast of the performance of Hunter Water in supplying quality water.	A comprehensive annual water quality monitoring plan (Annual Water Quality Monitoring Plan) for the Water Supply System has been prepared by 31 March 2011 that includes the elements set out in the licence requirement. NSW Health has endorsed this plan. The Monitoring and Reporting Protocol has been updated to reflect that not all tests done are NATA accredited (2009/10	<b>Full</b>	During the audit period HWC prepared the Annual Water Quality Monitoring Plan 2011/12. The draft plan was reviewed by NSW Health and no changes were required. The changes made by HWC in going from the 2010/2011 to the 2011/2012 plans were identified in correspondence with NSW Health. HWC went to the trouble of keeping a signed record to show that NSW Health had reviewed and endorsed the plan (2 <sup>nd</sup> March 2011). The final plan was then sent to NSW Health for their records. The reporting requirements were reflected in the updated HWC Monitoring & Reporting Protocol with IPART (page 9).

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<b>Clause/ Scope</b>	<b>Operating Licence Obligation</b>	<b>Risk</b>	<b>Target for Full Compliance</b>	<b>2010/11 Audit Grade</b>	<b>Auditor Commentary</b>
	Drinking Water Guidelines and apply those concepts as specified by NSW Health; (c) for Bulk Water, include a list of characteristics that will be monitored to identify potential hazards with the water supply, or a change in water quality; (d) include targeted, investigative and event-based monitoring; and (e) include monitoring for any other water characteristic nominated by NSW Health.		audit recommendation R3.1). The currency of documentation has been maintained and document control and systematic management has been improved (2009/10 audit recommendation R 3.4)		
<b>3.3.2 Audit</b>	Monitoring under the Annual Water Quality Monitoring Plan must be undertaken for the period from the Commencement Date to 30 June 2008 and after that for each subsequent financial year.	Moderate Risk. If water quality testing does not meet health-related requirements, there could be inadequate verification in place to meet expectations.	Monitoring under the Annual Water Quality Monitoring Plan has been undertaken for the 2010/11 financial year.	<b>Full</b>	The annual water quality monitoring that was undertaken was reported in the 2010/11 Annual Water Quality Report and in the Monthly reports. Under previous audits the plan was audited at a fine level of detail. Although not audited in detail under this audit, review of the annual and monthly reports found no evidence of nonconformity between the agreed/planned monitoring program and the reported monitoring.
<b>3.3.3 SC</b>	The sampling frequency and the locations chosen for the Drinking Water quality monitoring should be representative of the quality of Drinking Water supplied to Consumers.				
<b>3.3.4 SC</b>	Hunter Water must provide IPART with a copy of the Annual Water Quality Monitoring Plan as soon as possible after it				

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<b>Clause/ Scope</b>	<b>Operating Licence Obligation</b>	<b>Risk</b>	<b>Target for Full Compliance</b>	<b>2010/11 Audit Grade</b>	<b>Auditor Commentary</b>
	is agreed with NSW Health. Hunter Water must make a copy of that plan available to the public after it has been provided to IPART.				
<b>3.3.5 SC</b>	If Hunter Water and NSW Health cannot agree on the Annual Water Quality Monitoring Plan, the views of NSW Health will prevail and Hunter Water must accept the Annual Water Quality Monitoring Plan determined by NSW Health.				
<b>3.4</b>	<b>Drinking Water Quality – Reporting</b>				
<b>3.4.1 Audit</b>	Hunter Water must produce a monthly report that includes the Drinking Water quality monitoring test results undertaken in accordance with clause 3.3. The monthly report must be placed on Hunter Water's website on the internet for downloading free of charge imposed by Hunter Water and also made available for access by any person, free of any charges imposed by Hunter Water.	Low Risk. If water quality is not reported, stakeholders cannot be kept abreast of the performance of Hunter Water in supplying quality water.	A monthly report has been produced that includes Drinking Water quality monitoring test results undertaken in accordance with clause 3.3. The monthly report has been placed on Hunter Water's website on the internet for downloading free of charge.	<b>Full</b>	Monthly System Performance Reports for 2010/11 were provided by HWC for all months during the audit period. The reports included zonal and total system reporting for months and rolling annual performance in both tabular and graphical form. It is not known whether or not HWC refused access to the reports during the audit period, there is no evidence of any such refusal, and the availability of the reports on the internet mean that the intent of this clause can be assumed to be in full compliance.
<b>3.4.2 Audit</b>	Hunter Water must prepare, and make available to NSW Health by 31 December 2008 and by 31 December each subsequent year, an annual report on the implementation of the Five-Year Plan. The report must include details of: (a) the audit of the implementation of the framework for management of Drinking Water quality in the Australian Drinking Water Guidelines which may be undertaken as part of the Annual Audit;	Low Risk. If the report is overdue, NSW Health cannot be kept informed in a timely manner on the performance of Hunter Water against its Five-Year Plan.	An annual report on the implementation of the Five-Year Plan has been prepared. The report includes details set out in the licence requirement. Hunter Water has made this report available to NSW Health by 31 December 2010.	<b>Full</b>	HWC provided an Annual Report on Implementation of the 5 year Plan dated Dec 2010 and an email to NSW Health with report attached. The report provided an excellent and detailed summary of the water quality improvements and the audit of the drinking water quality management system against the ADWG Framework Aquality tool. The use of the Aquality tool to undertake an in depth internal audit of implementation of the framework represents international best practice. The Aquality assessment appeared to be detailed and comprehensive with significant effort being expended by many staff to complete the process. It was understood that NSW Health was permitted to be involved in witnessing the process. The detailed records arising from the Aquality audits are appended to the report and appeared to be a key tool used by HWC to

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	(b) any proposed amendments to the Five-Year Plan needed to protect public health or to ensure the effective operation of the Five-Year Plan; (c) any additional water quality improvement actions identified in the preceding year through the water quality monitoring data or by NSW Health and action taken to implement them, especially any non-compliance relating to clause 3.2.2; and (d) the annual report on water quality for the previous year from 1 July to 30 June.				improve implementation of the ADWG Framework. International best practice.
<b>3.4.3 SC</b>	Hunter Water must make available to NSW Health and IPART a copy of the report compiled to comply with clause 3.4.2.				
<b>3.4.4 Audit</b>	Hunter Water must comply with any requests by NSW Health to provide additional information on water quality. The additional information provided under this clause is to conform to the manner and form specified by NSW Health.	Moderate Risk. If Hunter Water does not respond to requests from NSW Health, this agency can't adequately oversee Hunter Water.	Any request by NSW Health to provide additional information on water quality has been met. Any additional information provided under this clause conforms to the manner and form specified by NSW Health.	<b>Full</b>	HWC provided additional information to NSW Health on water quality in relation to water quality from the Chichester main during June 2011 and provided notifications to NSW Health in accordance with the routine notification protocol. Correspondence between NSW Health and the auditor did not identify any concerns from NSW Health that HWC was not complying with requests from NSW Health. HWC had good records of communication with NSW Health, including copies of emails sent and a register of notifications (see Clause 3.5.1).
<b>3.5</b>	<b>Drinking Water - Incident Management</b>				
<b>3.5.1 Audit</b>	Hunter Water must immediately report to NSW Health, in accordance with a notification procedure agreed to under the Memorandum of Understanding referred to in clause 2.3.1, any information or	High Risk. If water quality poses a potential risk to public health and an	Hunter Water has immediately reported to NSW Health, in accordance with a notification procedure agreed to under the Memorandum of	<b>Full</b>	HWC provided ample details of its notifications to NSW Health. HWC had developed revised notification protocols during the audit period and had complied with those notification protocols. The "Revised Criteria for Notification to NSW Health" (as agreed by NSW Health and HWC 30 <sup>th</sup> June 2011) covered a range of notification criteria. A copy of

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	events in the delivery of the Services or in the Systems or operations which may have risks for public health.	adequate response is not undertaken, there could be adverse health impacts on consumers.	Understanding referred to in clause 2.3.1, any information or events in the delivery of the Services or in the Systems or operations which may have risks for public health.  Enough information is included in the notification criteria, eg, > x NTU for Y minutes (2009/10 audit recommendation R 3.2).		<p>Minutes from the NSW Health / HWC Liaison meeting from 30<sup>th</sup> June 2011 – noted NSW Health's agreement with the revised notification criteria. These MoU meetings are used to update health in relation to major upgrades and in relation to following up from incidents. Clearly HWC and NSW Health are in agreement with respect to the notification requirements. Furthermore, a copy of a spreadsheet and copies of email notifications to NSW Health for the 2010/11 period were provided. The spreadsheet and emails provided sufficient details of each incident, dates, times, causes, rectification and follow up, to enable NSW Health to be across the subject and to enable HWC to demonstrate compliance with this licence requirement.</p> <p>There were three weaknesses with the notification protocol in the view of this auditor. Having said that, NSW Health has only as of June 2011 agreed those criteria and therefore, these weaknesses do not represent a compliance issue for HWC. There may, however, be a risk to HWC and/or NSW Health in having such weaknesses in the protocol. HWC should internally review the notification criteria and should clarify the matter with NSW Health with respect to these weaknesses.</p> <p>The first weakness and most obvious weakness in the notification protocol is that the notification criteria require 'disinfection failure' to be notified but provide no definition as to what that means – to what lower limiting concentration or CT value, and for how long, can disinfection drop, at what point in the process? The other notification criteria have some quantitative definition. The most important control process in the water supply chain does not have a quantitative definition. Internally, HWC showed evidence of processes taking place to seek to define disinfection failure for internal use, and had appropriate internal alarm trigger values in current use and linked to SCADA systems. The work of HWC is benchmarked off the USEPA 1991 guidance document and log reduction estimates and requirements are benchmarked off the USEPA and Canadian guidance. There is no suggestion that HWC was not adequately managing its disinfection systems. However, the notification to NSW Health could be better expressed by reference to some clear criteria.</p>

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					<p>The second observation of concern was that the 1 NTU notification limit currently endorsed by NSW Health for filtered water turbidity was being interpreted by HWC as applying to combined filter effluent. However, there are many filters running in parallel and individual filter effluent turbidity is also monitored and managed by HWC. With multiple parallel filters it is possible for one or more of the individual filters to discharge water at well over 1 NTU without causing the combined filter effluent to exceed 1 NTU. Ordinarily it would seem necessary to report individual filter effluent against the agreed limit, not combined filter effluent. The exception to this would be if the purpose of filtration was merely to reduce turbidity to &lt; 1 NTU in order to reach the level that would be desirable for disinfection. However, HWC does not harvest water from protected catchments so that the purpose of filtration is control <i>Cryptosporidium</i> and <i>Giardia</i>. Under such scenarios it is the individual filter effluent that is the most relevant to public health.</p> <p>The third weakness identified was the use a 1 NTU notification limit to NSW Health. The draft ADWG turbidity fact sheet, due for release late October 2011, was circulated and endorsed by NSW Health and other agencies early in 2011. The fact sheet sets a target value of 0.2 NTU and a maximum value of 0.5 NTU for filters operating in situations where it is necessary to control <i>Cryptosporidium</i>. These values are directly encoded into the HWC SCADA system – HWC currently managed individual filters according to these 0.2 and 0.5 NTU target and critical limit values, in full compliance with the ADWG 2011. We note NSW Health current requirement is for notification at 1 NTU. We suggest that Hunter Water review this notification arrangement with NSW Health and clarify whether it applies to individual filters.</p> <p><b>Opportunity for improvement:</b></p> <p>Review the consequences of having undefined notification limits to NSW Health for disinfection failure and inconsistency with ADWG 2011 for filter operation.</p>
<b>3.5.2 SC</b>	From the Commencement Date, Hunter Water must maintain the existing water	High Risk. If water quality	R7.4 from the 2009/10 Operational Audit, the	<b>Full</b>	R 7.4 addressed at section 3.5.1 above.

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	quality incident management plan (Incident Management Plan) prepared to the satisfaction of NSW Health and that Incident Management Plan must remain in place until any new plan is developed in agreement with NSW Health.	poses a potential risk to public health and an adequate response is not undertaken, there could be adverse health impacts on consumers.	Emergency Management Guidelines has been updated to reflect water quality incidents and have been provided to NSW Health for their approval.		
<b>3.5.3 Audit</b>	The Incident Management Plan must contain, or incorporate by reference, procedures and protocols for the coordinated management of Drinking Water incidents including media and stakeholder liaison and any notification to Consumers of public health advice received from NSW Health.	High Risk. If water quality poses a potential risk to public health and an adequate response is not undertaken, there could be adverse health impacts on consumers.	The Incident Management Plan contains, or incorporates by reference, procedures and protocols for the coordinated management of Drinking Water incidents including media and stakeholder liaison and any notification to Consumers of public health advice received from NSW Health.  For example, relevant processes from the IMP and examples of media or stakeholder liaison that align with prescribed protocols have been provided.	<b>Full</b>	HWC has an overarching incident response plan (Emergency Management Guidelines) rather than a specific water quality incident response plan. The EMG did not include detailed contingency plans. However, such contingency plans were found outside of the EMG. For instance, the Blue-Green Algae Contingency Plan for Potable Water provided a high level HWC corporate example of a contingency plan. At the next level down, contingency plans were available for a range of scenarios, such as specific treatment plant defects at the Grahamstown Dam site. There was a section contained within the incident response plan that constitutes alert levels and notification triggers for water quality incidents. The document Criteria for Notification to NSW Health (Agreed by NSW Health / Hunter Water at 30th June 2011) was consistent with the relevant section within the current EMG and the information displayed on the wall at the Grahamstown WTP control centre. HWC showed a copy of a spreadsheet and copies of e-mail notifications to NSW Health for 2010/11 showing the use of the protocol in practice. There was a copy of Minutes from the NSW Health / HWC Liaison meeting from 30th June 2011 – noting NSW Health's agreement with the revised notification criteria. Flow diagrams for incident management and notification triggers were included in the main EMG and the relevant criteria. The EMG covered roles stakeholders (including NSW Health), contact details for the relevant agencies and departments, communication guidelines and recovery / debrief following incidents. Draft media releases have been prepared and co-badged with NSW Health. These media releases deal with E. coli detection, blue-green

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					<p>algae, boiled water alerts and do not drink alerts. NSW Health Notification Templates and draft media releases are linked into the main manual.</p> <p>In relation to the triggers for water quality incidents, one omission is the absence of a catch-all that would pick up water quality incidents other than those specifically foreseen. Any of a number of events would logically trigger a water quality incident, for instance any reasonably suspected contamination of the water supply. It is probable that such an occurrence would trigger an incident, but no such linkage currently exists among the existing triggers.</p> <p>A file entitled "Events list data for 2010_11" illustrated events that occurred and that lead to issues that created actions. There is a link to staff performance and emails can be sent out from the events list worksheet.</p> <p><b>Opportunity for improvement:</b></p> <p>Amend the water quality incident response protocol to include a general catch-all for any other suspected contamination event.</p>
<b>3.5.4 Audit</b>	In preparing an Incident Management Plan under clause 3.5.2 Hunter Water must have regard to the concepts set out in the Australian Drinking Water Guidelines and must apply these concepts in the manner, form and timeframes specified by NSW Health.	High Risk. If water quality incident management procedures are not consistent with the Guidelines, there could be adverse health impacts on consumers.	In preparing an Incident Management Plan under clause 3.5.2, Hunter Water has had regard to the concepts set out in the Australian Drinking Water Guidelines and has applied these concepts in the manner, form and timeframes specified by NSW Health.  Direct correlations between IMP sections and Australian Drinking Water Guidelines have been provided and specified timeframes have been adhered to.	<b>Full</b>	<p>In addition to the items noted under Clause 3.5.3, the recommendation in the ADWG to practice water quality incidents was assessed. Two desktop emergency management exercises were conducted during 2010/11. The exercises were used to validate the revised Emergency Management Guidelines. The first training exercise was conducted during August 2010 utilising the members of the Resilience Working Group. The second exercise was conducted during October 2011 for the General Management Team (GMT). A number of documents were provided as evidence of these exercises:</p> <p>There is no formal schedule of water quality incidents among the practice incidents. Practice incidents can involve matters other than water quality and there is no formal process to ensure that water quality incidents are practiced. However, the 2009 incident practice was a water quality failure of Dungog treatment plant and involved NSW Health. Another incident is planned for November 2011 to involve NSW Health and OEH. Therefore, it appears that water quality incidents are</p>



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					<p>practiced at a suitable frequency.</p> <p>Noting the items mentioned under this Clauses 3.5.4 and Clause 3.5.3 HWC appeared to be in compliance with the ADWG for its incident management system.</p> <p><b>Opportunity for improvement:</b></p> <p>Consider formalising the inclusion of at least one water quality practice incident per defined period.</p>
<b>3.6</b>	<b>Waste Water and Recycling Operations</b>				
<b>3.6.1 Audit</b>	Hunter Water must adopt a preventive risk management approach in relation to its Waste Water and recycling operations.	<p>High Risk.</p> <p>Failure to adopt a preventive risk management approach in relation to its Waste Water and recycling operations may have implications for environmental and public health.</p>	<p>A preventive risk management approach in relation to Waste Water and recycling operations has been adopted.</p> <p>The finding for clause 3.6.2 at the 2009/10 audit in respect to insufficient details on risk ranking for the scheme-specific Recycled Water Quality Management Plans (RWQMPs) has been addressed.</p> <p>The method used for validating pathogen reduction across treatment processes is defensible, meets current contemporary standards and critical limits set at treatment plants are directly derived from the validation evidence.</p> <p>Critical limit breaches at treatment plants will automatically ensure that the supply of unfit recycled water to customers does not occur.</p>	<b>Full</b>	<p>Hunter water has prepared a <i>Recycled Water Quality Management Plan Current Recycled Water Schemes</i> covering all of its existing recycled water schemes. This document has been endorsed by NSW Health (correspondence sighted 9<sup>th</sup> September 2009). The document presents a preventive risk management approach applied to all existing schemes via the 12 Element Australian Guidelines for Water Recycling framework.</p>

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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
<b>3.6.2 Audit</b>	Hunter Water must prepare, to the satisfaction of NSW Health, a risk management plan for Waste Water and recycling operations (Waste Water and Recycling Operations Plan) within 6 months of the Commencement Date. Hunter Water must provide IPART and NSW Health with a copy of the Waste Water and Recycling Operations Plan upon its preparation.	Moderate Risk. Failure to complete the required plans for all schemes leaves a gap between the current situation and industry good practice which may have implications for environmental or public health.	Hunter Water has prepared, to the satisfaction of NSW Health, a risk management plan for Waste Water and recycling operations (Waste Water and Recycling Operations Plan). An up to date copy of the Risk Management Plan for Wastewater and Recycling Operations has been provided to both IPART and NSW Health. The finding for clause 3.6.2 at the 2009/10 audit in respect to insufficient details on risk ranking for the scheme-specific Recycled Water Quality Management Plans (RWQMPs) has been addressed.	<b>Full</b>	Hunter water has prepared a <i>Recycled Water Quality Management Plan Current Recycled Water Schemes</i> covering all of its existing recycled water schemes. This document has been endorsed by NSW Health (correspondence sighted 9 <sup>th</sup> September 2009).
<b>3.6.3 Audit</b>	The Waste Water and Recycling Operations Plan must provide for monitoring, reporting and incident management procedures.	Moderate Risk. Failure to address key elements of the Guidelines may have implications for environmental or public health.	The Waste Water and Recycling Operations Plan provide for monitoring, reporting and incident management procedures. Sections of the plan that directly relate to monitoring and reporting and procedures for incident management have been identified. The Plan accounts for management of all critical control points.	<b>High</b>	It is acknowledged that incident triggers are currently being developed and that Hunter Water has recently devoted resources to this work. However, we consider that Hunter Water needs to develop firm timeframes for the completion of this work.  The <i>2010-2011 Recycled Water Monitoring Plan</i> (endorsed by NSW Health, correspondence sighted 2nd March 2011) identifies the sampling regime undertaken at each of the plants supplying recycled water and includes target criteria for some of the determinants. Results are captured in spreadsheets that are conditionally formatted to indicate to operators when recycled water does not meet specifications. A quarterly summary of the sampling data is prepared and distributed to internal stakeholders.  In some cases incident management procedures are outlined in the risk assessment spreadsheets and are either flagged for development, or are partially developed, in the RWQMP. However, at this stage, incident

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					<p>triggers and procedures are not fully developed for recycled water schemes. Until critical limits and acceptance criteria are developed, there would be some difficulty setting incident triggers for recycled water schemes (cross reference to 3.7.1). However, some interim incident triggers could potentially be agreed with NSW Health. At present other grades of water are not covered in the Emergency Management Guidelines notification criteria that only deal with potable water (cross reference to 3.5.3).</p> <p>In developing incident triggers, and other actions, the Branxton scheme is being used as the case study. For Branxton the validation testing has just finished. The relevant procedures will be referenced in the management plan. HWA will run the treatment systems and HWC systems will be covered in its QMS. The incident notification procedures developed for Branxton can provide a case study for all schemes.</p> <p>With respect to compliance, the appropriate approach is being adopted and is being rolled out across the recycled water schemes in a diligent and appropriate manner. However, at the time of audit, the approach hasn't been fully implemented for all schemes and firm timeframes are not in place to work towards in finalising the schemes. It is acknowledged that implementation of a risk-based framework such as the AGWR Framework is always a work in progress. However, the core of the AGWR Framework would need to be implemented at the operational level in order to reach an acceptable level of compliance with this licence requirement. These core elements would include having agreed incident triggers and associated procedures. Therefore, it is recommended that a timeframe be agreed with NSW Health by when the incident triggers and associated procedures would be developed.</p> <p><b>Recommendation:</b></p> <p>Develop timeframes, agreed with NSW Health, for completing the implementation of the incident triggers and associated procedures for all schemes.</p>
<b>3.6.4 Audit</b>	Hunter Water must immediately report to NSW Health, in accordance with the	High Risk. If recycled water	Any information or events in relation to Waste Water and	<b>Full</b>	No incidents were reported to occur during the 2010-11 period occurred that presented a risk to public health. There is no evidence of failure to

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	notification procedure agreed to under the Memorandum of Understanding referred to in clause 2.3.1, any information or events in relation to its Waste Water and recycling operations which may have risks for public health.	quality poses a risk to public health without an adequate response, there could be adverse impacts on public health.	recycling operations which may have risks for public health have been immediately reported to NSW Health, in accordance with the notification procedure agreed to under the Memorandum of Understanding referred to in clause 2.3.1.		notify any such incidents.
<b>3.7</b>	<b>Other grades of water</b>				
<b>3.7.1 Audit</b>	Other grades of water supplied by Hunter Water must be supplied according to the Australian Guidelines for Recycled Water or relevant guidelines specified by NSW Health, DECC and DWE.	High Risk. If recycled water quality does not meet relevant guidelines, there may be adverse public health or environmental consequences.	Other grades of water have been supplied according to the Australian Guidelines for Recycled Water or relevant guidelines specified by NSW Health, OEH and NOW.  The handover point for recycled water is clearly articulated in all recycled water agreements (2009/10 audit recommendation R 3.3).	<b>High</b>	Hunter water has prepared a <i>Recycled Water Quality Management Plan Current Recycled Water Schemes</i> covering all of its existing recycled water schemes. This document has been endorsed by NSW Health (correspondence sighted 9 <sup>th</sup> September 2009). The document presents a preventive risk management approach applied to all existing schemes via the 12 Element Australian Guidelines for Water Recycling (AGWR) Framework. The document represents good progress towards meeting this licence requirement. However, the document is currently quite high level and is lacking key information. For instance, there is an absence of agreed critical limits and the monitoring thereof for operations – arguably the most important part of a risk based recycled water management process. We attach a high importance to the development of timeframes, agreed with NSW Health, for completing this work for existing schemes since it represents the core of the AGWR Framework.  The <i>5 Year Recycled Water Quality Improvement Plan</i> (endorsed by NSW Health, correspondence sighted 2 <sup>nd</sup> March 2011) sets out a proposed pathway for the complete implementation of the AGWR Framework. Many of the actions in the improvement plan haven't yet been allocated dates. Even where target dates had been allocated, some of the interim timeframes have not been met. There doesn't appear to have been any interim reporting on progress against the improvement plan. The risk assessments are said to be scheduled to be reviewed during the 2011-12 financial year but it's not clear when many other key actions will be

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					<p>complete. For instance, the development of critical limits and the associated operational procedures are given as actions, but these actions have not yet been given a timeframe. A new Recycled Water Engineer role has been created within HWC to give effect to these actions. The plan is to roll out the more detailed implementation of the AGWR Framework for the Branxton scheme first, and then use that work as a template to support the roll out to the other schemes.</p> <p>It is intended that NSW Health will be asked to endorse the health aspects of the plans. NSW Health has been involved in the risk assessments. There would be no endorsement by third parties relating to environmental aspects. OEH would sign off the discharge limits rather than the recycling limits, although councils have provided the DA approval, which does relate to environmental aspects. OEH will be given copies of completed plans in relation to environmental aspects, but neither council nor OEH provides formal endorsement of the plans. Land capability assessments had been completed for each scheme. In addition to these existing schemes, HWC is developing revised and updated management plans as schemes are upgraded or expanded.</p> <p>The Branxton scheme was discussed in more detail since this is to be the pilot scheme for all the schemes. It was planned to have turbidity and ORP on line to monitor critical limits. Validation sampling was underway but critical limits had not yet been set for the scheme. Interface points with recycled water users have been made clear in the relevant agreements. Annual audits were proposed to check on compliance with end use restrictions with a one week notification prior to check that the required signs were in place, etc, although the recycled water user is not regulated. Currently HWC was reviewing the importance and control of helminths for its schemes. NSW Health is being kept informed via update meetings with Health that take place quarterly and cover drinking and other grades of water. Overall, the direction in which HWC is heading is excellent.</p> <p>With respect to compliance, the excellent approach that is being adopted and is being rolled out across the recycled water schemes is being carried out in a diligent and appropriate manner. However, at the</p>

Appendix 3 Water Quality Detailed Audit Findings (Part 3)					
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					<p>time of audit, the approach hasn't been fully implemented for all schemes and firm timeframes are not in place to work towards in finalising the roll out. It is acknowledged that implementation of a risk-based framework, such as the AGWR Framework, is always a "work in progress". However, the core of the AGWR Framework would need to be implemented at the operational level in order to reach an acceptable level of compliance with this licence requirement. These core elements centre around having completed a comprehensive risk assessment and then implemented operational monitoring of critical control points against validated, agreed, critical limit operating criteria. Therefore, it is recommended that a timeframe be agreed with NSW Health by when the core of the AGWR Framework will be implemented for all existing schemes.</p> <p><b>Recommendation:</b></p> <p>Develop timeframes, agreed with NSW Health, for completing the implementation of the core of the AGWR Framework for existing schemes.</p>
<b>3.7.2 NR</b>	Other grades of water supplied by Hunter Water do not include Drinking Water but does include Recycled Water.				
<b>3.7.3 SC</b>	Where there is a conflict between any of the guidelines, requirements or standards applying to Hunter Water under clause 3.7.1 the Minister's decision will prevail.				
<b>3.7.4 Audit</b>	<p>Hunter Water must use its best endeavours to reach agreement with persons to whom Other Grades of Water is supplied. The terms of agreement for the supply of Other Grades of Water must include:</p> <p>(a) the standard of the quality of the water supplied;</p> <p>(b) the purpose of the supply;</p>	Moderate Risk. Consumers need to be informed in order to make decisions about appropriate water uses.	Hunter Water has used its best endeavours to reach agreement with persons to whom Other Grades of Water is supplied. The terms of agreement for the supply of Other Grades of Water must include the matters set out in the licence requirement.	<b>Full</b>	Hunter Water maintains recycled water supply agreements with customers that outline recycled water supply conditions, water quality and permitted uses. Examples were sighted including that with Eraring Energy and another with Terry Wickham. The location of the recycled water delivery point was included as an amendment during the 2010-11 financial year. Examples of these amendments were provided for several recycled water schemes.

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	(c) the continuity of the water supplied; and (d) the costs to be paid by the Customers for the supply of water to them.				
<b>3.7.5 Audit</b>	Hunter Water must advise persons to whom Other Grades of Water is supplied, of the potential uses for the Other Grades of Water and of the requirement that Other Grades of Water must undergo water treatment if it is to be used as Drinking Water.	Moderate Risk. Consumers need to be informed in order to make decisions about appropriate water uses.	Persons to whom Other Grades of Water is supplied have been advised of the potential uses for Other Grades of Water and the requirement that Other Grades of Water must undergo water treatment if it is to be used as Drinking Water.	<b>Full</b>	Information regarding the acceptable use of recycled water is included in the recycled water supply agreements (see section 3.7.4).
<b>3.8</b>	<b>Environmental water quality</b>				
<b>3.8.1 Audit</b>	Hunter Water must report to IPART on its performance against any environmental water quality requirements for any discharges or water releases required by licences issued to it by the DECC or the DWE.	Low Risk. This performance is overseen by other regulators.	Hunter Water has reported to IPART on its performance against any environmental water quality requirements for any discharges or water releases required by licences issued to it by the OEH or NOW. The report provided is complete.	<b>Full</b>	<p>Hunter Water has no stipulated environmental water quality requirements for environmental discharges. However, the Water Management Licence stipulates environmental release rules for Chichester Dam. These results are presented in the Environmental Performance Indicators Report 2010-11 (p.3).</p> <p>With respect to wastewater discharges, water quality improvements were planned for effluent discharge to the ocean from Burwood Beach Waste Water Treatment Works. At present there are plans to ensure adequate inactivation of viral pathogens using a high UV dose disinfection system, as agreed with NSW Health and community groups. However, the upgrade has been delayed by potentially several years because of the need to understand the environmental impacts of the discharge. In addition to meeting health requirements, it is necessary to meet environmental requirements. It is possible that stricter or different environmental requirements would lead to a need to make alternative treatment arrangements so that a final decision on the upgrade cannot be made until both health and environmental requirements are understood. It is understood that NSW Health has expressed concerns about the public health risks associated with sewage effluent being discharged to the recreational water environments influenced by the</p>

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					<p>Burwood Beach plant. Therefore, given this additional delay in the disinfection upgrade, it is necessary to come to some interim arrangements to protect public health whilst the necessary environmental requirements are determined.</p> <p><b>Recommendation:</b></p> <p>Develop an interim agreement with NSW Health that will protect public health in the recreational water environments influenced by the Burwood Beach plant for the next few years – until a disinfection upgrade is in place.</p>



## Appendix 4 Infrastructure Performance Detailed Audit Findings (Part 4)

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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
4	Infrastructure Performance	Very High Risk The overarching recommendation related to a number of important management issues that spanned several licence sections.	Hunter Water has addressed the recommendations from the 2009/10 audit in respect to: <ul style="list-style-type: none"> <li>• implementation of a continuous improvement and quality assurance management strategy</li> <li>• development of a set of knowledge and information management processes and practices within a quality assurance framework</li> <li>• investigation report on sewerage system overflows</li> </ul> The first two points are discussed at section 4.8 and Appendix 2		<b>Evidence:</b> Board paper provided giving summary investigation of the wastewater overflows. – Sewer relining works... <b>Audit Comments:</b> Hunter Water has developed a continuous improvement strategy and is working through this process at the moment. This covers the quality management process and associated information processes and practices. (See 4.8) An investigation report has been developed and has been provided to the board to understand trends in dry weather overflows etc. and to look at potential impacts on the licence.
4.4	Compliance with system performance standards				
4.4.1 Audit	Hunter Water must comply with the Water Pressure Standard, the Water Continuity Standard and the Sewage	High Risk. Poor performance	Compliance with the Water Pressure Standard, the Water Continuity Standard	Full	<b>Evidence Provided:</b> Hunter Water complied with the new Water Pressure, Water Continuity and Sewer Overflow Standards for 2010/11 year. Results for the year are

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	Overflow Standard (each as amended) or other standard as required by the Minister.	can: Pose a public health hazard Damage customer property Pose loss of amenity to customers Disrupt industrial and commercial customer operations Increase fire hazard due to sufficient water Cause customer dissatisfaction	and the Sewage Overflow Standard or other standard as required by the Minister.		<p>documented in the Service Quality and System Performance Report. (Folder 4.1-4.3).</p> <p>Background information, systems used and methodology are outlined in the Monitoring and Reporting Protocol. (Folder 4.4)</p> <p>Evidence of actions taken to ensure compliance:</p> <ul style="list-style-type: none"> <li>• Sewage Overflow Strategy Report (Folder 4.0)</li> <li>• Pressure Management Strategy/Policy – Flow Meters /PRV(Folder 4.4)</li> <li>• Critical Sewer Inspection (Folder 4.4)</li> <li>• Cast Iron Sewer Lining Program (Folder 4.4)</li> <li>• I/I Program (Folder 4.4)</li> <li>• Sewer Rehab (Folder 4.4)</li> <li>• Water main Replacement Program (Folder 4.4)</li> <li>• Trunk main &amp; Rising main Condition Assessment Program (Folder 4.4)</li> <li>• Leak Detection Program (Folder 4.4)</li> <li>• Air Scouring Trial Program (Folder 4.4)</li> </ul> <p><b>Audit Comments:</b></p> <p><b>General Comments:</b></p> <p>Due to the way that Hunter Water collects performance information it has been possible to retrospectively look at performance for the new measures in this licence, this has made it fairly easy to review trends and understand what has been behind any substantial changes.</p> <p><b>Water Continuity – Unplanned</b></p> <ul style="list-style-type: none"> <li>• <b>Properties affected by low pressure</b> “No more than 4,800 properties of water customers per annum will experience a low pressure failure of less than 20 metres head for a continuous period of 30 minutes or more “</li> </ul> <p>The licence target has been achieved (2,334 compared with the target of 4,800). This is the first year that this measure has been required though retrospective data was provided. Generally there have been some extremely hot days e.g. hot first week of February, 40 degrees, and some areas therefore being stretched but average demand overall.</p>

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					<p>Compliance is modelling based, Hunter Water looked at the standards to measure pressure performance and concluded that it was too expensive to install pressure gauges (around \$4million) however Hunter Water are satisfied with their current system.</p> <ul style="list-style-type: none"> <li> <b>Unplanned Water Interruption Standard</b>            “No more than 10,000 properties served will experience an unplanned water interruption exceeding 5 hours in duration in the licence year.”            This is a new indicator. 5,845 properties were affected. The main jump in September was due to a main break. There were actually five large incidents during the period and lessons learnt around shutdowns and operational procedures have been changed to assist with mitigating against this occurring in the future. The annual trend for the number of jobs leading to a breach of the 5 hours duration is higher than during the three previous years. Some changes in the data collection process and some large main breaks prior to 2006/07 resulted in higher figures prior to 2007/08. Replacement of some trunk mains is now underway. Figure 1.2.2.         </li> <li> <b>Unplanned Interruptions – 3 or more events</b>            “No more than 5,000 properties served will experience 3 or more unplanned water interruption exceeding 1 hour in duration in the licence year.”            This is a new standard. 2,200 properties received more than three outages in one year. This mainly occurred in a few suburbs. Example provided – 375mm trunk main with a couple of failures, for example a temporary repair failed and a standpipe was vandalised when being used to assist in rezoning an area of the network. Then there was also a failure to correctly re- connect during the repair works. Windale – a project is underway to put automated valves and procedures in place for the future.         </li> <li>           Effective management of the trunk mains and the renewals strategy will assist Hunter Water keeping within these targets.         </li> <li> <b>Multiple Unplanned Interruptions</b>            Hunter Water has modified the water replacement programme to         </li> </ul>

Appendix 4 Infrastructure Performance Detailed Audit Findings (Part 4)					
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					<p>manage the repeat events. Staff look at monthly data for the renewal programme, and look at exceedance assessments. The longer term view is also considered (over a forty year period).</p> <ul style="list-style-type: none"> <li> <b>Average Duration of an Unplanned Water Interruption (NWI C15)</b>            Average duration of an unplanned interruption – water (minutes).”            147 minutes. A significant increase from previous years (around 120 minutes). Likely attributable to the number of customers affected by the large main outages this year.            Hunter Water looks at the cost/benefit of renewing versus repairing a main. They also look at customer impacts, water loss etc and incorporate these into their reticulation renewal models. Failure frequencies are also to be put into the model. The overall trend is downward, likely due to the water main replacement programme in 2007/08 reducing water breaks. Failure of bulk and mid-sized mains in remote areas can impact upon travel times and therefore the duration of some unplanned outages is extended.         </li> <li> <b>Ave frequency of unplanned water interruptions (NWI C17)</b>            “Customer unplanned interruption frequency – water (per 1000 properties)”.            259 unplanned customer interruptions/1,000 for the year. The overall trend is downwards         </li> </ul> <p><b>Summary of unplanned interruptions:</b>            There are a number of programmes in place to help maintain and improve performance regarding unplanned interruptions these include:</p> <ul style="list-style-type: none"> <li>Leak detection on a five year rolling programme</li> <li>Air scouring trial - water quality – increased planned interruptions.</li> <li>Water loss programme – this encompasses pressure management and leakage programmes. The pressure management is mainly for asset life extension 5-10 % of system.</li> <li>A business case has been developed for pressure management. Hunter</li> </ul>

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					<p>Water did a cost/benefit analysis and determined the marginal cost of water. Based on the current marginal long term cost of water and asset life extension .They have been working on this over the last two years.</p> <ul style="list-style-type: none"> <li>• Hunter Water is rolling out another suite of works programmes in high pressure areas, 2-3 areas are in the design phase, one has been installed, and 20-30 pressure management areas are being rolled out over the next five years if capital approval is given.</li> <li>• Active leak detection, Hunter Water has been undertaking this on a 4-5 year rolling period. ELL – increasing to 1 in 2 year frequency. Cost savings of leakage reduction at marginal long run cost, this will be cost effective at a two year frequency if money is available.</li> <li>• Looking at setting up control catchments to determine the effectiveness of the programme and to look at assumptions in the business case, working with WSAA and other utilities.</li> <li>• Hunter believes that pressure management will resolve some renewals issues.</li> <li>• There is a substantial amount of business consultation to ensure that the community accepts the principals of pressure management.</li> <li>• Active leak detection is used to determine the background level of leakage. Hunter Water would like to get to point of monitoring set up DMAs, monitoring and then setting up trigger points for leakage programmes. Hunter Water is finalising business cases for this project and it will need to go through the price path review.</li> </ul> <p><b>Planned Interruptions.</b></p> <ul style="list-style-type: none"> <li>• <b>Properties affected by planned water interruptions</b> A large jump was evident in June due to the air scouring programme. Overall the trend is pretty static, apart from the air scouring increase. Leak detection has been underway for 4-5 years, Hunter are now doing planned works. Tied the pilot to customer complaints, but mains not as dirty as expected. The trend has come down from 2002/03 to 2006/07 and has been slowly increasing since then but not a worrying trend.</li> <li>• <b>Properties affected by work not on time.</b> Lots of flow meters have been put in on larger mains, Hunter have done</li> </ul>

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					<p>trial shutdowns, etc. not always going to plan, due to traffic control, weather etc. In total Hunter Water planned around 19,000 jobs; approximately 10% were not completed within the time planned/indicated to customers. On average, around 1,600 properties are affected annually for 7 of the last 9 years that this measure has been compared against.</p> <ul style="list-style-type: none"> <li>• <b>Multiple planned interruptions.</b> There has been one small area of repeat events due to planned maintenance requirements, Hunter Water could look at project management improvement, but only one small area with 39 properties impacted.</li> <li>• <b>Water supply interruptions for 250 or more:</b> Three failures of new connections – The Infrastructure Delivery section contract managers have field inspectors and procedures that they follow. This raised the question regarding how this would be managed in the future. A review was undertaken to investigate what had happened and new procedures have been put in place to ensure this doesn't happen again. Asset Creation are going through a risk process at the moment incorporating key elements, have HAZOPS etc that they go through. For the Wallsend example of 399 properties out for more than 5 hours Hunter Water sat down with the contractor and discussed it in detail. Hunter Water is scaling up the capital programme but need to ensure this isn't resulting in lowered quality control. Glendale did a trial shutdown. In between trial and actual work, a failure occurred elsewhere and a valve failed closed, as this was the alternative supply. Need a project review and look at how this is dealt with in a systematic way and consider how this feeds into future processes to ensure it doesn't happen again. How has the asset creation team identified and/or addressed individual and systemic issues?</li> <li>• Interruption affecting 250+ longer than five hours: – three contractor incidents – risk workshop put in as a risk activity prior to a cut in, works associated with a shutdown, bring in contractor, HW staff</li> </ul>

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					<p>etc look at all the scenarios, this has been done for unplanned shutdowns as a result of the Wallsend pump station issue.</p> <p>Upper Dungog –letters were received from customers thanking HW for achievement of works. At risk customers are engaged when the works are due to go ahead and staff keep customers involved right up to the actual construction phase. HW has received good feedback on this practice.</p> <p>Different gates/milestones are set during the operations.</p> <p>Prior to the Wallsend incident they didn't have enough "What if" scenarios.</p> <p><b>Quality control</b></p> <p>Risk workshops, are held to formulate contingency plans and to reinforce the project scope. The team, go through inspection test plans with the contractor. Inspectors go through the works; everyone knows what their role is. ITP cover off the scope of works e.g. controls around open/close valves etc. Shutdown plans are documented and operators and contractors are involved.</p> <p>Post completion review processes are in place and these identify lessons learned, which will be pulled into the information Portal and the QMS for others to access.</p> <p>Alerts go out to contractors and consultants to share information.</p> <p>The larger construction programme has led to an increase in pre-planning, management of resource utilisation, creation of project teams, staggering of design and construction programmes, systematic processes to ensure efficient programme delivery. Hunter has capital delivery process to follow. This is updated on a monthly basis, then detailed programmes for each project are developed, contingency windows are applied.</p> <p>In the Wallsend incident – uncovered a large amount of services that there was no record of and ended up rushing the works to get the job done quickly. This has been discussed with the contractor to see how they will prevent this type of event from happening again in the future.</p> <p><b>Notes on the Uncontrolled Sewer Overflows:</b></p> <p>Dry Weather Overflows (DWO) – fairly static</p>

Appendix 4 Infrastructure Performance Detailed Audit Findings (Part 4)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>Information was provided by location, increase in private system faults Sewer overflow strategy report has been developed. This notes that the number of tree root blockages increases following a dry year and this has led to an increase in the sewer-relining projects in some areas Built a model , 75% of the incidents were related to tree root blockages, Hunter Water are addressing this by increased sewer re-lining, to lowest lifecycle cost , predict that similar likelihood of tree root blockage, cost effectiveness to 2-3 blockages over 3-five years, can justify re-lining the longer mains, 25m – up. Eliminates future root ingress.</p> <ul style="list-style-type: none"> <li>• <b>Dry Weather Overflows – no of properties affected.</b>  <i>“No more than 5,000 uncontrolled dry weather sewage overflow events in the licence year that impact on private property.”</i>  This is a new measure. 3,723 uncontrolled DWO were recorded on private property. The historical trend is fairly static with results being around the 3,000 mark for the nine years recorded.</li> <li>• <b>Dry Weather Overflows – 3 or more events</b>  <i>“No more than 45 properties experience three or more uncontrolled dry weather sewage overflow events in the licence year that impact on private property.”</i>  This indicator was introduced in 2010. 26 properties were reported compared with the target of 45. There is no clear trend for the nine years of data, although there were two low years in 2008/09 with a steep increase in 2010/11.</li> <li>• <b>Wet Weather Uncontrolled Overflows</b></li> <li>• Hunter Water have identified the key areas and assets most affected by such problems. Inflow and Infiltration are under a targeted management program. A strategy is in place for long standing wet weather overflows on to private land. Hunter has identified problem areas, implemented solutions and undertaken hot spot analysis. Recently ramping up in terms of getting a 4-5 year programme of works to address some of these issues. This won't necessarily prevent recurrence under a more than 1 in 5 year storm, but has the main aim of reducing the frequency of wet weather Overflows to customers.</li> </ul>



Appendix 4 Infrastructure Performance Detailed Audit Findings (Part 4)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p><b>Wet Weather Overflows – General:</b></p> <p>A number of problem areas have been identified, such as Swansea which has saline groundwater intrusion. Hunter Water is monitoring flows and salinity and have undertaken a cost benefit analysis. There has been evidence of corrosion in a downstream pump station. A relining strategy has been in place for the last few years and dry weather flows have decreased by around 30%. Hunter are using flow gauging to validate their programmes to determine how cost effective the project is and how physically effective it is in preventing Inflow and Infiltration to the network. Hunter is working with WSSA to develop a best practice guideline. They are also undertaking a validation programme, trying different things indifferent catchments.</p> <p>They are also working with HWA to better understand Inflow and Infiltration, looking at undertaking dye testing, checking p-traps, s-bends into the system etc in known problem areas where smoke testing has been inconclusive.</p> <p><b>Properties affected by more than one dry weather overflow</b></p> <p>“Number of properties affected by uncontrolled sewage overflow in dry weather where the period since the last uncontrolled sewage overflow in dry weather on that property is less than 12 months”.</p> <p>There has been a general upward trend in this measure over the nine year period. A number of programmes have been initiated to manage and reduce repeat events, for example the revised sewer rehabilitation model. 2.17 – in NWI average sewer interruptions.</p> <p>Lining with a continuous liner like fibreglass with no joints is a good example of attempting to introduce improvements in performance as part of renewal and rehabilitation. Such liners are also sufficiently flexible for managing soil movement. No indication of root intrusion or breaks of such liners have been observed.</p>
<b>4.5</b>	<b>Reporting on system performance standards</b>				
<b>4.5.1</b>	By no later than 1 September each				Service Quality and System Performance Report published and provided to

<b>Appendix 4 Infrastructure Performance Detailed Audit Findings (Part 4)</b>					
<b>Clause/ Scope</b>	<b>Operating Licence Obligation</b>	<b>Risk</b>	<b>Target for Full Compliance</b>	<b>2010/11 Audit Grade</b>	<b>Auditor Commentary</b>
<b>SC</b>	year, Hunter Water must report to IPART on its compliance with the Water Pressure Standard, the Water Continuity Standard and the Sewage Overflow Standard.				IPART (Folder 4.1-4.3). 31 <sup>st</sup> August – copy of letter provided.
<b>4.5.2 Audit</b>	By no later than 1 September each year, Hunter Water must report to IPART on: (a) the number of Properties that experienced a Water Pressure Failure; (b) the number of Properties that experienced a Planned Water Interruption or an Unplanned Water Interruption; and (c) the number of Uncontrolled Sewage Overflows; in the immediately preceding financial year.	Low Risk. This obligation is overseen by IPART.	Hunter Water reported to IPART its 2010/11 performance against the System Performance Standards by 1 September 2011 and this report was complete.	<b>Full</b>	<b>Audit Comments:</b> The checklist is incorporated in the Service Quality and System Performance Report to ensure that it is complete (Folder 4.1-4.3) This report was provided to IPART prior to 1 September.
<b>4.5.3 Audit</b>	Hunter Water must maintain record systems sufficient to enable it to measure accurately its performance against the Water Pressure Standard, the Water Continuity Standard and the Sewage Overflow Standard and to enable measurement and reporting by Hunter Water of those standards by delivery systems. Delivery system in this clause means the geographic classification used by Hunter Water for its own internal purposes, based on geographic regions forming part of the Services.	Moderate Risk. Insufficient records mean that Hunter Water is unable to measure these standards and the customer service levels that they underpin.	Record systems have been maintained sufficient to enable Hunter Water to measure accurately its performance against the Water Pressure Standard, the Water Continuity Standard and the Sewage Overflow Standard and to enable measurement and reporting of those standards by delivery systems.	<b>Full</b>	<b>Audit Evidence:</b> The main system used is the in-house built computer system Asset Operation Maintenance System (AOMS). The data capture process, work flow and methodology used to determine performance against the Water Pressure, Water Continuity and Sewage Overflow Standards are documented in the Monitoring and Reporting Protocol. The protocol was updated in 2011 to reflect the changes to the Standards (Folder 4.4). Hunter Water's IT DR Strategy is provided as an example of IT system management framework (Folder 4.7) <b>Audit Comments:</b> Hunter Water has updated protocols to address changes in the standard. The same data was being captured as previously therefore there was no need to change the systems used, rather it was the way the information

<b>Appendix 4 Infrastructure Performance Detailed Audit Findings (Part 4)</b>					
<b>Clause/ Scope</b>	<b>Operating Licence Obligation</b>	<b>Risk</b>	<b>Target for Full Compliance</b>	<b>2010/11 Audit Grade</b>	<b>Auditor Commentary</b>
					was combined and analysed that changed. Due to this Hunter were able to fairly easily compare performance against the previous standards even though the standards are new. To validate the data different teams checked the data queries and the trend analysis and this was undertaken in a way that was consistent with reporting protocols.
<b>4.5.4 SC</b>	Hunter Water must provide IPART where possible with such data and electronic access to the records kept by Hunter Water that enable it to report under clauses 4.5.1 and 4.5.2 otherwise Hunter Water must provide IPART with physical access to such records.				Relevant job details (20 random jobs in each category) for Water Continuity, Water Pressure and Sewage Overflow are provided to show data captured that enable accurate reporting against these Performance Standards (Folder 4.5).
<b>4.6</b>	<b>Review of system performance standards</b>				
<b>4.6.4 Audit</b>	Any amendments to the performance standards that must be adopted by Hunter Water under clause 4.6.3 must be incorporated into the Customer Contract as soon as reasonably possible and also considered as part of any review of the Customer Contract.	Low Risk. Amendments to system performance standards are published and incorporated into the Customer Contract is overseen by IPART.	The amendments to the performance standards that must be adopted under clause 4.6.3 have been incorporated into the Customer Contract as soon as reasonably possible. Any amendments to the performance standards effective from July 2010 have been considered in any review of the Customer Contract.	<b>Full</b>	<b>Evidence Provided:</b> Copy of new Customer Contract provided (Folder 4.6). The new Customer Contract incorporated feedback from customer consultation and the main focus of the amended performance standards. IPART Issues Paper and Hunter Water submission to IPART on Customer Contract are provided as evidence to demonstrate the process and options considered (Folder 4.6). <b>Audit Comments:</b> The issues paper has been reviewed and the customer contract clearly identifies the changes in Table 3.1 Hunter Water's proposed rebates. These relate to the new performance standards. It also outlines the removal of the rebate for planned interruptions.
<b>4.7</b>	<b>Service quality and system performance indicators</b>				
<b>4.7.2 Audit</b>	Hunter Water must maintain record systems that are sufficient to enable it	Moderate Risk. Insufficient	Record systems have been maintained sufficient to	<b>Full</b>	The main system used is the in-house built computer system Asset Operation Maintenance System (AOMS). The data capture process, work

<b>Appendix 4 Infrastructure Performance Detailed Audit Findings (Part 4)</b>					
<b>Clause/ Scope</b>	<b>Operating Licence Obligation</b>	<b>Risk</b>	<b>Target for Full Compliance</b>	<b>2010/11 Audit Grade</b>	<b>Auditor Commentary</b>
	to measure accurately its performance against: <ul style="list-style-type: none"> <li>the Service Quality and System Performance Indicators; and</li> <li>any service quality and system indicators specified in instruments that give effect to the National Water Initiative; and</li> <li>any service quality and system indicators in any other instrument determined by IPART.</li> </ul>	records mean that Hunter Water is unable to measure these indicators and the customer service levels that they underpin.	enable accurate measurement of performance against the indicators mentioned in the licence obligation.		flow and methodology used to determine performance against the Water Pressure, Water Continuity and Sewage Overflow Standards are documented in the Monitoring and Reporting Protocol. The protocol was updated in 2011 to reflect the changes to the Standards and a copy is provided (Folder 4.4) A number of AOMS QA reports and IT DR Strategy are provided to show the system management framework (Folder 4.7) <b>Audit Comments:</b> No changes other than those discussed previously. The on-site staff tablets were looked at including the way that jobs are issued and recorded, including time frames etc.
<b>4.7.3 Audit</b>	Where there is inconsistency between any of those indicators in clause 4.7.2 (or their application), IPART may determine which indicators are to apply.	Low Risk. Any inconsistency is known to IPART.	There is no inconsistency between any of the values reported for the indicators and, if there were inconsistencies, these inconsistencies were reported to IPART.	<b>Full</b>	<b>No inconsistency between any of the indicators.</b> Examples: (1) dry sewage overflow (public) under 2.3.1 (OL SSR-1A) is the same as sewage overflows on public land (dry weather) in 2.3.6 (OL SSR-2) (2) wet weather overflow (public) in 2.3.2 (OL SSR-1B) is the same as sewage overflows on public land wet weather) under 2.3.6 (OLSSR-2)
<b>4.7.4 Audit</b>	By no later than 1 September each year, Hunter Water must report to IPART its performance against the indicators in clause 4.7.2 for the immediately preceding financial year. The report must include an analysis of any problems of a systemic nature.	Low Risk. Indicators are monitored by IPART.	Performance against the indicators in clause 4.7.2 for the 2010/11 financial year has been reported to IPART by no later than 1 September 2011. This report included an analysis of any problems of a systemic nature.	<b>Full</b>	Report published and provided to IPART.  1 <sup>st</sup> September Report.
<b>4.8</b>	Asset management obligation				
<b>4.8 Audit (a) SC</b>	Hunter Water must ensure that its Assets are managed consistent with: (a) meeting its obligations under this Licence, the Customer Contract	Moderate Risk. Any failure to maintain capacity and	Maintenance of capacity to meet licence obligations into the future, and ensuring that the asset	<b>High</b>	High Compliance for renewals/rehabilitation work practices. Already discussed in Water Quality section. The following evidence demonstrates significant progress towards addressing the infrastructure specific recommendations in last year's audit.

Appendix 4 Infrastructure Performance Detailed Audit Findings (Part 4)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
(b) & (c)	<p>and all applicable laws;</p> <p>(b) subject to paragraph (a), achieving lowest cost of service delivery across the whole of life of the Assets, or where applicable across several asset life cycles, within the context of acceptable risk management principles; and</p> <p>(c) the analysis of Asset and Asset related business risks and managing them to a defensible residual level, subject to paragraphs (a) and (b).</p>	<p>capability into the future has important customer service implications that could include public health risks.</p>	<p>management system incorporates service targets that are consistent with licence requirements and the Customer Contract.</p> <p>The overarching recommendation from the 2009/10 audit has been addressed.</p> <p>Address recommendation R 7.5 from the 2009/10 audit, that Hunter Water Improves the management, operating, monitoring, actioning and reporting on asset management issues, including:</p> <p>Demonstrating that risk analysis and management processes are robust and holistic, integrated with business risk exposure and the work and monitoring processes and practices of staff and contractors.</p> <p>Conducting a business wide security threat assessment and gap analysis,</p> <p>Re-designing of condition monitoring checklists.</p> <p>Incorporating an independent participant in dam safety audits.</p>		<p>However, many are still to be completed or fully implemented and therefore a High compliance is appropriate. Since completion is only a question of time, and the auditors see no inefficiencies in progress or program plans, no key recommendations have been made.</p> <p><b>Evidence Provided:</b></p> <p><b>4.8(a)</b> Draft Asset Management Framework provided. Document has been endorsed by the GMT.</p> <p>R7.5 (a)</p> <ul style="list-style-type: none"> <li>Asset management (dams) flow diagram.</li> <li>Draft dams safety reports from 5-yr inspection recommendations. <ul style="list-style-type: none"> <li>Chichester flood deficiency.</li> <li>Grahamstown Wind &amp; Wave / PMF.</li> <li>Campvale Culvert Options.</li> <li>Grahamstown Liquefaction.</li> <li>Seepage – Geo9/Willowstick.</li> </ul> </li> <li>Letter from DSC RE: acceptance of 5-yr inspections.</li> <li>5-yr inspection reports – Chichester &amp; Grahamstown.</li> <li>Dams Safety Emergency Plans – Chichester &amp; Grahamstown.</li> </ul> <p>(b) Security threat assessments of Hunter Water's key critical infrastructure (CI) sites using an expert water sector peer review panel were conducted during early August 2011. The key documents used during these reviews were as follows:</p> <ul style="list-style-type: none"> <li>Malevolent Threat Scenario Matrix used during the assessments to consider all potential malevolent threats</li> <li>Draft Security Reviews of Critical Infrastructure document to provide background for the peer review panel (at the time of writing review comments were yet to be received from the panel, however, comments are expected shortly)</li> </ul> <p>Refer to the following documents:</p> <p>R7.5(b) IPART Methodology Brief - Security Review of Critical Infrastructure V.1.0.DOC</p>

Appendix 4 Infrastructure Performance Detailed Audit Findings (Part 4)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
			Development of asset management plans for dams.		<p>R7.5(b) IPART acknowledgement of dam security scope - 13 April 2011(2).pdf; R7.5(b) - Malevolent Threat Scenario Matrix.XLS; R7.5(b) Draft Security Reviews of Critical Infrastructure.DOC</p> <p>A presentation will be prepared for forthcoming IPART interviews</p> <p>(c) Revised routine dams safety inspection sheets.</p> <p>Email from independent dams safety participant (Norm Himsley) verifying participation. Resilience coordination –</p> <p><b>Audit Comments:</b></p> <p><b>4.8 (a)</b> The Manager Asset Management presented a summary of the Draft Asset Management Framework that was developed in November 2010. The AM Framework has been presented to the GMT and is next to be signed off by the CEO.</p> <p>Clear linkages were made between the organisations vision and mission and operational and regulatory requirements. Section 4.1 notes the asset planning process “commences with identifying the regulatory and operating requirements which define the level of service requirements”. This aligns with other evidence provided such as updates to the customer charter, achievement of performance indicators and measures and the continuous improvement focus to improve performance and information collation.</p> <p>Hunter Water is tying in the AMPs to the price path submission format.</p> <p><b>Recommendation 7.5</b></p> <p>(a) Risk Analysis Process</p> <p>Hunter Water Australia has a draft template for water.</p> <p>A five yearly dam inspection was undertaken a few years ago, recommendations have been pulled out of four studies. Technology to measure potential seepage through grahams town wall.</p> <p>Routine weekly and yearly inspections are held and result in the implementation of maintenance works etc. Maintenance schedules are linked to risks and put into the Asset Management Plan. Dam Security will feed into the AMP.</p>

Appendix 4 Infrastructure Performance Detailed Audit Findings (Part 4)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>(b) Business Wide Security Threats</p> <p>IPART were involved in developing the project scope for the security assessment. Hunter then engaged an external consultant to undertake a security assessment via a peer review process. In august State Water and Queensland authorities, came to Grahamstown and Chichester to undertake an assessment and are working on the report now. Main pump stations were also included in the review. Queensland Urban Authorities are due to come back with comments.</p> <p>Likely to have a reciprocal arrangement with the water agencies. Approach considered to be more pragmatic than obtaining results from consultants.</p> <p>Internally Hunter has established an organisational working group to look at security incidents and near misses etc and re-evaluate security risks. Looking at organisational security holistically including cyber-attacks, head office etc. There is an increase in repeat activities so this has been a timely introduction.</p> <p>Hunter Water is trailing use of highly sophisticated security units at remote sites monitored from a central control centre. Suitable sites for testing have been appropriately identified by the working group. Cost/benefits being analysed. Reservoirs are also monitored and alarmed etc.</p> <p>(c) Condition Monitoring Checklist</p> <p>Hunter Water has reviewed the condition monitoring checklist but this has been left mainly the same although they have added action items and works order numbers. Chichester dam is subject to its proscribed weekly condition inspections in addition to the normal attendance and random patrols by staff. Hunter are looking at using tablets in the field to keep information on the system, reduce administration time, uploading photographs etc. looking at suitability, for example, in strong sunlight/weather etc.</p> <p>Grahamstown has a similar checklist.</p> <p>(d) Independent person in auditing process</p> <p>An independent inspector is now used. They are undertaking a review</p>

<b>Appendix 4 Infrastructure Performance Detailed Audit Findings (Part 4)</b>					
<b>Clause/ Scope</b>	<b>Operating Licence Obligation</b>	<b>Risk</b>	<b>Target for Full Compliance</b>	<b>2010/11 Audit Grade</b>	<b>Auditor Commentary</b>
					of the 4-5 major studies that are underway and also taking part in annual inspections. (e) Dam Asset Management Plan Still working on the Dam AMP – recommendation to update the Dam Management processes with more than just the Dam Act being the driver
<b>4.9.2 NR</b>	<b>Reporting on the asset management plan</b>				



## Appendix 5 Infrastructure – Trends for System Performance Standards and Indicators

On 7 July 2010, the Governor of NSW proclaimed a set of new System Performance Standards (SPS) for Hunter Water. The Water Pressure SPS was unchanged but significant changes were made to the Water Continuity SPS and the Sewer Overflow SPS. This means that we are unable to present trends in the audits results for the Water Continuity and Sewer Overflow SPSs. In this section, we provide a trend analysis of the Water Pressure SPS as well as various system performance indicators.

### System Performance Standard - Drinking Water Pressure

#### Reported Compliance and Historical Trend Comparison

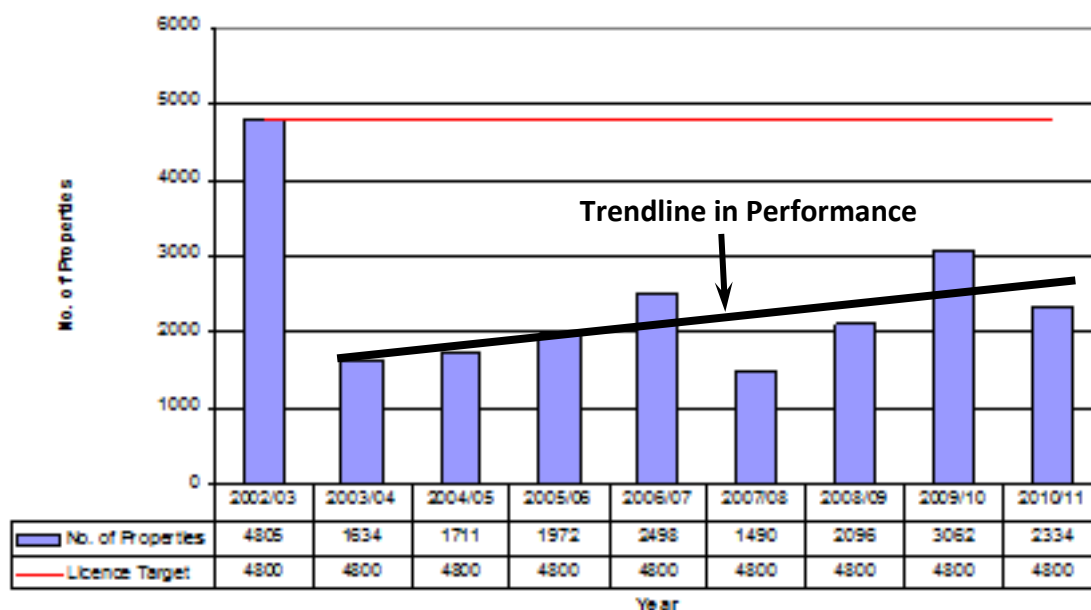
As noted previously, Hunter Water fully complies with the Standard of not more than 4,800 properties to be affected by a water pressure incident where the water pressure to a property falls below 20 metres, at the point of connection of the property to Hunter Water's main.

Comparison with data from previous years (see Table A5-1) indicates some inconsistency due to the high number reported for 2002/03. If this data is ignored as an outlier, the trendline in performance (as shown in Figure A5-1) over the other 8 years is showing a progressive deterioration in performance. While still within the Standard, attention will need to be paid to managing this issue in the near future, given the lead time required for any capital works required.

**Table A5-1 Water Pressure (Historical Comparison)**

Year	Number of properties that experience one or more pressure incidents in the year
2002/03	4,805
2003/04	1,634
2004/05	1,711
2005/06	1,972
2006/07	2,498
2007/08	1,490
2008/09	2,096
2009/10	3,062
2010/11	2,334

**Figure A5-1 Water Pressure (Trendline)**



## System Performance Standards - Water Continuity

### Unplanned Interruptions Greater than 5 hrs - Reported Compliance and Historical Trend Comparison

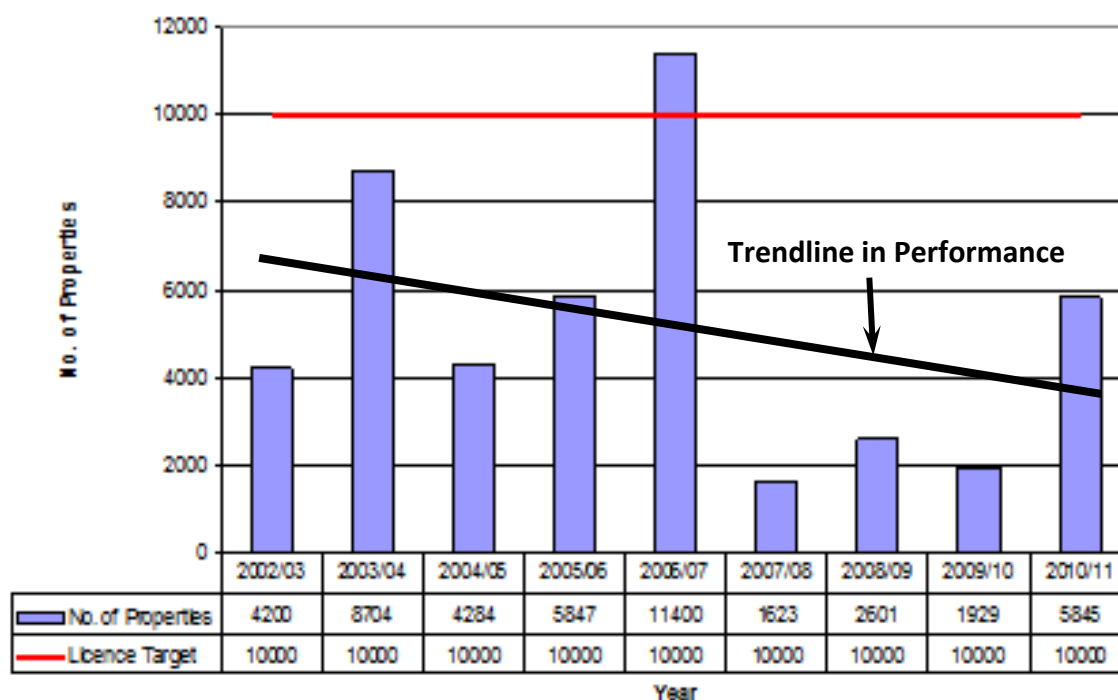
As noted previously, Hunter Water fully complies with the Standard of not more than 10,000 properties to be affected by an unplanned water interruption greater than 5 hrs

Comparison with data from previous years (see Table A5-2) shows the impact of the large main failures that occurred this year relative to the performance in the previous 3 years where no such failures occurred. The trendline in performance (as shown in Figure A5-2) is showing a positive trend driven by those 3 years – inference of future performance based on the trendline is at this point inconclusive.

**Table A5-2 Water Continuity Properties Affected by an Unplanned Interruption > 5hrs (Historical Comparison)**

Year	Number of properties that experience an interruption greater than 5 hrs duration
2002/03	4,200
2003/04	8,704
2004/05	4,284
2005/06	5,847
2006/07	11,400
2007/08	1,623
2008/09	2,601
2009/10	1,929
2010/11	5845

**Figure A5-2 Water Continuity Properties Affected by an Unplanned Interruption > 5hrs (Trendline)**



### Unplanned Interruptions Properties with 3 or More Interruptions in Excess of 1 hr - Reported Compliance and Historical Trend Comparison

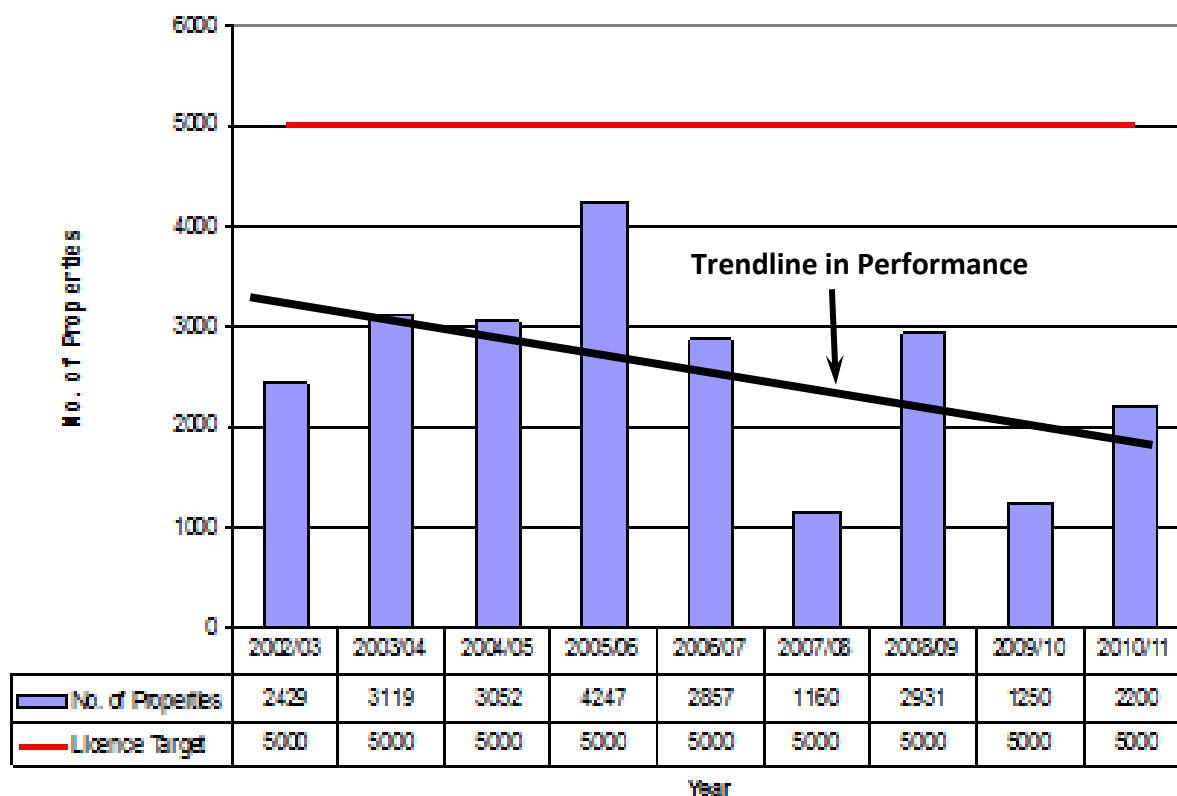
As noted previously, Hunter Water fully complies with the Standard of not more than 5,000 properties to be affected by 3 or more unplanned water interruptions greater than 1 hr.

Comparison with data from previous years (Table A5-3) indicates a downward trendline (Figure A5-3).

**Table A5-3 Water Continuity Multiple Interruptions (Historical Comparison)**

Year	Number of properties that experience more than 3 interruptions greater than 1 hr duration
2002/03	2,429
2003/04	3,119
2004/05	3,052
2005/06	4,247
2006/07	2,857
2007/08	1,160
2008/09	2,931
2009/10	1,250
2010/11	2,200

**Figure A5-3 Water Continuity Multiple Interruptions (Trendline)**



## System Performance Standards – Sewage Overflows

### Uncontrolled Dry Weather Overflows on Private Property - Reported Compliance and Historical Trend Comparison

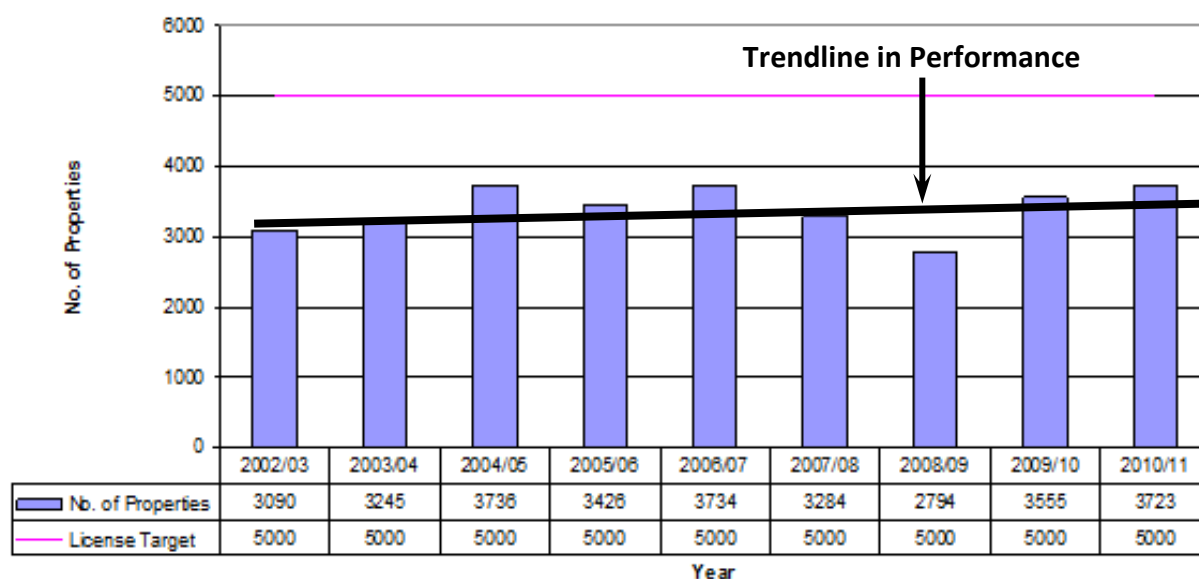
As noted previously, Hunter Water fully complies with the Standard of not more than 5,000 private properties to be affected by an uncontrolled dry weather overflow.

Comparison with data from previous years (see Table A5-4) shows a slowly increasing trendline in the number of overflows. (as shown in Figure A5-4)

**Table A5-4 Uncontrolled Dry Weather Overflows on Private Property (Historical Comparison)**

Year	Uncontrolled dry weather overflows on private property
2002/03	3,090
2003/04	3,245
2004/05	3,736
2005/06	3,426
2006/07	3,734
2007/08	3,284
2008/09	2,794
2009/10	3,555
2010/11	3,723

**Figure A5-4 Uncontrolled Dry Weather Overflows on Private Property (Trendline)**



### Multiple Uncontrolled Dry Weather Overflows on Private Property - Reported Compliance and Historical Trend Comparison

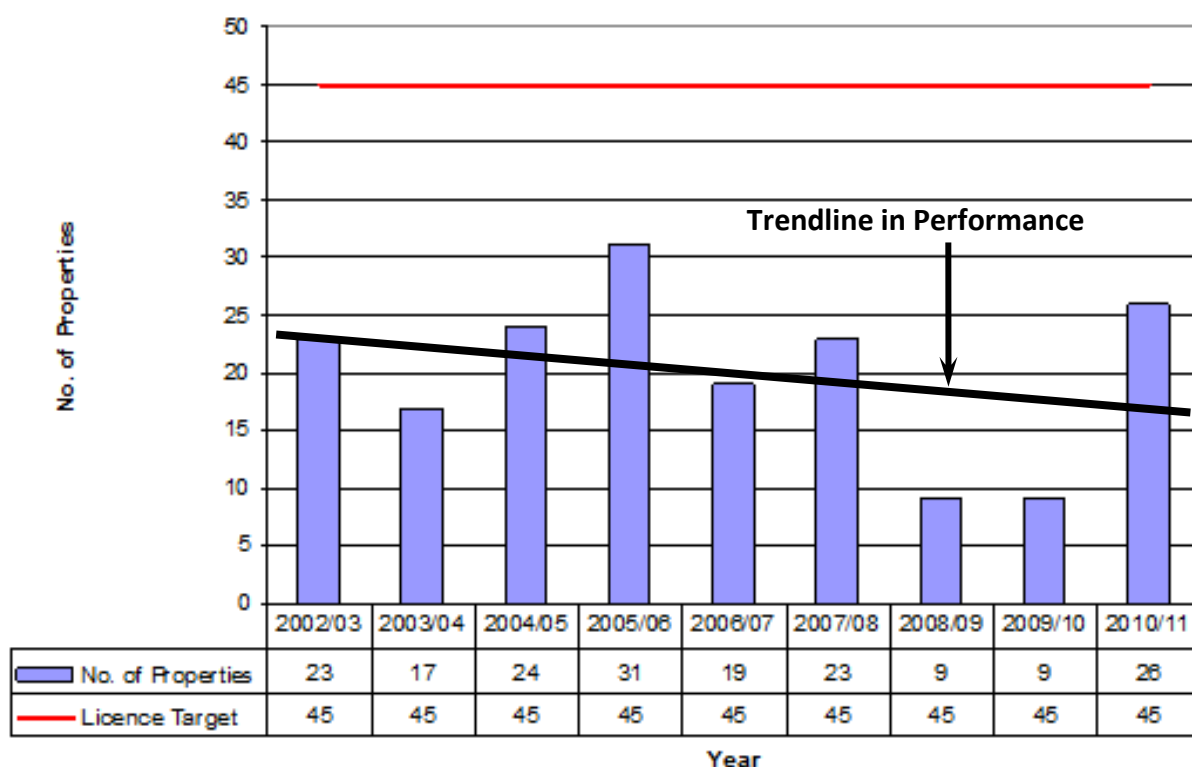
As noted previously, Hunter Water fully complies with the Standard of not more than 45 private properties to be affected by 3 or more uncontrolled dry weather overflows.

Comparison with data from previous years (see Table A5-5) shows a decreasing trendline in the number of properties affected. Future performance will only become clear once it is identified which of the results for the last three years are representative on ongoing behaviour. (as shown in Figure A5-5)

**Table A5-5 Multiple Uncontrolled Dry Weather Overflows on Private Property (Historical Comparison)**

Year	Private Properties with 3 or more uncontrolled dry weather sewer overflows
2002/03	23
2003/04	17
2004/05	24
2005/06	31
2006/07	19
2007/08	23
2008/09	9
2009/10	9
2010/11	26

**Figure A5-5 Multiple Uncontrolled Dry Weather Overflows on Private Property (Trendline)**



## System Performance Indicator- Drinking Water Pressure

The System Performance Indicators required to be reported by Hunter Water (Clause 4.7) provide valuable background information on Hunter Water's achievement of its performance Standards referenced in Clauses 4.1 – 4.3 and function as leading indicators of potential issues that may arise in the future in Hunter Water's ability to meet its System

Performance Standards. While generation and provision of this data is not subject to audit, the data itself requires critical appraisal within the context of Hunter Water's ongoing ability in meeting its System Performance Standards.

### System Performance Indicators - Water Pressure

Table A5-6 shows the trend in water pressure system performance indicator data for nine years. Where comparable data is unavailable for previous years, the cells have been shaded out.

**Table A5-6 Trend Comparison of Water Pressure System Performance Indicator**

<b>Year</b>	<b>OL WSR-4B (formally Clause 1.3.1) Number of Properties not in a low pressure area that experienced more than one Pressure incident/failure in a financial year.</b>
2002/03	24
2003/04	0
2004/05	0
2005/06	1
2006/07	0
2007/08	0
2008/09	0
2009/10	0
2010/11	0

## System Performance Indicators - Water Continuity

Table A5-7 shows the trends in the water continuity system performance indicators for nine years. Where comparable data is unavailable the cells have a grey tone. Of particular note this year is that there were 5 major trunk main outages or other events causing an interruption affecting more than 250 properties for in excess of 5 hours in 2010/11. These events have had a cascading impact on other measures. That aside, performance has been relatively stable.

**Table A5-7 Trends in Water Continuity System Performance Indicators**

Indicators	Indicator Parameters	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
OL WSR-1A (formally Clause 1.2.1) Number of Properties affected by Planned water interruptions where the duration of the interruption is:	<1 hour	4,189	2,748	3,473	3,501	3,066	3,366	4,169	3,943	3,860
	>1 hour but ≤ 5 hours	12,502	9,741	8,738	9,224	7,571	6,897	10,809	12,027	14,872
	>5 hours but ≤ 12 hours	2,452	2,485	2,902	1,137	376	623	972	586	463
	>12 hours but ≤ 24 hours	0	9	0	0	0	0	0	0	0
	>24 hours	52	0	0	0	0	0	0	0	0
	Total interruptions	19,195	14,983	15,113	13,862	11,013	10,886	15,950	16,556	19,195
OL WSR-1B (formally Clause 1.2.1) Number of Properties affected by Unplanned water interruptions where the duration of the interruption is:	<1 hour	23,003	17,028	21,174	19,684	18,598	12,404	14,821	13,356	11,944
	>1 hour but ≤ 5 hours	52,514	51,222	55,943	55,078	50,086	35,563	42,955	41,479	40,494
	>5 hours but ≤ 12 hours	4,500	8,911	4,353	5,713	8,386	1,494	2,045	2,226	6,145
	>12 hours but ≤ 24 hours	80	19	70	22	2,844	197	425	8	39
	>24 hours	31	0	3	6	66	15	191	2	2
	Total interruptions	80,128	77,180	81,543	80,503	79,980	49,673	60,437	57,071	58,624
OL WSR-2 (A) Total Number of Properties affected by multiple	2 interruptions						858	1,356	1,717	1,643
	3 interruptions						26	331	132	183



Indicators	Indicator Parameters	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Water Planned interruptions.	4 interruptions						0	0	0	0
	5 or more interruptions						0	0	0	39
	Total properties affected by multiple interruptions of any number						884	1,687	1,849	1,865
OL WSR-2 (B) Total Number of Properties affected by multiple Water Unplanned interruptions	2 interruptions						5,580	7,032	8,423	6,613
	3 interruptions						1,938	2,647	1,451	1,843
	4 interruptions						195	1,129	574	1,021
	5 or more interruptions						207	757	257	508
	Total properties affected by multiple interruptions of any number						7,920	11,565	10,705	9,985
OL WSR-2 Total Number of Properties affected by Water interruptions (whether a Planned or an Unplanned water interruption): (formally Clause 1.2.2)	2 interruptions	13,429	12,659	13,870	14,495	14,217	6,438	8,388	10,140	8,256
	3 interruptions	5,056	4,760	4,566	4,999	3,315	1,964	2,978	1,583	2,026
	4 interruptions	1,985	1,804	1,532	2,178	1,505	195	1,129	574	1,021
	5 or more interruptions	1,661	1,202	584	939	641	207	757	257	547
	Total properties affected by multiple interruptions of any number	22,131	20,425	20,552	22,611	19,678	8,804	13,252	12,554	11,850
OL WSR-1C (formally Clause 1.2.3)	Number of Properties affected by a Planned water interruption that did not commence at the time specified in the notice.	1,681	1,762	1,852	1131	1665	825	1,748	1,717	1,872
OL WSR-3 (formally Clause 1.2.4) Detail of events where 250 or more Properties were affected in a single	Number of planned events	0	3	1	0	0	0	0	0	0
	Total number of properties affected by planned events	0	1,017	252	0	0	0	0	0	0

Indicators	Indicator Parameters	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
event by either a Planned or an Unplanned water interruption either of which is longer than 5 hrs. (Presented by auditor as summary statistics)	Weighted average outage time for properties affected by planned events (hrs/property)	0	5.57	6.80	0	0	0	0	0	0
	Number of unplanned events (incl. 2007 storm event in brackets)	3	3	2	4	4 (8)	0	0	0	5
	Total number of properties affected by unplanned events (incl. 2007 storm event in brackets)	1,964	6,747	2,064	2,703	3,624 (8,525)	0	0	0	3,871
	Weighted average outage time for properties affected by unplanned events (hrs/property) (incl. 2007 storm event in brackets)	7.48	6.14	5.57	6.82	10.52 (9.51)	0	0	0	6.05
NWI-C10 Average duration of unplanned interruptions (minutes)							117.8	121	118.6	140.7
NWI-C12 Supply interruption frequency (minutes per 1000 properties)							225	272	255	259

## System Performance Indicators - Sewage Overflows

Table A5-8 shows the trends in sewage overflow system performance indicator data for nine years. Where comparable data is unavailable the cells are blocked out.

### Discussion

The performance reported for sewerage system performance and operation continues to show an underlying increasing trend and while this year's results are considered to be in general alignment with the prevailing weather conditions as noted by Hunter Water and the choke and breakage rates reported, it can be anticipated that Hunter Water will need to address this ongoing negative trend line in the near future.

**Table A5-8 Trends in Sewage Overflow System Performance Indicators**

Indicators	Indicator Parameters	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
OL SSR-1A Number of uncontrolled sewage overflows (dry weather)	Public						602	618	846	888
	Private						1,292	1,148	1585	1,741
	Total						1,894	1,766	2,431	2,629
OL SSR-1B Number of uncontrolled sewage overflows (wet weather)	Public						63	38	15	57
	Private						85	29	13	67
	Total						148	67	28	124
OL SSR-1 (formally Clause 1.4.1) Number of Uncontrolled sewage overflows (other than on Public land) in dry weather caused or resulting from:	(a) blockage in main pipe	1,401	1,363	1,535	1,281	1,501	1,292	1,148	1,585	1,741
	(b) blockage in branch pipe	1,506	1,706	1,993	1,977	2,028	1,825	1,485	1,782	1,741
	(c) Third party damage;	2	1	0	1	1	4	0	5	2
	An event other than one described in (a), (b) or (c)	13	12	16	23	23	29	19	17	22

Indicators	Indicator Parameters	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
OL SSR-3A (formally Clause 1.4.2 [a]) Number of Priority 1 sewage overflows to which the Corporation responded in:	< 1 hour	558	605	639	712	751	633	451	669	804
	> 1 hour	133	164	302	321	504	265	200	312	425
OL SSR-3B (formally Clause 1.4.2 [b]) Number of Priority 2 sewage overflows to which the Corporation responded in:	<3 hours	3,121	3,344	3,628	3,491	3,681	3,216	2,936	3711	3,641
	> 3 hours	659	701	990	810	1,462	790	642	718	882
OL SSR-2 (formally Clause 1.4.3) Number of Uncontrolled sewage overflows on Public land that occurred in:	dry weather	589	718	747	645	835	686	673	846	888
	wet weather.	9	14	55	17	129	74	40	15	57
OL SSR-1C (formally Clause 1.4.4) Number of Properties affected by an Uncontrolled sewage overflow in dry weather where the period since the last Uncontrolled sewage overflow in dry weather on that property is less than 12 months.		356	386	458	400	436	399		429	479
OL SSR-1D (formally Clause 1.4.5) Sewage overflow (whether an Uncontrolled sewage overflow or otherwise and whether occurring in dry weather or wet weather) where the period since the last sewage overflow on that Public land is less than twelve months.		28	76	109	63	104	94		116	155
NWI- C16 Average sewerage interruption (minutes)										2.36
NWI-E10 Sewer overflows to the environment (per 100km of main)							43			

## Appendix 6 Customer and consumer rights Detailed Audit Findings (Part 5)

Appendix 6 Customer and consumer rights Detailed Audit Findings (Part 5)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
5.1	Customer Contract				
5.2	Consumers				
5.4	Consultative Forum				
5.5	Customer Service Indicators (CSI)				
5.5.2 Audit	<p>Hunter Water must maintain record systems that are sufficient to enable it to measure accurately its performance against:</p> <ul style="list-style-type: none"> <li>(a) the Customer Service Indicators;</li> <li>(b) any customer service indicators specified in instruments that give effect to the National Water Initiative; and</li> <li>(c) any customer service indicators in any other instrument determined by IPART.</li> </ul>	<p>Low Risk.</p> <p>Failure to maintain sufficient records may compromise Hunter Water's ability to meet important customer service levels.</p>	<p>Record systems have been maintained sufficient to enable the accurate measurement of performance against the indicators listed in the licence obligation.</p> <p>Sufficient information has been collated to facilitate performance measurement and reporting.</p>	Full	<p><b>Commentary:</b></p> <p>Record systems were reviewed as part of the NWI section. A portion of results were tracked back to the base data and no problems were encountered.</p>
5.5.4 Audit	<p>By no later than 1 September each year, Hunter Water must report to IPART its performance against the indicators in clause 5.5.2 for the immediately preceding financial year. The report must include an analysis of any problems of a systemic nature.</p>	<p>Low Risk.</p> <p>This report is overseen by IPART.</p>	<p>Performance against the indicators in clause 5.5.2 for the 2010/11 financial year has been reported to IPART by no later than 1 September 2011. The report includes an analysis of any problem of a systemic nature.</p> <p>The information provided is complete.</p>	Full	<p><b>Commentary:</b></p> <p>Hunter Water provided a letter to IPART and IPART have confirmed receipt of this letter.</p> <p><b>Analysis of any problems of a systemic nature –</b></p> <ul style="list-style-type: none"> <li>• The number of Hardship vouchers has doubled in two years and Hunter Water has seen an increased trend in customers seeking payment assistance. More customers are asking for payment plans to smooth bill payments. Hunter Water is also more proactively contacting those customers that are lagging behind in payments. Where there is an identified hardship situation, HW will often refer customers to the appropriate agency. Customers can self-select, information is available</li> </ul>

Appendix 6 Customer and consumer rights Detailed Audit Findings (Part 5)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>on bills, reminder notices and the website. Information is actively provided to customers when they are late in payment.</p> <ul style="list-style-type: none"> <li>• Increase in the number of tenants requiring assistance (more than doubled) the number of home owners has marginally increased. Generally the number of vouchers has increased, not the number of customers.</li> <li>• Hunter Water is putting a lot of energy into managing this area and consequently has a new Hardship Manager commencing employment in September 2011. This is recognising that this is likely to be an issue that is going to be a long term concern not a quick fix.</li> <li>• Business rules help to identify which customers not paying their bills are in genuine hardship and need assistance, and those which are not in hardship and require a different management approach.. Restriction has shifted to an action of last resort after debt recovery has failed – i.e. where all avenues have been exhausted and it is understood that they can actually pay.</li> <li>• Contracts with Debt collection agencies ensure that appropriate procedures are followed. Have hold points where they need to come back to HW.</li> <li>• Looking at linkages between hardship and water efficiency.</li> </ul>

## Appendix 7 Complaints & Dispute Resolution Detailed Audit Findings (Part 6)

Appendix 7 Complaints and Dispute Resolution Detailed Audit Findings (Part 6)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
<b>6.1</b>	<b>Internal Dispute Resolution Process</b>				
<b>6.1.1 Audit</b>	Hunter Water must have in place internal complaint handling procedures (Internal Complaint Handling Procedures) for receiving, responding to and resolving Complaints by Customers and Consumers against Hunter Water.	Moderate Risk.  Adequate complaint handling processes are important elements of customer service	An internal complaint handling procedures for receiving, responding to and resolving Complaints by Customers and Consumers against Hunter Water is in place.	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending.</p> <p>Process Map – Case (First Point of Contact) (CI 6.1.1 - A - Process Map - Procedure - Case (First Point Of Contact).pdf)</p> <p>Case Investigation Process and Portal Guide Version 1.0 (CI 6.1.1 - B - Case Investigation Process &amp; Portal Guide.pdf)</p> <p>Customer information on Hunter Water's website (sighted online 13/09/2011 and at the audit interview 19/09/2011) (CI 6.1.1 - C(1) - Complaint Handling Procedure - Website.pdf)</p> <p>Complaint and Enquiry Policy (sighted online 10/09/2011) (CI 6.1.1 - C(2) - Complaint &amp; Enquiry Policy.pdf)</p> <p>Case Investigation Portal Version 1.0 (sighted online 19/09/2011).</p> <p>Case Number: 7364830977 viewed on Case Investigation Portal (19/09/2011). Extra information related to case viewed, provided post audit (CI 6.1.1 - Closed complaint case example.pdf).</p> <p><b>Commentary:</b></p> <p>HWC has a Customer Contact Centre in place which is managed by the Customer Services Manager (team under the Manager Business Operations looks after complaints and regulatory information around the customer). The Customer Contact Centre receives about 80-90% of overall customer contact – the rest received from emails, letters and 'face to face' contact. 'Face to face' contact sites include Head Office as well as co-located sites at Maitland and Lake Macquarie Councils.</p>

Appendix 7 Complaints and Dispute Resolution Detailed Audit Findings (Part 6)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>The Customer Information System is the main system for dealing with customer complaints. However, if requests need further action for them to be resolved, a 'to do' action is set up in the system and logged through the Customer Portal and investigated through the Case Investigation Process.</p> <p>The Case Investigation Process and Portal Guide exists which is the reference guide for use of this system as the name suggests. The Case Investigation Team is trained in the processes and business rules in the Guide. The guide itself is very user friendly and uses easy to scan tables and bullet points to relay information. Section 6 of the Guide includes information relating to Roles and Responsibilities for each defined role in the process – in generality, the roles and responsibilities are also reflected in Position Descriptions (not sighted) for customer services' staff. As an overall comment, the way that customers are managed is seen as a fundamental pillar of the business.</p> <p>A link to the Case Investigation Portal is found on the intranet site ('Reservoir') however, most staff members involved in customer actions are sent links to the Portal via email requests. The Portal uses Sharepoint software which has been adapted for management of customer actions and follow-up. The database appears easy to use and case information requested during the interview for the audit scope dates, was easily found and retrieved for analysis. Information can be downloaded from the Portal if required in an Excel format (not sighted).</p> <p>HWC has recently (end June 2011) moved to an external service provider which provides a Call Centre service for receipt and handling of customer requests. As part of the tender process, HWC stipulated that the successful tenderer had to be within a certain radius of Hunter's operations to allow a local focus to be maintained. Further information relating to the success of the Call Centre was not requested given that it was out of scope for the audit. The Call Centre is located at Maitland.</p> <p><b>OFI:</b> While not part of this audit scope, for the 'Change History' table in the Case Investigation Process and Portal Guide – consider including a comments section to summarise the salient points of the revisions that have been made in the document.</p>



Appendix 7 Complaints and Dispute Resolution Detailed Audit Findings (Part 6)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
<b>6.1.2 Audit</b>	The Internal Complaint Handling Procedures of Hunter Water must be based on the Australian Standard AS ISO 10002-2006 Customer satisfaction - Guidelines for complaints handling in organizations.	Low Risk. Adequate complaint handling processes are important elements of customer service	Hunter Water's Internal Complaint Handling Procedures is based on the Australian Standard AS ISO 10002-2006 Customer satisfaction - Guidelines for complaints handling in organizations.	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending.</p> <p>AS ISO 10002-2006 Customer satisfaction – Guidelines for complaint handling in organizations (<i>CI 6.1.2 - B - Australian Standard AS ISO 10002-2006.pdf</i>)</p> <p>Case Investigation Process and Portal Guide Version 1.0 (<i>CI 6.1.1 - B - Case Investigation Process &amp; Portal Guide.pdf</i>)</p> <p>Complaint and Enquiry Policy (sighted online 10/09/2011) (<i>CI 6.1.1 - C(2) - Complaint &amp; Enquiry Policy.pdf</i>)</p> <p><b>Commentary:</b></p> <p>HWC aligned its Internal Complaint Handling Procedures to AS ISO 10002-2006 in 2009. Principle of the changes was the definition of 'Complaints' which is taken directly from the standard (Section 4.4 of the Case Investigation Process and Portal Guide Version 1.0) as well as the capture of data relating to complaints and the training of pertinent staff.</p> <p><b>OFI:</b> As noted in this Clause, HWC must use AS ISO 10002-2006 as the standard on which its internal complaint handling procedures must be based, however, while the policy references the standard, it is incorrectly (albeit marginally) referenced as ASO ISO10002-2006. This incorrect reference may be confusing or may limit 'searchability' on the website and therefore should be revised when possible.</p>
<b>6.1.3 Audit</b>	Hunter Water must make available to Customers and Consumers information concerning its Internal Complaint Handling Procedures which explains how to make a Complaint and how the procedure works.	Low Risk. Adequate complaint handling information is an important element of customer service	Information concerning the Internal Complaint Handling Procedures which explains how to make a Complaint and how the procedure works is available to Customers and Consumers	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending.</p> <p>Complaint and Enquiry Policy (sighted online 10/09/2011) (<i>CI 6.1.1 - C(2) - Complaint &amp; Enquiry Policy.pdf</i>)</p> <p>'Making Waves' newsletter March 2011 (<i>CI 6.1.3 - B - March-June 2011</i>)</p>

Appendix 7 Complaints and Dispute Resolution Detailed Audit Findings (Part 6)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>Making Waves.pdf)</p> <p>Complaints Handling Information (web) (CI 6.1.3 - A(1) - Complaint Handling Procedure - Website.pdf)</p> <p><b>Commentary:</b></p> <p>As well as the Complaint and Enquiry Policy, HWC also provides annual information to customers about the complaint handling procedures in the 'Making Waves' newsletter. The March 2011 newsletter was sighted and information on the Code of Practice for Debt and Disconnection was viewed in the text in a section of the newsletter called 'Having Difficulty Paying Your Bill?' noting that on the website the document is called the Debt Disconnection Guide and not the Code of Practice.</p> <p>The Policy and the information related to complaints handling was viewed on the web (13/09/2011).</p>
<b>6.1.4 Audit</b>	Hunter Water must provide information of the nature described in clause 6.1.3 to Customers and Consumers at least once each year. Hunter Water may provide this information in the pamphlet referred to in clause 6.2.4.	Low Risk. Adequate complaint handling information is an important element of customer service	The information of the nature described in clause 6.1.3 has been provided to Customers and Consumers at least once in 2010/11. This information may be provided in the pamphlet referred to in clause 6.2.4.	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending.</p> <p>Complaint and Enquiry Policy (sighted online 10/09/2011) (CI 6.1.1 - C(2) - Complaint &amp; Enquiry Policy.pdf)</p> <p>'Making Waves' newsletter March 2011 (CI 6.1.3 - B - March-June 2011 Making Waves.pdf)</p> <p>Complaints Handling Information (web) (CI 6.1.3 - A(1) - Complaint Handling Procedure - Website.pdf)</p> <p><b>Commentary:</b></p> <p>See comments above.</p>
<b>6.1.5 Audit</b>	By no later than 1 September each year, Hunter Water must report to IPART on an exception basis for the immediately preceding financial year on the following details concerning Complaints made against Hunter Water	Low Risk. This report is overseen by IPART.	Hunter Water has reported to IPART by no later than 1 September 2011 on an exception basis for the 2010/11 financial year on the details concerning	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending.</p>

Appendix 7 Complaints and Dispute Resolution Detailed Audit Findings (Part 6)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
	<p>which are handled by its Internal Complaint Handling Procedures:</p> <ul style="list-style-type: none"> <li>the number and types of Complaints received on a month by month basis, classified by suburb into one or more of the following categories: <ul style="list-style-type: none"> <li>water quality, including health and aesthetic parameters;</li> <li>continuity of water supply;</li> <li>water pressure;</li> <li>sewage overflow;</li> <li>sewage odour;</li> <li>drainage services; and</li> <li>customer billing.</li> </ul> </li> <li>the number and type of Complaints resolved or not resolved (on a month by month basis) in sufficient detail and using sufficient classifications to enable IPART to gain a reasonable understanding of how and how well those Complaints were resolved or why Complaints were not resolved, as the case may be; and</li> <li>any problems of a systemic nature arising from the Complaints.</li> </ul>		Complaints made against Hunter Water which are handled by its Internal Complaint Handling Procedures that are set out in the licence requirement.		<p>Customer Service Report 2010-2011</p> <p>Letter of transmittal of regulatory reports from Sharon Smith General Manager Business Strategy and Communications (Hunter Water) to IPART 31 August 2011</p> <p><b>Commentary:</b></p> <p>Where the Customer Service Report meets the following clauses is referenced below:</p> <p>Clause 6.1.5(a)(i) – Table 2.3</p> <p>Clause 6.1.5(a)(ii) – Table 2.4</p> <p>Clause 6.1.5(a)(iii) – Table 2.4, 2.5, 2.6</p> <p>Clause 6.1.5(a)(iv) – Table 2.6</p> <p>Clause 6.1.5(a)(v) – Table 2.11</p> <p>Clause 6.1.5(a)(vi) – Table 2.6</p> <p>Clause 6.1.5(a)(vii) – Table 2.7</p> <p>See also comments at Clause 6.1.6.</p> <p>The report was transmitted to IPART as part of a suite of regulatory reports on 31 August 2011.</p> <p><b>OFI:</b> To improve communication within the synthesised information, Table 2.3 could benefit from the inclusion of an additional column after 'Number of Complaints and Detail', before 'Comments', with an explanation of 'Type' of water quality complaint i.e. Health and/or Aesthetic.</p> <p><b>OFI:</b> To improve communication within the synthesised information, Table 2.10 could benefit from the inclusion of additional columns after 'Number of Complaints or Properties Affected - issue', before 'Comments', with 'Number' and 'Type (wet/dry)'.</p>
<b>6.1.6 Audit</b>	A report produced by Hunter Water under clause 6.1.5 must report on the details specified in clauses 6.1.5(a) and	Low Risk. This report is overseen by	Hunter Water's report, produced under clause 6.1.5, reported on the	<b>Full</b>	<b>Evidence:</b> Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions,

Appendix 7 Complaints and Dispute Resolution Detailed Audit Findings (Part 6)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
	6.1.5(b) for a suburb only where a complaint has been made against Hunter Water in that suburb during that month.	IPART.	details specified in clauses 6.1.5(a) and 6.1.5(b) for a suburb, only where a complaint has been made against Hunter Water in that suburb during that month.		Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending. Customer Service Report 2010-2011 and specifically extracted pages 9, 14, 15, 20 and 22 ( <i>CI 6.1.6 - A - Extract From Customer Service Report.pdf</i> ) <b>Commentary:</b> The following pages specify the required information: Page 9: Table 2.3, greater than or equal to 5 complaints in a month Page 14: Table 2.5, water pressure Page 15: Table 2.6, water continuity Page 20: Table 2.10, sewer overflows Page 22: Table 2.11, sewer odours
<b>6.2</b>	<b>External dispute resolution scheme</b>				
<b>6.2.1 Audit</b>	Hunter Water must establish or be a member of an industry based dispute resolution scheme for the resolution by a dispute resolution body of disputes between Hunter Water and its Customers and between Hunter Water and Consumers.	Moderate Risk. Adequate complaint handling processes are important elements of customer service	Hunter Water has established or is a member of an industry based dispute resolution scheme for the resolution by a dispute resolution body of disputes between Hunter Water and its Customers and between Hunter Water and Consumers.	<b>Full</b>	<b>Evidence:</b> Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending. Complaint and Enquiry Policy (sighted online 10/09/2011) ( <i>CI 6.1.1 - C(2) - Complaint &amp; Enquiry Policy.pdf</i> ) 'Making Waves' newsletter March 2011 ( <i>CI 6.1.3 - B - March-June 2011 Making Waves.pdf</i> ) Complaints Handling Information (web) ( <i>CI 6.1.3 - A(1) - Complaint Handling Procedure - Website.pdf</i> ) Extract (page 31) of the Customer Services Report ( <i>CI 6.2.1 - A - Extract from 2010-11 Customer Services Report.pdf</i> ) Extract from EWON website 19/08/2011 ( <i>CI 6.2.1 - D - Listing Of EWON Members.pdf</i> ) Extract from Customer Contract ( <i>CI 6.2.1 - E - Extract From Hunter Water Customer Contract.pdf</i> ) EWON Members Manual ( <i>CI 6.2.1 - F - EWON Members Manual.pdf</i> )

Appendix 7 Complaints and Dispute Resolution Detailed Audit Findings (Part 6)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>EWON Member Roundtable 1 June 2011 Minutes (CI 6.1.2 - EWON Roundtable discussion notes.pdf)</p> <p>EWON feedback form for Member Roundtable discussion: Reducing, Preventing, Resolving complaints 1 June 2011 (CI 6.1.2 - Roundtable evaluation summary.pdf)</p> <p><b>Commentary:</b></p> <p>Evidence that HWC is a member of EWON (from 2002) is stated in Section 3.1 of page 31 of the Customer Service Report.</p> <p>An extract from the EWON website provides evidence that HWC is one of the members of EWON.</p> <p>Evidence that customers make take their complaints to EWON is covered under the 'Resolving Complaints' section of the Making Waves March 2011 newsletter and in Section 12 of the Customer Contract.</p> <p>A copy of the EWON Members Manual was also sighted attached to an email (which also confirmed HWC's membership) dated 29 August 2011.</p> <p>As well as being a member of EWON, HWC interacts with EWON on a proactive basis. For instance, part of the Manager Customer Care and Solutions role is to liaise with EWON in order to foster an effective working partnership between HWC and EWON.</p> <p>HWC also takes part in fori held by EWON including most recently, attendance of a 'hardship' seminar by the Manager Business Operations in June 2011. HWC also has the ability to suggest customer service topics for EWON's consideration as part of its training topic provision.</p> <p>EWON also visits HWC on an annual basis.</p>
<b>6.2.2 Audit</b>	The industry based dispute resolution scheme so established by Hunter Water or which Hunter Water is a member of is subject to the Minister's approval.	Low Risk. The industry based dispute resolution scheme was set up by government.	The industry based dispute resolution scheme so established by Hunter Water or which Hunter Water is a member of is subject to the Minister's approval.	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending.</p> <p>Approval letter from Minister Yeadon to then MD of Hunter Water 25/06/2002 stating acceptance of approval for Hunter Water to become a member of EWON (CI 6.2.2 - A - Letter From Minister.pdf)</p>

Appendix 7 Complaints and Dispute Resolution Detailed Audit Findings (Part 6)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<b>Commentary:</b> Approval for membership of EWON by HWC was sighted in the ministerial letter. Evidence that HWC is still a member of EWON is provided above.
<b>6.2.3 Audit</b>	Hunter Water must prepare a pamphlet that explains how the dispute resolution scheme operates and how it can be accessed.	Low Risk. Adequate complaint handling information is an important element of customer service	Hunter Water has prepared a pamphlet that explains how the dispute resolution scheme operates and how it can be accessed.	<b>Full</b>	<b>Evidence:</b> Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending. 'Making Waves' newsletter March 2011 (CI 6.1.3 - B - March-June 2011 Making Waves.pdf) Complaints Handling Information (web) (CI 6.1.3 - A(1) - Complaint Handling Procedure - Website.pdf) <b>Commentary:</b> The 'Making Waves' newsletter was sighted as evidence of this clause and was supported by interview and review of the complaints handling information.
<b>6.2.4 Audit</b>	Hunter Water must provide the pamphlet in clause 6.2.3 to Customers and Consumers at least once each year.	Low Risk. Adequate complaint handling information is an important element of customer service	Hunter Water has provided the pamphlet in clause 6.2.3 to Customers and Consumers at least once each year.	<b>Full</b>	<b>Evidence:</b> Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending. 'Making Waves' newsletter March 2011 (CI 6.1.3 - B - March-June 2011 Making Waves.pdf) Complaints Handling Information (web) (CI 6.1.3 - A(1) - Complaint Handling Procedure - Website.pdf) <b>Commentary:</b> HWC provides annual information to customers on dispute and complaint resolution within its 'Making Waves' newsletter. HWC also provides information 24/7 on its website.

Appendix 7 Complaints and Dispute Resolution Detailed Audit Findings (Part 6)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
<b>6.2.5 Audit</b>	Hunter Water must provide IPART with written reports of the determinations made by the dispute resolution body based on information available to Hunter Water and information reasonably obtained from the dispute resolution body. Where considered appropriate by Hunter Water and the dispute resolution body, confidentiality arrangements are to be made so as not to disclose the Customer or Consumer's identity in such reports.	Low Risk. This report is overseen by IPART.	Hunter Water has provided IPART with written reports of the determinations made by the dispute resolution body based on information available to Hunter Water and information reasonably obtained from the dispute resolution body. Where considered appropriate by Hunter Water and the dispute resolution body, confidentiality arrangements are to be made so as not to disclose the Customer or Consumer's identity in such reports.  The report provided is complete.	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending.</p> <p>Extract from Customer Service Report 2010-2011 Page 32 (<i>CI 6.2.5 - A - Extract From Customer Service Report.pdf</i>)</p> <p>Letter of transmittal of regulatory reports from Sharon Smith General Manager Business Strategy and Communications (Hunter Water) to IPART 31 August 2011</p> <p><b>Commentary:</b></p> <p>No determinations were made during the 2010-2011 reporting year and this information was sighted at page 32, Section 3.2 of the Customer Service Report.</p>
<b>6.2.6 Audit</b>	<p>Hunter Water must report to IPART by no later than 1 September each year based on information available to Hunter Water and information reasonably obtained from the dispute resolution body. The report must take into account any issues raised by the dispute resolution body and must contain the following information:</p> <ul style="list-style-type: none"> <li>the number and types of Complaints received by the dispute resolution body, classified in accordance with the dispute resolution body's reporting</li> </ul>	Low Risk. This report is overseen by IPART.	Hunter Water has provided a report to IPART by no later than 1 September 2011 on information available to Hunter Water and information reasonably obtained from the dispute resolution body. The report must take into account any issues raised by the dispute resolution body and must contain the information set out in the licence requirement.	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending.</p> <p>Quarterly reports from EWON dated 06/12/2010, 18/02/2011, 11/05/2011, 12/08/2011.</p> <p>Letter of transmittal of regulatory reports from Sharon Smith General Manager Business Strategy and Communications (Hunter Water) to IPART 31 August 2011.</p> <p><b>Commentary:</b></p> <p>A copy of the quarterly reports from EWON were sighted. HWC also has the ability to escalate issues within EWON if they feel things are not being dealt</p>

Appendix 7 Complaints and Dispute Resolution Detailed Audit Findings (Part 6)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
	<p>arrangements; and</p> <ul style="list-style-type: none"> <li>any other relevant information required by IPART to be included in the report.</li> </ul>		The report provided is complete.		<p>with in an appropriate and timely manner. During the interview, it was noted that Clare Petre (the EWON Ombudsman) has been willing to hear issues raised by HWC on a personal basis previously (but obviously by contact through the appropriate reporting hierarchy).</p> <p>Certain HWC staff have authority to access the EWON website to view information related to HWC including how complaints have been followed up by EWON.</p>
<b>6.2.7 Audit</b>	Hunter Water must post the report in clause 6.2.6 on Hunter Water's website on the internet for downloading free of any charges imposed by Hunter Water, and make it available at its premises for access or collection by any member of the public, also free of any charges imposed by Hunter Water.	Low Risk. Adequate complaint handling information is an important element of customer service	Hunter Water has posted the report in clause 6.2.6 on it's website on the internet for downloading free of any charges imposed by Hunter Water, and make it available at its premises for access or collection by any member of the public, also free of any charges imposed by Hunter Water.	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending.</p> <p>Customer Service Report 2010-2011</p> <p>Letter of transmittal of regulatory reports from Sharon Smith General Manager Business Strategy and Communications (Hunter Water) to IPART 31 August 2011</p> <p>HWC website</p> <p><b>Commentary:</b></p> <p>The report was viewed on the website during the interview.</p>
<b>6.3</b>	<b>Complaints to other bodies</b>				
<b>6.3.1 Audit</b>	Hunter Water must report to IPART by no later than 1 September each year on all Complaints made to Hunter Water in the immediately preceding financial year that relate to its performance under the Licence or the Customer Contract that were referred for resolution by an external dispute resolution body (other than a court), for example the Consumer Trader and Tenancy Tribunal.	Low Risk. This report is overseen by IPART.	Hunter Water has reported to IPART by no later than 1 September 2011 on all Complaints made to Hunter Water in the 2010/11 financial year that relate to its performance under the Licence or the Customer Contract that were referred for resolution by an external dispute resolution body (other than a court).	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending.</p> <p>Customer Service Report 2010-2011 (page 32, Cl 6.3.1 - A - Extract From Customer Service Report.pdf)</p> <p>Letter of transmittal of regulatory reports from Sharon Smith General Manager Business Strategy and Communications (Hunter Water) to IPART 31 August 2011</p>



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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<b>Commentary:</b> Information related to complaints were provided in page 32 of the Customer Service Report. The report was transmitted to IPART on 31 August 2011.
<b>6.3.2 Audit</b>	Hunter Water must report to IPART by no later than 1 September each year on all civil actions in the immediately preceding financial year that were brought against Hunter Water in all courts where the person bringing the action sought damages or other relief against Hunter Water for Hunter Water's failure to comply with a provision of its Customer Contract.	Low Risk. This report is overseen by IPART.	Hunter Water has reported to IPART by no later than 1 September 2011 on all civil actions in the 2010/11 financial year that were brought against Hunter Water in all courts where the person bringing the action sought damages or other relief against Hunter Water for Hunter Water's failure to comply with a provision of its Customer Contract.	<b>Full</b>	<b>Evidence:</b> Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending. Customer Service Report 2010-2011 (page 32, Cl 6.3.1 - A - Extract From Customer Service Report.pdf) Letter of transmittal of regulatory reports from Sharon Smith General Manager Business Strategy and Communications (Hunter Water) to IPART 31 August 2011 <b>Commentary:</b> Section 3.4, page 32 of the Customer Services Report states that there were no civil actions to report.
<b>6.3.3 Audit</b>	The reports required under clauses 6.3.1 and 6.3.2 must contain the following information: <ul style="list-style-type: none"> <li>the number and types of matters;</li> <li>the outcome of the matters;</li> <li>if the matters were subject to a negotiated settlement, how they were settled;</li> <li>any problems of a systemic nature arising from the matters or which the matters uncovered; and</li> <li>any other information that IPART may reasonably request.</li> </ul>	Low Risk. This report is overseen by IPART.	The reports required under clauses 6.3.1 and 6.3.2 contained the information set out in the licence requirement. The report provided is complete.	<b>Full</b>	<b>Evidence:</b> Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Business Operations, Manager Customer Care and Solutions, Business Reporting Manager by Annette Davison (auditor) with Jessica Hanna (IPART) attending. Customer Service Report 2010-2011 Letter of transmittal of regulatory reports from Sharon Smith General Manager Business Strategy and Communications (Hunter Water) to IPART 31 August 2011 <b>Commentary:</b> All of the information required by this clause is contained in the Customer Service Report.

## Appendix 8 Environment Indicators and Management Detailed Audit Findings (Part 7)

Appendix 8 Environment Indicators and Management Detailed Audit Findings (Part 7)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor commentary
<b>7.1</b>	<b>Environmental Performance Indicators</b>				
<b>7.1.1 Audit</b>	IPART will publish a schedule of Environmental Performance Indicators. Hunter Water must publish on its website on the internet the latest Environmental Performance Indicators.	Low Risk. Adequate environmental performance information is an important element of customer service	Publication of the latest Environmental Performance Indicators on the Hunter Water website.	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Environment and Sustainability Manager, Cadet Civil Engineer, Team Leader for Dams and Catchment and Water Quality Scientist by Annette Davison (auditor) with Dr Kaye Power and Jessica Hanna (IPART) attending.</p> <p>Environmental Performance Indicators Report Annual Operating Licence Report 2010-11 (<i>Regulatory Report - Environmental Performance Indicators 2010-11.pdf</i>) – also sighted on website (<a href="http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf">http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf</a>)</p> <p><b>Commentary:</b></p> <p>A copy of the Environmental Performance Indicators Report 2010-11 was sighted on HWC's website. The report contains licence and NWI indicators as required by the licence clauses.</p>
<b>7.1.2 Audit</b>	Each year Hunter Water must monitor, record, compile data and report on: <ul style="list-style-type: none"> <li>the Environmental Performance Indicators for the immediately preceding financial year;</li> <li>any environment performance indicators specified in instruments that give effect to the National Water</li> </ul>	Low Risk. This activity is overseen by IPART.	Monitoring, recording, compiling data and reporting on the indicators listed in the licence requirement. Ensure that sufficient information has been collated to facilitate performance measurement and reporting.	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Environment and Sustainability Manager, Cadet Civil Engineer, Team Leader for Dams and Catchment and Water Quality Scientist by Annette Davison (auditor) with Dr Kaye Power and Jessica Hanna (IPART) attending.</p> <p>Environmental Performance Indicators Report Annual Operating Licence Report 2010-11 (<i>Regulatory Report - Environmental</i></p>

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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor commentary
	<p>Initiative; and</p> <ul style="list-style-type: none"> <li>environment performance indicators in any other instrument determined by IPART.</li> </ul>				<p><i>Performance Indicators 2010-11.pdf</i>) – also sighted on website (<a href="http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf">http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf</a>)</p> <p>Public relations' information related to lead issues in Chichester Trunk Gravity Main on website sighted 26/9/2011 (<a href="http://www.hunterwater.com.au/About-Us/Latest-News/2011/Chichester-Trunk-Gravity-Main---Lead-Management.aspx">http://www.hunterwater.com.au/About-Us/Latest-News/2011/Chichester-Trunk-Gravity-Main---Lead-Management.aspx</a>)</p> <p>Greenprint for sustainable urban water management (provided in hard copy at interview 20/9/2011).</p> <p><b>Commentary:</b></p> <p>HWC is currently focusing on energy efficiency for the next price path with \$1.7 million being saved in energy costs for this current price path.</p> <p>Certification to ISO 14001 is being considered as a future goal for HWC's environmental operations, with implementation likely as part of HWC's overarching integrated Quality Management System program.</p> <p>As part of its environmental obligations, HWC has developed a contaminated sites register. In developing the register, HWC has identified that lead joints in pipes are an issue. Specifically the Chichester Trunk Gravity Main (a 900 mm diameter bulk water pipeline) has been targeted because of issues associated with high levels of lead being found in cows grazing close to the pipeline. HWC now has a program in place to replace the lead joints and therefore mitigate the issue. HWC has also addressed communication of the lead issue through its website (information was checked on website – 26/9/2011 – latest news is outside of audit scope but speaks to ongoing commitment to communication of this issue).</p> <p>Other innovations brought in by HWC include a program to recycle spoil produced by excavation of works (spoil would have historically been sent to landfill but is now recycled where appropriate) and a 'Greenprint for sustainable urban water management'. The</p>

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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor commentary
					Greenprint is considered to be an important innovation by the auditor as it helps to set out the overarching environmental framework for the organisation and as well as helping to give effect to the licence conditions, provides a basis for the implementation of environmental measures across the business.
<b>7.1.3 NR</b>	Where there is inconsistency between any of those indicators in clause 7.1.2 (or their application), IPART may determine which indicators are to apply.				
<b>7.1.4 Audit</b>	By no later than 1 September each year, Hunter Water must report on its performance against the indicators in clause 7.1.2, in a manner to be approved by IPART.	Low Risk.  This activity is overseen by IPART.	Report on performance against the indicators in clause 7.1.2, in a manner to be approved by IPART by no later than 1 September 2011.	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Environment and Sustainability Manager, Cadet Civil Engineer, Team Leader for Dams and Catchment and Water Quality Scientist by Annette Davison (auditor) with Dr Kaye Power and Jessica Hanna (IPART) attending.</p> <p>Environmental Performance Indicators Report Annual Operating Licence Report 2010-11 (<i>Regulatory Report - Environmental Performance Indicators 2010-11.pdf</i>) – also sighted on website (<a href="http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf">http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf</a>)</p> <p>Letter of transmittal of regulatory reports from Sharon Smith General Manager Business Strategy and Communications (Hunter Water) to Amanda Chadwick (IPART) 31 August 2011.</p> <p><b>Commentary:</b></p> <p>The Environmental Indicators Report provides a succinct and informative presentation of HWC's performance against its obligations at a state and national level. Of particular note is the excellent presentation of data both in tables and graphs allowing for a visual and numerical representation of trends. Presenting the target lines on the graphs and rolling averages is also a best practice way of presenting data and allows the reader at a glance to visualise performance.</p>

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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor commentary
					<p>HWC also provides plausible commentary on the reason why certain targets may or may not have been met for instance; the number of trees planted is on OL requirement (Clause CM-1). The target for tree planting in catchment areas will not be achieved due to the Tillegra Dam not going ahead (given that the 1.5 million tree plantings was largely as an offset for the dam). However, tree plantings will increase in future years to offset recycled water project, greenhouse gas emissions.</p> <p>Of commendation was the fact that in 2010-11, HWC managed to reach its target of 100% compliance for the percent of sewage treated that was compliant.</p> <p>The inclusion of a road map at Section 9 of the report for cross-checking location of indicators in sections of the report was also extremely helpful.</p> <p>The only note for clarification in the performance indicator presentation is that of data histories i.e. in some cases, 10 years' worth of data are not available for all indicators and it is not always clear:</p> <ul style="list-style-type: none"> <li>• whether only a portion of data is presented in the tables for clarity or</li> <li>• whether the truncation of data pertains to incomplete datasets or</li> <li>• whether indicators have changed for the reporting period and therefore, it is not possible to compare the indicator for this reporting period with the previous dataset.</li> </ul> <p><b>OFI:</b> As an opportunity for improvement, it is recommended that a note be placed at the front of the report (or where HWC considers appropriate) saying that unless otherwise stated in table legends, data in tables represent an historical time series.</p>
<b>7.1.5 Audit</b>	Hunter Water must provide IPART where possible with such data and records kept by Hunter Water that enable it to report under clause 7.1.4 otherwise Hunter Water must provide IPART with physical access to such	Low Risk. This activity is overseen by IPART.	Provide IPART where possible with such data and records kept by Hunter Water that enable it to report under clause 7.1.4 otherwise provide IPART	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Environment and Sustainability Manager, Cadet Civil Engineer, Team Leader for Dams and Catchment and Water Quality Scientist by</p>

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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor commentary
	records		with physical access to such records  The information provided is complete.		<p>Annette Davison (auditor) with Dr Kaye Power and Jessica Hanna (IPART) attending.</p> <p>Environmental Performance Indicators Report Annual Operating Licence Report 2010-11 (<i>Regulatory Report - Environmental Performance Indicators 2010-11.pdf</i>) – also sighted on website (<a href="http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf">http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf</a>)</p> <p>Viewed ComQuest data warehousing software 20/9/2011. Comquest screenshots were also supplied post audit (<i>CI 7.1.5 - Comquest screen shots.doc</i>)</p> <p><b>Commentary:</b></p> <p>The existence of the Environmental Performance Indicators Report, the access to relevant personnel for interview and access to other supporting information is considered full compliance for this section. See also comments below about ComQuest.</p> <p>HWC uses a data warehousing software package called ComQuest. This package is in its third year of use at HWC. ComQuest allows for indicators and data to be stored and checked depending on relevant responsibilities. Indicators are placed into three groups 1. Regulatory Requirements (viewed at audit); 2. Audit Actions Update and 3. Environmental Reporting. Each person has a checklist of information relevant to them relating to operation licence clauses – the information is asked of each person in a human manner e.g. ‘Has the corporation published the latest environmental indicators on the website?’ Responsible persons have to check the questions quarterly as well as being reminded by email, for review.</p>
<b>7.1.6 Audit</b>	The report must provide information which enables a year to year comparison in relation to Hunter Water’s performance against the environmental performance indicators in clause 7.1.2. In particular, Hunter Water is to compare the performance indicators in clause 7.1.2 with	Low Risk.  This activity is overseen by IPART.	The report provides information which enables a year to year comparison in relation to Hunter Water’s performance against the environmental performance indicators in clause 7.1.2. In	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Environment and Sustainability Manager, Cadet Civil Engineer, Team Leader for Dams and Catchment and Water Quality Scientist by Annette Davison (auditor) with Dr Kaye Power and Jessica Hanna (IPART) attending.</p>

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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor commentary
	historical annual values over at least the previous 10 years where comparable data is available.		particular, compare the performance indicators in clause 7.1.2 with historical annual values over at least the previous 10 years where comparable data is available.		Environmental Performance Indicators Report Annual Operating Licence Report 2010-11 ( <i>Regulatory Report - Environmental Performance Indicators 2010-11.pdf</i> ) – also sighted on website ( <a href="http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf">http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf</a> )  CI 7.1.6 - recycling data.xlsx  Clarification post audit on issues related to recycled water customer categories and Algal issues on Edgeworth Storage Dam ( <i>CI 7.1.6 Additional Evidence - recycled water definition &amp; algal outbreak info.doc</i> ).  <b>Commentary:</b> See comments at Clause 7.1.4.
<b>7.1.7 Audit</b>	The information in the report referred to in clauses 7.1.2 and 7.1.4 is to be made available to the public by Hunter Water. Copies of the information are to be made available from Hunter Water's offices on request free of charge and posted on Hunter Water's website on the internet for downloading by any person also free of charges imposed by Hunter Water.	Low Risk.  Adequate environmental performance information is an important element of customer service	The information in the report referred to in clauses 7.1.2 and 7.1.4 has been made available to the public by Hunter Water. Copies of the information have been made available from Hunter Water's offices on request free of charge and posted on Hunter Water's website on the internet for downloading by any person also free of charges imposed by Hunter Water.	<b>Full</b>	<b>Evidence:</b>  Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Environment and Sustainability Manager, Cadet Civil Engineer, Team Leader for Dams and Catchment and Water Quality Scientist by Annette Davison (auditor) with Dr Kaye Power and Jessica Hanna (IPART) attending.  Environmental Performance Indicators Report Annual Operating Licence Report 2010-11 ( <i>Regulatory Report - Environmental Performance Indicators 2010-11.pdf</i> ) – also sighted on website ( <a href="http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf">http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Environmental-Performance-Indicators-Report-2010-11.pdf</a> )  <b>Commentary:</b> See comments at Clause 7.1.4.
<b>7.2</b>	<b>Environmental Management</b>				
<b>7.2.1 SC</b>	Hunter Water must produce a five-year environment management plan (Environmental Management Plan) within 15 months of the Commencement Date.				

<b>Appendix 8 Environment Indicators and Management Detailed Audit Findings (Part 7)</b>					
<b>Clause/ Scope</b>	<b>Operating Licence Obligation</b>	<b>Risk</b>	<b>Target for Full Compliance</b>	<b>2010/11 Audit Grade</b>	<b>Auditor commentary</b>
	After that Hunter Water must produce further Environment Management Plans every 5 years.				
<b>7.2.2 SC</b>	Hunter Water must engage in Public Consultation in developing an Environmental Management Plan.				
<b>7.2.3 SC</b>	<p>The Environmental Management Plan must:</p> <ul style="list-style-type: none"> <li>contain details of Hunter Water's environmental improvement strategies and objectives for its catchments, Water Storages, Water Supply System, Sewerage System, and Drainage System, as well as the environmental aspects of its other activities such as energy management, waste minimisation and heritage;</li> <li>endorse ESD principles;</li> <li>be integrated into Hunter Water's business plans;</li> <li>incorporate the objectives of the energy management plan of Hunter Water to: <ul style="list-style-type: none"> <li>develop and implement energy savings plans for major facilities;</li> <li>develop a greenhouse gas emissions strategy; and</li> <li>comply with all relevant energy related regulation.</li> </ul> </li> </ul>				
<b>7.2.4 Audit</b>	The Environmental Management Plan must set targets and timetables for environmental activities to be undertaken by Hunter Water over the term of the Environmental Management Plan.	Moderate Risk. Adequate environmental planning and management is an important	The Environmental Management Plan has targets and timetables for environmental activities to be undertaken by Hunter Water over the term of the	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Environment and Sustainability Manager, Cadet Civil Engineer, Team Leader for Dams and Catchment and Water Quality Scientist by Annette Davison (auditor) with Dr Kaye Power and Jessica Hanna (IPART) attending.</p>



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Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor commentary
		element of Hunter Water's environmental responsibilities.	Environmental Management Plan.  The Environmental Management Plan has been implemented in accordance with the timeframes specified in the Plan.		Environmental Management Plan 2008-2013 (sighted on website 12/9/2011).  <b>Commentary:</b>  An Environmental Management Plan (EMP) is in existence as required by this section of the licence. Targets and timetables for environmental activities are clearly articulated in the plan and are grouped under goals e.g. Goal 1: Protection of our Drinking Water Catchments; Goal 3: Conserve Water Supplies by Ensuring Efficient Water Use. Achievements relating to the actions and targets in the EMP are summarised in the Environmental Indicators Report 2010-11 in Section 9.3.  While the EMP Framework diagram on page 3 of the report is a good overview of how the EMP sits within the overall corporate context, there could be better articulation of integration with the corporate Enterprise Risk Management Framework. However, this aspect was acknowledged at the interview and it was noted that closer integration with corporate systems, will be addressed in the next review of the EMP.  Overall the EMP is a well-articulated requirement of the clause requirement noting that the EMP provides an overarching context for 'corporate to coalface' implementation of actions to achieve goals.
<b>7.2.5 SC</b>	Any material amendments may only be made to the Environmental Management Plan following Public Consultation.				<b>Evidence:</b>  Project plan for revision of the Environmental Management Plan ( <i>Project Plan for Revision of EMP.DOCX</i> )  <b>Commentary:</b>  Even though not due for review until 2013, a review of the EMP has commenced now because of the increased importance of environmental issues such as greenhouse gases.
<b>7.2.6 SC</b>	Hunter Water must report on any material amendments made in accordance with 7.2.5.				

Appendix 8 Environment Indicators and Management Detailed Audit Findings (Part 7)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor commentary
<b>7.2.7 SC</b>	The Environmental Management Plan must be provided to IPART on its completion and posted on Hunter Water's website on the internet for downloading free of any charges imposed by Hunter Water, made available at its Customer centres for access or collection by any member of the public and lodged with public libraries in the Area of Operations, in each case also free of charge.				
<b>7.3</b>	<b>Catchment Report</b>				
<b>7.3.1 Audit</b>	<p>Hunter Water must report its performance by no later than 1 September each year against its catchment management activities for the immediately preceding financial year, in a report to be known as the Catchment Report. The Catchment Report must include:</p> <ul style="list-style-type: none"> <li>details of activities conducted by Hunter Water under the Hunter Water Corporation Limited (Special Areas) Regulation 2003, and approvals under the <i>Water Act 1912</i> and the <i>Water Management Act 2000</i>, Water Sharing Plans and any other relevant land or water management activities carried out jointly with other authorities or landholders together with a comparison of:</li> <li>those activities planned against those activities undertaken by Hunter Water during the immediately preceding financial year; and</li> <li>the estimated cost of planned</li> </ul>	<p>High Risk.</p> <p>Adequate management of catchments is a key element of water quality management.</p>	<p>Report performance by no later than 1 September 2011 against the catchment management activities for the 2010/11 financial year, in a report to be known as the Catchment Report. The Catchment Report must include details set out in the licence requirement.</p> <p>Address all recommendations from the 2009/10 audit, set out in Appendix 2.</p>	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011 with Manager Network Operations, Acting Manager Network Operations, Team Leader for Dams and Catchment and Water Quality Scientist by Annette Davison (auditor) with Dr Kaye Power and Jessica Hanna (IPART) attending.</p> <p>Letter of transmittal of regulatory reports from Sharon Smith General Manager Business Strategy and Communications (Hunter Water) to Amanda Chadwick (IPART) 31 August 2011.</p> <p>Catchment Report presentation by Manager Network Operations (<i>CI 7.3 Catchment Report.ppt</i>)</p> <p><b>Commentary:</b></p> <p>The Manager Network Operations gave an overview of the Catchment Report via Powerpoint presentation. The requirements of the audit were clearly articulated in the presentation which facilitated cross-checking of evidence and requirements by the auditor.</p> <p>The Catchment Report was viewed on the website under the 'Reports: Other Reports' section.</p> <p>(a) Summary of catchment activities is presented in Table 3.1 commencing page 5 of the Catchment Report clearly articulating the activities and costs based on a financial year context and</p>

Appendix 8 Environment Indicators and Management Detailed Audit Findings (Part 7)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor commentary
	<p>activities against the actual costs incurred by Hunter Water relating to these activities;</p> <ul style="list-style-type: none"> <li>• details of Hunter Water's performance against the Water Management Licence and the <i>Dam Safety Act 1978</i>; and</li> <li>• details of activities proposed to be undertaken in accordance with clause 7.3.1(a) for the next financial year including costs that Hunter Water estimates it will incur in undertaking these activities.</li> </ul>				<p>projected to a 2011-2012 estimate. Because HWC has no powers in its legislation for catchment management, it has to rely on partnerships with other organisations which do have powers such as the NSW Police and National Parks. To this end, HWC purchased two motorbikes for police to allow for better surveillance coverage of the catchments. HWC also initiated having better maps available on the NSW legislation website for its special area drinking water catchments. HWC is increasingly integrating all catchment related actions into the Catchment Report even though previously such actions have been budgeted for in other departments or groups e.g. 'CMA Water Watch', 'CMA Catchment Crawl' and 'Hunter Wetland Centre Education Program' were originally budgeted for in the Communications program and therefore appear as a zero in the 2010-2011 estimated budget but are recognised in the 2010-2011 actual budget. The Chichester lead issue was discussed in detail in the overview of the environment section and commentary is provided at Clause 7.1.2.</p> <p>(b) Section 7 of the Catchment Report covers issues related to the Water Management Licence and the <i>Dams Safety Act 1978</i>.</p> <ul style="list-style-type: none"> <li>• Requirements of the Water Management Licence include: Recording Data, Immediate Notification, Annual Reporting and any Supplementary Studies required. HWC reported 5 incidents to the NSW Office of Water including issues such as Low Water Levels at Seaham Weir and Dissolved Oxygen Levels at Chichester Dam. All of the incidents were issues considered to be of minor non-compliance and no further action was initiated from the Office of Water.</li> <li>• A Surveillance Report is required by the Dams Safety Committee every 5 years; the next report is not due until 2013.</li> </ul> <p>(c) Next financial year activities: Table 3.1 details these activities.</p>
<b>7.3.2</b>	Hunter Water must also publicly display the Catchment Report on its website on the	Low Risk. Publication of the	Publicly display the Catchment Report on the Hunter Water	<b>Full</b>	<p><b>Evidence:</b> Interview at Hunter Water (Honeysuckle Drive Office) 20/09/2011</p>

<b>Appendix 8 Environment Indicators and Management Detailed Audit Findings (Part 7)</b>					
<b>Clause/ Scope</b>	<b>Operating Licence Obligation</b>	<b>Risk</b>	<b>Target for Full Compliance</b>	<b>2010/11 Audit Grade</b>	<b>Auditor commentary</b>
<b>Audit</b>	internet for downloading free of any charges imposed by Hunter Water, and make it available at its premises for access or collection by any member of the public free of charge.	Catchment Report is an important means of communicating with stakeholders.	website on the internet for downloading free of any charges imposed by Hunter Water, and make it available at its premises for access or collection by any member of the public free of charge.		with Environment and Sustainability Manager, Cadet Civil Engineer, Team Leader for Dams and Catchment and Water Quality Scientist by Annette Davison (auditor) with Dr Kaye Power and Jessica Hanna (IPART) attending.  Catchment Report viewed at <a href="http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Catchment-Report-2010-11.pdf">http://www.hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Catchment-Report-2010-11.pdf</a>  <b>Commentary:</b>  The 2010-11 Annual Catchment Report was viewed on the Hunter Water website.

## Appendix 9 Managing Supply and Demand Detailed Audit Findings (Part 9)

Appendix 9 Managing Supply and Demand Detailed Audit Findings (Part 9)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
<b>9.1</b>	<b>Water Conservation Target</b>				
<b>9.1.1 Audit</b>	Hunter Water must ensure that the 5 year rolling average for annual residential water consumption calculated for the financial year is equal to or less than 215 kilolitres (Water Conservation Target).	Moderate Risk. Compliance with the water conservation target is an important element of resource conservation.	The 5 year rolling average for annual residential water consumption calculated for the financial year is equal to or less than 215 kilolitres (Water Conservation Target).	<b>Full</b>	<p><b>Evidence:</b> Included as an indicator in the 2010/11 Environmental Performance Indicators Report. Number is less than 215 KL.</p> <p><b>Commentary:</b> The five year rolling average was provided on page 9 of the EPI, report with a summary trend on page ten. This indicated that the trend was generally downwards. A Shift towards high density living and infill housing is evident. This year the climatic conditions have been fairly average and the combination of fair weather and increased focus on water efficiency programmes, Basix etc is helping with this downward trend. Ten years of historical data has been provided. This indicated a clear downward trend on the five year rolling average from 2006/07. Hunter Water is starting to increase the water efficiency programme over the next few years; this will include water efficiency programmes and education.</p>
<b>9.1.2 Audit</b>	Hunter Water must report its compliance with the Water Conservation Target.	Low Risk. This report is overseen by IPART.	Report compliance with the Water Conservation Target.	<b>Full</b>	<p><b>Commentary:</b> Included as an indicator in the 2010/11 Environmental Performance Indicators Report.</p>
<b>9.1.3 Audit</b>	Hunter Water must comply with the Water Conservation Target until replaced (if at all) by some or all of the proposals in clause 9.2.17 that are approved as part of the Licence review under clause 1.3.1.	Moderate Risk. Compliance with the water conservation target is an	Comply with the Water Conservation Target until replaced (if at all) by some or all of the proposals in clause 9.2.17 that are approved as part of the Licence review	<b>Full</b>	<p><b>Commentary:</b> Compliance has been achieved as indicated in Figure 2.6 in the 2010/11 EPI Report.</p>

Appendix 9 Managing Supply and Demand Detailed Audit Findings (Part 9)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
		important element of resource conservation.	under clause 1.3.1.		
<b>9.2</b>	<b>The Integrated Water Resources Plan (IWRC)</b>				
<b>9.2.17 Audit</b>	Applying the Integrated Water Resources Plan and the matters in clause 9.2, Hunter Water must outline targets, standards, indicators or other proposals for consideration as part of the Licence review under clause 1.3.1.	Moderate Risk. Satisfactory application of the Water Resources plan is an important element of resource conservation.	Applying the Integrated Water Resources Plan and the matters in clause 9.2, outline targets, standards, indicators or other proposals for consideration as part of the Licence review under clause 1.3.1.	<b>Full</b>	<p><b>Evidence:</b></p> <p>In November 2010, the previous Minister for Planning refused an application for the proposed Tillegra Dam. The refusal of planning approval for the Tillegra Dam proposal in the face of an acknowledged supply and demand imbalance triggers the need for a new IWRP.</p> <p>The NSW Government announced that it would develop a new Lower Hunter Water Plan (LHWP) to secure a water supply for this region.</p> <p><a href="#">IPART's Issues Paper</a> for the End of Term Review of the Operating Licence for Hunter Water Corporation 2012-2017 (March 2011), Section 1.2.1 (Table 1.1, page 4) proposes limited review of Section 9 until the LHWP has been completed, acknowledging the Operating Licence may need to be varied after 1 July 2012.</p> <p><a href="#">Hunter Water's Submission</a> to IPART's review (May 2011), Section 2.3 (page 12)</p> <p>Supports IPART's proposal to exclude the operating licence review considering new targets, standards, indicators or other proposals for the IWRP at this stage.</p> <p><b>Commentary:</b></p> <p>The Report was completed and submitted on time.</p> <p>Subject to licence review and is subject to the lower hunter water plan.</p>
<b>9.2.18 Audit</b>	Hunter Water must report to IPART by no later than 1 September each year on its performance against the Integrated Water	Low Risk. This report is overseen by	Report to IPART by no later than 1 September 2011 on performance against the	<b>Full</b>	<p><b>Commentary:</b></p> <p>The 2010/11 IWRP Annual Report was submitted to IPART prior to 1 September and is available on the website.</p>

<b>Appendix 9 Managing Supply and Demand Detailed Audit Findings (Part 9)</b>					
<b>Clause/ Scope</b>	<b>Operating Licence Obligation</b>	<b>Risk</b>	<b>Target for Full Compliance</b>	<b>2010/11 Audit Grade</b>	<b>Auditor Commentary</b>
	Resources Plan.	IPART.	Integrated Water Resources Plan. Address recommendations from the 2009/10 audit in respect to performance reporting against the H <sub>2</sub> 50 Plan (R 9.1 – 9.4). These are set out below.		Audit comment on Hunter Water's response to recommendation 9.2 from the 2010/11 audit regarding this report are contained in Appendix 2. The report would benefit from inclusion of a succinct summary of achievements against targets. <b>Opportunity for Improvement</b> – include a succinct summary of achievement against targets
<b>9.3</b>	<b>Security of Supply</b>				
<b>9.3.1 NR</b>	Hunter Water may impose Water Restrictions.				
<b>9.3.2 Audit</b>	Hunter Water must report on the nature and length of each Water Restriction imposed in the immediately preceding financial year and whether (based on information reasonably available to Hunter Water) it is likely to impose a Water Restriction in the ensuing financial year or at any other time during the Licence.	Low Risk. This report is overseen by IPART.	Report on the nature and length of each Water Restriction imposed in the 2010/11 financial year and whether (based on information reasonably available to Hunter Water) it is likely to impose a Water Restriction in the 2011/12 financial year or at any other time during the Licence.	<b>Full</b>	<b>Commentary:</b> There were no water restrictions.
<b>9.3.3 Audit</b>	Hunter Water must report on the criteria it applies in determining whether to request that the Minister authorise a Water Restriction.	Low Risk. This activity is overseen by government.	Report on the criteria applied in determining whether to request that the Minister authorise a Water Restriction.	<b>Full</b>	<b>Commentary:</b> There has been no change to the criteria used for determining water restrictions. The Lower Hunter Water Plan is being developed and it is believed that the plan can be delivered by the summer of 2013/14 then several years will be required to implement outcomes of the Water Plan. This has been benchmarked against other Australian Utilities to understand the timeframes involved to do their water resource plans. HW is re-building some of their water models and there is a lot of work involved to undertake the review and compare options. Outcome of the water plan – approval, design, construction lead

Appendix 9 Managing Supply and Demand Detailed Audit Findings (Part 9)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>times. Could be up to 10 years until something has been implemented.</p> <p>To address the short term risk, an Interim Drought Management Plan (IDMP) is being implemented. This will outline short term outcomes to implement to stop the water shortages should the region head into a drought situations. The options won't pre-empt the outcome of the Lower Hunter Water Plan.</p> <p>Community and stakeholders will be involved heavily. There is a short term water supply shortage therefore the IDMP will allow HW to implement other options to ensure water supplies are ok in a drought.</p> <p>There is crossover in the two options, modelling permanent water supply restrictions, using benchmarking from other utilities, will do some community consultation to understand how the community will support this.</p> <p>The IDMP will be submitted to the Board in October.</p> <p>Sources can go from 100% full to near depletion in around three years, based around historical drought sequences (includes water restrictions already being in place and other viable drought response measures). This would not allow enough time to build supplementary supply options. Looking at technical feasibility of other options, e.g. freighting water form another desalination plant. This is the only climate independent option that they currently have.</p>
					<p>It is estimated that when supplies are down to 30% this will trigger the implementation of other infrastructure.</p> <p>The schemes have large natural losses e.g. grahams town is narrow and has large evaporation, leakage from the other dam and evapotranspiration through the trees; Chichester is good but is small in size.</p> <p>Significant water resources staff have been taken on to provide input into the LHWP. New government has supported the development of the plan which will allow Metro water to get funding to deliver it (i.e. get more resources). Were involved in the</p>



Appendix 9 Managing Supply and Demand Detailed Audit Findings (Part 9)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					metro water plan in Sydney, therefore bring a lot of experience to the table. Challenge for the next price path.
<b>9.3.4 Audit</b>	Hunter Water must report on the quantity of water (in mega litres) supplied from each Water Storage.	Low Risk. This activity is overseen by another regulator	Report on the quantity of water (in megalitres) supplied from each Water Storage.  Address recommendation from the 2009/10 audit in respect to improving quality assurance of the generation of data.	<b>Full</b>	<b>Commentary:</b>  Over the last 18 months the Engineering Data Reporting System (EDRS) has been implemented which extracts all water source information and integrates with the telemetry system extracting daily flows from major water sites. There are a couple of sites that are manually entered, e.g. water loss stream from Dungog treatment plant, EDRS allows daily supply from source information and then collated into each of the source types for surface, groundwater etc.  The customer consumption is specific CIS consumption reports undertake a calculation on the metered consumption in the billing system, pro rate calculation looking at meter reads then looks at how much during the period for each customer then abstract using the billing system customer type (res/industrial/commercial)
					Pro rate to align reads with the reporting period.  Type of meter lag, e.g. wet winter to dry winter, might have some consumption at one end being higher than the hard to correct for climate for individual meters. Aim for accurate reflection of customer use during the reporting period.  There has been an assessment regarding changing trends across customer classes – A demand forecast model is in place which looks at growth in customer connections, understanding the consumption trends in each of the main customer categories. This splits residential customers into five categories, standalone, multi etc, Larger customers (>50,00KL) look at trends in their consumption, discuss with account managers and any future upgrades for increase in water consumption.  Climatic impacts – HW is developing this in more detail now, previously looked at rainfall and temperature and impact on demand to support thoughts around the 12 months requirements.

Appendix 9 Managing Supply and Demand Detailed Audit Findings (Part 9)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>Hunter Water has an indoor outdoor metering programme, 200 customers with semi smart meters on meter and outdoor taps which can store 13 months of data to understand representative sample and the split between indoor and outdoor use over a monthly basis. This can then be compared with rainfall and temperature.</p> <p>Interacting with the LHWP and developing demand forecast, currently developing water demand forecast with end use model capability e.g. toilet, washing machine, etc breaking down end uses to give more transparency to look at trends at a sub level compared with what they have in the unit based forecasts at the moment.</p> <p>The NSW Office of Water and the National Water Commission engaged ISF to develop an integrated supply demand planning model ISDP, It has been agreed to use this as the end use model and HW are developing all data into this at the moment.</p>
					<p>HW will do a comparison with the existing model once the end use model is complete. Enough confidence and detailed information around end use for around 75% of demand, then top down, three years of data for outdoor/indoor metering programme.</p> <p>Water supply: can use metered information and the end use information to understand customer usage then HW can use a top down approach to understand water losses across the network.</p>
<b>9.3.5 Audit</b>	Hunter Water must report against each of the components in the Water Balance Table.	Low Risk. This activity is overseen by another regulator.	Report against each of the components in the Water Balance Table.	<b>Full</b>	<p><b>Commentary:</b></p> <p>The WSAA standard Water balance form has been used for Water Balance calculations.</p> <p>NWI are entered into the form under step 1.</p> <p>Other losses have been left in using default percentages; these are being reviewed against investigation data within Hunters jurisdiction. e.g. fire fighting and operational use. This is due to be completed within the next couple of months. This includes calibration of bulk meters, a review of the process and methodology</p> <p>The ILI is 1.21 which is similar to last year's 1.26. Programmes are being undertaken during the year which relate to water loss</p>

Appendix 9 Managing Supply and Demand Detailed Audit Findings (Part 9)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					reduction e.g. the water main replacement program, active leak detection, pressure management, and unavoidable losses calculations. With the water main replacement programme and the pressure management programme there should be a corresponding reduction in bursts.  Active leak detection also used to determine accuracy of leakage rates.  Revised sheet 23/February 2010. Another sheet available for active leak detection. New sheet, but business as usual until the validation process is completed.
<b>9.3.6 Audit</b>	Hunter Water must report on the differences in the outcomes in applying clause 9.3.5 between one financial year and an immediately preceding financial year.	Low Risk. This report is overseen by IPART.	Report on the differences in the outcomes in applying clause 9.3.5 between the 2010/11 financial year and the 2009/10 financial year.	<b>Full</b>	<b>Commentary:</b> Slight increase
<b>9.3.7 Audit</b>	Hunter Water must report on the quantity of Recycled Water (in mega litres) supplied in the immediately preceding financial year for the following applications: <ul style="list-style-type: none"> <li>• for industrial or commercial use;</li> <li>• for direct use in irrigation; or</li> <li>• for uses, other than those described in (a) or (b).</li> </ul>	Low Risk. This report is overseen by IPART.	Report on the quantity of Recycled Water (in megalitres) supplied in the 2010/11 financial year for the applications set out in the licence obligation.	<b>Full</b>	<b>Commentary:</b> <ul style="list-style-type: none"> <li>• Indirect recycled water is included in the calculations</li> <li>• There is an assessment of systems to determine how much is being used. Limited flow data is available on river systems themselves, can account for all river takes.</li> <li>• Other systems, upgrading recycled water systems, putting in flow meters on recycled water customers to e.g. Eraring power in flow meters to be installed to ensure HW can guaranteed the water being delivered to them, Edgeworth WWTP, two flow meters to be installed for oceanic coal (dams on site, don't need further quality) and Waratah golf course, predicted through pump house run arrangement i.e. how long they run for ext. putting in a flow meter to get more accurate results.</li> <li>• Need to get business cases to be able to put in the flow meters, but from a regulatory perspective can do this.</li> <li>• WWTW – two being upgraded in various ways so will switch users over to flow meters. Clients are not all billed on volume. Have low to high security contracts, high security contracts billed</li> </ul>

Appendix 9 Managing Supply and Demand Detailed Audit Findings (Part 9)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					<p>on volumes, low billed on fee for abstraction but don't guarantee the quantity being available.</p> <ul style="list-style-type: none"> <li>• Farmers and golf courses on the low security contracts generally.</li> <li>• Shutdowns at Eraring at the power plant and as part of the Edgeworth upgrade, therefore a reduction recycled water delivered and the potable water substitution. Industrial customers make up the bulk of that.</li> </ul>
					<p>Three major schemes are in the planning phases Kooragang 3000 ML a year. On line in a couple of years. Dual reticulation schemes on the horizon.</p>
<b>9.3.8 Audit</b>	<p>Hunter Water must report on the total quantity of water (in mega litres) supplied by it for each of the following:</p> <ul style="list-style-type: none"> <li>• consumption by persons in Residential Properties;</li> <li>• industrial and commercial uses (excluding use by a Large Customer); and</li> <li>• Consumption by Large Customers.</li> </ul>	<p>Low Risk. This report is overseen by IPART.</p>	<p>Report on the total quantity of water (in megalitres) supplied by it for each of the uses set out in the licence obligation.</p>	<b>Full</b>	<p><b>Commentary:</b> Consumption by persons in Residential Properties is shown on Page 9 of the EPI report;</p> <ul style="list-style-type: none"> <li>• Graph on page 10 shows a downward trend.</li> <li>• Shift towards high density living and infill housing.</li> <li>• Fairly average year regarding climate, combination of more effort into water efficiency programmes, Basix etc and other drivers.</li> <li>• Ten years of historical data has been provided. This shows a clear downward trend on the five year rolling average from 2006/07.</li> <li>• HW is looking at ramping up the water efficiency programme over the next few years,</li> </ul>
<b>9.3.9 Audit</b>	<p>In its report, Hunter Water must compare each application in clause 9.3.8, with the corresponding application in the immediately preceding financial year, and indicate whether all or some of the following factors, (or other factors of which Hunter Water is aware), contributed to the difference (if any) in the comparison:</p>	<p>Low Risk. This report is overseen by IPART.</p>	<p>Compare each application in clause 9.3.8, with the corresponding application in the 2009/10 financial year, and indicate whether all or some of the factors in the licence obligation, (or other factors of which Hunter Water is aware),</p>	<b>Full</b>	<p><b>Commentary:</b> Discussed previously</p>

<b>Appendix 9 Managing Supply and Demand Detailed Audit Findings (Part 9)</b>					
<b>Clause/ Scope</b>	<b>Operating Licence Obligation</b>	<b>Risk</b>	<b>Target for Full Compliance</b>	<b>2010/11 Audit Grade</b>	<b>Auditor Commentary</b>
	(a) growth in the Customer base; (b) climatic impact; (c) the nature or extent of consumption of Recycled Water; or (d) demand management initiatives.		contributed to the difference (if any) in the comparison.		

## Appendix 10 Damage and Compensation Detailed Audit Findings (Part 11)

Appendix 10 Damage and Compensation Detailed Audit Findings (Part 11)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
<b>11.2</b>	<b>Damage and compensation to persons</b>				
<b>11.2 Audit</b>	Hunter Water is required by Section 22 of the Act to do as little damage as practicable in exercising its functions under Division 2 of Part 5 of the Act, and in circumstances specified in that provision, to compensate persons who suffer damage by the exercise of those functions.	Moderate Risk. Performance in compliance has important implications for corporate reputation and public confidence.	As required by Section 22 of the Act, do as little damage as practicable in exercising its functions under Division 2 of Part 5 of the Act, and in circumstances specified in that provision, has compensated persons who suffer damage by the exercise of those functions.	<b>Full</b>	<p><b>Evidence:</b></p> <p>Interview at Hunter Water (Honeysuckle Drive Office) 19/09/2011 with Manager Corporate Services and Risk Analyst by Annette Davison (auditor) with Jessica Hanna (IPART) attending.</p> <p>Client Register interrogation from Treasury Managed Funds and notes to support evidence for this section (<i>Part 11 - Damage and Compensation - Evidence 2011.doc</i>)</p> <p><b>Commentary:</b></p> <p>Division 2 provisions relate to works, entry onto land and exercise of powers on entry etc. Section 22 is specifically related to issues associated with works and Powers of Entry. HWC has a culture of 'doing the right thing' which mitigates the likelihood of customers taking action.</p> <p>Actions generally result from the repair of roads when HWC has had to breach transport routes to access pipes. For the 2010/2011 licence period, there were 189 road restorations totalling \$795,000 (viewed in the evidence provided). Roads are reinstated according to the standards for the required jurisdiction.</p> <p>There are three potential Section 22 claims currently being investigated by HWC, but these are all arising from incidents outside the 2010/11 licence year and are yet to be settled:</p> <p><b>Items 1 and 2:</b></p> <p>Hunter Water scoured a reservoir to sewer, however the volume of water exceeded the capacity in the sewer and water inundated two properties. Both incidents are ongoing with the Energy and Water Ombudsman involved in one case. This case may result in Hunter</p>

Appendix 10 Damage and Compensation Detailed Audit Findings (Part 11)					
Clause/ Scope	Operating Licence Obligation	Risk	Target for Full Compliance	2010/11 Audit Grade	Auditor Commentary
					Water seeking an easement over the property in question. The other matter is proceeding as a liability issue.  <b>Item 3:</b> Hunter Water's contractor accessed a customer's property through a locked pedestrian gate and replaced a water meter. A pipe burst within the property and damaged internal fixtures and fittings. The customer alleges this was as a direct result of the water meter changeover. Investigations are ongoing.
<b>11.3</b>	<b>Competitive neutrality</b>				
<b>11.3.1 SC</b>	Subject to the Act, the SOC Act and any applicable law, Hunter Water must comply, and must ensure that its Subsidiaries comply, with the competitive neutrality policies and guidelines adopted by New South Wales under clause 3 of the Competition Principles Agreement.				
<b>11.3.2 NR</b>	Clause 11.3 is in addition to any obligations of Hunter Water under: <i>the Trade Practices Act 1974;</i> <i>the Water Industry Competition Act 2006;</i> the Competition Code of NSW and other States and Territories as applicable; and any applicable law.				

## Appendix 11 Historical Performance Comparison

We have reviewed Hunter Water's performance in meeting its Licence Obligations over the period 2003/04 to 2010/11. In considering how to most usefully present this data a number of issues were identified:

IPART employs a risk-based methodology to prepare the audit scope. This means that different Licence Parts and/or Clauses will be audited in any given year. Consequently trends in performance over time against specific Parts or Clauses are difficult to analyse. Further, Licences are reviewed every five years. This process may involve the removal, addition or changes to licence parts or individual licence clauses. This further complicates any attempt to analyse longer term trends in performance.

The reporting by auditors over the years also shows a fair deal of variety. In some cases compliance is rated only against Clauses, in other cases, compliance is rated for sub-clauses and, on occasions, dot points in Clauses. There is no ready means to adequately compare compliance reporting on a fine scale with that on a more course scale. While variations in auditing practice and reporting can vary between auditors, IPART and the agency provide some 'levelling' or consistency over time.

Given these issues, we felt that the best approach was to consider some aggregate measure of business performance. Simply, the audit reports were reviewed, all compliances were recorded and the results presented as percentages of compliance achieved across all audited items. The number of Key Recommendations made was also considered as a measure of performance.

In addition to the above Figure provided in the Executive Summary, the following two Figures are presented for information:

Figure A11-1 Hunter Water Aggregate Compliance against Licence – Alternative View

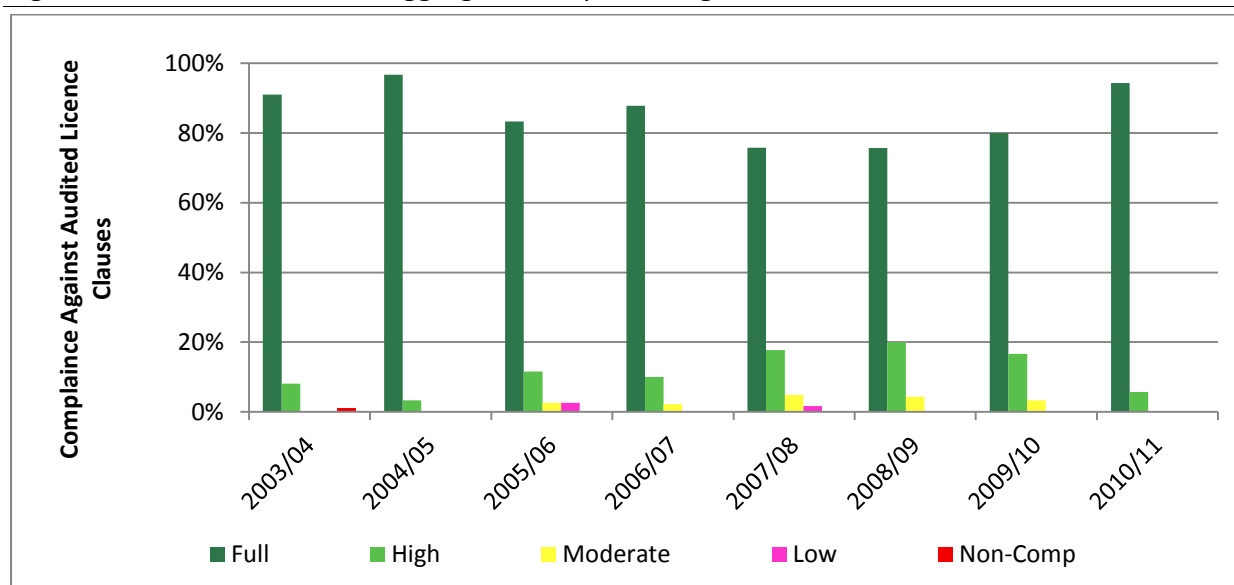
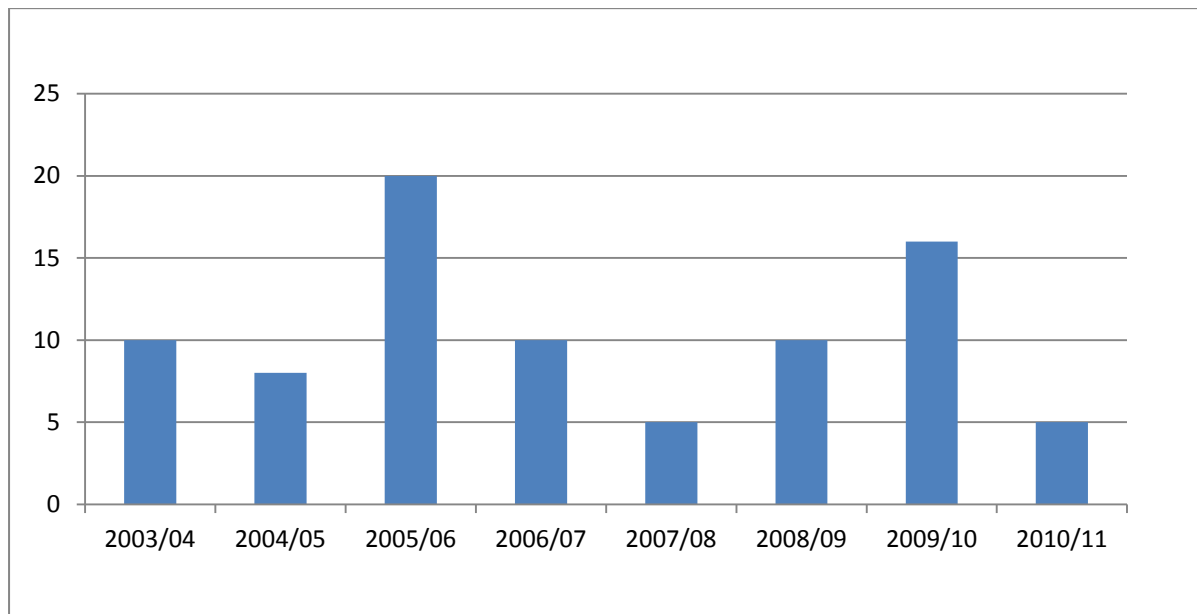




Figure A11-2 Hunter Water - Number of Recommendations made in any Licence Year



While they do not provide great precision, the above graphs clearly illustrate the improvements in aggregate performance that Hunter Water has achieved over the period 2008/09 to 2010/11.

## Appendix 12 Audit Methodology

It was an IPART requirement that the conduct of the audit of the utility's compliance with the relevant Part, Section or Clause of its Licence, involved the following activities:

- a) conduct a **detailed examination** of those activities of the utility that are regulated by the Operating Licence, subject to IPART's risk-based audit scope, where applicable.
- b) assess the **level of compliance** achieved by the utility against each of the requirements of the Operating Licence, set out in IPART's risk-based audit scope, providing detailed supporting evidence for this assessment and reporting compliance according to IPART's established compliance scoring methodology.
- c) assess and report on progress by the utility in addressing any **comments made by the relevant portfolio Minister** pertaining to previous audits, providing supporting evidence for these assessments.
- d) for each section of the Operating Licence that is to be audited, **identify factors (if any) that have affected the utility's performance** for the audit period (1 July 2010 to 30 June 2011). This includes verifying the calculation of performance indicators associated with relevant requirements of the operating licences and undertaking an assessment of any underlying trends in performance arising from these indicators. Make recommendations to IPART on how the utility can improve its performance in the future, based on the audit assessment.
- e) provide a **formal briefing** to the Tribunal, if required, comprising an overview of the utility's overall performance against the requirements of the Operating Licence and the key findings of the audit.
- f) prepare a **full report** on the findings of the assignment, including a summary of the utility's overall performance against the audited obligations of the Operating Licence and detail of its compliance with each audited obligation of the Operating Licence.

The auditor is responsible for assessing and interpreting the audit requirements in the relevant Operating Licence and the Act and ensuring that the audit process satisfies all statutory requirements subject to the detailed audit scope.

IPART advertised the audit processes and sought submissions from the public. The auditor was required to take account of any public submissions received and the views of relevant regulators (Department of Environment, Climate Change and Water, NSW Health and the NSW Office of Water) and other stakeholders including environment, social welfare and public interest groups.

For efficiency purposes, IPART also included auditing of Hunter Water's National Water Initiative (NWI) reporting into the Request for Quote (RFQ) audit scope, as the indicators reported in that reporting framework overlap with (and are being progressively integrated with) Operating Licence compliance and performance reporting. The outcomes of the NWI audit are the subject of a separate report.

## **Audit Methodology**

The methodology adopted for this audit is described in the following paragraphs.

### **Audit Preparation**

To meet the specific requirements of IPART, the operational audit was undertaken adopting a methodology consistent with ISO 14011 'Guidelines for Environmental Auditing'. This guideline provides a systematic approach to defining the requirements of the audit, planning, interpreting Licence Conditions, collecting audit evidence, objectively assessing the evidence, and reporting in a clear and accurate manner. It also ensures that the audit has been conducted in accordance with an established and recognised audit protocol.

#### *Draft Audit Plan*

A draft audit plan was prepared to ensure that the audit requirements were met and this plan was confirmed with IPART and Hunter Water.

#### *Inception Meetings*

Following the preparation and confirmation of the audit plan, an inception meeting was held with IPART and Hunter Water. This meeting, which included Hunter Water representatives, IPART representatives and the auditors, was held on 19<sup>th</sup> September, 2011. The primary objective of this latter meeting was to develop working relationships, mutual understandings and expectations relating to the requirements and process of the audit. The meetings also provided an opportunity for Hunter Water to present an overview of compliance and progress since the previous audit period.

#### *Audit Questionnaires*

Specific audit questionnaires were developed for all clauses to be audited within the scope of the risk-based approach adopted by IPART for 2010/11. These questionnaires sought to determine compliance with the Licence requirements, identify any factors that may have impacted on performance (and the likely magnitude of that impact) and the systems in place to deliver or pursue '*best appropriate practice*' performance.

Audit questionnaires were provided prior to the audit interviews, to allow Hunter Water the opportunity to prepare for the interview.

#### *Provision of Preliminary Information and Draft Responses*

It was agreed by IPART, Hunter Water and the auditors, that the audit questionnaires would indicate the evidence that might be required, and that Hunter Water would make every endeavour to provide this evidence in sufficient time to allow the auditors to inform themselves with respect to Hunter Water's performance prior to interview. This allowed for more effective targeting of issues or factors during the interview process.

### **Conduct of the Audit**

Audit protocols were agreed and confirmed between the auditors, IPART and Hunter Water at the Hunter Water inception meeting to ensure an open and efficient flow of information and to resolve any identified or potential audit issues.

*Audit Interviews*

Nominated auditors (see Figure 1.2) led interviews over 19 and 20 September 2011. The interviews permitted the auditors to explore factors or issues not readily addressed in the written response to the auditors' questionnaires, or in the evidence previously provided by Hunter Water. The provision of the written responses and evidence prior to the interviews maximised the benefit of the interview process by allowing the auditors to better target key factors and issues not fully or readily addressed in the provided information.

## Appendix 13 Audit Scope

Licence Clause	Operating Licence Obligations	Scope	Comments
<b>3.1</b>	<b>Drinking Water Quality – Planning</b>		
3.1.1	Hunter Water must prepare, to the satisfaction of NSW Health, a five-year Water Quality Management Plan (Five-Year Plan) within 6 months of the Commencement Date. Hunter Water must provide a copy of the Five-Year Plan to IPART and NSW Health upon its preparation. Hunter Water must release to the public a discussion paper in relation to the Five-Year Plan within 3 months of the Commencement Date and must engage in Public Consultation on the discussion paper.	NR	<b>No change</b>
3.1.2	The Five-Year Plan should be based on the framework for management of Drinking Water quality in the Australian Drinking Water Guidelines.	NR	
3.1.3	The Five-Year Plan must reflect the following: (a) the Annual Water Quality Monitoring Plan; and (b) the Incident Management Plan.	Audit	HWC's Five Year Plan includes the requirement to prepare and review an Annual Water Quality Monitoring Plan and Incident Management Plan. These requirements have not been altered within the Five Year Plan during the 2010/11 year. Both Plans have undergone updates during 2010/11.  The Annual Water Quality Monitoring Plan is subject to audit examination under clause 3.3 and the Incident Management Plan is subject to audit examination under clause 3.5.
3.1.4	Hunter Water must implement the Five-Year Plan according to the timeframes specified by NSW Health.	Audit	
<b>3.2</b>	<b>Drinking Water Quality – Standards</b>		
3.2.1	Hunter Water must ensure that the Drinking Water supplied to Customers and Consumers meets the performance requirements for Drinking Water specified in the Australian Drinking Water Guidelines or such other standard as directed by NSW Health.	Audit	NSW Health has requested that the audit should include chlorine residual in distribution network, especially at extremes.
3.2.2	If the results do not comply with the Health Guideline Values, Hunter Water must provide NSW Health with an appraisal of the inconsistency, and indicate the action to be taken to resolve any non-compliance.	Audit	Audit for exceptions where Hunter Water did not comply with Health Guideline Values.
<b>3.3</b>	<b>Drinking Water Quality – Monitoring</b>		

<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
3.3.1	<p>Hunter Water must prepare, to the satisfaction of NSW Health, a comprehensive annual water quality monitoring plan (Annual Water Quality Monitoring Plan) for the Water Supply System by 31 March each year, for the duration of the Licence. This Annual Water Quality Monitoring Plan must:</p> <ul style="list-style-type: none"> <li>(a) include monitoring of Bulk Water and Drinking Water quality and details of laboratory testing and reporting processes to ensure quality control;</li> <li>(b) have regard to the concepts of good practice set out in the Australian Drinking Water Guidelines and apply those concepts as specified by NSW Health;</li> <li>(c) for Bulk Water, include a list of characteristics that will be monitored to identify potential hazards with the water supply, or a change in water quality;</li> <li>(d) include targeted, investigative and event-based monitoring; and</li> <li>(e) include monitoring for any other water characteristic nominated by NSW Health.</li> </ul>	Audit	<p>NSW Health has requested that the audit should include a check of chlorine residual in distribution network, especially at extremes.</p> <p>Audit to confirm whether the Monitoring and Reporting Protocol has been updated to reflect that not all tests done are NATA accredited.</p> <p>Audit to consider the recommendation from the 2009/10 audit in respect to maintaining the currency of documentation, improving document control and systematic management.</p>
3.3.2	Monitoring under the Annual Water Quality Monitoring Plan must be undertaken for the period from the Commencement Date to 30 June 2008 and after that for each subsequent financial year.	Audit	
3.3.3	The sampling frequency and the locations chosen for the Drinking Water quality monitoring should be representative of the quality of Drinking Water supplied to Consumers.	SC	No change to sampling locations or frequency during 2010/11.
3.3.4	Hunter Water must provide IPART with a copy of the Annual Water Quality Monitoring Plan as soon as possible after it is agreed with NSW Health. Hunter Water must make a copy of that plan available to the public after it has been provided to IPART.	SC	
3.3.5	If Hunter Water and NSW Health cannot agree on the Annual Water Quality Monitoring Plan, the views of NSW Health will prevail and Hunter Water must accept the Annual Water Quality Monitoring Plan determined by NSW Health.	SC	No areas of disagreement during 2010/11.
<b>3.4</b>	<b>Drinking Water Quality – Reporting</b>		
3.4.1	Hunter Water must produce a monthly report that includes the Drinking Water quality monitoring test results undertaken in accordance with clause 3.3. The monthly report must be placed on Hunter Water's website on the internet for downloading free of charge imposed by Hunter Water and also made available for access by any person, free of any charges imposed by Hunter Water.	Audit	NSW Health has requested this clause be included in the audit.

<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
3.4.2	Hunter Water must prepare, and make available to NSW Health by 31 December 2008 and by 31 December each subsequent year, an annual report on the implementation of the Five-Year Plan. The report must include details of: (a) the audit of the implementation of the framework for management of Drinking Water quality in the Australian Drinking Water Guidelines which may be undertaken as part of the Annual Audit; (b) any proposed amendments to the Five-Year Plan needed to protect public health or to ensure the effective operation of the Five-Year Plan; (c) any additional water quality improvement actions identified in the preceding year through the water quality monitoring data or by NSW Health and action taken to implement them, especially any non-compliance relating to clause 3.2.2; and (d) the annual report on water quality for the previous year from 1 July to 30 June.	Audit	
3.4.3	Hunter Water must make available to NSW Health and IPART a copy of the report compiled to comply with clause 3.4.2.	SC	
3.4.4	Hunter Water must comply with any requests by NSW Health to provide additional information on water quality. The additional information provided under this clause is to conform to the manner and form specified by NSW Health.	Audit	
<b>3.5</b>	<b>Drinking Water - Incident Management</b>		
3.5.1	Hunter Water must immediately report to NSW Health, in accordance with a notification procedure agreed to under the Memorandum of Understanding referred to in clause 2.3.1, any information or events in the delivery of the Services or in the Systems or operations which may have risks for public health.	Audit	Audit to examine whether enough information is included in the notification criteria, eg, > x NTU for Y minutes.
3.5.2	From the Commencement Date, Hunter Water must maintain the existing water quality incident management plan (Incident Management Plan) prepared to the satisfaction of NSW Health and that Incident Management Plan must remain in place until any new plan is developed in agreement with NSW Health.	SC	As part of recommendation R7.4 from the 2009/10 Operational Audit, the Emergency Management Guidelines were updated to reflect water quality incidents and have been provided to NSW Health for their approval.
3.5.3	The Incident Management Plan must contain, or incorporate by reference, procedures and protocols for the coordinated management of Drinking Water incidents including media and stakeholder liaison and any notification to Consumers of public health advice received from NSW Health.	Audit	
3.5.4	In preparing an Incident Management Plan under clause 3.5.2 Hunter Water must have regard to the concepts set out in the Australian Drinking Water Guidelines and must apply these concepts in the manner, form and timeframes specified by NSW Health.	Audit	
<b>3.6</b>	<b>Waste Water and Recycling Operations</b>		
3.6.1	Hunter Water must adopt a preventive risk management approach in relation to its Waste Water and recycling operations.	Audit	Audit to consider the finding from the 2010 audit in respect to insufficient details on risk ranking for the scheme-specific Recycled Water Quality Management Plans (RWQMPs).

<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
3.6.2	Hunter Water must prepare, to the satisfaction of NSW Health, a risk management plan for Waste Water and recycling operations (Waste Water and Recycling Operations Plan) within 6 months of the Commencement Date. Hunter Water must provide IPART and NSW Health with a copy of the Waste Water and Recycling Operations Plan upon its preparation.	Audit	See comment above (clause 3.6.1).
3.6.3	The Waste Water and Recycling Operations Plan must provide for monitoring, reporting and incident management procedures.	Audit	Audit to consider the audit finding in 2010 in respect to articulating the control loops for all critical control points.
3.6.4	Hunter Water must immediately report to NSW Health, in accordance with the notification procedure agreed to under the Memorandum of Understanding referred to in clause 2.3.1, any information or events in relation to its Waste Water and recycling operations which may have risks for public health.	Audit	
<b>3.7</b>	<b>Other grades of water</b>		
3.7.1	Other grades of water supplied by Hunter Water must be supplied according to the Australian Guidelines for Recycled Water or relevant guidelines specified by NSW Health, DECC and DWE.	Audit	Audit is to examine whether the handover point for recycled water is clearly articulated in all recycled water agreements.
3.7.2	Other grades of water supplied by Hunter Water do not include Drinking Water but does include Recycled Water.	NR	
3.7.3	Where there is a conflict between any of the guidelines, requirements or standards applying to Hunter Water under clause 3.7.1 the Minister's decision will prevail.	SC	No conflict in 2010/11.
3.7.4	Hunter Water must use its best endeavours to reach agreement with persons to whom Other Grades of Water is supplied. The terms of agreement for the supply of Other Grades of Water must include: (a) the standard of the quality of the water supplied; (b) the purpose of the supply; (c) the continuity of the water supplied; and (d) the costs to be paid by the Customers for the supply of water to them.	Audit	See comment at clause 3.7.1.
3.7.5	Hunter Water must advise persons to whom Other Grades of Water is supplied, of the potential uses for the Other Grades of Water and of the requirement that Other Grades of Water must undergo water treatment if it is to be used as Drinking Water.	Audit	
<b>3.8</b>	<b>Environmental water quality</b>		
3.8.1	Hunter Water must report to IPART on its performance against any environmental water quality requirements for any discharges or water releases required by licences issued to it by the DECC or the DWE.	Audit	Audit is to verify that the report provided is complete.
<b>4</b>	<b>Infrastructure Performance</b>		
4.1	Water Pressure Standard	SC	Performance Standards were agreed and gazetted in July 2010 with effect for the full 2010/11 year. No material changes have been made to these agreed Standards since the gazettal..
4.2	Water Continuity Standard	SC	As per 4.1
4.3	Sewage Overflows on Private Property Standard	SC	As per 4.1
<b>4.4</b>	<b>Compliance with system performance standards</b>		



<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
4.4.1	Hunter Water must comply with the Water Pressure Standard, the Water Continuity Standard and the Sewage Overflow Standard (each as amended) or other standard as required by the Minister.	Audit	Audit to consider recommendations from the 2009/10 audit in respect to: <ul style="list-style-type: none"> <li>• implementation of a continuous improvement and quality assurance management strategy</li> <li>• development of a set of knowledge and information management processes and practices within a quality assurance framework</li> <li>• the investigation report on sewerage system overflows</li> </ul>
<b>4.5</b>	<b>Reporting on system performance standards</b>		
4.5.1	By no later than 1 September each year, Hunter Water must report to IPART on its compliance with the Water Pressure Standard, the Water Continuity Standard and the Sewage Overflow Standard.	SC	Hunter Water is to verify that the report provided is complete.
4.5.2	By no later than 1 September each year, Hunter Water must report to IPART on: <ul style="list-style-type: none"> <li>(a) the number of Properties that experienced a Water Pressure Failure;</li> <li>(b) the number of Properties that experienced a Planned Water Interruption or an Unplanned Water Interruption; and</li> <li>(c) the number of Uncontrolled Sewage Overflows; in the immediately preceding financial year.</li> </ul>	Audit	Audit to verify that the report provided is complete.
4.5.3	Hunter Water must maintain record systems sufficient to enable it to measure accurately its performance against the Water Pressure Standard, the Water Continuity Standard and the Sewage Overflow Standard and to enable measurement and reporting by Hunter Water of those standards by delivery systems. Delivery system in this clause means the geographic classification used by Hunter Water for its own internal purposes, based on geographic regions forming part of the Services.	Audit	Audit in 2010/11 is to take account of changes to System Performance Standards effective from July 2010.
4.5.4	Hunter Water must provide IPART where possible with such data and electronic access to the records kept by Hunter Water that enable it to report under clauses 4.5.1 and 4.5.2 otherwise Hunter Water must provide IPART with physical access to such records.	SC	Statement of Compliance needs to confirm that Hunter Water will provide IPART with access to relevant records.
<b>4.6</b>	<b>Review of system performance standards</b>		
4.6.1	At least once during the term of the Licence, IPART must consult with Hunter Water and other stakeholders and report to the Minister on whether the Water Pressure Standard, the Water Continuity Standard and the Sewage Overflow Standard should be amended, and if so the nature of the amendments.	NR	
4.6.2	The report under clause 4.6.1 must include an analysis of the benefits and costs of: <ul style="list-style-type: none"> <li>(a) the existing Water Pressure Standard, the Water Continuity Standard and the Sewage Overflow Standard; and</li> <li>(b) proposed amendments to the Water Pressure Standard, the Water Continuity Standard and the Sewage Overflow Standard.</li> </ul>	NR	

<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
4.6.3	Following receipt of the report the Minister, or a person appointed by the Minister, may publish a notice in the NSW Government Gazette which lists amendments to the Water Pressure Standard, the Water Continuity Standard and the Sewage Overflow Standard that must be adopted by Hunter Water.	NR	
4.6.4	Any amendments to the performance standards that must be adopted by Hunter Water under clause 4.6.3 must be incorporated into the Customer Contract as soon as reasonably possible and also considered as part of any review of the Customer Contract.	Audit	Audit to verify that the amendment to the system performance standards which took effect from July 2010 has been adopted and incorporated into the Customer Contract.
4.6.5	From the Commencement Date, Hunter Water must provide IPART with such data and physical and electronic access to records kept by Hunter Water that enable it to report under clause 4.6.1.	SC	Statement of Compliance to certify that Hunter Water had cooperated fully during the SPS review.
<b>4.7</b>	<b>Service quality and system performance indicators</b>		
4.7.1	IPART will publish a schedule of Service Quality and System Performance Indicators. Hunter Water must publish on its website on the internet the latest Service Quality and System Performance Indicators.	SC	
4.7.2	Hunter Water must maintain record systems that are sufficient to enable it to measure accurately its performance against: <ol style="list-style-type: none"> <li>1. the Service Quality and System Performance Indicators; and</li> <li>2. any service quality and system indicators specified in instruments that give effect to the National Water Initiative; and</li> <li>3. any service quality and system indicators in any other instrument determined by IPART.</li> </ol>	Audit	
4.7.3	Where there is inconsistency between any of those indicators in clause 4.7.2 (or their application), IPART may determine which indicators are to apply.	Audit	Audit to check whether there is any inconsistency which went undetected or was not reported to IPART.
4.7.4	By no later than 1 September each year, Hunter Water must report to IPART its performance against the indicators in clause 4.7.2 for the immediately preceding financial year. The report must include an analysis of any problems of a systemic nature.	Audit	
4.7.5	As part of its report, Hunter Water must provide IPART where possible with such data and electronic access to the records that enable it to report under clause 4.7.4 otherwise Hunter Water must provide IPART with physical access to such records.	SC	Statement of Compliance to verify whether Hunter Water has cooperated fully in supplying data for these indicators.
<b>4.8</b>	<b>Asset management obligation</b>		
	Hunter Water must ensure that its Assets are managed consistent with: <ol style="list-style-type: none"> <li>(a) meeting its obligations under this Licence, the Customer Contract and all applicable laws;</li> <li>(b) subject to paragraph (a), achieving lowest cost of service delivery across the whole of life of the Assets, or where applicable across several asset life cycles, within the context of acceptable risk management principles; and</li> <li>(c) the analysis of Asset and Asset related business risks and managing them to a defensible residual level, subject to paragraphs (a) and (b).</li> </ol>	a) Audit b) SC c) SC	Audit to verify that Hunter Water has maintained its capacity to meet licence obligations into the future, and that Hunter Water's asset management system incorporates service targets that are consistent with licence requirements.

Licence Clause	Operating Licence Obligations	Scope	Comments
<b>4.9</b>	<b>Reporting on the asset management plan</b>		
4.9.1	At least once during the term of the Licence at a time to be agreed with IPART, Hunter Water must report to IPART on the state of each group of Assets managed by Hunter Water.	NR	
4.9.2	<p>The report must include the following matters:</p> <ul style="list-style-type: none"> <li>(a) a description of each group of Assets (for the purpose of this clause, a group of Assets may consist of only one Asset);</li> <li>(b) an assessment of the expected capability of each group of Assets to meet the obligations required under clause 4.8;</li> <li>(c) a description of the processes, practices, systems and plans Hunter Water uses in managing Assets, or as applicable, individual groups of Assets.</li> <li>(d) a demonstration by benchmarking, or other defensible analysis, that the processes and practices, systems and plans Hunter Water uses are appropriate within the context of the capabilities and characteristics of the business.</li> <li>(e) progress in implementing justifiable improvements in processes, practices, systems and plans for the management of Hunter Water's Assets.</li> <li>(f) strategies and predicted costs for the future management of the Assets to achieve the requirements of clause 4.8.</li> <li>(g) an assessment of the major issues and constraints on current and future performance of the Assets including implications for service pricing.</li> <li>(h) such other matters reasonably required by IPART</li> </ul>	NR	Removed from audit scope
<b>4.10</b>	<b>Auditing the Asset Management Plan</b>		
4.10.1	At least once during the term of the Licence IPART may (at a time it determines) conduct an audit of Hunter Water's compliance with clauses 4.8 and 4.9. The audit may form part of an Annual Audit or be conducted separately from an Annual Audit, at the discretion of IPART.	NR	
4.10.2	<p>In addition, IPART may at any time audit Hunter Water's compliance with clauses 4.8 and 4.9 for the purpose of:</p> <ul style="list-style-type: none"> <li>(a) investigating and reporting on, or reviewing the pricing of the Services under the IPART Act; or</li> <li>(b) investigating compliance by Hunter Water with specific areas of its Asset management.</li> </ul>	NR	
4.10.3	An audit undertaken under clause 4.10.1 or 4.10.2, must comply with the scope and audit specifications determined by IPART.	NR	
4.10.4	The provisions of clause 12 apply to an audit under clause 4.10 as if the audit under clause 4.10 is an Annual Audit.	NR	
4.10.5	The Minister must be advised of any such decision to audit and, subsequent to the audit, be provided with a report on the outcomes of the audit.	NR	

<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
<b>5.1</b>	<b>Customer Contract</b>		
5.1.1	The Customer Contract applies for the purpose of Section 35 of the Act and may only be varied in accordance with Section 38 of the Act.	NR	Definition clause.
5.1.2	Pursuant to Section 36(1) of the Act, and subject to Sections 36(3) and 36(4) of the Act, the Customer Contract applies to an owner of land connected to a water main or sewer main owned by Hunter Water.	NR	Definition clause.
5.1.3	The Customer Contract sets out the rights and obligations of Customers and Hunter Water in relation to the Services provided through the Systems. These rights and obligations are in addition to the rights and obligations conferred by the Act and any applicable law.	NR	Definition clause.
5.1.4	A copy of the Customer Contract, and any variations to it must be posted on Hunter Water's website on the internet for downloading free of any charges imposed by Hunter Water, and made available at its premises for access or collection by any member of the public, also free of any charges imposed by Hunter Water.	SC	
5.1.5	IPART may, unless required by the Minister, initiate a review of the Customer Contract during the term of the Licence.	NR	
5.1.6	By the completion of the review, IPART must produce a report setting out its findings and recommendations. A copy of the Report must be provided to the Minister upon its completion.	NR	
5.1.7	Within 3 months of the completion of the review of the Customer Contract under clause 5.1.5, Hunter Water must, if directed by the Minister, take all steps necessary to issue a new Customer Contract that addresses the recommendations of the report.	SC	
5.1.8	Within 3 months of the completion of the review of the Customer Contract under clause 5.1.5 Hunter Water must prepare a pamphlet that: (a) provides a brief explanatory introduction to the Customer Contract; (b) summarises the key rights and obligations of Customers under the Customer Contract; and (c) lists Hunter Water's local offices and emergency contact numbers in its Area of Operations.	SC	
5.1.9	The pamphlet prepared under clause 5.1.8 must be updated when changes are made to the Customer Contract under clause 5.1.7 and must be posted on Hunter Water's website on the internet for downloading free of any charges imposed by Hunter Water and also disseminated by Hunter Water free of charge (a) to Customers or Consumers, at least every two years ; and (b) to any other person on request.	SC	
5.1.10	As provided by and subject to Section 37 of the Act, Hunter Water may enter into other contracts or arrangements for the supply of Services. The terms of any such contract or arrangement are such as may be negotiated between Hunter Water and any such person.	NR	Definition clause.
<b>5.2</b>	<b>Consumers</b>		

<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
5.2.1	Hunter Water must fulfil its obligations under the Customer Contract relating to complaint handling and complaint resolution procedures, as if those obligations also extended to Consumers.	SC	
5.2.2	Hunter Water must fulfil its obligations under the Customer Contract relating to debt and disconnection procedures as if those obligations also extended to Consumers.	SC	
<b>5.3</b>	<b>Code of practice and procedure on debt and disconnection</b>		
5.3.1	Hunter Water must have in place a code of practice and procedure on debt and disconnection (Code of Practice and Procedure on Debt and Disconnection).	SC	Hunter Water to confirm that the web link omission found during the 2008/09 audit has been rectified.
5.3.2	The Code of Practice and Procedure on Debt and Disconnection must provide for: (a) deferred payment or payment by instalment options for bills; and (b) the payment options referred to in (a) are to be advised in bills.	SC	Statement of Compliance to confirm that information on customer assistance has been incorporated in customer bills, directly under the invoiced amount.
5.3.3	Hunter Water must ensure that the rights and obligations in the Code of Practice and Procedure on Debt and Disconnection are incorporated into the Customer Contract as if it were part of the Customer Contract.	SC	
5.3.4	Hunter Water must disseminate information on its Code of Practice and Procedure on Debt and Disconnection free of charge to: (a) to Customers or Consumers, at least once each year; and (b) to any other person on request.	SC	
<b>5.4</b>	<b>Consultative Forum</b>		
5.4.1	Hunter Water must have in place and regularly consult with a consultative forum (Consultative Forum) to enable community involvement in issues relevant to the performance of Hunter Water's obligations under the Licence.	SC	
5.4.2	The Consultative Forum may be utilised by Hunter Water, among other things, to provide it with high quality advice on the interests of Customers and Consumers of Hunter Water, on the Customer Contract and on such other key issues related to Hunter Water's planning and operations as Hunter Water may determine, consistent with the Consultative Forum Charter established and maintained under clause 5.4.4.	SC	

Licence Clause	Operating Licence Obligations	Scope	Comments
5.4.3	At all times, the membership of the Consultative Forum must: (a) be appointed by Hunter Water; (b) be determined in accordance with the Consultative Forum Charter established and maintained under clause 5.4.4; and (c) include a representative from at least each of the following: (i) business and consumer groups; (ii) organisations representing low income households; (iii) people living in rural and urban fringe areas; (iv) residential consumers; (v) environmental groups; (vi) local government; and (vii) people from non-English speaking backgrounds.	SC	
5.4.4	A consultative forum charter (Consultative Forum Charter) must be maintained by Hunter Water and the Consultative Forum members for the term of the Licence that addresses the following issues: (a) the role of the Consultative Forum; (b) selection criteria on how members will be drawn from the community, and information on how vacancies for membership will be advertised; (c) the procedure for appointment of members; (d) the term of members; (e) information on how the Consultative Forum will operate; (f) a description of the type of matters that will be referred to the Consultative Forum; (g) procedures for the conduct of Consultative Forum meetings, including the appointment of a chairperson; (h) communicating the outcome of the Consultative Forum's work to Hunter Water; (i) procedures for tracking issues raised and ensuring appropriate follow-up of those issues; and (j) funding and resourcing of the Consultative Forum by Hunter Water.	SC	
5.4.5	Hunter Water must provide the Consultative Forum with information within its possession or under its control necessary to enable the Consultative Forum to discharge the tasks assigned to it, other than information or documents over which Hunter Water or another person claims confidentiality or privilege.	SC	
5.4.6	A copy of the Consultative Forum Charter must be posted on Hunter Water's website on the internet for downloading free of any charges imposed by Hunter Water, and made available at its offices for access or collection by any member of the public, also free of charges imposed by Hunter Water.	SC	

<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
5.4.7	<p>Hunter Water must:</p> <p>(a) publish minutes from proceedings of the Consultative Forum on Hunter Water's website on the internet for downloading free of any charges imposed by Hunter Water, and make available at its offices for access or collection by any member of the public, also free of charges imposed by Hunter Water; and</p> <p>(b) publish a report by no later than 1 September each year on the activities of the Consultative Forum for the immediately preceding financial year that addresses the following issues:</p> <p style="padding-left: 40px;">(i) the activities and achievements of the Consultative Forum; and</p> <p style="padding-left: 40px;">(ii) compliance of the Consultative Forum with the Consultative Forum Charter; and</p> <p>post this report on Hunter Water's website on the internet for downloading free of any charges imposed by Hunter Water and make available at its offices for access or collection by any member of the public, also free of charges imposed by Hunter Water.</p>	SC	
5.4.8	As part of the Licence review referred to in clause 1.3.1, IPART must evaluate and report on the effectiveness of the Consultative Forum and compliance with the Consultative Forum Charter.	NR	
<b>5.5</b>	<b>Customer Service Indicators (CSI)</b>		
5.5.1	IPART will publish a schedule of Customer Service Indicators. Hunter Water must publish on its website on the internet the latest Customer Service Indicators.	SC	
5.5.2	<p>Hunter Water must maintain record systems that are sufficient to enable it to measure accurately its performance against:</p> <p>(a) the Customer Service Indicators;</p> <p>(b) any customer service indicators specified in instruments that give effect to the National Water Initiative; and</p> <p>(c) any customer service indicators in any other instrument determined by IPART.</p>	Audit	Audit is to verify that sufficient information have been collated to facilitate performance measurement and reporting.
5.5.3	Where there is inconsistency between any of those indicators in clause 5.5.2 (or their application), IPART may determine which indicators are to apply.	NR	
5.5.4	By no later than 1 September each year, Hunter Water must report to IPART its performance against the indicators in clause 5.5.2 for the immediately preceding financial year. The report must include an analysis of any problems of a systemic nature.	Audit	Audit is to verify that the information provided is complete.
5.5.5	It will be sufficient compliance with this clause if the report required by this clause is integrated into the report required by Hunter Water under clause 4.7.4.	NR	
5.5.6	As part of its report, Hunter Water must provide IPART with physical and electronic access to the records kept by Hunter Water that enable it to report under clause 5.5.4.	SC	Statement of Compliance is to verify that Hunter Water has cooperated fully in supplying data for these indicators.
<b>6.1</b>	<b>Internal Dispute Resolution Process</b>		

<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
6.1.1	Hunter Water must have in place internal complaint handling procedures (Internal Complaint Handling Procedures) for receiving, responding to and resolving Complaints by Customers and Consumers against Hunter Water.	Audit	
6.1.2	The Internal Complaint Handling Procedures of Hunter Water must be based on the Australian Standard AS ISO 10002-2006 Customer satisfaction - Guidelines for complaints handling in organizations.	Audit	
6.1.3	Hunter Water must make available to Customers and Consumers information concerning its Internal Complaint Handling Procedures which explains how to make a Complaint and how the procedure works.	Audit	
6.1.4	Hunter Water must provide information of the nature described in clause 6.1.3 to Customers and Consumers at least once each year. Hunter Water may provide this information in the pamphlet referred to in clause 6.2.4.	Audit	
6.1.5	<p>By no later than 1 September each year, Hunter Water must report to IPART on an exception basis for the immediately preceding financial year on the following details concerning Complaints made against Hunter Water which are handled by its Internal Complaint Handling Procedures:</p> <p>(a) the number and types of Complaints received on a month by month basis, classified by suburb into one or more of the following categories:</p> <ul style="list-style-type: none"> <li>(i) water quality, including health and aesthetic parameters;</li> <li>(ii) continuity of water supply;</li> <li>(iii) water pressure;</li> <li>(iv) sewage overflow;</li> <li>(v) sewage odour;</li> <li>(vi) drainage services; and</li> <li>(vii) customer billing.</li> </ul> <p>(b) the number and type of Complaints resolved or not resolved (on a month by month basis) in sufficient detail and using sufficient classifications to enable IPART to gain a reasonable understanding of how and how well those Complaints were resolved or why Complaints were not resolved, as the case may be; and</p> <p>(c) any problems of a systemic nature arising from the Complaints.</p>	Audit	
6.1.6	A report produced by Hunter Water under clause 6.1.5 must report on the details specified in clauses 6.1.5(a) and 6.1.5(b) for a suburb only where a complaint has been made against Hunter Water in that suburb during that month.	Audit	
<b>6.2</b>	<b>External dispute resolution scheme</b>		
6.2.1	Hunter Water must establish or be a member of an industry based dispute resolution scheme for the resolution by a dispute resolution body of disputes between Hunter Water and its Customers and between Hunter Water and Consumers.	Audit	
6.2.2	The industry based dispute resolution scheme so established by Hunter Water or which Hunter Water is a member of is subject to the Minister's approval.	Audit	



<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
6.2.3	Hunter Water must prepare a pamphlet that explains how the dispute resolution scheme operates and how it can be accessed.	Audit	
6.2.4	Hunter Water must provide the pamphlet in clause 6.2.3 to Customers and Consumers at least once each year.	Audit	
6.2.5	Hunter Water must provide IPART with written reports of the determinations made by the dispute resolution body based on information available to Hunter Water and information reasonably obtained from the dispute resolution body. Where considered appropriate by Hunter Water and the dispute resolution body, confidentiality arrangements are to be made so as not to disclose the Customer or Consumer's identity in such reports.	Audit	Audit is to verify that the report provided is complete.
6.2.6	Hunter Water must report to IPART by no later than 1 September each year based on information available to Hunter Water and information reasonably obtained from the dispute resolution body. The report must take into account any issues raised by the dispute resolution body and must contain the following information: (a) the number and types of Complaints received by the dispute resolution body, classified in accordance with the dispute resolution body's reporting arrangements; and (b) any other relevant information required by IPART to be included in the report.	Audit	Audit is to verify that the report provided is complete.
6.2.7	Hunter Water must post the report in clause 6.2.6 on Hunter Water's website on the internet for downloading free of any charges imposed by Hunter Water, and make it available at its premises for access or collection by any member of the public, also free of any charges imposed by Hunter Water.	Audit	
<b>6.3</b>	<b>Complaints to other bodies</b>		
6.3.1	Hunter Water must report to IPART by no later than 1 September each year on all Complaints made to Hunter Water in the immediately preceding financial year that relate to its performance under the Licence or the Customer Contract that were referred for resolution by an external dispute resolution body (other than a court), for example the Consumer Trader and Tenancy Tribunal.	Audit	
6.3.2	Hunter Water must report to IPART by no later than 1 September each year on all civil actions in the immediately preceding financial year that were brought against Hunter Water in all courts where the person bringing the action sought damages or other relief against Hunter Water for Hunter Water's failure to comply with a provision of its Customer Contract.	Audit	
6.3.3	The reports required under clauses 6.3.1 and 6.3.2 must contain the following information: (a) the number and types of matters; (b) the outcome of the matters; (c) if the matters were subject to a negotiated settlement, how they were settled; (d) any problems of a systemic nature arising from the matters or which the matters uncovered; and (e) any other information that IPART may reasonably request.	Audit	Audit is to verify that the report provided is complete.
<b>7.1</b>	<b>Environmental Performance Indicators</b>		

<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
7.1.1	IPART will publish a schedule of Environmental Performance Indicators. Hunter Water must publish on its website on the internet the latest Environmental Performance Indicators.	Audit	
7.1.2	Each year Hunter Water must monitor, record, compile data and report on: (a) the Environmental Performance Indicators for the immediately preceding financial year; (b) any environment performance indicators specified in instruments that give effect to the National Water Initiative; and (c) environment performance indicators in any other instrument determined by IPART.	Audit	Audit is to verify that sufficient information has been collated to facilitate performance measurement and reporting.
7.1.3	Where there is inconsistency between any of those indicators in clause 7.1.2 (or their application), IPART may determine which indicators are to apply.	NR	
7.1.4	By no later than 1 September each year, Hunter Water must report on its performance against the indicators in clause 7.1.2, in a manner to be approved by IPART.	Audit	
7.1.5	Hunter Water must provide IPART where possible with such data and records kept by Hunter Water that enable it to report under clause 7.1.4 otherwise Hunter Water must provide IPART with physical access to such records	Audit	Audit is to verify that the information provided is complete.
7.1.6	The report must provide information which enables a year to year comparison in relation to Hunter Water's performance against the environmental performance indicators in clause 7.1.2. In particular, Hunter Water is to compare the performance indicators in clause 7.1.2 with historical annual values over at least the previous 10 years where comparable data is available.	Audit	
7.1.7	The information in the report referred to in clauses 7.1.2 and 7.1.4 is to be made available to the public by Hunter Water. Copies of the information are to be made available from Hunter Water's offices on request free of charge and posted on Hunter Water's website on the internet for downloading by any person also free of charges imposed by Hunter Water.	Audit	
<b>7.2</b>	<b>Environmental Management</b>		
7.2.1	Hunter Water must produce a five-year environment management plan (Environmental Management Plan) within 15 months of the Commencement Date. After that Hunter Water must produce further Environment Management Plans every 5 years.	SC	
7.2.2	Hunter Water must engage in Public Consultation in developing an Environmental Management Plan.	SC	

Licence Clause	Operating Licence Obligations	Scope	Comments
7.2.3	The Environmental Management Plan must: (a) contain details of Hunter Water's environmental improvement strategies and objectives for its catchments, Water Storages, Water Supply System, Sewerage System, and Drainage System, as well as the environmental aspects of its other activities such as energy management, waste minimisation and heritage; (b) endorse ESD principles; (c) be integrated into Hunter Water's business plans; (d) incorporate the objectives of the energy management plan of Hunter Water to: (i) develop and implement energy savings plans for major facilities; (ii) develop a greenhouse gas emissions strategy; and (iii) comply with all relevant energy related regulation.	SC	
7.2.4	The Environmental Management Plan must set targets and timetables for environmental activities to be undertaken by Hunter Water over the term of the Environmental Management Plan.	Audit	Audit is to verify that the Environmental Management Plan has been implemented in accordance with the timeframes specified in the Plan.
7.2.5	Any material amendments may only be made to the Environmental Management Plan following Public Consultation.	SC	There have been no material amendments to the Plan during the audit period.
7.2.6	Hunter Water must report on any material amendments made in accordance with 7.2.5.	SC	As above.
7.2.7	The Environmental Management Plan must be provided to IPART on its completion and posted on Hunter Water's website on the internet for downloading free of any charges imposed by Hunter Water, made available at its Customer centres for access or collection by any member of the public and lodged with public libraries in the Area of Operations, in each case also free of charge.	SC	

Licence Clause	Operating Licence Obligations	Scope	Comments
<b>7.3</b>	<b>Catchment Report</b>		
7.3.1	<p>Hunter Water must report its performance by no later than 1 September each year against its catchment management activities for the immediately preceding financial year, in a report to be known as the Catchment Report. The Catchment Report must include:</p> <p>(a) details of activities conducted by Hunter Water under the Hunter Water Corporation Limited (Special Areas) Regulation 2003, and approvals under the <i>Water Act 1912</i> and the <i>Water Management Act 2000</i>, Water Sharing Plans and any other relevant land or water management activities carried out jointly with other authorities or landholders together with a comparison of:</p> <p>(i) those activities planned against those activities undertaken by Hunter Water during the immediately preceding financial year; and</p> <p>(ii) the estimated cost of planned activities against the actual costs incurred by Hunter Water relating to these activities;</p> <p>(b) details of Hunter Water's performance against the Water Management Licence and the <i>Dam Safety Act 1978</i>; and</p> <p>(c) details of activities proposed to be undertaken in accordance with clause 7.3.1(a) for the next financial year including costs that Hunter Water estimates it will incur in undertaking these activities.</p>	Audit	<p>Audit to consider all recommendations from the 2009/10 audit in respect to:</p> <ul style="list-style-type: none"> <li>Catchment Management Plan and the catchment report</li> <li>Linking catchment decision support system to risk assessment</li> <li>Developing appropriate notification protocol and compliance categorisation with the NSW Office of Water</li> <li>Refinement of incident management procedures and how incidents are triggered</li> <li>Improving the management, operating, monitoring, actioning and reporting of asset management issues relating to dams and dam safety</li> </ul>
7.3.2	Hunter Water must also publicly display the Catchment Report on its website on the internet for downloading free of any charges imposed by Hunter Water, and make it available at its premises for access or collection by any member of the public free of charge.	Audit	
<b>8</b>	<b>Pricing</b>		
8.1.1	Hunter Water must set the level of fees, charges, and other amounts payable for the Services subject to the terms of the Licence, the Act and the maximum prices and methodologies for the Services determined from time to time by IPART.	SC	
<b>9.1</b>	<b>Water Conservation Target</b>		
9.1.1	Hunter Water must ensure that the 5 year rolling average for annual residential water consumption calculated for the financial year is equal to or less than 215 kilolitres (Water Conservation Target).	Audit	
9.1.2	Hunter Water must report its compliance with the Water Conservation Target.	Audit	
9.1.3	Hunter Water must comply with the Water Conservation Target until replaced (if at all) by some or all of the proposals in clause 9.2.17 that are approved as part of the Licence review under clause 1.3.1.	Audit	Audit is triggered by a change in the Target
<b>9.2</b>	<b>The Integrated Water Resources Plan (IWRP)</b>		
9.2.1	Hunter Water must have in place an integrated water resources plan that complies with clause 9.2 (Integrated Water Resources Plan).	SC	With the removal of Tillegra Dam as an alternate supply source, the current IWRP was materially altered. However, all other aspects of the Plan continue to be pursued in 2010/11 whilst a revised IWRP is being developed in consultation with NOW.

Licence Clause	Operating Licence Obligations	Scope	Comments
9.2.2	The most recent Integrated Water Resources Plan must be posted on Hunter Water's website on the internet for downloading free of any charges imposed by Hunter Water and made available at its premises for access or collection by any member of the public, free of any access charge imposed by Hunter Water.	SC	
9.2.3	Hunter Water must at least once during the term of the Licence review the Integrated Water Resources Plan, of its own motion or as directed by IPART. Hunter Water may amend any material provisions in the Integrated Water Resources Plan only following Public Consultation and after taking into account comments received as part of that Public Consultation process. Following amendment, the Integrated Water Resources Plan must be made available as required by clause 9.2.2.	SC	
9.2.4	Hunter Water must engage in Public Consultation in any review of the Integrated Water Resources Plan under clause 9.2.3 and must take into account comments received as part of the Public Consultation process in preparing the final version of the Integrated Water Resources Plan.	SC	
9.2.5	Hunter Water must provide IPART with details of any material amendments made in accordance with clause 9.2.3.	SC	
9.2.6	So far as reasonably practicable Hunter Water must, when reviewing the Integrated Water Resources Plan (including the methodology for the Integrated Water Resources Plan), rely on and apply relevant best practice research available in the public domain and endeavour to continually refine and renew its methodologies to reflect current best practice.	SC	
9.2.7	As part of the Licence review referred to in clause 1.3.1, IPART must evaluate and report on the outcomes achieved by the Integrated Water Resources Plan.	NR	
9.2.8	The Integrated Water Resources Plan must enable Hunter Water to respond to the water needs in the Area of Operations, having regard to the financial, social and environmental costs of all reasonably available options to manage demand and supply of water.	SC	
9.2.9	The Integrated Water Resources Plan must indicate: (a) how Hunter Water will manage supply augmentation, real losses of water from its Water Supply Systems and demand for water within its Area of Operations over not less than the next 10 years; (b) the planning assumptions, including drought management assumptions employed; (c) the operational strategy in relation to water resource management; and (d) all other relevant matters employed.	SC	

Licence Clause	Operating Licence Obligations	Scope	Comments
9.2.10	<p>The Integrated Water Resources Plan must quantify the maximum reliable quantity of water that Hunter Water can derive from one year to the next, from its existing Water Storages, taking into account and quantifying all relevant factors including but not limited to:</p> <ul style="list-style-type: none"> <li>(a) the capacity of the Water Storages, and the rates of depletion and recovery of water in the Water Storages at current rates of consumption;</li> <li>(b) climatic data, trends and projections;</li> <li>(c) supply to and/or from areas outside the Area of Operations; and</li> <li>(d) constraints on extraction of water to the Water Storages, including those imposed by licences and approvals under the <i>Water Act 1912</i>, the <i>Water Management Act 2000</i> and conditions in the relevant Water Sharing Plans.</li> </ul>	SC	
9.2.11	<p>The Integrated Water Resources Plan must make projections of the total demand for water within the Area of Operations, having regard to relevant factors influencing demand for water, including but not limited to:</p> <ul style="list-style-type: none"> <li>(a) total growth in consumption, including specific growth rates across the residential, commercial and industrial sectors;</li> <li>(b) rates and trends in water leakage and real losses, in terms of the components of the Water Balance Table;</li> <li>(c) rates and trends in the demand for Recycled Water; and</li> <li>(d) actual and potential reductions in demand resulting from Hunter Water's initiatives.</li> </ul>	SC	
9.2.12	<p>The Integrated Water Resources Plan must identify and evaluate all reasonably practicable options to manage demand and supply of water within its Area of Operations, must define the relevant projected outputs from each option and must list the non-financial advantages and disadvantages of each option.</p>	SC	
9.2.13	<p>In evaluating the options identified under clause 9.2.12 Hunter Water must take all necessary steps to ensure that the Integrated Water Resources Plan;</p> <ul style="list-style-type: none"> <li>(a) quantifies the estimated costs of each option identified, which must include the financial (capital and operating) costs and takes full account of the social and environmental costs of each option for each year of the Integrated Water Resources Plan; and</li> <li>(b) compares the financial, social and environmental costs of each option.</li> </ul>	SC	Statement of compliance should provide an update on any progress made in this regard.
9.2.14	<p>If Hunter Water is unable to reasonably quantify the social and environmental costs of the options developed under clause 9.2.12 pursuant to clause 9.2.13, it may use qualitative analysis, such as Multi-Criteria Analysis.</p>	SC	Statement of Compliance should confirm that Hunter Water has developed the Sustainability tool box, as mentioned in the 2008/09 audit report.
9.2.15	<p>Where Hunter Water uses qualitative analysis, such as Multi-Criteria Analysis pursuant to clause 9.2.14, Hunter Water must publish details of the qualitative analysis used and the results of that analysis in the Integrated Water Resources Plan.</p>	SC	Statement of compliance should provide an update on any progress made in this regard.

<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
9.2.16	Hunter Water must adopt the least cost option determined under clause 9.2.13 or 9.2.14 unless there are reasonable and substantive reasons for adopting a different option and those reasons are described in detail in the Integrated Water Resources Plan.	SC	Statement of compliance should provide an update on any progress made in this regard.
9.2.17	Applying the Integrated Water Resources Plan and the matters in clause 9.2, Hunter Water must outline targets, standards, indicators or other proposals for consideration as part of the Licence review under clause 1.3.1.	Audit	
9.2.18	Hunter Water must report to IPART by no later than 1 September each year on its performance against the Integrated Water Resources Plan.	Audit	Audit to consider recommendations from the 2009/10 audit in respect to performance reporting against the H <sub>2</sub> O Plan.
<b>9.3</b>	<b>Security of Supply</b>		
9.3.1	Hunter Water may impose Water Restrictions.	NR	
9.3.2	Hunter Water must report on the nature and length of each Water Restriction imposed in the immediately preceding financial year and whether (based on information reasonably available to Hunter Water) it is likely to impose a Water Restriction in the ensuing financial year or at any other time during the Licence.	Audit	
9.3.3	Hunter Water must report on the criteria it applies in determining whether to request that the Minister authorise a Water Restriction.	Audit	Audit is triggered if a water restriction is requested
9.3.4	Hunter Water must report on the quantity of water (in mega litres) supplied from each Water Storage.	Audit	Audit to consider recommendation from the 2009/10 audit in respect to improving quality assurance of the generation of data.
9.3.5	Hunter Water must report against each of the components in the Water Balance Table.	Audit	
9.3.6	Hunter Water must report on the differences in the outcomes in applying clause 9.3.5 between one financial year and an immediately preceding financial year.	Audit	
9.3.7	Hunter Water must report on the quantity of Recycled Water (in mega litres) supplied in the immediately preceding financial year for the following applications: (a) for industrial or commercial use; (b) for direct use in irrigation; or (c) for uses, other than those described in (a) or (b).	Audit	
9.3.8	Hunter Water must report on the total quantity of water (in mega litres) supplied by it for each of the following: (a) consumption by persons in Residential Properties; (b) industrial and commercial uses (excluding use by a Large Customer); and (c) consumption by Large Customers.	Audit	

<b>Licence Clause</b>	<b>Operating Licence Obligations</b>	<b>Scope</b>	<b>Comments</b>
9.3.9	In its report, Hunter Water must compare each application in clause 9.3.8, with the corresponding application in the immediately preceding financial year, and indicate whether all or some of the following factors, (or other factors of which Hunter Water is aware), contributed to the difference (if any) in the comparison: (a) growth in the Customer base; (b) climatic impact; (c) the nature or extent of consumption of Recycled Water; or (d) demand management initiatives.	Audit	
<b>9.4</b>	<b>Annual Reporting on Water demand and supply indicators</b>		
9.4.1	Hunter Water must report its performance against the water demand and supply indicators under clauses 9.3.1 to 9.3.9. The report may be included in the report on the environmental and ESD indicators required under clauses 7.1.2 and 7.1.4.	SC	Hunter Water is to verify that the information provided is complete.
9.4.2	Hunter Water must also publicly display the report provided under clause 9.4.1 on its website on the internet for downloading free of any charges imposed by Hunter Water, and make it available at its premises for access or collection by any member of the public free of charge.	SC	
<b>11.2</b>	<b>Damage and compensation to persons</b>		
	Hunter Water is required by Section 22 of the Act to do as little damage as practicable in exercising its functions under Division 2 of Part 5 of the Act, and in circumstances specified in that provision, to compensate persons who suffer damage by the exercise of those functions.	Audit	
<b>11.3</b>	<b>Competitive neutrality</b>		
11.3.1	Subject to the Act, the SOC Act and any applicable law, Hunter Water must comply, and must ensure that its Subsidiaries comply, with the competitive neutrality policies and guidelines adopted by New South Wales under clause 3 of the Competition Principles Agreement.	SC	
11.3.2	Clause 11.3 is in addition to any obligations of Hunter Water under: (a) the <i>Trade Practices Act 1974</i> ; (b) the <i>Water Industry Competition Act 2006</i> ; (c) the Competition Code of NSW and other States and Territories as applicable; and (d) any applicable law.	NR-	Definition clause.
<b>12.2</b>	<b>What the audit is to Report on</b>		
12.2.1 (b)	IPART or the person undertaking the Annual Audit must investigate and prepare a report on any of the following: (b) Hunter Water's compliance with its obligations under the Memorandum of Understanding referred to in clause 2.3;	SC	



## B | Hunter Water's statement of compliance



# Annual Compliance Report for 2010 /11

Submitted by Hunter Water Corporation

## Statement of Compliance

To: Independent Pricing and Regulatory Tribunal of NSW (the Tribunal)  
Level 8, 1 Market Street  
Sydney NSW 2000

Attention: The Chief Executive Officer

Hunter Water Corporation reports as follows:

The Annual Compliance Report documents compliance during 2010/11 with those obligations in Hunter Water Corporation's 2007-2012 operating licence that are not subject to an operational audit. These obligations are listed by clause in Schedule A.

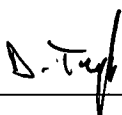
The Annual Compliance Report has been prepared by Hunter Water Corporation with all due care and skill in full knowledge of the obligations to which it is subject and in compliance with the Tribunal's Monitoring and Reporting Protocol, if applicable.

Schedule B provides information on those licence obligations that were not audited with which Hunter Water Corporation did not fully comply during 2010/11.

Other than the information provided in Schedule B, Hunter Water Corporation has complied with all obligations to which it is subject that have not been audited.

Schedule C outlines any factors and emerging issues that may affect compliance with a licence clause in future years.


The Annual Compliance Report has been approved by the Board of Directors of Hunter Water Corporation on 27 October 2011.

  
Signed: \_\_\_\_\_

D Taylor  
Name: \_\_\_\_\_

Acting Managing Director  
Title: \_\_\_\_\_

27.10.11  
Date: \_\_\_\_\_

  
Signed: \_\_\_\_\_

R Robson  
Name: \_\_\_\_\_

Chairman  
Title: \_\_\_\_\_

27.10.11  
Date: \_\_\_\_\_

## Schedule A: Licence obligations for Hunter Water Corporation not audited in 2010/11

*[Instruction: For each licence clause Hunter Water Corporation must specify whether or not there was full compliance with the obligation. There must be a "yes" or "no" response in the compliance column corresponding to each clause.]*

*Where a "no" response is given, please provide further detail in Schedule B. Where a "yes" response is given and there are factors or emerging issues which may affect compliance in future audits, please outline these factors or issues in Schedule C.]*

Operating Licence Section Title	Licence Clause	Compliance Yes/No
<b>Drinking Water Quality – Monitoring</b>	<b>3.3</b>	
	3.3.3	Yes
	3.3.4	Yes
	3.3.5	Yes
<b>Drinking Water Quality – Reporting</b>	<b>3.4</b>	
	3.4.3	Yes
<b>Drinking Water - Incident Management</b>	<b>3.5</b>	
	3.5.2	Yes
<b>Other grades of water</b>	<b>3.7</b>	
	3.7.3	Yes
<b>System Performance Standards</b>		
<b>Water Pressure Standard</b>	<b>4.1</b>	Yes
<b>Water Continuity Standard</b>	<b>4.2</b>	Yes
<b>Sewage Overflows on Private Property Standard</b>	<b>4.3</b>	Yes
<b>Reporting on system performance standards</b>	<b>4.5</b>	Yes
	4.5.1	Yes
	4.5.4	Yes
<b>Review of system performance standards</b>	<b>4.6</b>	
	4.6.5	Yes
<b>Service quality and system performance indicators</b>	<b>4.7</b>	
	4.7.1	Yes
	4.7.5	Yes
<b>Asset management obligation</b>	<b>4.8</b>	
	4.8(b)	Yes
	4.8(c)	Yes
<b>Customer Contract</b>	<b>5.1</b>	
	5.1.4	Yes
	5.1.7	Yes
	5.1.8	Yes
	5.1.9	Yes
<b>Consumers</b>	<b>5.2</b>	

Operating Licence Section Title	Licence Clause	Compliance Yes/No
	5.2.1	Yes
	5.2.2	Yes
<b>Code of practice and procedure on debt and disconnection</b>	<b>5.3</b>	
	5.3.1	Yes
	5.3.2	Yes
	5.3.3	Yes
	5.3.4	Yes
<b>Consultative Forum</b>	<b>5.4</b>	
	5.4.1	Yes
	5.4.2	Yes
	5.4.3	Yes
	5.4.4	Yes
	5.4.5	Yes
	5.4.6	Yes
	5.4.7	Yes
<b>Customer Service Indicators (CSI)</b>	<b>5.5</b>	
	5.5.1	Yes
	5.5.6	Yes
<b>Environmental Management</b>	<b>7.2</b>	
	7.2.1	Yes
	7.2.2	Yes
	7.2.3	Yes
	7.2.5	Yes
	7.2.6	Yes
	7.2.7	Yes
<b>Pricing</b>	<b>8</b>	
	8.1.1	Yes
<b>The Integrated Water Resources Plan (IWRC)</b>	<b>9.2</b>	
	9.2.1	see schedule B
	9.2.2	Yes
	9.2.3	Yes
	9.2.4	Yes
	9.2.5	Yes
	9.2.6	Yes
	9.2.8	see schedule B
	9.2.9	Yes
	9.2.10	Yes
	9.2.11	Yes
	9.2.12	Yes
	9.2.13	see schedule B
	9.2.14	see schedule B

Operating Licence Section Title	Licence Clause	Compliance Yes/No
	9.2.15	see schedule B
	9.2.16	see schedule B
<b>Annual Reporting on Water demand and supply indicators</b>	<b>9.4</b>	
	9.4.1	Yes
	9.4.2	Yes
<b>Liability Issues</b>	<b>11</b>	
Competitive neutrality	11.3	Yes
	11.3.1	Yes
<b>What the audit is to Report on</b>	<b>12.2</b>	
MOU	12.2.1 (b)	Yes

## Schedule B: Non-Compliances for Hunter Water Corporation's licence obligations not audited in 2010/11

*[Instruction: If a "no" response was provided in the compliance column for a licence clause in Schedule A, then a description of the non-compliance must be provided for that clause in Schedule B.]*

Licence clause	Obligation	Description of non-compliance
<i>List licence clauses</i>	<i>List obligations breached, including a brief description of each obligation</i>	<ul style="list-style-type: none"> <li>➤ <i>Nature and extent of non-compliance</i></li> <li>➤ <i>Reasons for non-compliance</i></li> <li>➤ <i>Remedial action taken</i></li> <li>➤ <i>Actual/ anticipated date of full compliance</i></li> </ul>
<b>9.2.1 and 9.2.8</b>	The Operating Licence requires Hunter Water to have in place an Integrated Water Resources Plan (IWRP) that responds to the water needs of its area of operations.	<p>Water security issues were addressed in Hunter Water's H250 Water Plan published in 2008. The construction of Tillegra Dam was proposed as a means to secure water supplies through to at least 2050. The former government's decision to not proceed with the dam raises concerns about water security for this region for the short and long term. The former NSW Premier acknowledged these concerns and announced development of a new Lower Hunter Water Plan (LHWP) by the Metropolitan Water Directorate of NSW Department of Finance and Services in collaboration with Hunter Water, other government agencies and the community.</p> <p>Once complete, the LHWP will replace Hunter Water's H250 Plan. In the meantime Hunter Water will continue to focus on water efficiency and recycling initiatives outlined in the existing H250 Plan. Hunter Water is also progressing with the development of the Interim Drought Management Plan (iDMP) to address the short term vulnerability of the system whilst the LHWP is being developed and its outcomes implemented.</p>
<b>9.2.13</b>	<p>In evaluating the options identified under clause 9.2.12 Hunter Water must take all necessary steps to ensure that the Integrated Water Resources Plan;</p> <ul style="list-style-type: none"> <li>• quantifies the estimated costs of each option identified, which must include the financial (capital and operating) costs and takes full account of the social and environmental costs of each option for each year of the Integrated Water Resources Plan; and</li> <li>• compares the financial, social and</li> </ul>	<p><i>Hunter Water has collated all known water security options, including those suggested through the Tillegra Dam assessment process and previous Integrated Water Resource Plan consultation processes. The long list consists of over 70 options including but not limited to, demand management (e.g. water efficiency, water loss minimisation), water recycling, stormwater harvesting, desalination and surface water and groundwater sources.</i></p>

	<p>environmental costs of each option.</p>	<p><i>Hunter Water has scoped and started developing a range of options, including their technical feasibility, estimated cost and the likely environmental and social impacts of these options.</i></p> <p><i>It is likely that new options will emerge from the LHWP stakeholder engagement and community consultation process and that additional work will be required to develop and fully consider these options as part of the assessment process.</i></p> <p>Options to be further developed will be selected in consultation with the inter-agency working groups and may be subject to independent review.</p>
<p><b>9.2.14 &amp; 9.2.15 &amp; 9.16</b></p>	<p>If Hunter Water is unable to reasonably quantify the social and environmental costs of the options developed under clause 9.2.12 pursuant to clause 9.2.13, it may use qualitative analysis, such as Multi-Criteria Analysis.</p> <p>Where Hunter Water uses qualitative analysis, such as Multi-Criteria Analysis pursuant to clause 9.2.14, Hunter Water must publish details of the qualitative analysis used and the results of that analysis in the Integrated Water Resources Plan.</p> <p>Hunter Water must adopt the least cost option determined under clause 9.2.13 or 9.2.14 unless there are reasonable and substantive reasons for adopting a different option and those reasons are described in detail in the Integrated Water Resources Plan.</p>	<p><i>A portfolio approach to water planning will be taken for both the iDMP and LHWP. This is an approach established for the Metropolitan Water Plan for greater Sydney (MWP) that has credibility with a range of government stakeholders.</i></p> <p><i>A portfolio approach involves evaluating water supply and demand management options to derive a short list. Different combinations, or portfolios, of short-listed options that could potentially meet lower Hunter's water needs would be developed and analysed. Short-listed portfolios may undergo further evaluation against social, environmental, financial and technical considerations prior to a preferred portfolio being selected.</i></p> <p><i>The portfolio approach recognises the set of measures already in place, such as recycling and water efficiency initiatives in the H<sub>2</sub>50 Plan. Combinations of additional measures, such as new infrastructure or changes to the existing measures, form new portfolios, which can be tested for robustness under various climate scenarios.</i></p> <p>Using portfolios, rather than individual measures, takes into account the interactions between measures and their impact on water supply. For example, the water savings achieved by a demand management program may be reduced if it is combined with drought restrictions, because both are designed to reduce the amount of discretionary water use by households.</p>



### Schedule C: Issues that may affect compliance in future audits

[Instruction: If a "yes" response was provided in the compliance column for a licence clause in Schedule A and there are factors or emerging issues that may affect compliance in future audits, please describe these factors or issues in Schedule C.]

Licence clause	Obligation	Description of emerging issue
List licence clauses	List obligations including a brief description of each obligation	<ul style="list-style-type: none"> <li>➤ Describe the issue</li> <li>➤ Explain how the issue could affect compliance in the future with licence clause</li> <li>➤ Outline how the issue is being managed</li> <li>➤ Explain any impedances to management.</li> </ul>
9.2.1 and 9.2.8	The Operating Licence requires Hunter Water to have in place an Integrated Water Resources Plan (IWRP) that responds to the water needs of its area of operations.	<p>A Lower Hunter Water Plan is being developed by the Metropolitan Water Directorate, in the Department of Finance and Services, in collaboration with Hunter Water and other government agencies. Once complete, the LHWP will replace Hunter Water's H250 Plan.</p> <p>IPART's Issues Paper for the End of Term Review of the Operating Licence for Hunter Water Corporation 2012-2017 (March 2011), Section 1.2.1 (Table 1.1, page 4) acknowledges the change in responsibility for an Integrated Water Resources Plan and notes that the Operating Licence may need to be varied after 1 July 2012 to reflect this change.</p>



## C Summary of opportunities for improvement

The operating licence auditor's report lists a number of opportunities for improvement. These opportunities are listed below.

1. As a priority, ensure that the incident response contingency plans are readily recoverable from the intranet using the updated Knowledge Management System.
2. Review the consequences of having undefined notification limits to NSW Health for disinfection failure and limits that are inconsistent with ADWG 2011 for filter operation.
3. Amend the water quality incident response protocol to include a general catch-all for any other suspected contamination event.
4. Formalise the inclusion of at least one water quality practice incident per period.
5. Update reservoir condition checklists to include an item for "roof integrity" and "bird proofing" to ensure that assets are more extensively and consciously inspected.
6. Ensure that the Dam Management Processes are based on more than just the Dam Act being the main driver.
7. Ensure that the corporate system storing Standard Operating Procedures and other procedures is sufficiently secure to prevent staff implementing standalone material to amend the official procedures, thereby endangering version integrity.
8. Review the linkages between customer hardship and water efficiency, Sydney Water is also working in this area and may share knowledge and experience to more efficiently implement any programs.
9. To improve communication within the synthesised information, Table 2.3 (Customer Service Report 2010 to 2011) could benefit from the inclusion of an additional column after 'Number of Complaints and Detail', before 'Comments', with an explanation of 'Type' of water quality complaint ie, Health and/or Aesthetic.
10. To improve communication within the synthesised information, Table 2.10 (Customer Service Report 2010 to 2011) could benefit from the inclusion of additional columns after 'Number of Complaints or Properties Affected - issue', before 'Comments', with 'Number' and 'Type (wet/dry)'.

11. Place a note at the front of the Performance Indicator Report (or where Hunter Water considers appropriate), saying that unless otherwise stated in table legends, data in tables represent an historical time series. In this report, 10 years' data was not available for all indicators and it was not always clear whether:
  - a) only a portion of data is presented in the tables for clarity
  - b) the truncation of data pertains to incomplete datasets, or
  - c) indicators have changed for the reporting period and, therefore, it is not possible to compare the indicator for this reporting period with the previous dataset.
12. Prepare a Strategy report identifying the implication of no supply augmentation, on the likely changes to restriction trigger points.