

# **Hunter Water Corporation Operational Audit 2009/2010**

Report to the Minister

**Water — Compliance Report**  
November 2010



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Mr James Cox, Chief Executive Officer and Full Time Member

Ms Sibylle Krieger, Part Time Member

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## Executive Summary

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) has completed its audit of Hunter Water Corporation's (Hunter Water) compliance with the requirements of its 2007-2012 Operating Licence (the Licence). This audit covers the period from 1 July 2009 to 30 June 2010. We engaged t-cAM Consulting (t-cAM) as consultant to assist with the 2009/10 Operational Audit (the audit) of Hunter Water.

### Overview of audit findings

Overall, the auditor found that Hunter Water has managed its resources to achieve predominately full compliance with the requirements of the licence. Hunter Water's performance in 2009/10 was in line with the performance in 2008/09 in terms of compliance grades achieved. In summary, we found that Hunter Water:

- ▼ Supplied drinking water described by the auditor as being of an **excellent** standard and achieved **High to Full Compliance** with requirements relating to water quality.
- ▼ Achieved **Full Compliance** in meeting all system performance standards for water continuity, water pressure and sewer overflows.
- ▼ Achieved **Full Compliance** with requirements relating to customer service.
- ▼ Achieved **High to Full Compliance** with requirements relating to catchment management and reporting.
- ▼ Achieved **Moderate to Full Compliance** with requirements relating to the management of water supply and demand.

Hunter Water's compliance is illustrated in the following table. A comparison of compliance for the years 2007/08 to 2009/10 is summarised in Chapter 7.

**Table 1 Summary of Hunter Water's 2009/10 Compliance**

Licence Clause	No. of Auditable Clauses	Compliance Grade Awarded			
		Full	High	Moderate	Insufficient Information
Part 3 – Water Quality	14	12	2	-	-
Part 4 – Infrastructure Performance	1	1	-	-	-
Part 5 – Customer and Consumer Rights	1	1	-	-	-
Part 7 – Environment – Indicators and Management	4	2	2	-	-
Part 9 – Managing Supply and Demand	9	7	1	1	-
<b>Total</b>	<b>29</b>	<b>23</b>	<b>5</b>	<b>1</b>	<b>-</b>

Hunter Water has provided us with a Statement of Compliance, shown at Appendix C. This documents Hunter Water's compliance for the period 2009/10 with licence clauses not subject to audit during the 2009/10 year. This document has been signed by Hunter Water's Chairman and Managing Director.

In accordance with our risk-based audit program, the following parts of the Operating Licence were not audited in 2009/10:

- ▼ Part 6 – Complaint and Dispute Handling
- ▼ Part 8 – Pricing

Hunter Water has addressed the recommendations arising from the previous operational audit. Details of our follow-up on the 2008/09 audit are in Chapter 7.

Hunter Water has performed satisfactorily against the requirements of the licence. However, the auditor has drawn attention to some shortcomings in Hunter Water's knowledge management, continuous improvement and quality assurance in several licence areas. Hunter Water in the past has heavily relied on the experience and expertise of its staff to ensure compliance. However, as the organisation grows and staff leave or move into more senior positions it becomes more important for Hunter Water to fully document its processes and practices as part of an integrated management system. This is necessary to ensure that consistently superior performance, prudent management and innovation become entrenched throughout the operations of the utility. Further, if these matters are left unaddressed, they have the potential to compromise Hunter Water's capacity to comply with the licence in the future.

We support the auditor's overarching recommendation to address these issues set out in the next section. The reasons behind this overarching recommendation are further explained in the relevant sections of the report.



## IPART's recommendations

We recommend that Hunter Water implement the following actions:

### 1 Quality Assurance and continuous improvement

- a) Implement an appropriate continuous improvement and quality assurance management strategy with 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:
  - Embed document control information into key documents
  - Establish document review processes and timetables to assist in maintaining information currency
  - Investigate of improved information management processes for field staff
  - Document 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
  - Expand analysis of performance data to clearly evidence utilisation of the results in continuous improvement plans
  - Document key data analysis processes, with integrated integrity and assurance checks.
- b) 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 and its derivatives.
  - An implementation plan outlining the resources to be applied, objectives, responsibilities, action plans and deliverables over the next five years.
- c) Provide, by 1 September of each year, a summary of progress against the strategy and plan, cross-referenced to Licence Parts, for use of IPART and the Licence auditor.

### 2 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.

### 3 Dam Asset Management

Improve management, operating, monitoring, actioning and reporting on dam asset management issues, including:

- (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.
- (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 by 28 February 2011.
- (c) Re-design of condition monitoring checklists.
- (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.
- (e) Development of asset management plans for dams.

With the exception of (b) and (e), all these improvements should be completed, and reported on, by 1 September 2011. In the case of (b) the project scope phase should be completed by 30 March 2011, and in the case of (e), an interim plan, utilising currently available information, should be prepared within this timeframe and a full asset management plan completed for audit in 2012.

The audit report identifies a number of opportunities where compliance with the licence could be enhanced or where Hunter Water's practices and procedures could be improved. We support the matters raised as recommendations in the auditor's report and recommend that Hunter Water provide us with a report before 31 March 2011 that sets out actions to address these recommendations. We will follow-up on Hunter Water's progress in addressing these matters and we will review the implementation of these recommendations as part of the 2010/11 operational audit.

We have discussed these recommendations with officers of Hunter Water. Hunter Water has accepted them and agreed to address these issues. We note that Hunter Water has already initiated action to address knowledge management in the organisation by appointment of a knowledge management/resilience officer.

We do not recommend that any additional requirements be imposed on Hunter Water by the Minister as a result of this audit.

## 1 Introduction and scope

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) has completed its audit of Hunter Water Corporation's (Hunter Water) compliance with the requirements of its 2007-2012 Operating Licence (the Licence). This audit covers the period from 1 July 2009 to 30 June 2010. We engaged t-cAM Consulting (t-cAM) as consultant to assist with the 2009/10 Operational Audit (the audit) of Hunter Water.

The purpose of this report is to inform the Minister for Water of our findings in relation to Hunter Water's performance against its licence obligations for the audit period and set out our recommendations in response to these findings.

Hunter Water is a State Owned Corporation, which is wholly owned by the NSW Government. Its roles and responsibilities include providing water and wastewater services to the Newcastle, Lake Macquarie, Maitland, Cessnock, Dungog and Port Stephens areas, and bulk water services to parts of the Singleton and Great Lakes areas and the Central Coast. These roles and responsibilities are derived from the *Hunter Water Act 1991* (the Act) and the licence issued to Hunter Water pursuant to Section 12 of the Act.

The licence provides for a risk-based auditing regime. The risk-based auditing process provides that only clauses assessed as having high risk associated with non-compliance are more regularly included in the audit scope. Higher risk clauses include those relating to water quality, infrastructure and the environment. t-cAM assessed Hunter Water's compliance with high risk areas of the licence and submitted an audit report to us.

Other clauses, such as that dealing with customer contracts, have been assessed as low risk and therefore audited less frequently. However, all requirements of the licence are audited at least once during the term of the licence. In 2009/10, Hunter Water provided us with a Statement of Compliance, signed by the Managing Director and the Chairman, which details Hunter Water's compliance with the unaudited, low risk clauses of the licence (Appendix C).

Part 12 of the Operating Licence stipulates that IPART is to undertake an audit of Hunter Water's performance against the requirements of the licence each year and report its findings to the Minister.

## 1.1 Structure of report

This report presents and discusses the findings and recommendations of the 2009/10 audit of Hunter Water.

This chapter explains the basis for and scope of the audit review, and the process followed in undertaking it.

Chapters 2 to 6 present a summary of the audit findings and recommendations, where applicable, for each part of the licence. In addition, we have provided commentary and an overall assessment of Hunter Water's performance for the audit period.

Chapter 7 discusses the actions that Hunter Water has taken in response to the findings and recommendations of the 2008/09 audit and summarises Hunter Water's historical performance in audits since the commencement of the current licence.

Appendices provide a copy of the consultant's report (Appendix A), an outline of independently audited Licence clauses (Appendix B), and a copy of Hunter Water's 2009/10 Statement of Compliance (Appendix C).

## 1.2 Scope

The licence provides for a risk-based approach to the assessment of compliance with Licence requirements. The 2009/10 audit is the third audit of compliance with this licence.

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. Appendix B sets out the scope of the 2009/10 audit and identifies which licence requirements are subject to a comprehensive audit and which are covered by a Statement of Compliance, signed by the Managing Director and the Chairman of the Board.

## 1.3 Process

We engaged t-cAM to assess Hunter Water's performance against licence requirements that were subject to comprehensive audit in 2010. As part of the audit process, we advertised for public submissions in the Sydney Morning Herald, Daily Telegraph, and Newcastle Herald on 8 September 2010. We did not receive any submissions from the public.

The consultant adopted a 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 t-cAM and Hunter Water representatives on 6 September 2010. This meeting set out mutual understanding and expectations of the requirements of the audit and protocols for the conduct of the audit. All parties adhered to the agreed protocols throughout the audit. We attended all meetings between the consultant and Hunter Water.

We provided Hunter Water with drafts of the audit report, and gave it an opportunity to provide its comments on these documents. These comments were considered before the audit report was finalised. The consultant’s audit report is attached at Appendix A.

Hunter Water’s compliance with the relevant requirements of the Operating Licence was assessed according the following schedule:

<b>Compliance Grade</b>	<b>Description Detail</b>
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.

## 2 | Water Quality

Part 3 of the licence deals with water quality. It includes requirements relating to planning, monitoring, reporting and incident management. Part 3 also includes obligations dealing with waste water and water recycling. 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.

### 2.1 Overview

The auditor found Hunter Water continued to deliver drinking water of an excellent standard to its customers throughout 2009/10. It achieved predominantly Full Compliance with this part of the licence, with 2 exceptions. These relate to the clarity of criteria which trigger notification to NSW Health, and the inconsistency between the wording of the Monitoring & Reporting Protocols and actual practice. This suggests that documentation of procedures and quality assurance could be improved.

The auditor found that Hunter Water is making progress in its program to investigate and improve the management of chlorine residuals in the water reticulation system. These findings address a question raised previously by NSW Health.

### 2.2 Audit findings

Hunter Water has maintained similar performance to 2008/09 against the requirements of this part of the licence, achieving full compliance with 12 out of the 14 auditable clauses associated with water quality. High compliance was awarded for the remaining 2 clauses.

#### Drinking Water Quality – Planning

As in 2008/09, Hunter Water has achieved **Full Compliance** for the one auditable clause in this section.

### Drinking Water Quality – Standards

Hunter Water continued to achieve **Full Compliance** with the licence requirements on Drinking Water Quality Standards. The auditor found that Hunter Water fully complied with the requirements of the ADWG throughout the audit period.

### Drinking Water Quality – Monitoring

There were two audited clauses in this section of the licence. Hunter Water achieved **Full Compliance** for the requirement to undertake all monitoring consistent with the Monitoring Plan and **High Compliance** for the preparation of the plan. The high compliance grading reflects a minor inconsistency between the Monitoring and Reporting Protocol and actual practice.

### Drinking Water Quality – Reporting

Hunter Water continued to achieve **Full Compliance** with respect to reporting of the Drinking Water quality monitoring test results.

### Drinking Water Quality – Incident Management Plan

There were two audited clauses in this section of the licence. Hunter Water achieved **Full Compliance** for the requirement to maintain a water quality incident management plan and **High Compliance** for the requirement to report water quality incidents to NSW Health. The high compliance grading reflects a need to clarify certain criteria for notification of water quality events to NSW Health.

### Wastewater and Recycling Operations

Hunter Water continued to achieve **Full Compliance** with all requirements of this section of the licence. Hunter Water has continued to make progress with the implementation of its commitments under the *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks* (AGWR) 2006.

### Other Grades of Water

Hunter Water continued to achieve **Full Compliance** with respect to supplying Other Grades of Water. Hunter Water has developed a strategy that any new water recycling scheme will be compliant with AGWR and all existing schemes will transition to comply with AGWR by 2015. NSW Health has accepted Hunter Water's strategy.

Hunter Water has agreements with all recycled water users. The audit found that one such agreement did not clearly specify the handover point for supply of recycled water to the Customer.

### **2.3 IPART's recommendations**

We do not have any recommendation for Hunter Water for this part of the licence. However, we note that the auditor has made a number of recommendations and suggestions for improved performance. We intend to monitor Hunter Water's performance in these areas.



## 3 Infrastructure Performance

Part 4 of the licence sets out Performance Standards for Water Continuity, Water Pressure and Sewage Overflows. It also includes requirements 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.

### 3.1 Overview

Overall, Hunter Water's compliance with its system performance standards has improved over the last 4 years. In 2009/10 it achieved **Full Compliance** with the auditable requirement in this part of the Licence. It has shown continual improvements with respect to its overall infrastructure performance over the last 4 years. The audit found that Hunter Water provides high quality technical training to its staff and maintains communication links between the staff and senior management.

However, the audit identified a tendency of over-reliance on the knowledge and skills of experienced staff members; a need to consolidate operations and maintenance manuals; and a need to improve new staff members' access to knowledge bases and instruction manuals.

### 3.2 Audit finding

#### System Performance Standards

Hunter Water achieved **Full Compliance** with the Water Continuity Standard. This standard sets a limit of 14,000 for the number of properties that experience one or more interruptions to their water supply in a financial year. Hunter Water reported 7,163 against this standard in 2009/10, a 21% reduction in the number of affected properties compared to 2008/09. This reduction represents a balance between the impact of Hunter Water's main replacement program in reducing unplanned interruptions, and the higher number of planned interruptions not commencing on time.

Hunter Water achieved **Full Compliance** with the Water Pressure Standard. This standard stipulates that no more than 4,800 properties should experience one or

more low pressure incidents in a financial year. Hunter Water reported 1,657 properties experiencing one or more water pressure incidents. This figure is similar to the number reported over the last 6 audit periods, and is related to elevation and/or network capacity issues. The auditor recommends that Hunter Water should consider how to reduce the number of properties experiencing low water pressure through an overarching continuous improvement programme. We support this as a suggestion for improved performance.

Hunter Water achieved **Full Compliance** with the Standard for Sewage Overflows on Private Property. This standard stipulates that the number of uncontrolled sewage overflows on private land should not exceed 6,500 in a financial year. There were 3,388 uncontrolled sewage overflows onto private property in 2009/10, a 24% increase from the 2,740 reported in 2008/09, although similar to the 3,435 reported in 2007/08. Hunter Water attributed the deterioration in performance to the increase in soil dryness due to lack of rainfall, leading to increased tree root intrusion into sewerage mains. Nonetheless, this deterioration in performance is consistent with the increasing trend experienced between 1999/2000 and 2006/07. Hunter Water is conducting a research project into the primary failure causes to identify underlying trends for the increase in dry weather overflows.

### 3.3 IPART's recommendations

We do not have any recommendation for Hunter Water for this part of the licence. However, we note that the auditor has made a number of recommendations and suggestions for improved performance. We intend to monitor Hunter Water's performance in these areas, including Hunter Water's response to the auditor's recommendations.

## 4 Customer and Consumer Rights

Part 5 of the Operating Licence deals with the Customer Contract, the Code of Practice on Debt and Disconnection (the code), 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, do not warrant audit every year. However, we decided to audit Hunter Water performance against the licence obligations concerning the code in 2009/10 as a consequence of its performance in the 2008/09 audit.

### 4.1 Overview

Among other details, the code sets out options available to customers to assist them to pay their bill and the steps that Hunter Water must follow before it can restrict the flow of water to a customer or disconnect a customer from its system. It is an important element of Hunter Water's debt management process.

Hunter Water significantly improved its communication to customers regarding options for payment assistance during 2009/10.

### 4.2 Audit findings

#### Code of practice and procedure on debt and disconnection

Hunter Water achieved **Full Compliance** with the requirement to provide customers with specific information about available payment options. This is an improvement from the high compliance awarded last year.

### 4.3 IPART's recommendations

We do not have any key recommendations for Hunter Water with respect to this part of the licence. However, we suggest Hunter Water consider the auditor's simple but effective secondary recommendation to include contact details for payment assistance in the bill, directly under the invoiced amount.

## 5 | Environment – Indicators and Management

Part 7 of the Operating Licence deals with monitoring and reporting of Environmental Performance Indicators, environment 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, do not warrant audit every year. Under the risk-based auditing framework, we determined that some of these clauses should be included in the 2009/10 audit.

### 5.1 Overview

Hunter Water's 2009/10 performance in catchment management is similar to that in 2008/09. The catchment report was an improvement on last year. Hunter Water has complied with the Water Management Licence and the requirements of the *Dam Safety Act 1978*.

However, the auditor has made significant comment in this section of the report on Hunter Water's asset management and quality assurance processes in conducting assessments, reporting outcomes and implementing corrective actions.

### 5.2 Audit findings

#### Catchment Report

Hunter Water achieved **High Compliance** with the licence requirement dealing with catchment reporting. The Catchment Report evidenced a clear and concise format and appropriate content. It referenced significant catchment management tasks undertaken by Hunter Water during the year.

High compliance was awarded because the Catchment Report was not published on the due date and a lack of clarity in Hunter Water's notification protocol with the NSW Office of Water and Hunter Water's processes for corrective actions.

**Full Compliance** was awarded for the requirement to publish the Catchment Report on the Hunter Water website and making it available to the public.

Hunter Water was awarded **High Compliance** for its performance against the Water Management Licence and the *Dam Safety Act 1978*.

The auditor expressed concern about a variety of issues in the areas of catchment management and dam asset management. Many of these concerns are likely to impact future licence compliance.

Regarding the Catchment Report, the auditor felt that there were deficiencies in the following areas:

- ▼ Benchmarking and periodic reviewing of the Catchment Management Plan.
- ▼ Engagement of the Board and Senior Management for the Catchment Management Plan and the Catchment Report.
- ▼ Linkages between catchment risk assessment outcomes with the Catchment Decision Support System (CDSS) and the Catchment Management Plan.
- ▼ Referencing the action plan and associated activities in the Catchment Report.
- ▼ Finalising the CDSS process on a risk-based approach and establishing the CDSS as an input to the risk assessment process.
- ▼ Clarity about Hunter Water's notification protocol with the NSW Office of Water and Hunter Water's processes for corrective actions.

Regarding dam asset management the auditor raised a number of issues in the following general areas:

- ▼ Maintenance Management - procedures were inadequately documented and completed, checklists were inconsistent, contradictory and incomplete, identification and notification processes are poorly documented and logged. The consequences of these deficiencies are currently mitigated by the training, experience and skill of the current operators.
- ▼ Security and Minor Maintenance - there was a lack of signage and security patrols, access to dam operating infrastructure was not secured and there was a lack of contractor training or supervision.
- ▼ Risk Analysis & Management - no failure mode analysis was included in the risk analysis for dam failure in spite of the assessment as a high level risk.
- ▼ Knowledge Management, covering both Management/Engineering and Field Operations -there was significant dependence on individual staff member's knowledge. The experience of individuals has not been adequately documented and codified into procedures. Hunter Water has already initiated action on this issue by appointing a knowledge management/resilience officer.
- ▼ Integrated Asset Management -no asset management plans were provided. Failure modes should be identified in asset management plans and systematically monitored to detect issues that require either remedial action or the implementation of response plans. Operations and Maintenance manuals were of poor quality and had not been reviewed or updated for some time.

An integration of asset management, risk planning and quality assurance processes is important to ensure that defects and problems potentially are adequately addressed.

- ▼ Quality Assurance, Continuous Improvement and Definition of Regulatory Responsibilities. The auditor has stressed the value of these matters. They have also been raised in other sections of this report. A general recommendation has been made to cover these areas.

### 5.3 IPART's recommendations

We recommend that Hunter Water:

#### 1 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.

#### 2 Dam Asset Management

Improve management, operating, monitoring, actioning and reporting on dam asset management issues, including:

- (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.
- (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 by 28 February 2011.
- (c) Re-design of condition monitoring checklists.
- (d) Incorporation of an independent participant in dam safety audits (inclusion of a representative from another agency under the purview, or with membership of, the Dam Safety Committee would be considered to be adequate independence. This involvement could be considered under a mutual exchange of services arrangement.)
- (e) Development of asset management plans for dams.

With the exception of (b) and (e), all these improvements should be completed, and reported on, by 1 September 2011. In the case of (b) the project scope phase should be completed by 30 March 2011, and in the case of (e), an interim plan, utilising currently available information, should be prepared within this timeframe and a full asset management plan completed for audit in 2012

The auditor has made a number of other recommendations and suggestions for improved performance. We endorse the remaining recommendations and

suggestions for improvements identified by the auditor. We will monitor Hunter Water's performance in these areas. In particular, we will seek to ensure that Hunter Water provides timely and comprehensive responses to reports required by these recommendations.

## 6 Managing Supply and Demand

Part 9 of the Operating Licence deals with Water Conservation and Demand Management Strategy. It includes requirements for a Water Conservation Target, the Integrated Water Resources Plan and the reporting of Water Demand and Supply Indicators.

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.

### 6.1 Overview

The audit considered the Annual Report on the Integrated Water Resources Plan (H250) and the Water Demand and Supply Indicators. Hunter Water's performance in 2009/10 was similar to 2008/09, achieving full compliance with 7 of the 9 audited clauses in this section.

### 6.2 Audit findings

#### The Integrated Water Resources Plan

Hunter Water achieved **High Compliance** with the annual reporting on its performance against the Integrated Water Resources Plan (IWRP). This compliance grade reflected a lack of explanation regarding the difference between the actual and the budgeted expenditure for many activities in the Report. Although the highlights achieved from Hunter Water activities are summarised in the report, it was not clear how these achievements compared to targets and requirements set in the IWRP.

#### Water Demand and Supply Indicators

Hunter Water achieved **Full Compliance** with the reporting requirements relating to water restrictions and water demand and supply indicators, evidenced by extensive data collection and the use of industry best practice approach to calculate its water balance. It achieved a **Moderate Compliance** grading for reporting on the quantity of water supplied from each of the water storages, due to errors in the data presented and the lack of a clear and concise reporting format. This reflects quality assurance shortcomings.



### 6.3 IPART's recommendations

We do not have any recommendation for Hunter Water for this part of the licence. However, we note that the auditor has made a number of recommendations and suggestions for improved performance. We expect Hunter Water to consider all recommendations and suggestions in the auditor's report. We intend to monitor Hunter Water's performance in these areas, including Hunter Water's response to the auditor's recommendations.

## 7 Response to previous audit recommendations and compliance history

This section of our report presents the outcomes of our follow up on recommendations in the 2008/09 audit report and summarises Hunter Water's historical compliance with licence requirements.

### 7.1 Follow-up on the 2008/09 audit recommendations

The 2008/09 audit report identified licence areas where Hunter Water's performance was assessed as less than high compliance. It also located areas where performance could be improved, even though high grades of compliance were awarded. We made recommendations to address these issues.

Hunter Water has cooperated in this work and has considered and responded to these recommendations. During 2009/10, we reviewed Hunter Water's responses and monitored progress in addressing these matters. The following section is a report on the status of these investigations.

Some of the compliance matters are simply resolved. Others relate to more complex issues that can only be resolved over time. In the case of improvement suggestions where compliance was not the central issue, Hunter Water considered these and responded to us. We will continue to work towards settling all outstanding or partly resolved matters.

#### Issues from the 2008/09 audit that have been resolved

Table 7.1 details issues from last year's audit that we have **resolved** with Hunter Water.

**Table 7.1 Issues from the 2008/09 audit that have been resolved**

Water Quality (Part 3)	
R 3.1 Gather, review and endorse the QA/QC documentation relevant to test methods without NATA accreditation, and R 3.2 Modify the Water Quality Monitoring Plan to reflect the NATA accreditation status of all test methods.	These matters have been resolved, but there is still a need to change the wording in the Monitoring & Reporting Protocol to reflect that in practice, not all tests done are NATA accredited tests. IPART will address this matter with Hunter Water.

<b>Customer and Consumer Rights (Part 5)</b>	
R 5.1 Refer specifically to its 'Code of Practice for Debt and Disconnection' (by title or sub title) and include a copy of this Code, and associated links, on the Hunter Water's Web site.	Hunter Water has included this information on its website. The information is now on the website for customer downloads.
<b>Customer and Consumer Rights (Part 5) Improvement Suggestions</b>	
SR 5.4 Improve its Customer Service Indicator Report through: <ul style="list-style-type: none"> <li>– Inserting Figure numbers and relevant year in Figure /Table titles, to assist readability</li> </ul>	This has been implemented in the 2009/10 Customer Service Report.
<ul style="list-style-type: none"> <li>– Using uniform performance scales across year-to-year comparisons</li> </ul>	This has been implemented in the 2009/10 Customer Service Report.
<ul style="list-style-type: none"> <li>– Defining all acronyms.</li> </ul>	This has been implemented in the 2009/10 Customer Service Report.
<ul style="list-style-type: none"> <li>– Reporting only against 'NPR compliant' methodology.</li> </ul>	This has been implemented in the 2009/10 Customer Service Report.
<b>Environment – Indicators and Management (Part 7) - Improvement Suggestions</b>	
SR 7.4 Incorporate the Sustainability criteria into its Environmental Management Plan (EMP) and identify such principles as 'INPUTS' into its 'EMP FRAMEWORK'.	Hunter Water advised that it will update its EMP to incorporate this suggested improvement.
SR 7.5 Improve the integration of its Environmental Management Plan (EMP) into the Business Plan by: <ul style="list-style-type: none"> <li>– specific reference to the EMP in its Business Plan</li> <li>– demonstrating the linkages between the EMPs and the Business Plan.</li> </ul>	Hunter Water has agreed to update its Environmental Management Plan to incorporate these suggested improvements by June 2010. This will be verified at the next audit of this section.
SR 7.6 Report the status on all its EMP commitments in the Environmental Performance Indicators Annual Report by either providing the status, or cross-referencing to the page number if the status is reported elsewhere in the Annual report.	Hunter Water has included the status of its EMP commitments in the 2009/10 EPI Report.

SR 7.7 Include the total annual expenditure for its Catchment Management Activities in its annual Catchment Report.	Hunter Water has incorporated the actual and budgeted expenditure in its 2009/10 Catchment Report, including an estimate of the cost for the 2010/11 year on catchment related activities. Details of the specific activities are also provided. The Catchment Report evidenced a clear and concise format.
SR 7.8 Investigate the Development Application (DA) over lands in the Special Areas, lodged with local councils over 2008/09, to: <ul style="list-style-type: none"> <li>confirm, or otherwise, that all such DA were referred to HWC</li> <li>assess the effectiveness of Hunter Water's response to limiting the impact of development on water quality and catchment health.</li> </ul>	Hunter Water has advised that the Special Areas Regulation was under review and was scheduled for completion in September 2010. Any subsequent action taken in respect to this suggested improvement will be determined in light of the new Regulation. Hunter Water notes that it is resource constrained in this area – the dedicated EFT has been committed to developing the Catchment Management Plan.
<b>Managing Supply and Demand (Part 9)</b>	
R 9.1 Provide a more comprehensive reporting of sensitivity and options analyses results for the Integrated Water Resource Plan (IWRP) when communicating with its customers and stakeholders. This was to be done when the IWRP was next reviewed.	This licence clause was not audited in 2010, the IWRP is not due for review until 2013. Hunter Water advised that at the next iteration of the H250 Plan, it will ensure customers and stakeholders are provided the opportunity to review and provide input to the sensitivity and options analysis process.
<b>What the audit is to Report on – MOU (Part 12)</b>	
R 12.1 Explore any opportunities to add a strategic component to its MOU activities with NSW Health to address Emerging Public Health issues.	Hunter Water has advised that it is currently discussing public health issues with NSW Health in quarterly liaison meetings. A specific item to address such issues will be included as a standing agenda item.
<b>What the audit is to Report on – MOU (Part 12) - Improvement Suggestions</b>	
SR 12.2 Recognise the intent for a more strategic role under its MOU with Health by renaming the current 'Liaison Committee DoH/HWC' to the Joint Operational Committee.	Hunter Water believes that this suggested improvement did not add meaningful benefit to the quarterly meetings. However, an increased strategic role has been recognised by the inclusion of a standing item in the quarterly meeting agenda for "Emerging Public Health Issues".

### Issues from the 2008/09 audit that are yet to be fully resolved

Table 7.2 details issues from last year's audit that we have **not yet fully resolved** with Hunter Water. These include recommendations that are of a more long-term nature and "improvement opportunities" which are suggestions to enhance performance rather than improve compliance.

**Table 7.2 Issues from the 2008/09 audit that are yet to be resolved**

<b>Water Quality (Part 3)</b>	
R 3.3 Review and confirm the fluoridation training requirements and ensure that these requirements are conformed to.	This is a long term project. Hunter Water has plans to send operators to NSW Health courses as soon as practical. However, NSW Health runs fluoridation training courses infrequently and Hunter Water can only send limited number of operators to each course in order to maintain operational security. IPART will follow up on progress to resolve this matter.
<b>Infrastructure Performance (Part 4)</b>	
R 4.1 Consider applying greater attention to monitoring, analysis and proactive maintenance to its medium sized distribution assets.	<p>This is a long term project. Hunter Water advised that it has developed a reliability strategy for reticulation and trunk mains. The investigation to focus on the prioritisation of large shutdown area impacts is complete. Subsequent action and timing is now being finalised.</p> <p>IPART will follow up in future audits to ensure that the reliability strategy is extended to the medium sized distribution assets.</p>
R 4.2 Link its asset risk management processes and outputs directly to its overarching business risk assessment and management.	<p>This is a long term project. Hunter Water is developing both asset class and specific asset risk assessment processes. It is also developing a Corporate Asset Risk Profile to prioritise the development of management strategies and the application of asset risk assessment. It anticipates that 3 to 5 years will be required to complete this work.</p> <p>This matter is incorporated into a major recommendation for 2009/10. IPART acknowledges that this process will take some time. We intend to monitor progress and report on this in future audit reports.</p>

<b>Customer and Consumer Rights (Part 5) - Improvement Suggestions</b>	
SR 5.2 Revise the Customer Contract to clarify the obligation to handle consumer complaints as if the complaint were made by a customer.	This matter will be considered in the review of its Customer Contract, which is in progress.
SR 5.3 Investigate the need to retain two (and at times overlapping) systems of reporting and managing customer contacts in light of the need to incorporate customer contacts (in Water Quality and Sewer Odours) as complaints in compliance with the National Performance Framework 2008-09	Hunter Water has examined this matter and has advised that significant investment is required to address it. IPART is following up to clarify this matter and resolve it.
SR 5.4 Improve its Customer Service Indicator Report through: <ul style="list-style-type: none"> <li>– Addition of annual totals for both monthly and complaint subtypes.</li> <li>– Provide page numbers for 'Customer Service Indicators Index'.</li> </ul>	<p>These improvement opportunities do not impact on compliance but are still outstanding - Annual totals for complaint subtypes and Page numbers are not shown for all Customer Service Indicators in the 2009/10 Customer Service Report.</p> <p>IPART is following up on these matters.</p>
<b>Environment – Indicators and Management (Part 7)</b>	
R 7.1 Develop an explicit and concise set of economic, social and environmental criteria defining Hunter Water Sustainability Strategy so as to provide a uniform and transparent basis for the decision making of its major infrastructure and support tools.	<p>This licence clause was not subject to audit in 2010. Hunter Water has advised that it intends to incorporate the Hunter Water Sustainability Strategy into the Sustainable Decision Making Framework Project.</p> <p>IPART will follow up on this matter with Hunter Water during 2011 and it will be checked when this clause is next audited.</p>
R7.2 Accelerate the development of its HWC Catchment Management Plan and use this Plan to target its Catchment management activities and expenditure to enhance the safeguarding of water quality.	Hunter Water has completed its Catchment Management Plan (CMP), which was endorsed for internal use by the General Manager, System Strategy and Sustainability, in July 2010. The CMP is comprehensive, readily understood and well templated. Hunter Water is yet to link the Catchment Management Plan with the catchment risk assessment, the CDSS and continual improvement activities, and report progress in the Catchment Report. A recommendation has been made in this audit to address these issues.

<b>Environment – Indicators and Management (Part 7) - Improvement Suggestions</b>	
SR7.3 Ensure the consistency and accuracy of the information reported in its Environmental Indicator Report	Hunter Water has already incorporated the suggested improvements from the 2008/09 audit and has advised that it will continue to make improvements to the Environmental Performance Indicators Report (EPI Report). This progress was evidenced in the 2009/10 EPI Report. IPART will continue to follow up on this matter to ensure that it is resolved.
<b>Managing Supply and Demand (Part 9) - Improvement Suggestions</b>	
<p>SR9.2 Include details in the Annual Report on performance against Integrated Water Resources Plan (IWRP), including:</p> <ul style="list-style-type: none"> <li>– Budgeted expenditure in addition to the current expenditure for the subject year</li> <li>– a Total Reuse and Potable Substitution amount in megalitres</li> <li>– An explanation/comment where progress has not achieved target</li> <li>– Cumulative totals over the operating period</li> <li>– Graphical and tabular information on its annual Response and Rectification performance for Priority 1 and 2 Urgent Jobs under the leakage reduction, water main replacement program.</li> </ul>	<p>Hunter Water has followed the main relevant recommendations from the 2008/09 audit into the 2009/10 IWRP Report</p> <p>However, more information regarding the difference in the actual to budgeted expenditure is needed. Recommendations have been made in this report to address these issues.</p> <p>IPART will follow up on these during 2011.</p>

## 7.2 Compliance history

Table 7.3 displays Hunter Water's performance in audits since the commencement of its current licence. In this table definitional clauses and asset management audit requirements are not included. Asset Management is subject to a separate audit.

**Table 7.3 Historical performance of Hunter Water**

(Full = Full Compliance; High = High Compliance; Mod = Moderate Compliance; Low = Low Compliance; NC = Non Compliance; Insuff = Insufficient Information; - = No requirement/not audited)

Clause	Summary of requirement	2007/08	2008/09	2009/10
<b>3</b>	<b>Water Quality</b>			
3.1	Drinking Water Quality – Planning	High-Full	Full	Full
3.2	Drinking Water Quality – Standards	Full	Full	Full
3.3	Water Quality – Monitoring	High-Full	High-Full	High-Full
3.4	Water Quality – Reporting	Full	Full	Full
3.5	Water – Incident Management Plan	High-Full	Full	High-Full
3.6	Waste Water and Recycling Operations	Full	Full	Full
3.7	Other grades of water	High-Full	Full	Full
3.8	Environmental water quality	-	-	-
<b>4</b>	<b>Infrastructure Performance</b>			
4.4	Compliance with System Performance Standards	Full	Full	Full
4.5	Reporting on System Performance Standards	Full	-	-
4.6	Review of System Performance Standards	-	-	-
4.7	Service quality and system performance indicators	Full	-	-
4.8	Asset management obligation	-	Full	-
4.9	Reporting on the asset management plan	-	Full	-
4.10	Auditing the asset management plan	-	-	-
<b>5</b>	<b>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	-
<b>6</b>	<b>Complaint and Dispute Handling</b>			
6.1	Internal dispute resolution process	High-Full	-	-
6.2	External dispute resolution scheme	-	-	-
6.3	Complaints to other bodies	-	-	-



Clause	Summary of requirement	2007/08	2008/09	2009/10
<b>7</b>	<b>Environment – Indicators and management</b>			
7.1	Environment performance indicators	Mod-Full	High	-
7.2	Environment management	-	High-Full	-
7.3	Catchment Report	Mod-Full	High-Full	High-Full
<b>8</b>	<b>Pricing</b>			
8.1	Pricing	-	-	-
<b>9</b>	<b>Managing Supply and Demand</b>			
9.1	Water Conservation Target	Full	-	-
9.2	Demand management strategy	Full	Mod-Full	High
9.3	Water demand and supply indicators	High-Full	Full	Mod-Full
9.4	Annual reporting on water demand and supply indicators	Full	-	-
<b>11</b>	<b>Liability Issues</b>			
11.1	Contracting out	-	-	-
11.2	Damage and compensation to persons	-	-	-
11.3	Competitive neutrality	-	-	-
<b>12</b>	<b>Operational Audits of the Licence</b>			
12.2	What the audit is to report on (MOU compliance)	-	High	-

7 Response to previous audit recommendations and compliance history



## Appendices



## A | Final Audit Report – t-cAM Consulting





**t-cAM Consulting**

*in association with*



## **Final Report**

# **Hunter Water Corporation Operational Audit 2009/10**

prepared for the

**Independent Pricing & Regulatory Tribunal**

November 2010





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## Glossary

### Abbreviations

Acronym	Description
ADWG (1996)	Australian Drinking Water Guidelines (1996), National Health and Medical Research Council and Agriculture and Resource Management Council
ADWG (2004)	Australian Drinking Water Guidelines (2004), National Health and Medical Research Council and Agriculture and Resource Management Council
Act	Hunter Water Act, 1991.
AGWR	Australian Guidelines for Water Recycling (2006)
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)
DBT	Di Butyl Tin
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 Resources (NSW) – now covered by Department of Planning, DECCW

Acronym	Description
	(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	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
NPR	National Performance Report (published by the National Water Commission/Water Services Association of Australia)

## t-cAM Consulting

Acronym	Description
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 Quote
SCADA	Supervisory Control and Data Acquisition
SEDA	Sustainable Energy Development Authority
SLC	Strategic Liaison Committee
TBT	Tri Butyl Tin
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	Hunter Water Act 1991 (NSW)
Area of Operations	As specified in Section 16 of the Act and described in Schedule 1 of the Operating Licence.
Audit period	1 July 2009 to 30 June 2010.
Auditor	t-cAM Consulting Pty Ltd, supported by 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</i> (NSW).
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	self-audit by Hunter Water, where a Statement of Compliance signed by the Chief Executive and the Chairman of the Board of Hunter Water is submitted to IPART as evidence, clause is not subject to independent audit this year.
Water Management Licence	A Water Management Licence granted under the <i>Water Act, 1912</i> (NSW) and issued by the DNR on 26 August 2005.

## Compliance Assessment Grades

The following table sets out the ratings used to grade compliance in this audit. These 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)	self-audit by Hunter Water, where a Statement of Compliance signed by the Chief Executive and the Chairman of the Board of Hunter Water is submitted to IPART as evidence, clause is not subject to independent audit this year.



## Executive Summary

### Introduction

In 2009/10 Hunter Water has been subject to detailed audit of compliance against nominated Clauses in the following Parts of its Operating Licence (see Appendix B Audit Scope):

- Water Quality (Part 3)
- Infrastructure Performance (Part 4)
- Customer and Consumer Rights (Part 5)
- Environment – Indicators and Management (Part 7)
- Managing Supply and Demand (Part 9)

The choice of the specific Clauses subjected to audit was based on IPART's risk based selection methodology.

### Change to audit interview process

In previous years, audit interviews were streamed and, therefore, individual auditors only attended interviews for licence sections relevant to their specific area of responsibility. For this audit, Hunter Water was requested to schedule a single audit stream and all three auditors attended all interviews. This process allowed the auditors to adopt a 'systems' approach to the audit and to consider how Hunter Water was meeting its obligations from a 'whole of business' perspective.

### Overarching Performance

Hunter Water Corporation has managed its resources in 2009/10 to achieve predominantly **Full Compliance** with the Operating Licence, although some clauses were assigned a **High or Moderate compliance**. As shown in Figure ES-1, Hunter Water's overarching performance in 2009/10 is consistent with its performance in recent previous audits<sup>1</sup>.

**Figure ES-1 Hunter Water's Overarching Compliance History**



<sup>1</sup> see Appendix A Historical Performance Comparison, for the methodology and assumptions associated with generation of this Figure

This Figure should not be interpreted as reflecting Hunter Water's performance in addressing specific issues or recommendations identified by auditors in any one year, as the Clauses audited in any year are not necessarily the same as the previous year.

Consideration of the details of this audit and previous audits will, in fact, demonstrate Hunter Water's efficiency and effectiveness in responding to specific recommendations for improvement, and that it has made significant gains in meeting specific Licence Standards, such as in Water Quality and Infrastructure Performance. However, what this Figure does demonstrate and support, is the need for Hunter Water to improve its general approach to fulfilling its Licence obligations relative to the performance of other agencies.

It was also apparent, in all Licence Parts subject to audit this year, that despite good performance in specific areas, Hunter Water has shortcomings in applying a systematic approach to knowledge management, continuous improvement and quality assurance. It is the auditor's opinion the two issues are one and the same. Therefore, the auditor has drawn out the specific recommendations in each Licence Part relating to this issue in to a single key recommendation as follows.

### Overarching Recommendation

Hunter Water needs to adopt a more focused business strategy with respect to knowledge management, applying the principles of continuous improvement, and working within a sound quality assurance framework, to meet its Licence obligations in to the future. The key overarching recommendation is based on the auditor's experience and following enquiries made with other, equivalent, agencies.

The following **Key Recommendation** of the 2009/10 Operational Audit, while triggered by audit issues identified in the referenced Licence Parts, should be considered as applying to all Licence Parts; specific issues for each audited Licence Part are noted in the reporting of compliance with each Licence Part in the body of the report:

Hunter Water is to:

- |      |   |   |
|------|---|---|
| R3.4 | } | 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: |
| R4.1 |   |   |
| R4.2 |   |   |
| R7.6 |   |   |
| R9.4 |   |   |
- 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.
- b) Hunter Water is to 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 and its derivatives.
  - An implementation plan outlining the resources to be applied, objectives, responsibilities, action plans and deliverables over the next five years.
- c) By 1 September of each year, Hunter Water is to provide a summary of progress against the strategy and plan, cross-referenced to Licence Parts, for use of IPART and the Licence auditor.

## Key Findings and Recommendations by Licence Part

The Key Findings and Key Recommendations, against each Licence Part, other than those referred to above, are:

### Water Quality (Part 3)

HWC 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 health related requirements of the Australian Drinking Water Guidelines (ADWG) and the aesthetic related requirements of NSW Health and the Minister. Hunter Water is working toward upgrading existing recycled water schemes to the Australian Guidelines for Water Recycling (2006) with new and proposed schemes being designed to meet the AGWR (2006) from inception. The exceptions to **Full Compliance** were:

**High compliance** was assigned for two clauses as follows:

- (a) A minor inconsistency between wording in the Monitoring and Reporting Protocol and actual practice (clause 3.1.1). This has been addressed in Recommendation R 3.1
- (b) A lack of clarity in the definition of a coagulation/disinfection failure which triggers notification to NSW Health (clause 3.5.1). This has been addressed in Recommendation R 3.2

Additionally, while **Full Compliance** was assigned to clause 3.7.1, which deals with the requirement to supply recycled water consistent with the Australian Guidelines for Water Recycling, recommendation R 3.3 is directed to improving clarity of responsibility in recycled water agreements, this is seen as good risk management practice.

### Water Quality Key Recommendations

- 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.

- R3.2 **Clause 3.5.1:** Formalise the envelope of information around the notification criteria e.g. >X NTU for Y minutes.
- R3.3 **Clause 3.7.1:** Ensure that the handover point for recycled water is clearly articulated on all recycled water agreements.

### Infrastructure Performance (Part 4)

Under the risk-based audit scope, only system performance standards were considered in the audit. HWC achieved **Full Compliance** in meeting its Licence requirements for the infrastructure performance requirements for delivering water and sewage services to its customers. Performance is well within the required standards for water pressure, water continuity and sewage overflows.

### *Infrastructure Performance Key Recommendations*

The key recommendations for Licence Part 4 are incorporated in the overarching recommendation as noted above. There are no separate key recommendations for this Licence Part.

### Customer and Consumer Rights (Part 5)

Within the Customer and Consumer Rights section of the licence, only the requirement relating to the code of practice and procedure on debt and disconnection was considered in the audit, because only high compliance was awarded for this section in the 2008/09 audit. At this audit, Hunter Water achieved **Full Compliance** in meeting the relevant Licence requirement for customer and consumer rights.

### *Customer and Consumer Rights Key Recommendations*

There are no separate key recommendations relating to this Licence Part.

### Environment – Indicators and Management (Part 7)

**Full Compliance** was assigned for publication of the Catchment Report and provision of details of future catchment management activities.

Hunter Water achieved **High Compliance** in meeting the rest of its Licence requirements for Environment – Catchment Report. Specifically:

**High Compliance** was assigned due to their being a lack of protocols about notifications and incidents under the Water Management licences administered by the NSW Office of Water and a minor delay in making the Catchment Report publicly available.

Hunter Water was also awarded **High Compliance** for its performance against the requirements of the Water Management licence and the *Dam Safety Act 1978*. However, the audit investigations revealed some significant shortcomings in Hunter Water's processes and practices relating to areas identified as being mostly outside the regulatory responsibility of the Dam Safety Committee (as delineated in the Committee's published guidelines) under the *Dam Safety Act 1978*. These processes and practices included issues with respect to systems,

processes and/or practices in maintenance management, security, risk analysis, knowledge management, integrated asset management and quality assurance. These issues (as noted in Key Recommendation R7.5), while identified and referenced in the audit of this Licence Part, should, in future, be addressed within the context of the Licence Clauses pertaining to Asset Management (4.8-4.9).

Recommendation R7.4 should also be addressed as a 'whole-of-business' issue.

The following recommendations seek to address the identified shortcomings:

***Environment – Catchment Report Key Recommendations***

- R7.1 Implement the following improvements by 30 June 2011, with respect to the Catchment Management Plan and associated documents:
- (a) Seek input, feedback and discussion opportunities with other catchment authorities to benchmark their Catchment Management Plan and document this process.
  - (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).
  - (c) Link the Catchment Management Plan and CDSS with relevant risk assessment, corrective action, incident management and continual improvement procedures of Hunter Water
  - (d) Document and implement an appropriate periodic review process.
- 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.
- R7.3 NOW protocol – develop a mutually agreed protocol with regard to compliance notification and categorisation by 30 June 2011.
- 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.
- R7.5 Improve management, operating, monitoring, actioning and reporting on (dam) asset management issues, including:
- (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.
  - (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 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 in a project scoping exercise by 28 February 2011.

- (c) Re-design of condition monitoring checklists.
- (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.
- (e) Development of asset management plans for dams.

With the exception of (b) and (e), all these improvements should be completed, and reported on, by 1 September 2011. In the case of R7.5 (b) the project scoping phase should be completed by 30 March 2011, and in the case of R7.5 (e), an interim plan, utilising currently available information, should be prepared within this timeframe and a full asset management plan completed for audit in 2012.

### Managing Supply and Demand (Part 9)

The risk-based audit scope for this section of the licence included:

- Annual reporting on the Integrated Water Resources Plan (licence clause 9.2.18)
- Water Demand and Supply Indicators (licence clause 9.3).

HWC achieved **Full to Moderate Compliance** in meeting these Licence requirements.

The **Moderate Compliance** was awarded for the lack of a disciplined quality assurance process for reporting the quantity of water supplied from water storages. The recommendation relating to this issue is included in the overarching recommendation.

The **High Compliance** related to the documentation and explanation of changes to budgets and expenditure for activities under the Integrated Water Resources Plan as well as an unclear decision making process for these changes. Recommendations R 9.1 – R 9.3 relate to this issue and should be integrated into ongoing activity.

### *Managing Supply and Demand Recommendations*

- 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
- R9.2 Executive Summary – provide more discussion as to associated targets and how activities have compared to meeting those targets
- 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

## Recommendations for IPART

### *Evaluation criteria for classifying recommendations*

IPART has stipulated that key recommendations are only appropriate to address matters of other than full compliance identified in the audit and that any suggested performance

improvement should be treated as a secondary recommendation. Since an audit is inherently backward looking, under this stipulation the decision making process on whether a key recommendation should be made is also backward looking. The auditor has encountered situations in this audit where we feel that a recommendation is warranted to address the risk of future non-compliance, even though the audited utility is currently achieving full compliance. We feel this is more forward-looking and pro-active and provides good due diligence for both IPART and the audited utility.

It is therefore recommended that IPART:

- Redefine the criteria for key recommendations to include key recommendations that address the risk of future compliance issues.

### ***Out of scope compliance issues***

During this audit, while we were investigating matters that were within the scope of the audit, we discovered issues that were not included in the original scope of audit set out by IPART. The auditor also identified that there is no defined protocol for managing 'discovery' of issues in audit parts or clauses currently addressed through self audit and consequent 'Statements of Compliance'. Given the overlapping nature of activities undertaken to meet licence obligations, we believe that IPART's audit scope should include a mechanism to allow the auditor to formally consider matters that were outside the original audit scope but are identified during the course of the audit.

It is therefore recommended that IPART:

- Develop future audit scopes and protocols to allow the auditor to formally consider matters that are outside the original audit scope but are identified during the course of the audit.

### ***Audit reporting (and template)***

While related to the previous issue, this issue is of sufficient significance that it should be considered in its own right. During this audit, several issues were identified in particular audit clauses that were 'traced' to causes that were systematic across several areas of the business, and therefore created risk across all these areas, despite the manifestation or identification of these issues against only one Clause.

It is therefore recommended that IPART:

- Modify future audit scoping and consequent reporting templates to incorporate a process for managing the occurrence of recommendations that 'cascade' in this fashion.

### ***Asset Management audits***

IPART were concerned that previous Asset Management audits had not identified that there was no asset management plan in place for dams – though it is noted that Dam Safety, per se, is not at question here, due to other regulatory and management processes and practices in place.

It is therefore recommended that IPART:

- Review its approach to auditing Asset Management to better address its needs from both pricing and Operating Licence perspectives.



## ***Naming of audit interviewee's***

It was identified that it has not been common practice to document the names of the audit interviewee's in IPART Licence audits. It is commonly considered as good audit practice to ensure that the audit trail is documented by this evidence being recorded in the audit report.

It is therefore recommended that IPART:

- Establish a protocol around the naming of interviewee's as part of the audit process.

## ***Water Quality***

- The results of the automatic chlorine dosing system trial in the Belmont system should be reviewed for efficacy during the 2010/11 licence audit.

## ***Dam Safety Act 1978***

- The requirement for compliance with the *Dam Safety Act 1978* and associated infrastructure/asset management issues be relocated from Part 7 of the Licence to Part 4. In addressing this issue, IPART should also address the holistic nature of infrastructure and asset management for the business as the current approach emphasises reticulation assets over the asset management of the other essential assets required for the delivery of services.
- IPART needs to investigate and clarify regulatory responsibilities around dam assets and facilities.

## **Structure of this Report**

Chapter 1 provides some background and information on Hunter Water, Chapter 2 describes the scope of this audit. Chapter 3 provides a discussion of audit methodology. Chapter 4 contains details of the reported activities undertaken by Hunter Water to address both Key and Secondary Recommendations from last year's audit. Chapter's 5 to 9 contain the auditor's reporting on compliance for each of the Licence Parts assessed. Historical performance comparisons for Hunter Water and the detailed audit scope are presented in the Appendices.

## **Licence Part Compliance Reporting**

The compliance reports for each Licence Part are structured as follows:

<b>Statement of requirement</b>	Overarching objective of Licence Part.
<b>Licence Part compliance</b>	Summary of compliance against the Licence Part.
<b>Factors affecting compliance</b>	Any factor that may have impacted compliance but was not within the control or influence of Hunter Water. The nature of these issues may be any of political, regulatory, social, financial/commercial, environmental or a combination of the above. The factor may be ongoing (i.e. it affects performance over multiple years), or be a sudden event resulting in a discontinuity between historical or normal performance and



the performance reported in this audit period.

**Discussion**

Where appropriate, a detailed discussion of key sources of evidence, conclusions drawn or other information that provides insight into the reasoning for the level of compliance assigned by the auditor or where this cannot be appropriately documented in a single specific Licence Clause.

**Key Recommendations**

Key Recommendations that address improvements that can assist Hunter Water in achieving full compliance with the conditions specified in the Licence Part, or where the auditor is of the view that the future achievement of compliance is threatened. Where key recommendations are taken up by IPART (and endorsed by the Minister), IPART includes performance against these recommendations in future audit scopes.

**Secondary Recommendations**

Secondary Recommendations addressing alternative or improved methodologies, processes or practices that could lead to Hunter Water achieving gains in efficiency or effectiveness in achieving or maintaining its compliance with the conditions specified in this Licence Part. Hunter Water is expected to give due consideration to those recommendations and facilitate improved performance and compliance for subsequent audit periods.

***Table of Detailed Audit Findings***

<b>Clause</b>	The number of the clause in the Licence Part being audited.
<b>Requirement</b>	The wording of the clause and (where relevant) any specific aspect that was the subject of audit.
<b>Risk</b>	An indication of the possible consequence (in grade and nature) if the requirements of the clause were not met.
<b>Target for Full Compliance</b>	An indication, or target, of the performance or information required for Full Compliance.
<b>Compliance Rating</b>	The auditor's assessment of the level of compliance
<b>Findings</b>	Supporting commentary with respect to the reported level of compliance.



# 1 Introduction

## Hunter Water Corporation

Hunter Water Corporation (Hunter Water) is a State Owned Corporation established under the *State Owned Corporations Act 1989* (NSW). Hunter Water is governed by a Board of Directors and its shareholders are the NSW Treasurer and Minister for Finance.

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.

**Figure 1-1 Hunter Water's Area of Operations**



Source: Hunter Water Corporation H<sub>2</sub>O Plan

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. In addition to its core services, Hunter Water supplies bulk water to small parts of the Great Lakes area, has transfer 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.

## **Operating Licence**

Hunter Water's first Operating Licence was issued in 1992 for a period of five years. The current licence was issued in 2007 and applies until 2012. The Operating Licence specifies the minimum standards of service or performance that must be met by Hunter Water in relation to its operations, including:

- Water quality
- Infrastructure performance in delivery of service to customers
- Customer and consumer rights
- Complaint and dispute handling
- Environmental management
- Pricing
- Managing supply and demand for water
- Area and extent of operations
- Relationships with other agencies and regulatory bodies.

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

[http://www.hunterwater.com.au/files/HWC\\_Operating\\_Licence\\_190607.pdf](http://www.hunterwater.com.au/files/HWC_Operating_Licence_190607.pdf)

Part 12 of the Licence provides that IPART (or its appointee) undertakes an Operational Audit of Hunter Water's performance against the requirements of the Licence each year, and reports its findings to the Minister. The performance of Hunter Water for 2009/10 was audited against the specific requirements of the Licence identified by IPART in its audit scope, in accordance with Part 12.

## 2 Audit Scope

IPART operates a risk-based approach to licence auditing. This approach tailors the verification processes applied to assessing Hunter Water's compliance with the different Parts, Sections or Clauses in the Licence (Licence Conditions) to the level of risk (likelihood and consequence) of a potential breach of the specific Licence Condition. This audit report encompasses those Licence Conditions requiring independent auditing in 2009/10 as identified under IPART's approach.

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.

### Operating Licence Audit Scope

IPART itemised the risk-based scope for the Hunter Water audit by Licence Part, Section, and Clause. The relevant scope is shown at Appendix B of this report and summarised in the section "Summary of Auditable Clauses". In conducting the audit of the utility's compliance with the relevant Part, Section or Clause of its Licence, the auditor was required by IPART to:

- 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 2009 to 30 June 2010). 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 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, the NSW Office of Water and the Dam Safety Committee) and other stakeholders including environment, social welfare and public interest groups.

### Key Issues to be addressed

Additionally, IPART identified some key issues to be addressed in the 2009/10 Hunter Water audit, based on 2008/09 audit findings and requests from NSW Health:

- Drinking Water Quality standards, monitoring, reporting and incident management and Waste Water and Recycling Operations
- Compliance with System Performance Standards
- Environmental Indicators and Catchment Report
- Code of Practice and Procedure on Debt and Disconnection.

### Summary of Auditable Clauses

The following table presents a summary of auditable clauses for this audit.

**Table 2-1 Hunter Water Response to Previous Audit Recommendations**

Licence Part	Description	Section/Clauses
3	Water Quality	3.1.4 3.2 3.3.1-3.3.2 3.4.1, 3.4.2, 3.4.4 3.5.1, 3.5.2 3.6.2-3.6.4 3.7.1-3.7.2
4	Infrastructure performance	4.4.1
5	Customer and Consumer Rights	5.3.2
7	Environmental – Indicators and Management	7.3
9	Managing Supply and Demand	9.2.18 9.3.2-9.3.9

### Ministerial Requirements

There are no Ministerial Requirements currently applying to Hunter Water.

### 3 Audit Methodology

The audit methodology applied is summarised below.

#### **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's General Manager Operations, other Hunter Water representatives, IPART representatives and the auditors, was held on 6<sup>th</sup> September, 2010.

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 2009/10. 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 include indicative lists of 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. Given the time constraints for this year's audit, Hunter Water were only able to provide some of this information prior to interview and the rest were provided at interview.

## 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 2-1) led interviews over 6 and 7 September 2010. 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.

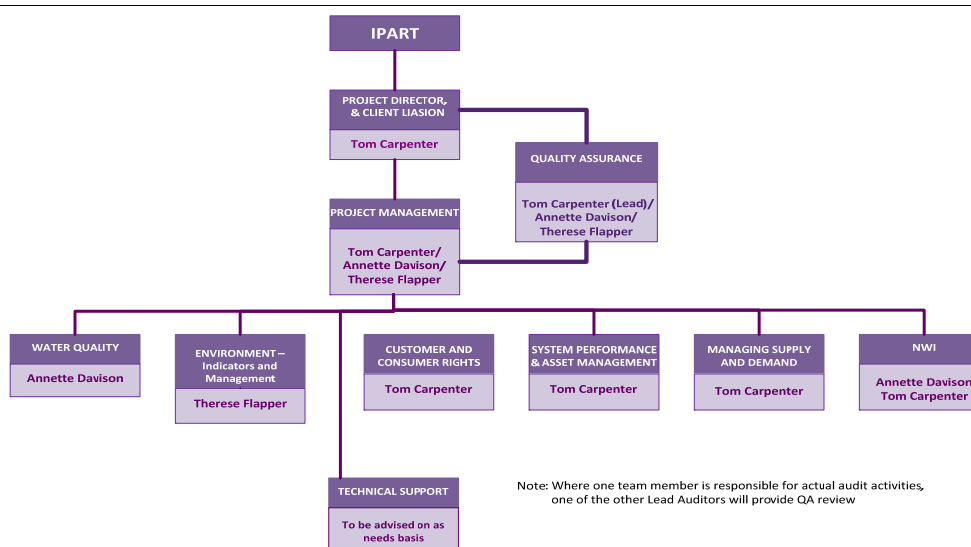
## Change to audit interview process

In previous years, audit interviews were streamed and, therefore, individual auditors only attended interviews for licence sections relevant to their specific area of responsibility. For this audit, Hunter Water was requested to schedule a single audit stream and all three auditors attended all interviews. This process allowed the auditors to adopt a 'systems' approach to the audit and to consider how Hunter Water was meeting its obligations from a 'whole of business' perspective. For example, with the application of a horizontally and vertically integrated and consistent risk management framework.

## Audit Team

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

**Figure 2-1 Structure and Responsibilities of the Audit Team**





## **4 Response to Previous Audit Recommendations**

Table 4-1 outlines Hunter Water's responses, approach and progress for recommendations made in last year's audit report.

**Table 4-1 Hunter Water Response to Previous Audit Recommendations**

Audit Recommendation		Evaluation (AGREE/ DISAGREE + STRATEGY/REASON)	Planned Completion Date
(Ref #)	Details		
LICENCE PART 3 - WATER QUALITY – Key recommendations			
R3.1	Gather, review and endorse the QA/QC documentation relevant to the test methods for which NATA accreditation is not in place.	Agreed  For a limited number of test methods (2) there is not a NATA accredited laboratory available. Alternate QA processes need to be transparent and endorsed by HWC.  Documentation on QA processes for radiological testing is available. QC report with control and duplicate analysis for our records is available for Asbestos Analysis. QA for radiological and asbestos analysis has been reviewed and endorsed.	Completed
R3.2	Modify Section 8.6.1 of the Water Quality Monitoring Plan so that it more precisely reflects the NATA accreditation status of the test methods used.	Agreed  An adjustment to our annual water quality monitoring plan is required to reflect the QA processes of the above mentioned testing.  The Plan will be updated accordingly. (ie modify section 8.6.1 of 2010/11 Water Quality Monitoring Plan)	31 Mar 2010
R3.3	Review and confirm the fluoridation training requirements and ensure that these requirements are conformed to.	Agreed  HWA operators will be sent to accredited training as courses become available (5 of the 10 operators have already completed the training).  HWA Operators to be sent to NSW health courses as soon as practical - Note that NSW Health only runs fluoridation training courses infrequently and to maintain operational security we can only send limited numbers of operators to each course.	Subject to course scheduling and operational needs.
WATER QUALITY – Suggested Improvements			
	<i>There were no suggested improvements</i>		
LICENCE PART 4 - INFRASTRUCTURE PERFORMANCE – Key Recommendations			
R4.1	Supported by IPART  Consider the cost/benefit of applying more aggressive management to its medium sized distribution assets.	Agreed  HWC has developed a reliability strategy for reticulation and trunkmains, however an investigation should be focussed on large shutdown area impacts, which will be prioritised to be undertaken by July 2010. (Completion of investigation phase only by nominated date – subsequent action and timing will be dependent on outcomes)	31 Jul 2010

Audit Recommendation		Evaluation (AGREE/ DISAGREE + STRATEGY/REASON)	Planned Completion Date
(Ref #)	Details		
R4.2	Supported by IPART  Link its asset risk management processes and outputs directly to its overarching business risk assessment and management.	Agreed  Our understanding is that this recommendation involves linking the specific asset risk analyses (ie pump stations, trunkmains, critical sewers, etc) to HWC's Enterprise Risk Management Framework, through consistent parameters, application and collation within Methodware (corporate risk register).  HWC is continuing to develop both asset class and specific asset risk assessments. It is proposed that a Corporate Asset Risk Profile is developed which prioritises the development of management strategies and the application of asset risk assessments. (Completion of scope of project only by nominated completion date. It is anticipated that 3-5 years will be required to effect meaningful integration of asset risk management processes into the ERM Framework)	31 Jul 2010
INFRASTRUCTURE PERFORMANCE – Suggested Improvements			
	<i>There were no suggested improvements</i>		
LICENCE PART 5 – CUSTOMER AND CONSUMER RIGHTS – Key Recommendations			
R5.1	Refer specifically to its 'Code of Practice for Debt and Disconnection' and include a copy of this guide and associated links, on the Hunter Water web site.	Agreed  This reference is now listed under 'About Us - Brochures' on our website. For ease of user understanding, the brochure has been titled "Help with your account: Having trouble paying your bill?" The brochure is now referred to as both "Help with your account..." and 'Code of practice...' on our website for customer download (despite this not being an Operating Licence requirement).	Completed
LICENCE PART 5 – CUSTOMER AND CONSUMER RIGHTS – Suggested Improvements			
SR5.2	Revise the now 6 year old Customer Contract to clarify its obligation to handle and resolve consumer complaints as if the complaint were made by a customer (under Clause 5.2.1).	Under consideration  Subject to IPART's agreement, our Customer Contract is to be reviewed by the end of 2010/11. This suggested improvement will be considered in light of that review.	Dec 2010
SR5.3	Investigate the need to retain two (and at times overlapping) systems of reporting and managing customer contacts in light of the need to incorporate customer contacts (in <i>Water Quality</i> and <i>Sewer Odours</i> ) as complaints on compliance with the <i>National Performance Framework 2008/09</i> .	Disagree  Whilst acknowledging the challenges of managing two customer related systems, HWC is not in a position to consider the significant investment required to address this suggestion.	

Audit Recommendation		Evaluation (AGREE/ DISAGREE + STRATEGY/REASON)	Planned Completion Date
(Ref #)	Details		
SR5.4	<p>Improve its Customer Service Indicator Report through:</p> <ul style="list-style-type: none"> <li>Inserting figure numbers and relevant year in Figure/Table titles, to assist readability;</li> <li>Use of uniform performance scales across year-to-year comparisons;</li> <li>Defining all acronyms (vis. NPR, SQSP, etc)</li> <li>Reporting only against 'NPR compliant' methodology, (recognising the presentation of old ("Mixed") and new ("NPR compliant") methodology assisted in the 2008/09 transitional year);</li> <li>Addition of annual totals across monthly and complaint subtypes (eg. "Issues raised with EWON" figure, p 44); and</li> <li>Provide page numbers for all 'Customer Service Indicators Index' cross reference to 'Location in Report' (p 50).</li> </ul>	<p>Agreed</p> <p>Suggested improvements will be integrated into the annual regulatory report.</p>	30 Sep 2010
LICENCE PART 7 – ENVIRONMENT – INDICATORS AND MANAGEMENT – Key Recommendations			
R7.1	<p>Develop (including review by the Consultative Forum), an explicit and concise set of economic, social and environmental criteria defining <i>Hunter Water Sustainability Strategy</i> so as to provide a uniform and transparent basis for the decision making of its major infrastructure and support tools (such as Multi Criteria Analysis).</p>	<p>Agreed</p> <p>Strategy is to incorporate into the Sustainable Decision Making Framework Project</p>	30 Jun 2010
R7.2	<p>Supported by IPART</p> <p>Accelerate the development of the HWC Catchment Management Plan and use this Plan to target its catchment management activities and expenditure, (now that HWC has completed the risk assessment of all its catchments and can apply a risk based approach as set out in the Australian Drinking Water Guidelines 6, 2004) to enhance the safeguarding of water quality.</p>	<p>Agreed</p> <p>HWC will continue to prioritise development of our Catchment Management Plan (CMP) and use it as an active tool to guide and direct activities in this area. It is intended that the results of the water quality risk assessments will be incorporated into the CMP and treatment actions developed to address the risks identified.</p>	30 Jun 2010
LICENCE PART 7 – ENVIRONMENT – INDICATORS AND MANAGEMENT – Suggested Improvements			
SR7.3	<p>Ensure the consistency and accuracy of the information reported in its <i>Environmental Indicator Report</i> including:</p> <ul style="list-style-type: none"> <li>Formal IPART endorsement of changes in reported performance measures;</li> <li>Consistency of (KPI) performance relative to that reported in earlier audits;</li> <li>Clarification (or explanation) when KPI, scheduled for completion in the audit year, are postponed or reprioritized; and</li> <li>Improved accuracy in trends and data reporting (for example, Extraction from Water Sources Residential water usage, Trade waste inspections, electricity consumption, greenhouse gases, Value of community sponsorship and historic water pricing).</li> </ul>	<p>Agreed</p> <p>HWC will continue to make improvements to the Environmental Performance Indicators Report</p>	1 Aug 2010

Audit Recommendation		Evaluation (AGREE/ DISAGREE + STRATEGY/REASON)	Planned Completion Date
(Ref #)	Details		
SR7.4	Incorporate the <i>Sustainability criteria</i> (proposed in Key Recommendation R7.1) into its Environmental Management Plan and identify such principles as 'INPUTS' into its 'EMP FRAMEWORK'.	Agreed EMP will be updated	30 Jun 2010
SR7.5	Improve the integration of its Environmental Management Plan (EMP) into the <i>Business Plan</i> by: <ul style="list-style-type: none"> <li>specific reference to the EMP in its <i>Business Plan</i>; and</li> <li>demonstrating the linkages between the EMP's (vis Objectives/ Actions and Timetables) and the Business Plan (vis 'Specific Activities and Initiatives').</li> </ul>	Agreed EMP will be updated	30 Jun 2010
SR7.6	Report the status on all its EMP <i>commitments</i> , (vis under the heading ' <i>Status on Environmental Management Plan Commitments</i> '), in the <i>Environmental Performance Indicators Annual Report</i> , (by either providing the status or cross referencing to the page number if the status is reported elsewhere in the Annual report).	Agreed Considering including status on EMP commitments as an appendix to EPI Report.	1 Aug 2010
SR7.7	Include the total annual expenditure for its Catchment Management Activities in its annual Catchment Report (vis <i>Table 1: Summary of Catchment Activities</i> ).	Under consideration Re-design of the Catchment Report will be considered in light of financial system constraints for provision of the required information.	1 Sep 2010
SR7.8	Investigate the Development Applications (DA) over lands in the Special Areas, lodged with local councils over 2008/09, to: <ul style="list-style-type: none"> <li>confirm, or otherwise, that all such DAs were referred to HWC; and</li> <li>assess the effectiveness of Hunter Water's response to limit the impact of development on water quality and catchment health. (Note: The Sydney Catchment Authority has established such risk based review, modelling and suits of conditions and may be able to assist in this regard).</li> </ul>	Under consideration The Special Areas Regulation is currently under review and not scheduled for completion until September 2010. Any subsequent action taken in respect to this suggested improvement will be determined in light of the new Regulation.  It is also important to note that HWC is resource constrained in this area, given our dedicated FTE is already committed to addressing the key recommendation of developing the Catchment Management Plan (refer R7.2).	30 June 2011
LICENCE PART 9 – MANAGING SUPPLY AND DEMAND – Key Recommendations			
R9.1	Supported by IPART Provide more comprehensive reporting of the results of sensitivity and options analyses relating to supply demand balance when communicating with its customers and stakeholders. In particular, this should be provided in any future development or revision of the Integrated Water Resources Plan.	Agreed At the next iteration of the H <sub>2</sub> O Plan, HWC will ensure customers and stakeholders are provided the opportunity to review/provide input to the sensitivity and options analysis process, eg by way of the multi criteria analysis process	2013 (subject to Tillegra Dam approval)

Audit Recommendation		Evaluation (AGREE/ DISAGREE + STRATEGY/REASON)	Planned Completion Date
(Ref #)	Details		
LICENCE PART 9 – MANAGING SUPPLY AND DEMAND – Suggested Improvements			
SR9.2	<p>In providing its Annual Operating Licence Report H<sub>2</sub>O Plan (Report on Performance against Integrated Water Resources Plan 2008-09) include the following:</p> <ul style="list-style-type: none"> <li>• Hunter Water Budgeted expenditure in addition to the current Hunter Water Expenditure for the subject year ( in Table 1 Summary of existing supply and demand management program expenditure and benefits achieved) ;</li> <li>• a <i>Total Reuse and Potable Substitution</i> amount in mega litres (in <i>Table 2 Summary of Recycled Water Statistics</i>) and the percentage change compared to the previous year (vis 13-14% increase from 20078/08, being a positive achievement over 2008/09);</li> <li>• An explanation/comment where progress has not achieved target (for example, Section 3.2.9 Leakage reduction maintain active leakage detection program that ensures full water network inspected every five-year operating period (i.e. 100% over five years) which informs that over the last 6 years 69% of the total reticulation network has been surveyed);</li> <li>• Cumulative totals over the operating period (for example, Section 3.2.9 Leakage reduction maintain active leakage detection program that ensures full water network inspected every five-year operating period); and</li> <li>• Graphical and tabular information on its annual Response and Rectification performance for Priority 1 and Priority 2 Urgent Jobs under the Leakage reduction: Maintain watermain replacement program.</li> </ul>	Agreed	Jul 2010
LICENCE PART 12 – What the audit is to report on – MOU – Key recommendations			
R12.1	Explore any opportunities to add a strategic component to HWC's MOU activities with NSW Health to address <i>Emerging Public Health</i> issues through, for example, expanding activities to include a specific program of joint research and development into Emerging Public Health issues.	<p>Agreed</p> <p>Emerging public health issues are currently discussed with NSW Health in quarterly liaison meetings. A specific item to address such issues will be included as a standing agenda item.</p>	Completed
LICENCE PART 12 – What the audit is to report on – MOU – Suggested improvements			
There were no suggested improvements			

## **5 Licence Part 3 - Water Quality**

### **Summary of Requirements**

Part 3 of the Operating Licence requires Hunter Water to provide its customers and consumers with water of an adequate quality and is, therefore, safe to use and consume.

For the purpose of the risk-based Audit, **t-cAM**'s detailed audit included clauses under:

Drinking Water Quality-Standards	Drinking Water Incident Management
Drinking Water Quality-Monitoring	Waste Water and Recycling Operations
Drinking Water Quality-Reporting	Other Grades of Water

### **Water Quality – Compliance**

Overall, **t-cAM** assessed Hunter Water to have demonstrated **Full to High Compliance** with the requirements of this Part of the Licence.

Compliance and supporting commentary for specific Clauses in this Licence Part are shown in Table 5-1.

### **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.

However, it should be noted that there has been a revision to the Australian Drinking Water Guidelines (currently waiting to be finalised), which may impact on Hunter Water's future operations and performance.

### **Discussion**

As well as the licence clauses relating to this section, NSW Health was interested in viewing how Hunter Water was addressing issues associated with the maintenance of chlorine residuals at extremities of its systems and the timeliness of review and approval of documents submitted to NSW Health.

Hunter Water is making progress towards understanding the issues associated with low chlorine residuals in its systems. The current focus for Hunter Water is on the Belmont system, where an automatic chlorine dosing system is to be trialled. The results of this trial will need to be reviewed during the 2010/11 licence audit for efficacy.

Chlorine residual maintenance will potentially become even more significant in the future if low chlorine residuals are coupled with higher temperatures, i.e. above 25°C, for a period of time. This

situation is a known risk factor for the proliferation of opportunistic pathogens such as *Naegleria fowleri*<sup>2</sup> and *Legionella* spp.

The evidence sighted in relation to timeliness and review of documents supplied to NSW Health appears to have addressed this concern.

## Recommendations

### Key Recommendations

In terms of key recommendations, it is recommended that Hunter Water:

- 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.
- R3.2 **Clause 3.5.1:** Formalise the envelope of information around the notification criteria e.g. >X NTU for Y minutes.
- R3.3 **Clause 3.7.1:** Ensure that the handover point for recycled water is clearly articulated on all recycled water agreements.
- R3.4 Hunter Water will need to review how it manages documentation currency, control and systematic management. Several issues were identified during the audit which, while not affecting compliance markedly at this stage, could have the potential to cause problems over the longer term. Examples include: not having changed documentation to take into account comments from the previous audit; issues with formalising of processes relating to maintenance of information currency; and issues relating to document identification including having appropriate document control information on important documents (e.g. *HWC State of Asset Report - Dungog LGA.pdf*).

### Secondary Recommendations

There are no secondary recommendations for this Licence Part. However several Opportunities for Improvement (OFI) have been identified in Table 4-1.

### Recommendations for IPART's consideration

The results of the automatic chlorine dosing system trial in the Belmont system should be reviewed for efficacy during the 2010/11 licence audit.

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<sup>2</sup> In 2002, two five-year olds living in Maricopa County, Arizona became infected with *Naegleria fowleri* and subsequently died of Primary Amoebic Meningitis (PAM), 72 hours after hospital admission. The water supply provided to the children's homes was sourced from an untreated groundwater supply and provided by a private water company. *N. fowleri* was subsequently isolated from the groundwater supplied to one of the children's homes and from the refrigerator filter from the second child's grandparents' home (at which the child spent a lot of time). The pathogen was also found in bathroom and kitchen pipes as well as filtered bathwater from both homes. Reynolds, K.A. (2006) Newly Identified Tap Water Sources of Pathogenic Amoeba. Water Conditioning & Purification. January 2006. 58-60 (Synthesised from [www.thewaterhub.com/incidents-online](http://www.thewaterhub.com/incidents-online)).



## Table of Detailed Audit Findings

Table 5-1 Licence Part 3 – Water Quality

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
<b>3.1</b>	<b>Drinking Water Quality – Planning</b>				
<b>3.1.1</b>				<b>NR</b>	
<b>3.1.2</b>				<b>NR</b>	
<b>3.1.3</b>				<b>NR</b>	
<b>3.1.4</b>	Hunter Water must implement the Five-Year Plan according to the timeframes specified by NSW Health.	Moderate. Failure to meet expectations of NSW Health would potentially expose consumers to higher health risks than those agreed.	Evidence that any timeframes specified by NSW Health have been met.	<b>Full Compliance</b>	<p>The Dungog system was assessed as being in scope for this audit period. The Gresford system was chosen as a representation of the Dungog system. Examples of improvements in the Gresford system were shown and discussed. Improvements included improving the integrity of the clearwater tank roofing, improved mixing of chlorine in the clearwater tank, on-line instrumentation installation for pH, turbidity, chlorine and improved procedures for reservoir inspections, improved procedure for notification of health-related complaints to NSW Health. A State of the Assets report for the Dungog system was provided to IPART however, there is no date or document control information on the report (<i>HWC State of Asset Report - Dungog LGA.pdf</i>).</p> <p>Evidence of a catchment site inspection and risk assessment workshop attendance for the Gresford system was sighted as well as the risk assessment results (<i>Clause 3.1 - Gresford Catchment Raw RA 0.1.pdf</i>; <i>Clause 3.1 - Gresford WTP RA 0.1.pdf</i>; <i>Clause</i></p>

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
					<p>3.1 - Major Risks - Gresford Treatment and Distribution.pdf). Major risks for the Gresford system appear to have been appropriately identified e.g. pathogen risks from human and animal inputs in the lower catchment i.e. closer to the offtakes. Actions have been identified to address identified risks and gaps (Clause 3.1 - Major Risks - Gresford Catchments.pdf; Clause 3.1 - Major Risks - Gresford Treatment and Distribution.pdf) - actions appear to be captured systematically within the Water Quality Improvement Plan (Water Quality Improvement Plan Oct 2009.doc) - a focus for next year's audit will be to track progress for actions for the Gresford system (note lack of document control on the plan). The Gresford distribution system shows the distribution of treated and raw water - this situation concurs with risks identified in the distribution system risk assessment of potential cross-contamination of potable with raw water (Gresford Map showing Raw Mains and Distr System.pdf; Gresford Line Diagram with Critical Control Points.doc). In terms of training, water quality awareness training is on a 2 year cycle so all Dungog Shire staff will eventually undergo this training. Microbiological compliance for the Dungog system has been historically low. Compliance for the year 08/09 was 96.1% (Microbiological water quality Gresford 2001 02 to 2008 09.doc) - noting that HWC took over the system in 1 July 2008, a target for next year's audit should to check for continuing improvement in microbiological compliance i.e. to check for results compliant with the ADWG guideline value.</p>

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
					Records were sighted to show that the Amended Five Year Drinking Water Quality Management Plan and Monitoring Plan was provided to NSW Health on 28/08/08 (Clause 3.1 - Acceptance by DOH - Amended Five Year Drinking Water Quality Management Plan ~ 20.10.2008.pdf; Clause 3.1 - Reviewed and accepted by DOH - Amended Five Year Drinking Water Quality Monitoring Plan ~ 20.10.2008.PDF).
<b>3.2</b>	Drinking Water Quality – Standards				
<b>3.2.1</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.	High. If water quality does not meet health-related requirements, there could be adverse health impacts on consumers.	Evidence that water quality test results met the requirements	<b>Full Compliance</b>	<p>The annual water quality report was sighted (Clause 3.2 - Draft Annual Water Quality Report 2009-10.pdf) as well as a sample of water quality results and parameters from November 2009. In the distribution system results, the parameter list shows toluene as being spelt incorrectly - while this may seem trivial, spelling mistakes may cause searching issues within the water quality database. Heterotrophic Plate Count Bacteria appear to be measured per 1mL volume when the normal industry standard is per 100 mL. While this result was checked at the audit, it may cause issues with transcription or misinterpretation of volumes. However, HPC bacteria are used as an operational not a health indicator so this comment is included for reference to HWC only.</p> <p><b>OFI:</b> Check for any transcription errors for HPC bacteria given the units of measurement used.</p>

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
					<p>Progress is being made to understanding the issue of chlorine residuals within the distribution network (<i>Clause 3.2 - Presentation - Chlorine Residual in Distribution System – Geographic Representation.pdf</i>). Chlorine dosing jobs within AOMS were sighted and a sample viewed (<i>AOMS Jobs for Reservoir Dosing</i>).</p> <p>Current focus is on the Belmont system where an automatic chlorine dosing system will be trialled (sighted project development plan for Belmont 1 Reservoir Chlorine Dosing Unit - HW2010-1008 1 1.005 File note - PDP - Belmont 1 res chlorinator - CP306900 - 23 Aug 10.DOC; Belmont 1 Res System Chlorine Testing_NEW.xls).</p> <p><b>OFI:</b> Overlay the temperature and chlorine residuals on the time series graph and keep an eye on this issue from an emerging hazard perspective re potential risks from opportunistic pathogens.  <b>OFI:</b> Keep an eye on sodium hypochlorite solution storage and chlorate generation issue.</p>
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.	High. If water quality does not meet health-related requirements, and an adequate response is not undertaken, there could be adverse	Evidence of notification to NSW Health in the event that water quality test results did not meet the requirements.	Full Compliance	A new reservoir inspection regime has been initiated - all reservoirs are now inspected monthly during summer. Philippe Porigneaux from NSW Health was involved in the <i>Aquality</i> audit and was also involved in the move to tighten up inspection regimes ( <i>HW2007-1649.005 Data - Reservoir Inspection Report ~ Template.DOC; Example of completed Reservoir Inspection.pdf</i> ).

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
		health impacts on consumers.			<i>E. coli</i> detects in Swansea and correspondence with NSW Health were sighted (HW2006-1448 13 5.023 File note - Email - to to NSW Health - E Coli count at 7 Josephson ST Swansea.pdf) (noting however that the following error was recorded on the report "Sample Date 15 March 2010. Results received 16 March 2020") and follow up regarding chlorine sampling (RE Water Quality Exception 7 Josephson St Swansea E Coli count - Chlorine Sampling report.htm). Evidence sighted suggested that HWC understands and implements this clause well.
<b>3.3</b>	<b>Water Quality – Monitoring</b>				
<b>3.3.1</b>	<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>include monitoring of Bulk Water and Drinking Water quality and details of laboratory testing and reporting processes to ensure quality control;</li> <li>have regard to the concepts of good practice set out in the Australian Drinking Water Guidelines and apply those</li> </ul>	Moderate. If water quality is not reported, stakeholders cannot be kept abreast of the performance of Hunter Water in supplying quality water.	Evidence of completion of a suitable report to the satisfaction of NSW Health.	<b>High Compliance</b>	<p>NSW Health receipt notification form sighted for original (Clause 3.3 - DoH Checklist Signoff on Annual Water Monitoring Plan 2010-11.pdf.pdf - noting that the timeframe of 31 March was met at 17/03/10) and revised water quality monitoring plan incorporating the Gresford changes (Clause 3.3 - Doc checklist signoff on revised WQ Monitoring Plan Feb 2010.pdf).</p> <p>The Annual Water Quality Monitoring Plan includes monitoring concepts as set by the Framework within the ADWG (Source Water Monitoring, Operational Monitoring, Customer Based Monitoring, Operational procedures and process control, Verification Monitoring, Monitoring in response to incidents and emergencies; Clause 3.3 - Water Quality Monitoring Plan 2010_11.pdf). The targeted monitoring referred to in the Plan clearly links the risks identified in the</p>

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Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
	<p>concepts as specified by NSW Health;</p> <ul style="list-style-type: none"> <li>• 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>• include targeted, investigative and event-based monitoring; and</li> <li>• include monitoring for any other water characteristic nominated by NSW Health.</li> </ul>				<p>risk assessment to the monitoring being undertaken for specific parameters for specific locations (e.g. Table 2, page 9). Raw water parameters are addressed within Table 3, page 11-13. A sample of the analytes from Table 3 was cross-checked with the data provided for November 2009 and appear to correlate with those being assessed in practice (e.g. <i>Giardia</i> - G-FITC; 2-Methylisoborneol - MIB, Atrazine, DDT, however, noting that Heptochlor in Table 3 is correctly spelt in the November data as Heptachlor - again this could result in issues with locating data on particular parameters).</p> <p>Cross reference issues relating to chlorine residuals at extremes with Clause 3.2.1.</p> <p>Regarding information queries from the previous audit, QA/QC information has been received from ANSTO regarding the radiological parameters (evidence sighted at the interview). This information was assessed by Andrea Swan as being adequate. However, there is still a need to change the wording in the M&amp;R Protocol (<i>HWC Monitoring and Reporting Protocol v1.2_July 2010.doc</i>) under 'Analysis' section (top of page 9) as not all tests are done by NATA accredited tests, which the wording still implies. Failure to have addressed this issue in terms of cross-referencing what happens in practice with written documentation means that this parameter remains at a High Compliance.</p>

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
3.3.2	<p>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.</p> <p>The following was noted in the 2008 to 2009 audit (page 3-9, Table 3-1 Licence Part 3 – Water Quality))</p> <p>“The number and nature of tests undertaken was found to be in compliance with the plan for most parameters, with no omissions of concern or significance. However, although not of health or other significance, a literal nonconformity was identified between the planned and reported tests for the month. HPC samples were not taken in the ground water sources, only the surface water sources. The Plan indicated that both were sampled. Although this difference between actual and planned sampling is not significant, it represents a literal nonconformity that drops the compliance status from Full to High.”</p>	Moderate. If water quality testing does not meet health-related requirements, there could be inadequate verification in place to meet expectations.	Evidence that water quality test program as completed conformed to the planned program.	<b>Full Compliance</b>	<p>The monitoring program was viewed and given the newness of the Dungog system for HWC, Gresford was chosen from that system as a focus. The parameter of <i>E. coli</i> was chosen for the Gresford system. Two points are monitored fortnightly, a check was conducted of these two points (71 Park Street and 5 Short Street) against the dataset and it was verified that the sample points were in the set and met the required frequency as per the monitoring program.</p> <p>Noted also that key monitoring parameters have been set for Dungog LGA with NSW Health's approval. Email correspondence between Pam O'Donoghue and NSW Health for new parameters (23/10/09) was sighted.</p> <p>The non-conformity of the HPC samples (identified in the previous audit) has been addressed with the number of HPC samples revised to 2 from the 6 originally stated. Together with the above evidence, this clause can now be rated as attaining full compliance.</p>
3.3.3 - 3.3.5				<b>SoC</b>	

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
<b>3.4</b>	<b>Water Quality – Reporting</b>				
<b>3.4.1</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. If water quality is not reported, stakeholders cannot be kept abreast of the performance of Hunter Water in supplying quality water.	Evidence of completion of monthly reports.	<b>Full Compliance</b>	Water quality committee reports and water quality monthly reports were sighted (noting that August 2009 was missing from the set) and appear to be in compliance. Scrutiny of the results showed that an anomalous THM result (mean being higher than the 95% percentile) - had been picked up, noted and the implications discussed with managers (evidence based on interview and sighting of the anomalous figure). Water quality monthly report was viewed on the HWC website.
<b>3.4.2</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:  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;  any proposed amendments to the Five-Year Plan needed to protect public health or to ensure the	Low. 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.	Evidence of submission of the report in a timely manner.	<b>Full Compliance</b>	Receipt notification protocol clearly shows that the Annual Report on Implementation of Five Year Drinking Water Plan was delivered on 23/12/09 by HWC with receipt acknowledgement from NSW Health on 07/02/10 ( <i>Document Checklist Annual Report on Implementation of Five Year Drinking Water Plan.pdf</i> ). HWC's annual report on the implementation of the Five-Year Plan includes an audit of the Framework (conducted using WSAA's <i>Aquality</i> ), additional water quality improvement actions (which contains elements which cross-reference back to Clause 3.1.4 relating to the Dungog system), a statement showing that no amendments to the Five Year plan were needed and a link to the Annual Report on Water Quality for the previous year ( <i>Clause 3.4 - HW2006-1448 8 11.002 Report - Annual Report on Five-Year Plan 2009 -</i>



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Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
	<p>effective operation of the Five-Year Plan;</p> <p>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</p> <p>the annual report on water quality for the previous year from 1 July to 30 June.</p>				<i>FINAL.pdf</i> ).
<b>3.4.3</b>				<b>SoC</b>	
<b>3.4.4</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. If Hunter Water does not respond to requests from NSW Health, the relevant agency cannot adequately oversee Hunter Water.	Evidence of response to NSW Health in a timely manner.	<b>Full Compliance</b>	<p>Sighted email correspondence (April 2010; <i>Clause 3.4 - RE Data request for report.pdf</i>) between NSW Health (Jacomina Spedding) and HWC (Pam O'Donoghue) for data to populate the Chief Health Officer's Report. The data are provided in the manner requested by NSW Health and in a timely manner.</p> <p>There are no agreed performance targets for chlorine between Health and HWC or corporate targets. There appears to be no guidance for chlorine residual targets in the distribution system within the draft 2010 ADWG however, the guidelines state that typical free chlorine distribution residuals are in the range of 0.2 to 0.4 mg/L. A presentation was given at the interview on chlorine residuals in</p>

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
					the distribution system ( <i>Clause 3.2 - Presentation - Chlorine Residual in Distribution System – Geographic Representation.pdf</i> ). Investigation of chlorine distribution residuals was also noted as an action within the improvement plan ( <i>Water Quality Improvement Plan Oct 2009.doc</i> ).
<b>3.5</b>	<b>Water – Incident Management Plan</b>				
<b>3.5.1</b>	<p>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.</p> <p>Consider 2008/09 audit recommendation about tightening definition of multiple customer complaints in “Table 1 – Water Quality – Criteria for Potential Public Health Issues requiring notification to NSW Health” in the MOU.</p>	High. If water quality may be adverse to public health and an adequate response is not undertaken, there could be adverse health impacts on consumers.	Evidence of notification to NSW Health in the event that water quality may impact public health.	<b>High Compliance</b>	<p>While the incident management process appears to be satisfactory, there appear to be a couple of issues with what constitutes a coagulation/ disinfection 'failure' in the Water Quality Criteria for Notification to the Department of Health and what constitutes 'Multiple Water Quality Complaints' which has still not been resolved and was identified in the last audit. For this reason, this clause has been assessed as attaining High Compliance. HWC will need to address and more clearly formalise the criteria understanding to attain a level of full compliance for the next audit – recommendations/opportunities for improvement are provided below.</p> <p><b>Recommendation:</b> Formalise the envelope of information around the notification criteria e.g. &gt;X NTU for Y minutes.</p> <p><b>OFI:</b> Check the new turbidity limits in the revised ADWG for tightening of limits in 'failure' definitions.</p>
<b>3.5.2</b>	From the Commencement Date, Hunter Water must maintain the existing water quality incident	High. If water quality may be adverse to public	Evidence of maintenance of the relevant	<b>Full Compliance</b>	Need to make sure that the contact list is updated formally every year – an informal statement was viewed that the contact list is updated every year but at the audit, evidence could not be found that

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Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
	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.	health and an adequate response is not undertaken, there could be adverse health impacts on consumers.	plans.		<p>the list is formally updated.</p> <p>HWC has just appointed a Resilience Officer who's job it will be to ensure that currency of information is checked and updated as necessary. This appointment should facilitate document and information control across the business.</p> <p>Exercise 'Gremlin' was conducted during the audit period 4 November 2009 - for a water quality incident. Health (Philippe Porignaux) was involved in this process.</p> <p>Quarterly Liaison meetings with Health are also used to discuss incidents.</p>
<b>3.5.3 - 3.5.4</b>				<b>SoC</b>	
<b>3.6</b>	<b>Waste Water and Recycling Operations</b>				
<b>3.6.1</b>				<b>SoC</b>	
<b>3.6.2</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. 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	Full Compliance with a reasonable interpretation of the 2006 Australian Guidelines for Water Recycling for all recycled	<b>Full Compliance</b>	<p>HWC continues to make progress with the implementation of its AGWR 2006 commitments.</p> <p>A Five Year (2010-2015) Recycled Water Quality Improvement Plan (RWQIP) (<i>Clause 3.6.2 - Plan - Five Year Recycled Water Quality Improvement Plan with DOH comments 3 09 10.PDF</i>) is now in place (initiated April 2010, approved June 2010) and contains clearly articulated improvement actions. This plan together with the RWQMP forms HWC's response to this clause (<i>Clause 3.6.2 - Plan - Recycled Water Quality Management Plan (DOH) Final</i>)</p>

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
		environmental or public health.	water schemes, or adequate and agreed progress towards this goal.		<p><i>Version Accepted by NSW Health 09.09.09.pdf</i>) – noting that scheme-specific plans will also be developed.</p> <p>Validation of process trains and individual barriers is an integral component of the AGWR 2006 (Element 9). Validation plans are in place for schemes including Branxton and Kooragang (<i>Clause 3.6.2 - KIWS Desktop Validation Final.PDF</i>). For the Branxton scheme, NSW Health has signed off on the validation plan (<i>Clause 3.6.2 - Email_Re Branxton Validation Plan.html</i>). In addition, scheme-specific RWQMPs are now in existence (e.g. <i>Clause 3.6.2 - Branxton WWTW RWQMP Preliminary Draft 260310 gz.pdf</i>). While the preliminary risk register viewed for Branxton did not contain sufficient details on risk ranking to be considered adequate for the purpose of the RWQMP (<i>Clause 3.6.2 - Risk Assessment Branxton Preliminary Risk Register Draft.pdf</i>), it is noted that this register is preliminary and may be populated further once finalised.</p> <p>The body of evidence available (through interview and external review of documentation), shows that HWC is progressing its commitments to the implementation of sound and compliant AGWR 2006 RWQMPs and is fulfilling audit comments and requirements from the 08/09 IPART audit report.</p> <p>Full Compliance rating is given for this audit however, continued progress will be required to maintain this rating in future audits. Further, compliance will also need to take into account the</p>

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
					cross reference with the comments on recycled water agreements in Clause 3.7.1 where handover points in recycled water schemes need to be clarified to avoid issues of responsibility debate with recycled water quality.
<b>3.6.3</b>	The Waste Water and Recycling Operations Plan must provide for monitoring, reporting and incident management procedures.	Moderate. 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.	Full Compliance with a reasonable interpretation of the 2006 Australian Guidelines for Water Recycling for all recycled water schemes, or adequate and agreed progress towards this goal.	<b>Full Compliance</b>	<p>A Five Year (2010-2015) Recycled Water Quality Improvement Plan (RWQIP) (<i>Clause 3.6.2 - Plan - Five Year Recycled Water Quality Improvement Plan with DOH comments 3 09 10.PDF</i>) is now in place (initiated April 2010, approved June 2010) and contains clearly articulated improvement actions. This plan is to be read in conjunction with the overarching Recycled Water Quality Management Plan (RWQMP). The RWQIP is clearly set out on an element by element basis such that gaps against each part of the Framework for Management of Recycled Water Quality and Use are identified and actions are in place to deal with the identified issues. Further audits will need to ensure that the actions are being implemented in the timeframe stated. Given that the content of the RWQIP and the individual scheme-specific plans being developed are 'Framework-based' and are deemed by HWC to constitute its interpretation of the requirements of a Waste Water and Recycling Operations Plan, this clause must be given a full compliance rating given also that the Framework encompasses monitoring, reporting and incident management requirements.</p> <p>Further evidence for this clause can be found in the Recycled Water Quality Monitoring Plan (June 2010; <i>Clause 3.6.3 - Plan - 2010-2011 Recycled Water</i></p>

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
					<p><i>Quality Monitoring Plan with DOH comments 03 09 10.PDF</i>) and accompanying NSW Health endorsement. While information on critical control points and their monitoring appears to have grown as a total body of evidence since the previous audit, and that the information contained in the documents provided is comprehensive, it would be beneficial to see the 'corrections' in response to critical limits appear on the same worksheets as the parameters and monitoring requirements – especially when the parameter is health-related (e.g. <i>Clause 3.6.3 - AppendixB KurriMonitoring.pdf</i>).</p> <p><b>OFI:</b> Ensure that control loops for all CCPs are clearly articulated.</p>
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.	High. If recycled water quality may be adverse to public health and an adequate response is not undertaken, there could be adverse health impacts on public health.	Evidence of notification to NSW Health in the event that recycled water quality may impact public health.	<b>Full Compliance</b>	As per the 08/09 audit, the same comment is provided i.e. that no reportable incidents occurred during the audit period, but the systems are in place such that if an adverse event had occurred, it would have been expected that NSW Health would have been notified (cross-reference with Clause 3.5.1).
3.7	<b>Other Grades of Water</b>				
3.7.1	Other grades of water (Other Grades of Water) supplied by Hunter Water must be supplied according to the Australian Guidelines for Recycled	High. If recycled water quality does not meet relevant	Evidence of compliance with the relevant	<b>Full Compliance</b>	<p>HWC supplies no 'other grades of water' than recycled water or potable water.</p> <p>NSW Health has maintained acceptance of the <i>2000 National Water Quality Management Strategy</i>,</p>

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
	Water or relevant guidelines specified by NSW Health, DECC and DWE.	guidelines, there may be adverse public health or environmental consequences.	guidelines.		<p><i>Guidelines for Sewerage Systems, Use of Reclaimed Water</i> for existing schemes (until upgrading to AGWR 2006 compliance) with the proposal and development of any new wastewater recycling schemes to be compliant with the AGWR 2006 (<i>Clause 3.7 - Letter from NSW Health Re Operating Licence Requirement - Wastewater 7 Recycling Operations (Clause 3.7) - 13.3.09.PDF.PDF</i>). Further, NSW Health had previously clarified that the 12 element Framework for Management of Recycled Water Quality and Use be the basis for compliance against the AGWR 2006. A target of the year 2015 has been set for the adoption of the AGWR 2006 for compliance for existing schemes.</p> <p>In response to any DECCW requirements, HWC has not yet sought clarification from DECCW regarding whether the 2004 DECC guidelines or the AGWR 2006 takes precedence, as HWC does not currently operate any urban schemes (<i>Clause 3.7 - Letter - Signed Letter to DoH Re Operating Licence Requirement - Wastewater and Recycling Operations (Clause ~ 11.2.09.PDF)</i>). Presumably any such issues will be dealt with as they arise for HWC.</p> <p>The current RWQMP will eventually be phased out as each scheme gets its own RWQMP. Development of the plans for the existing schemes is prioritised on customer requirements for greater product quality and/or the HWC upgrade program. All recycled water users are required to have an agreement in place with HWC however, the recycled water agreement sighted for the Dungog scheme was not</p>

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Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
					<p>clear in terms of what constituted the handover point for supply of recycled water to the customer. This lack of clarity will have to be reviewed for all recycled water agreements currently in place and ensured for all those to be drafted for future schemes. While this issue will not affect the compliance rating for this audit, it will need to be addressed and reassessed for future audits.</p> <p><b>Recommendation:</b> Ensure that the handover point for recycled water is clearly articulated on all recycled water agreements.</p>
3.7.2 – 3.7.3				NR	Definitional clause
3.7.4 - 3.7.5				SoC	
3.8	Environmental Water Quality				
3.8.1				SoC	



## **6 Licence Part 4 - Infrastructure Performance**

### **Summary of Requirements**

Part 4 of the Operating Licence requires Hunter Water to achieve specific standards of service delivery to customers from its water and sewerage service infrastructure. The Part also requires Hunter Water to demonstrate that it is planning, designing, operating and maintaining the infrastructure to ensure ongoing achievement of its required performance into the future.

For the purpose of the risk-based Audit, **t-cAM's** detailed audit included clauses related to compliance with System Performance Standards

### **Infrastructure Performance – Compliance**

Overall, **t-cAM** assessed Hunter Water to have demonstrated **Full Compliance** with the auditable requirements of this Part of the Licence in 2009/10.

Compliance and supporting commentary for specific Sections and Clauses in Part 4, Infrastructure Performance, are detailed in Table 6.7.

### **Factors Affecting Compliance**

Hunter Water has advised that climatic conditions have been both favourable and stable in 2009/10 with respect to its ability to meet the performance requirements of this Licence Part, with the exception of some increase in soil dryness, due to reduction of rainfall, leading to increased tree root intrusion into sewerage mains.

### **Discussion**

Overall, compliance with this section of the Licence has generally improved over the four years leading up to this audit. Full Compliance was achieved in the previous two years (2008/09 and 2007/08), High Compliance was achieved for overall system performance in 2006/07 and moderate compliance in 2005/06. Over the last five years the audit has been focussed on:

2005/06	Data accuracy and process and practice improvement for operation and maintenance
2006/07	Data validation and condition/criticality based decision making
2007/08	Trend analysis and integration of use of leading indicators of performance with Standards
2008/09	Integrated operations and maintenance and asset and risk management for medium to long term sustainability of service provision performance
2009/10	Demonstrated adoption of proactive continuous improvement within a sound quality assurance process and practice framework

This approach has provided an opportunity for targeted, sequential and integrated achievement of improved performance.

## Drinking Water Pressure

### Reported Compliance and Historical Trend Comparison

Comparison with data from previous years (see Table 6-1) indicates that the number of properties affected by low pressure has decreased significantly since 2000/01, when 2,709 properties were affected. Figure 6-1 shows a decreasing trend of properties affected by low pressure, but essentially stabilising from 2003/04 onwards, and essentially limited to those properties that are more or less permanently affected due to elevation and/or network capacity issues.

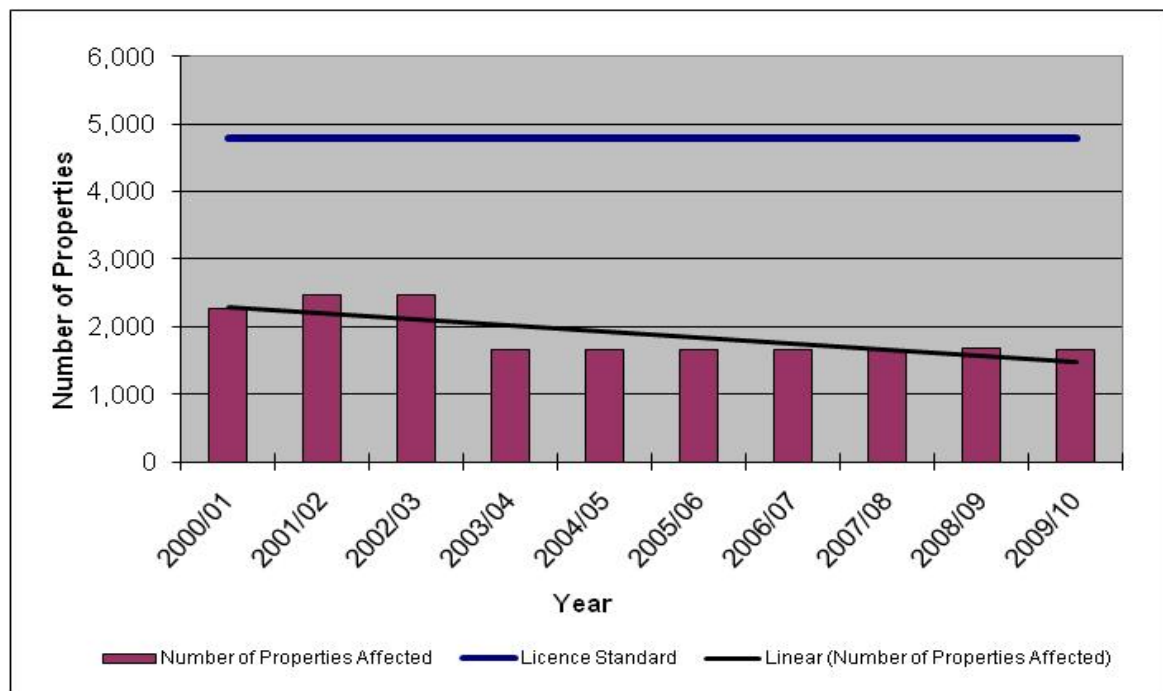
The scope of this audit specifies that the auditor should examine opportunities for improvement as part of the audit. In the case of water pressure, it is the auditors' opinion that, despite Hunter Water being in compliance with the Licence Standard as defined, the approximately 1650 customers who are 'permanently' affected, are not receiving the equivalent level of service of other Hunter Water customers on an ongoing basis. It is considered appropriate that the viability of redressing this deficiency should be periodically revisited.

The auditor is also of the opinion that such a periodic review should be scheduled and conducted as part of an overarching continuous improvement program within the context of applying a quality assurance framework and a recommendation to this effect has been proposed.

**Table 6-1 Water Pressure (Historical Comparison)**

Indicator	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
No more than 4,800 Properties experience one or more pressure incidents.	2,256	2,461	2,461	1,655	1,656	1,663	1,655	1,658	1,677	1,657

**Figure 6-1 Water Pressure (Historical Comparison)**



## Summary

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.

Since 2003/04, this figure has been relatively stable and below the upper limit defined by the Standard.

## Drinking Water Continuity (Unplanned and 'Planned and Warned')

### Reported Compliance and Historical Trend Comparison

In 2009/10, Hunter Water had 7,163 properties affected for more than 5 hours of cumulative interruptions. This was a lower level of interruptions to service than last year, see Table 6-2 and Figure 6-1. This performance is due to a number of both positive and negative factors:

- Hunter Water's water main replacement program reducing unplanned interruptions.
- An increase in the number of properties affected by planned interruptions despite the number of planned events dropping. At the request of the auditor, Hunter Water investigated this phenomenon and identified that the source of the relatively larger increase in the number of properties affected was due to the specific nature of a series of maintenance activities. These activities included (planned) maintenance, renewal or replacement of single source pipelines to pump stations and to (normally) shut boundary valves between zones (where the isolation process/shutdown affected customers on both sides of the valve).
- The higher number of planned interruptions not commencing on time in 2008/09 being repeated in 2009/10.

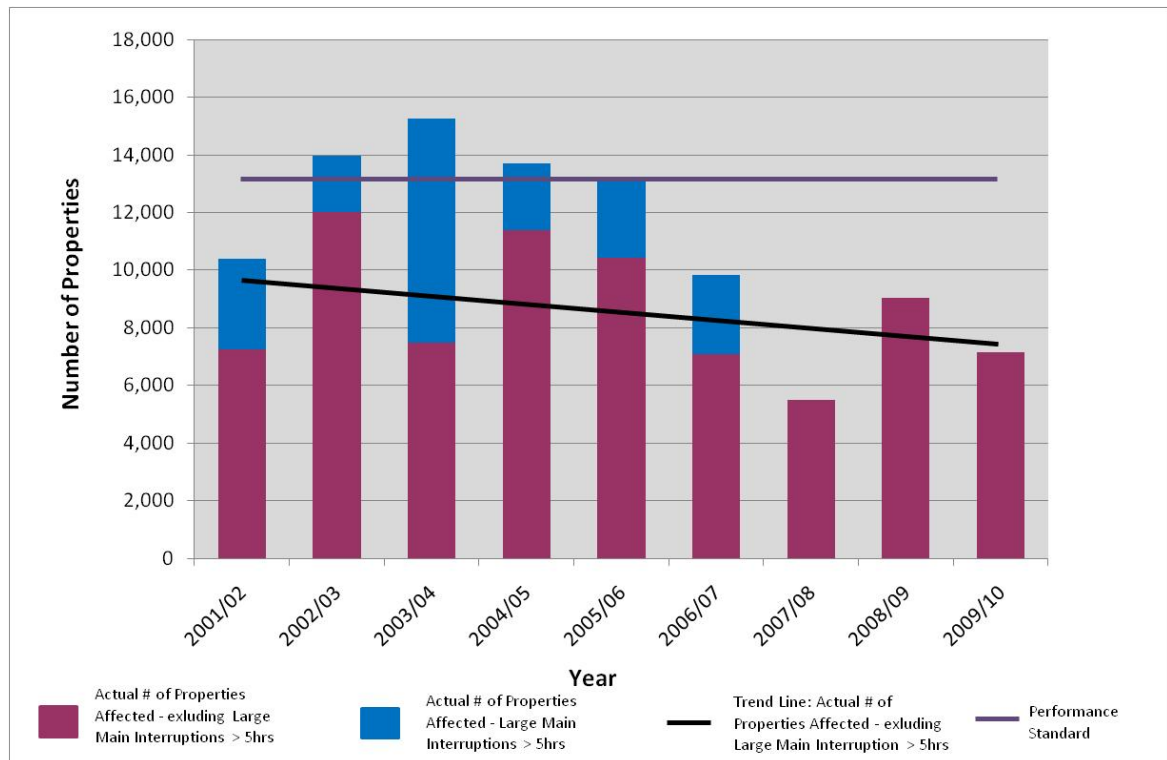
- No events affecting 250 or more properties for more than 5 hours.

Large main outages have historically had a major impact on Hunter Water's performance against this Standard, while there have again been no large main outages in 2009/10, the significant real and potential impact of these failures needs to be continually borne in mind. Figure 6-1 flags the historical performance of Hunter Water's systems in this regard by differentiating between those properties affected by large main outages affecting more than 250 properties for a duration exceeding five hours and properties affected by other outages/failure events or modes. This allows some consideration of the impact of the targeting of large main failures and outages with the improved asset management processes and practices that has occurred over the last few years.

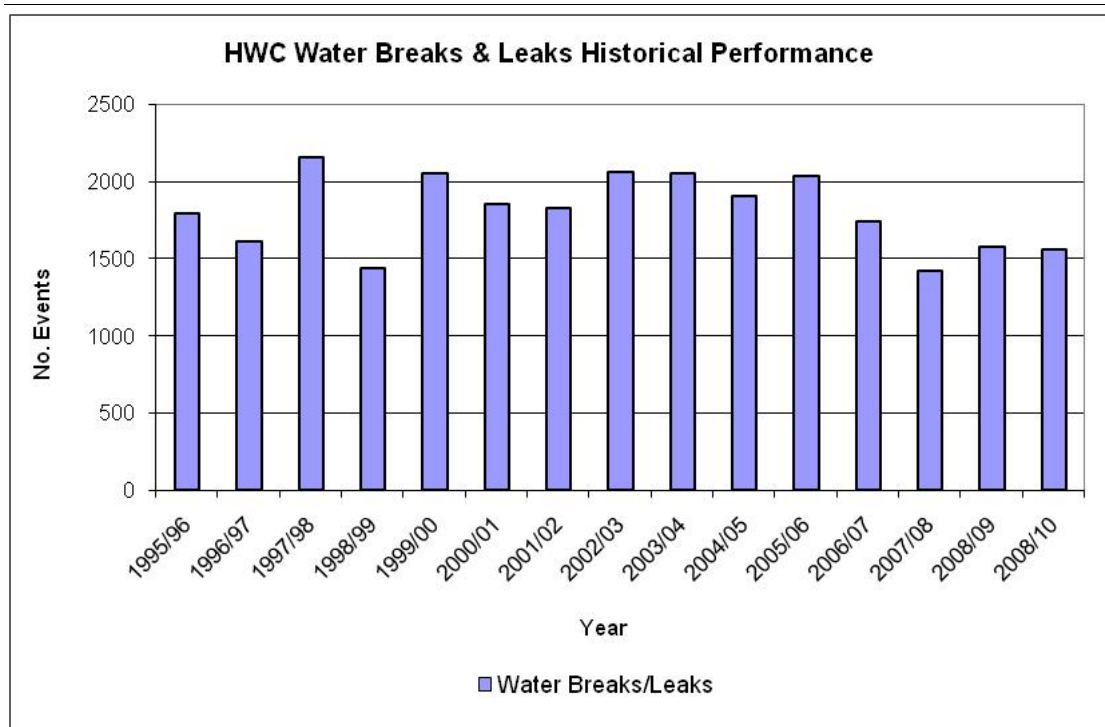
**Table 6-2 Water Continuity (Historical Comparison)**

Indicators	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Properties with one or more water interruptions cumulative duration exceeding 5 hours.	9,094	10,410	13,966	15,248	13,696	13,133	9,835 (excl. storm event)	5,484	9,036	7,163

**Figure 6-1 Water Continuity (Historical Comparison)**



**Figure 6-2 Water Continuity (Number of water main breaks and leaks)**



The scope of this audit specifies that the auditor should examine opportunities for improvement as part of the audit. In the case of water continuity, it is the auditors' opinion that, despite Hunter Water being in compliance with the Licence Standard as defined, Hunter Water should have critically examined the performance data it provided to identify the anomaly of the number of properties being interrupted increasing faster than the rate of events precipitating the interruptions. As an opportunity for improvement, it is considered appropriate that such critical evaluations should be made as part of an overarching continuous improvement program and this reinforces the need for Hunter to address the recommendation for adoption of such a continuous improvement program and quality assurance framework.

## Summary

Hunter Water fully complies with the Standard that no more than 14,000 properties experience one or more water interruptions with a cumulative duration exceeding 5 hours.

Since 2001/02, this figure has shown some significant improvement, especially due to the actions taken by Hunter Water with respect to the management of large mains and favourable weather conditions. None-the-less, the opportunity exists for more critical continuous improvement review of performance than presently exists.

## Sewage Overflows

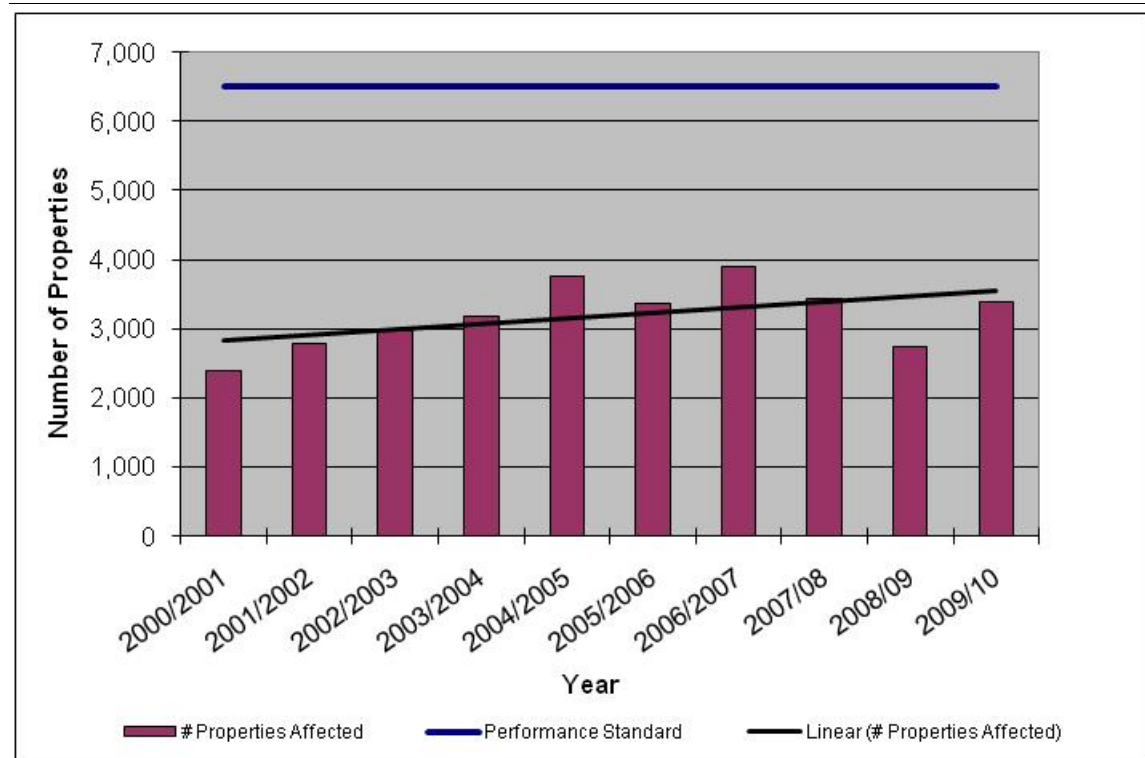
### Reported Compliance and Historical Trend Comparison

Hunter Water recorded 3,388 overflows for 2009/10 compared with 2,740 overflows for 2008/09. Comparison of 2009/10 results with previous performance (Table 6-3 and Figure 6-4) shows a deterioration in performance consistent with the increasing trend experienced between 1999/00 and 2006/07 (bearing in mind the prevailing weather conditions which Hunter Water has indicated is the principal source of the increase over last year). Ongoing monitoring will be required, and it is noted that Hunter Water are currently conducting a research project in to the primary failure causes in an effort to clearly identifying the underlying trend, though given the still significant head-room between performance and the Standard, this is not an urgent task.

**Table 6-3 Sewage Overflows (Historical Comparison)**

Indicator	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Number of uncontrolled sewage overflows (other than public land)	2,381	2,775	2,966	3,190	3,763	3,359	3,895 (excl. storm event)	3,435	2,740	3,388

**Figure 6-3 Sewer Overflows (Historical Comparison)**



## Summary

Hunter Water fully complies with the Standard that the number of uncontrolled sewage overflows (other than public land) does not exceed 6,500.

Since 2000/01, this figure has shown some erratic performance, while some of this is directly attributable to prevailing weather conditions, the underlying trend is negative and needs to be monitored.

## System Performance Indicators

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 6-4 shows the trend in water pressure system performance indicator data for eight years. Where comparable data is unavailable for previous years, the cells have been shaded out.

**Table 6-4 Trend Comparison of Water Pressure System Performance Indicator**

Indicators	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
OL WSR-4A Properties that experienced one or more pressure incident/failure						1,658	1,715	1,715
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.	24	0	0	1	0	0	0	0

### Discussion

There has been no significant change in performance for 2009/10 and this is consistent with the prevailing weather conditions and consequent customer demand load.

### System Performance Indicators - Water Continuity

Table 6-5 shows the trends in the water continuity system performance indicators for eight years. Where comparable data is unavailable the cells have a grey tone. Of particular note is that, as with 2007/08 and 2008/09, no major trunk main outages or other events causing an interruption affecting more than 250 properties for in excess of 5 hours in 2009/10. There has been another notable increase in properties per

event for planned interruptions (though a stabilisation of those affected by unplanned events) and in the number of properties affected by multiple planned interruptions, though those affected by multiple unplanned interruptions has dropped.

**Table 6-5 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
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
	>1 hour but ≤ 5 hours	12,502	9,741	8,738	9,224	7,571	6,897	10,809	12,027
	>5 hours but ≤ 12 hours	2,452	2,485	2,902	1,137	376	623	972	586
	>12 hours but ≤ 24 hours	0	9	0	0	0	0	0	0
	>24 hours	52	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
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
	>1 hour but ≤ 5 hours	52,514	51,222	55,943	55,078	50,086	35,563	42,955	41,479
	>5 hours but ≤ 12 hours	4,500	8,911	4,353	5,713	8,386	1,494	2,045	2,226
	>12 hours but ≤ 24 hours	80	19	70	22	2,844	197	425	8
	>24 hours	31	0	3	6	66	15	191	2
	Total interruptions	80,128	77,180	81,543	80,503	79,980	49,673	60,437	57,071
OL WSR-2 (A) Total Number of Properties affected by multiple Water Planned interruptions.	2 interruptions						858	1,356	1,717
	3 interruptions						26	331	132
	4 interruptions						0	0	0
	5 or more interruptions						0	0	0
	Total properties affected by multiple interruptions of any number						884	1,687	1,849
OL WSR-2 (B)	2 interruptions						5,580	7,032	8,423



Indicators	Indicator Parameters	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Total Number of Properties affected by multiple Water Unplanned interruptions	3 interruptions						1,938	2,647	1,451
	4 interruptions						195	1,129	574
	5 or more interruptions						207	757	257
	Total properties affected by multiple interruptions of any number						7,920	11,565	10,705
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
	3 interruptions	5,056	4,760	4,566	4,999	3,315	1,964	2,978	1,583
	4 interruptions	1,985	1,804	1,532	2,178	1,505	195	1,129	574
	5 or more interruptions	1,661	1,202	584	939	641	207	757	257
	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
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
OL WSR-3 (formally Clause 1.2.4) Detail of events where 250 or more Properties were affected in a single event by either a Planned or an Unplanned water interruption either of which is longer than 5 hrs.	Number of planned events	0	3	1	0	0	0	0	0
	Total number of properties affected by planned events	0	1,017	252	0	0	0	0	0
	Weighted average outage time for properties affected by planned events (hrs/property)	0	5.57	6.80	0	0	0	0	0
	Number of unplanned events (incl. 2007 storm event in brackets)	3	3	2	4	4	0	0	0

(8)

Indicators	Indicator Parameters	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
(Presented by auditor as summary statistics)	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
	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
NWI-C10	Average duration of unplanned interruptions (minutes)						117.8	121	118.6
NWI-C12	Supply interruption frequency (minutes per 1000 properties)						225	272	255

### System Performance Indicators - Sewage Overflows

Table 6-6 shows the trends in sewage overflow system performance indicator data for eight years. Where comparable data is unavailable the cells are blocked out.

#### Discussion

Subject to any underlying trends as previously discussed, the performance reported for sewerage system performance and operation is considered to be in general alignment with the prevailing weather conditions as noted by Hunter Water and the choke and breakage rates reported.

**Table 6-6 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
OL SSR-1A Number of uncontrolled sewage overflows (dry weather)	Public						602	618	846
	Private						1,292	1,148	1585
	Total						1,894	1,766	2,431
OL SSR-1B Number of uncontrolled sewage overflows (wet weather)	Public						63	38	15
	Private						85	29	13
	Total						148	67	28
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
	(b) blockage in branch pipe	1,506	1,706	1,993	1,977	2,028	1,825	1,485	1,782
	(c) Third party damage;	2	1	0	1	1	4	0	5
	An event other than one described in (a), (b) or (c)	13	12	16	23	23	29	19	17
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
	> 1 hour	133	164	302	321	504	265	200	312

Indicators	Indicator Parameters	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
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 hours	659	701	990	810	1,462	790	642	718
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
	wet weather.	9	14	55	17	129	74	40	15
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
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
NWI-C11 Average break/choke repair time – sewerage (hr)							2.38	2.30	

Indicators	Indicator Parameters	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
NWI-E10 Sewer overflows to the environment (per 100km of main)							43		

## Discussion with Field Supervisor

Hunter Water's ability to meet its licence obligations is dependent on the performance of its field crews. These crews require clear guidance as to the business's expectations and obligations and an appropriate performance management framework. As part of this year's audit, the auditor interviewed an experienced field supervisor to gain an understanding of Hunter Water's processes and practices in this regard.

Hunter Water's senior management are complemented on their approach to ensuring they are engaged with their field crews, in the general information and training provided and opportunities for feedback and consultation.

The discussion did, however, identify two points for improvement. These are:

- The dissemination of information in a usable form.***  
 There is an over-reliance on utilisation of email and other 'informal' communication modes for delivery of information critical to the field crews understanding their responsibilities. The auditor agrees with the interviewee that the lack of a consolidated operations or maintenance manual clearly identifying responsibilities, performance targets and processes and procedures is an issue that needs to be addressed. There is too much reliance on email and other disjointed communication methods for conveying information that should be consolidated, easily accessible and user friendly for field staff.
- Skills transfer and data and knowledge management.***  
 There is an over-reliance on the knowledge and skill of experienced staff members. Newer staff members lack access to knowledge bases, instruction manuals and similar resources in carrying out their work activities.

## Recommendations

### Key Recommendations

It is recommended that Hunter Water:

- R4.1 Implement an appropriate continuous improvement and quality assurance management strategy.
- R4.2 Develop appropriate knowledge and information management processes and practices for ensuring field staff and management alike

can effectively and efficiently fulfil their responsibilities. These processes and practices should be developed within the context of a quality assurance framework.

**Secondary Recommendations**

It is further recommended that Hunter Water:

- SR4.3            Make their investigation report on sewerage system overflows available to IPART for consideration at the next audit.

## Table of Detailed Audit Findings

Table 6-7 Licence Part 4 – Infrastructure Performance

Clause	Requirement	Risk	Target for Compliance	Compliance Rating	Findings
4.1	Water Pressure Standard				
4.1.1 - 4.1.3				SoC	
4.2	Water Continuity Standard				
4.2.1 - 4.2.2				SoC	
4.3	Sewage Overflows Standard				
4.3.1				SoC	
4.4	Compliance with System Performance Standards				
	Hunter Water must comply with the Standard...(as amended)				As part of its audit of Hunter Water compliance with the System Performance Standards, the auditor interviewed a field supervisor with 20 years experience. The field supervisor outlined some of the processes and practices with respect to field work and implementing regulatory, licence and performance improvement changes. While communication links between staff and senior management are excellent from an interpersonal and informal point of view, and technical training is also of high quality, written documentation is very poor. The organisation also relies extensively on informal modes such as toolbox talks and email. It relies on personal knowledge and capability rather than documented processes and practices.

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Clause	Requirement	Risk	Target for Compliance	Compliance Rating	Findings
4.4.1	Hunter Water must comply with the Water Pressure Standard... (as amended).	High: as poor pressure can: <ul style="list-style-type: none"> <li>• Pose a public health hazard</li> <li>• Damage customer property</li> <li>• Pose loss of amenity to domestic customers</li> <li>• Disrupt industrial and commercial customer operations</li> <li>• Pose a public health risk for customers dependant on a secure water supply, such as dialysis and other medical activities</li> <li>• Lead to claims for compensation</li> <li>• Damage customer's water dependant machinery and equipment</li> <li>• Increase fire hazard due to inability of fire services to extract sufficient water</li> <li>• Limit site development or building location/size options for developers or other builders of structures</li> <li>• Cause customer dissatisfaction.</li> </ul>	Less than 4 800 properties experience less than 20m water pressure	<b>Full Compliance</b>	<p>Hunter Water reported 1,657 properties that experienced one or more water pressure incidents below 20 metres head at the point of connection of the Property to Hunter Water's main. This figure is similar to the number affected over the last three licence periods.</p> <p>Information was presented on the basis for the determination of the actual number of low pressure failures.</p> <p>The reported number of customers is virtually completely made up of those customers who Hunter Water have identified as having 'permanent' water pressure problems due to 'elevation and/or network capacity issues'. Despite the 'permanency' of these deficiencies, network upgrades/ refurbishments and new works are an ongoing part of Hunter Water's business and a periodic review of these problems is appropriate. It is noted that Sydney Water recognises the 'permanent' lack of appropriate service to these type of customers as an issue that should be dealt with beyond the constraints of licence compliance.</p>



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Clause	Requirement	Risk	Target for Compliance	Compliance Rating	Findings
	Hunter Water must comply with... the Water Continuity Standard.... (as amended).	<p>High: as disruption to customer supply can:</p> <ul style="list-style-type: none"> <li>• Pose a public health hazard</li> <li>• Damage customer property</li> <li>• Pose loss of amenity to domestic customers</li> <li>• Disrupt industrial and commercial customer operations</li> <li>• Pose a public health risk for customers dependant on a secure water supply, such as dialysis and other medical activities</li> <li>• Lead to claims for compensation</li> <li>• Damage customer's water dependant machinery and equipment</li> <li>• Cause customer dissatisfaction.</li> </ul>	Less than 14 000 properties have a cumulative interruption to service of more than 5 hours	<b>Full Compliance</b>	<p>Hunter Water reported 7,163 properties experiencing one or more water interruptions resulting in a cumulative duration of 5 hours or more for 2009/10. A decrease from 2008/09 but still a significant increase on the 5,488 for 2007/08. This is well within the licence standard and an improvement in the 13,133 recorded in 2005/06.</p> <p>There were no major trunk failures or other events disrupting more than 250 customers supply for more than 5 hours.</p> <p>Hunter Water conducted a review of both their 2008/09 and 2009/10 data to address an issue raised by the auditor (both this year and last year) with respect to the increase in the unit numbers of properties affected per outage event. This identified an increased number of planned outages of pump station supply mains and normally shut boundary valves (which affected a larger number of customers per event than a simple main outage) as being the source of the changed results.</p> <p>Since this data is available and is targeted at improving performance, there is an issue with Hunter Water not actually doing anything with it other than reporting it and providing somewhat generic commentary.</p>
					<p>Hunter provided information on its trunk main condition monitoring program, its association with industry research projects, examples of main failures and associated data and analysis and the analysis of planned outage events. Discussed resourcing utilising base staff supplemented by contractors.</p>

Clause	Requirement	Risk	Target for Compliance	Compliance Rating	Findings
	Hunter Water must comply with... the Sewage Overflow Standard... (as amended).	High: as the discharge of raw sewage onto customer property can: <ul style="list-style-type: none"> <li>• Pose a public health hazard</li> <li>• Damage customer property</li> <li>• Create unnecessary cleanup costs</li> <li>• Lead to claims for compensation</li> <li>• Cause customer dissatisfaction</li> </ul>	Less than 6 500 properties experience a sewage overflow	<b>Full Compliance</b>	<p>There were 3,388 uncontrolled sewage overflows onto private property (other than on public land) in 2009/10. This compares to 2 740 in 2008/09 and equivalent to that achieved for the 2007/08 reporting period (3,435). The 2006/07 result was 4,158.</p> <p>Hunter Water has attributed this year's deterioration to lower soil moisture content tied to El Nino variations.</p> <p>Hunter are in the process of researching and analysing the primary causes of dry weather overflows – report is due this year and to be made available at next year's audit.</p>
	Hunter Water must comply with... other standard as required by the Minister.			<b>NR</b>	No other standards specified
<b>4.5</b>	<b>Reporting on System Performance Standards</b>				
<b>4.5.1–4.5.4</b>				<b>SoC</b>	
<b>4.6</b>	<b>Review of System Performance Standards</b>				
4.6.1 - 4.6.4				<b>NR</b>	
4.6.5				<b>SoC</b>	
<b>4.7</b>	<b>Service Quality and System Performance Indicators</b>				

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Clause	Requirement	Risk	Target for Compliance	Compliance Rating	Findings
4.7.1 - 4.7.5				SoC	
<b>4.8</b>	<b>Assets Management (AM) Obligation</b>				
4.8.1(a)				SoC	
4.8.1 (b)-(c)				SoC	
<b>4.9</b>	<b>Reporting on the Asset Management Plan</b>				
4.9.1				NR	
4.9.2				SoC	
<b>4.10</b>	<b>Auditing the Asset Management Plan</b>				
4.10.1 – 4.10.5				NR	



## **7 Licence Part 5 – Customer and Consumer Rights**

### **Summary of Requirements**

Part 5 of the Operating Licence requires Hunter Water to satisfy the rights of both consumers and customers in its provision of water and wastewater services.

For the purpose of the risk-based Audit, **t-cAM's** detailed audit included clauses under:

Code of Practice and procedure on debt and disconnection

### **Customer and Consumer Rights – Compliance**

Overall, Hunter Water exhibited **Full Compliance** on auditable Clauses over 2009/10.

Compliance and supporting commentary for specific Clauses in Part 5, Customer and Consumer Rights, are outlined in Table 5-1.

### **Factors Affecting Compliance**

No external factors substantially impacted on Hunter Water's ability to comply with the requirements of this Licence Part.

### **Discussion**

Hunter Water has significantly improved its communication to customers of how they can find out about their options with respect to obtaining assistance in paying their bills. None-the-less, there is a further improvement that can be quickly and efficiently made.

### **Recommendations**

#### **Key Recommendations**

There are no key recommendations for this section

#### **Secondary Recommendations**

It is recommended that Hunter Water:

- SR5.1            Incorporate within its bills, directly under the invoiced amount, information directing customers who are in need of assistance to the website and customer service telephone number.

## Table of Detailed Audit Findings

Table 7-1 Licence Part 5 – Customer and Consumer Rights

Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
<b>5.1</b>	<b>Customer Contract</b>				
<b>5.1.1-5.1.10</b>				<b>SoC/ NR</b>	
<b>5.2</b>	<b>Consumers</b>				
<b>5.2.1</b>				<b>SoC</b>	
<b>5.3</b>	<b>Code of practice and procedure on debt and disconnection</b>				
<b>5.3.1</b>				<b>SoC</b>	
<b>5.3.2</b>	<p>The Code of Practice and Procedure on Debt and Disconnection must provide for:</p> <p>(a) a deferred payment or payment by instalment options for bills; and</p> <p>(b) the payment options referred to in (a) are to be advised in bills.</p>	As for 5.3.1	<p>Required options are available and the customer and consumer is fully informed of procedures (from their perspective) options, responsibilities and</p>	<b>Full Compliance</b>	<p>Hunter Water provided an example of its new bill layout and of communication of the layout to the customer consultation committee.</p> <p>While the new bill includes communication of how customers can obtain information on options for customer assistance, this is still not as effective as it could be. A review of the bill identified that this information could be inserted in the bill directly under the payment amount as part of the printing process (since other information was inserted this way). It is recommended that this be done.</p>

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Clause	Requirement	Risk	Target for Full Compliance	Compliance Rating	Findings
consequences.					
5.3.3				SoC	
5.3.4				SoC	
5.4	Consultative Forum				
5.4.1 – 5.4.8				SoC/NR	
5.5	Customer service indicators				
5.5.1 - 5.5.3				SoC/ NR	
5.5.4				SoC	
5.5.5 - 5.5.6				NR	





## **8 Licence Part 7 – Environment –Catchment Report**

### **Summary of Requirements**

Part 7 of the Operating Licence requires Hunter Water to report its environmental performance against a series of '*performance indicators*', *prepare a Five Year Environmental Management Plan* and prepare a *Catchment Report* setting out its catchment management performance.

For the purpose of the risk-based Audit, **t-cAM's** detailed audit included clauses under:

Catchment Report

### **Catchment Report – Compliance**

**Full and High Compliance** was assessed for Hunter Water's performance against Clauses 7.3.1 and 7.3.2 subjected to auditing in 2009/10.

Compliance and supporting commentary for individual Clauses in Part 7, Catchment Report, are outlined in Table 8-1.

### **Factors Affecting Compliance**

There are no substantive factors that have impacted on Hunter Water's performance against Part 7 of the Licence in 2009/10.

### **Discussion**

Over 2009/10 Hunter Water:

- revised their approach to the Catchment Report template and structure, in accordance with recommendations and findings from the 2008/09 audit
- prepared a Catchment Management Plan, endorsed by the General Manager (System Strategy and Sustainability) and released in July 2010
- trialled the Catchment Decision Support System (CDSS) developed by the Sydney Catchment Authority in Hunter Water's Grahamstown Dam catchment.

These achievements have allowed Hunter Water to better understand their catchment risks and to prioritise activities for catchment improvement. This contributes to funding priority.

However, significant further opportunities for improvement were identified as outlined in the detailed findings and addressed in the recommendations.

The requirement for compliance with the Dam Safety Act 1978 within this Licence Part (Clause 7.3.1 (b)) is somewhat at odds with the nature of the other requirements of the Licence Part. Dam Safety is an infrastructure/asset management issue as distinct from the environmental and catchment management issues which are the main focus of the Licence Part. From a technical perspective, management and auditing of this issue therefore requires a different skill set and knowledge base. This year, therefore, t-cAM included an infrastructure/asset management auditor in the audit of this Licence Part. It is believed that this is the first audit of Hunter Water that has considered this licence Clause from this perspective.

## **Recommendations**

### **Key Recommendations**

It is recommended that Hunter Water:

- R7.1 Implement the following improvements by 30 June 2011, with respect to the Catchment Management Plan and associated documents:
  - (a) Seek input, feedback and discussion opportunities with other catchment authorities to benchmark their Catchment Management Plan and document this process.
  - (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).
  - (c) Link the Catchment Management Plan and CDSS with relevant risk assessment, corrective action, incident management and continual improvement procedures of Hunter Water
  - (d) Document and implement an appropriate periodic review process.
- 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.
- R7.3 NOW protocol – develop a mutually agreed protocol with regard to compliance notification and categorisation by 30 June 2011.
- 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.
- R7.5 Improve management, operating, monitoring, actioning and reporting on (dam) asset management issues, including:
  - (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.
  - (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 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 in a project scoping exercise by 28 February 2011.
  - (c) Re-design of condition monitoring checklists.
  - (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

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- under a mutual exchange of services arrangement.
- (e) Development of asset management plans for dams.

With the exception of (b) and (e), all these improvements should be completed, and reported on, by 1 September 2011. In the case of R7.5 (b) the project scoping phase should be completed by 30 March 2011, and in the case of R7.5 (e), an interim plan, utilising currently available information, should be prepared within this timeframe and a full asset management plan completed for audit in 2012.

- R7.6 Dam Safety – Incorporate appropriate knowledge management, continuous improvement and quality assurance processes in operating, monitoring, actioning and reporting on dam safety.

### Secondary Recommendations

It is further recommended that Hunter Water:

- SR7.1 Catchments as assets – consider that Hunter Water as a corporation endorse that catchments are assets, including them on corporate asset registers.
- SR7.2 Catchment Management Plan to the Catchment Report – determine how the Catchment Management Plan and associated activities and Action Plan will be referenced into the Catchment Report.

## Table of Detailed Audit Findings

**Table 8-1 Licence Part 7 – Environment Indicators and Management**

Clause	Requirement	Risk	Target for compliance	Compliance Rating	Findings
<b>7.3</b>	<b>Catchment Report</b>				
<b>7.3.1</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> <p>(a) details of activities conducted by Hunter Water under the Hunter Water Corporation Limited (Special Areas) Regulation 2003, and approvals under the Water Act 1912 and the Water Management Act 2000, Water Sharing Plans and any other relevant land or water management activities carried out jointly with other authorities or landholders together with a comparison</p>	<p>Moderate: if HWC failed to report then community confidence will be lost and HWC's 'environmental' (sustainability) outcomes will not be achieved.</p>	<p>Ensure 1st September report: is received on time;</p> <p>provides the performance information against the indicators described in Clause 7.3.1 (a)-(c) and in the manner described (for example, subclauses (i)-(ii));</p> <p>includes the costs, nominated at 7.3.1 (a) (i)</p>	<b>High Compliance</b>	<p>The Catchment Report for 2009/10 was uploaded to the Hunter Water web site on 02/09/2010 at 2.30pm, as evidenced in a web log provided. This is one day later than that required by the Clause. It was noted by an audit review of the Hunter Water web site on 03/09/2010 at 11.15am that the report could not be recovered and it is not clear the underlying cause of this finding. The auditor does not consider this one-off issue warrants attention in this audit period, but if repeat events occur, these should be addressed appropriately in future audits.</p> <p>It was noted during the audit interview that the Board does not approve the Catchment Report prior to release, although General Managers provide endorsement after a significant review process, reflected in TRIM records.</p> <p>The activities undertaken in the 2009/10 year are provided in the Catchment Report, and in accordance with the Hunter Water Corporation Limited (Special Areas) Regulation 2003 (Section 4), and approvals under the Water Act 1912 and the Water Management Act 2000 (Section 5), Water Sharing Plans (Section 6) and any other relevant land or water management activities. Hunter Water's performance against the Water Management Licence and the Dam Safety Act 1978 is also noted in the Catchment Report (Section 7).</p>

Clause	Requirement	Risk	Target for compliance	Compliance Rating	Findings
	<p>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>		and (ii).		<p>The activities undertaken during 2009/10 are compared to those proposed (Table 3.1), in the Catchment Report including a report against actual and budgeted expenditure. An estimate of the cost for the 2010/11 year on catchment related activities is also provided (Table 3.1). Details of the specific activities are provided throughout Section 4 to 7 of the Catchment Report in accordance with the defined statutory instrument. This is a clear and concise format that is readily evidenced.</p> <p>Two significant tasks undertaken in the 2009/10 year included the preparation of a Catchment Management Plan and trialling a Catchment Decision Support System (CDSS), developed by the Sydney Catchment Authority, in the Grahamstown dam catchment. The CDSS enables the qualitative risk-based assessment of the catchment to be more quantitative where applied. This is a positive step for Hunter Water and will enable effective prioritisation of future activities as it is implemented across all Hunter Water catchments.</p> <p>Other key activities undertaken in the 2009/10 year included bushfire management, illegal access control, installation of new catchment signage, Medowie Floodplain Management Plan, park maintenance, weed control, algae nutrient and sediment nutrient sources review, and the installation of an automatic water sampler on Campervale Canal.</p> <p>Two notification reports were issued to the NSW Office of Water (NOW) during 2009/10 (Section 7.1.2). One was conferred as a minor non-compliance, the other a potential non-compliance. This is conferred by the NOW to Hunter Water. During audit interview, and in follow-up</p>

Clause	Requirement	Risk	Target for compliance	Compliance Rating	Findings
					evidence, it was difficult to assess the systematic approach to the management of these non-compliance's in Hunter Waters corporate approach. It also seems that there is no clear protocol regarding compliance or otherwise with the NOW. It was difficult to ascertain the corrective action pathway or that continual improvement was operating for the notifications.
<b>7.3.1</b>	(b) details of Hunter Water's performance against the Water Management Licence and the Dam Safety Act 1978; and	High:  Dam failures, while usually of low probability, are quite frequently of high or extreme consequence. It is noted that Hunter Water recognises the risk posed by its dams as a significant Corporate risk.	Demonstration of Compliance with referenced Licence and Act	<b>High Compliance</b>	<p>Clause 7.3.1 (b) of the licence requires that the Catchment Report set out details of Hunter Water's performance against the Water Management Licence and the <i>Dam Safety Act 1978</i>;</p> <p>The Dam Safety Committee has provided IPART with verbal advice that they consider that Hunter Water complies with the requirements of the Dam Safety Act 1978.</p> <p>While Hunter Water has demonstrated sufficient capability and application in many critical areas of Dam Safety Management during the audit, there are gaps in applying that capability that need to be addressed. In summary, the auditor is of the opinion that Hunter Water needs to apply a more systematic approach to addressing managing such a facility at an operational level.</p> <p>Initial information provided: Five yearly Dam Safety Inspection Report and example of monitoring checklists were provided at interview. Hunter Water described participation on the NSW Dam Safety Committee. Additional information requested included Operation &amp; Maintenance manuals, Asset Management Plans, Work Instructions, Risk analysis involving failure modes and causes, demonstration of documented actions arising from</p>

Clause	Requirement	Risk	Target for compliance	Compliance Rating	Findings
					<p>identified issues in monitoring regime. Some of this documentation was provided.</p> <p>Hunter Water has a pool of experienced field operatives and engineers trained in dam safety management and has itemised (and scheduled) within the five yearly review reports, and supporting documentation, a list of investigative projects that prudently address key dam safety engineering issues.</p> <p>However, the following issues were identified as needing attention:</p> <ul style="list-style-type: none"> <li> <b>Maintenance Management</b> <p>The dam inspection checklists provided to the dam operators for daily and weekly checks were inconsistent, contradictory and incomplete. Identification and notification procedures (by phone) are poorly documented and logged.</p> <p>Though the consequences of this deficiency are currently mitigated by the training, experience and skill of the current operators. The auditor believes it is important to document critical monitoring activities in an appropriate manner – particularly as these are designed to give early warning of potential failure of the dam in sufficient time for remedial actions to be undertaken or emergency procedures enacted. The difference in the time involved in identifying the need to take, and then undertaking, remedial actions, even one as simple as drawing down the level of water in the dam, relative to the length of time that an actual dam failure can take to</p> </li> </ul>

Clause	Requirement	Risk	Target for compliance	Compliance Rating	Findings
					<p>occur are significant, and clearly articulated records are critical. These records would also be critical in any post-event reviews and enquiries.</p> <p>The auditor, having recently reviewed the records and evidence provided by the electricity utilities to the Royal Commission into the recent Victorian Bushfires, is also of the opinion that these checklists do not reflect what the auditor perceives to be Hunter Water's conscientious monitoring of their facilities.</p> <ul style="list-style-type: none"> <li> <b>Security and Minor Maintenance</b> <p>Despite the previous comment of conscientious monitoring against checklists with respect to the condition of Hunter Water's dams, one Work order/ communication provided demonstrated a breakdown of security barriers at Chichester Dam. Regardless of the site being 'manned 7 days a week', it is clear from the content of the communication that there was an accumulation of failures: lack of signage, access to dam operating infrastructure was not secured, including gates actually left open, lack of security patrols, lack of contractor training/supervision/ and/or instructions requirements. The auditor is also considers it appropriate that some assessment be made with respect to the actual capability of some of the security infrastructure to address the full range of possible threat scenarios.</p> <p>The lack of signage is a long term or process</p> </li> </ul>



Clause	Requirement	Risk	Target for compliance	Compliance Rating	Findings
					<p>deficiency and the failure to secure the access road and access to the valve pit and hydro-generator had gone un-noticed at least overnight if not for up to two days. The failure to secure access was attributed to inaction by a contractor. A range of issues are apparent and include: adequate discipline in security patrols; adequate induction or supervision of contractors and/or a deficiency in specification and/or enforcement of security requirements in contracts; understanding of potential threats and suitability of management/response capability.</p> <p>The auditor also notes the lack of maintenance of access tracks, though it is impossible to determine if this issue would hinder access in an emergency from the information provided.</p> <p>These are a combination of one-off and systematic issues in basic maintenance and security process and procedure. Either way, they give an indication that opportunities for improvement exist. While it is fair to claim that a determined individual or group would most likely not be deterred by activities such as security patrols, closing and securing common type access gates and provision of appropriate signage, these do deter opportunistic intrusion, and act as a deterrent by demonstrating a level of vigilance and prudence.</p> <ul style="list-style-type: none"> <li> <b>Risk Analysis &amp; Management</b> <p>Risk register data indicated no failure mode analysis. While the risk register notes dam failure as a high level risk, and the action plans for improvement</p> </li> </ul>

Clause	Requirement	Risk	Target for compliance	Compliance Rating	Findings
					<p>address flood, liquefaction and wind and wave action failures, there is no presentation and consideration of the full range of failure modes (outside actual dam failure or uncontrolled discharge) and causes associated with operating and maintaining a facility of this nature.</p> <ul style="list-style-type: none"> <li> <b>Knowledge Management</b> <p>There are two aspects to this:</p> <ul style="list-style-type: none"> <li> <i>Management and Engineering</i> <p>The auditor's data request required a staff member be called in from Hunter Water Australia to find the information – the fact that fundamental information on asset management, operation and maintenance of the dam, as requested, was not easily accessible and discoverable without reference to a single individual who was working at Hunter Water Australia (a wholly owned subsidiary of Hunter Water Corporation) at the time, indicates a potential increase or heightening of risk. Especially if duties associated with consulting for Hunter Water Australia resulted in the said individual being inaccessible due to travel.</p> </li> <li> <i>Field Operations</i> <p>The auditor found far too great a dependence on individual staff members' knowledge. While Hunter Water has rightly pointed out the high level of training and expertise of their staff, the issue here is that there is too much reliance on these individual's skill and knowledge. In the short term this leads to</p> </li> </ul> </li> </ul>

Clause	Requirement	Risk	Target for compliance	Compliance Rating	Findings
					<p>critical dependence, in the long term it has the potential to lead to a loss of knowledge and skill to the business.</p> <p>It is acknowledged that Hunter Water is initiating action to address knowledge management in the organisation by appointment of a knowledge management/resilience officer.</p> <ul style="list-style-type: none"> <li> <b>Integrated Asset Management</b>            No asset management plans were provided as requested. Dams are Hunter Water's longest life assets and, while relatively passive in nature relative to a complex dynamic asset such as a treatment plant, are subject to failure modes that require regular ongoing monitoring in order to minimise likelihood and allow timely implementation of either remedial actions or (emergency) response plans. Operations and Maintenance manuals were of low quality and had not been reviewed/updated in some time.         </li> </ul> <p>Without an integration of Asset Management, risk planning and quality assurance processes and practices, potential issues, defects and problems potentially go unaddressed.</p> <ul style="list-style-type: none"> <li> <b>Quality Assurance and Continuous Improvement</b>            The five yearly Dam Safety inspections did not include an independent auditor. The auditor considers that the full benefits available from this detailed and critical review process are not derived from a self-evaluation of performance, but from the         </li> </ul>

Clause	Requirement	Risk	Target for compliance	Compliance Rating	Findings
					<p>inclusion of an independent assessment. This is generally part of a good quality management and continuous improvement framework. This could easily be achieved by attendance of a dam 'expert' from another organisation at such inspections. The auditor recommends that at future inspections, a member of the NSW Dam Safety Committee be invited to participate. The opportunities for process and practice improvement from the input of alternative views are well documented and understood.</p> <ul style="list-style-type: none"> <li> <b>Regulatory Management</b>  It was identified during the discovery and investigation activities undertaken that there was not a full understanding by all concerned (IPART, Hunter Water, etc) as to the delineation of regulatory responsibilities and requirements, and while some progress in clarification has been made, further work is required. </li> </ul> <p>In reviewing the documentation provided, the responses to questions at interview, and Hunter Water's elucidation on issues presented by the auditor in the drafts of this report, a High Compliance was awarded, i.e. 'The major requirements of the condition have been met.'  Hunter Water need to adopt a more systematic and holistic approach to dam facility management.</p>

Clause	Requirement	Risk	Target for compliance	Compliance Rating	Findings
	(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.			<b>Full Compliance</b>	Hunter Water has documented ongoing expenditure for 2010/11 for numerous catchment management activities in undertaking activities in accordance with 7.3.1(a).
					<p>The Catchment Management Plan was endorsed for internal use by the General Manager System Strategy and Sustainability in July 2010. Part 1 and 2 provide an introduction to the document and Hunter Waters drinking water catchments. The Plan applies an eight element approach (Part 3) to strategic planning, in accordance with the ADWG (2004).</p> <p>Part 4 details an action plan that is noted to be 'live' and continually updated. It was noted that the Catchment Management Plan is to be reviewed periodically, but during audit evidence and audit interview, this review process and timeframe was not clearly known or documented.</p> <p>It is not clear from the audit evidence or audit interview how the Catchment Management Plan links with the catchment risk-based assessment, the CDSS, the Catchment Report, or other risk-based assessment and continual improvement activities.</p> <p>The Catchment Management Plan is not endorsed by the Board. It is however comprehensive, readily understood and well templated. The Action Plan provided in Part 4 is comprehensive and clearly links to the eight elements as</p>

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Clause	Requirement	Risk	Target for compliance	Compliance Rating	Findings
					<p>well as risk-based priorities. The associated timeline and budget estimate is clear and concise.</p> <p>It is not clear how the Catchment Management Plan will be incorporated into the Catchment Report in later years.</p>
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.	Low: if HWC did not make information available then community confidence will progressively diminish.	Distribution of Report incorporates required options.	Full Compliance	Copies of the 2009/10 Catchment Report are publicly displayed on HWC's website for downloading free of any charges. It is available at HWC's offices for access or collection by any member of the public, also free of charge. It is also held in the Public Library for loan and referral.

## **9 Licence Part 9 – Managing Supply and Demand**

### **Summary of Requirements**

Part 9 of the Operating Licence requires Hunter Water to manage and report on its water conservation activities, demand management strategy, water demand and provide annual reporting of supporting indicators.

For the purpose of the risk-based Audit, **t-cAM's** detailed audit included clauses under:

Integrated Water Resource Plan (IWRP)

Security of Supply.

### **Managing Supply and Demand – Compliance**

**Full Compliance** has been assessed for the majority of Clauses in this Part. With a minority being assigned **High** and **Moderate Compliance**.

Compliance for specific Clauses in Part 9, Managing Supply and Demand of the Licence, are outlined in Table 9-1.

### **Factors Affecting Compliance**

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

### **Discussion**

Hunter Water completed its new Integrated Water Resources Plan, called the *H<sub>2</sub>50 Plan*, in December 2008, and has defined what it sees as the supply and demand options for the next 50 years within this Plan.

A number of the Plan's components were advanced over the audit year, including: the Environmental Impact Assessment report for the Tillegra Dam; a Water Recycling Strategy; and support programs (for example, the Kooragang Island projects which doubles the quantity of water recycling in the lower Hunter).

This is the second report cycle for Hunter Water against its Integrated Water Resource Plan (the H<sub>2</sub>50 Plan) and continues to be a commendable result.

### **Recommendations**

#### **Key Recommendations**

It is recommended that Hunter Water:

- 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

- R9.2 Executive Summary – provide more discussion as to associated targets and how activities have compared to meeting those targets
- 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
- R9.4 Adopt a more disciplined quality assured approach to generation of data.

**Secondary Recommendations**

There are no secondary recommendations for this Licence Part.



## Table of Detailed Audit Findings

Table 9-1 Licence Part 9 – Managing Supply and Demand

Clause	Requirement	Risk	Target for Compliance	Compliance Rating	Findings
<b>9.1</b>	<b>Water Conservation Target</b>				
<b>9.1.1 – 9.1.3</b>				<b>SoC</b>	
<b>9.2</b>	<b>Demand Management Strategy</b>				
<b>9.2.1 – 9.2.6</b>				<b>SoC</b>	
<b>9.2.7</b>				<b>NR</b>	
<b>9.2.8</b>				<b>SoC</b>	
<b>9.2.9 – 9.2.17</b>				<b>SoC</b>	
<b>9.2.18</b>	Annual Reporting on the Integrated Water Resources Plan –Hunter Water must report to IPART by no later than 1 September each year on its performance against the Integrated Water Resources Plan	Moderate	Report provided and complete	<b>High Compliance</b>	<p>Hunter Water provided its <i>Annual Operating Licence Report H<sub>2</sub>O Plan (Report on Performance against Integrated Water Resources Plan 2008-09)</i> by the 1<sup>st</sup> September 2010. The report is comprehensive, clear and concise in the information it presents and in its format.</p> <p>Recommendations from the 2008/09 audit report were generally incorporated into the 2009/10 report.</p> <p>Noted highlights achieved from Hunter Water activities are summarised in the Executive Summary. It was not clear however in the Executive Summary how these tracked compared to targets and requirements.</p>

Clause	Requirement	Risk	Target for Compliance	Compliance Rating	Findings
					<p>Table E1 presents a summary of activities, the annual expenditure and estimated yield against each activity for 2008/09 and 2009/10. It seems the estimated yield columns are not sufficiently or accurately completed given comments during the audit interview, and the lack of supporting evidence that could be provided in a timely manner. There is little information provided in the Report, nor in requested evidence, regarding the difference in actual to budgeted expenditure, apparent for many activities (for example Tillegra Dam, Balickera pump station upgrade, other recycled water development).</p> <p>Although these budget and expenditure changes may be appropriate, it is not well documented nor can it be traced to an approval process for change. It is therefore not clear how decisions regarding changes to the budget and expenditure are managed, and if these are associated and linked with the risk assessment and continual improvement processes of Hunter Water. The impacts on yield and meeting targets from these changes is also not clearly identified.</p> <p>The Executive Summary and Table E1 would benefit from provided: the estimated yield, comparison to targets, brief comment regarding significant budget to expenditure changes, ensuring the table header row is located on each page.</p> <p>It was noted that page 8 referred to Clause 9.2.8 and should be 9.2.18.</p>

Clause	Requirement	Risk	Target for Compliance	Compliance Rating	Findings
<b>9.3</b>	<b>Water Demand and Supply Indicators: Security of Supply</b>				
<b>9.3.1</b>				<b>NR</b>	
<b>9.3.2</b>	Hunter Water must report on the nature and length of each Water restriction imposed in a Reporting period and whether (based on information reasonably available to Hunter Water) it is likely to impose a Water restriction in the ensuing Reporting period or at any other time during this Licence.	Low. IPART un-informed	Report provided, Analysis quantifies relevant factors using information reasonably available and using suitable practices, information and methodologies	<b>Full Compliance</b>	No restrictions occurred and there is no likely imposition of restrictions. The auditor considers that Hunter Water's analysis of the reasons for concluding that restrictions will not be necessary during the life of this Licence are reasonable and appropriate.
<b>9.3.3</b>	Hunter Water must report on the criteria it applies in determining whether to request that the Minister authorise a Water restriction.	Medium. IPART and Minister un-informed	Report provided	<b>Full Compliance</b>	Hunter Water provided a copy of its (Board approved) Restriction Policy and criteria and a comparative report
<b>9.3.4</b>	Hunter Water must report on the quantity of water (in megalitres) supplied from each water storage.	Low. IPART un-informed	Report provided	<b>Moderate Compliance</b>	Hunter Water provided information from the master meters of the various storages under its control. The volumes supplied were presented in a spreadsheet form. The spreadsheet was the same one used for NWI reporting and contained errors in construction that were flagged by the auditee, it also lacked identification of values to be reported, headings and instructions to a level that would inspire confidence that the correct data was being reported. A more disciplined quality assurance process is required.

Clause	Requirement	Risk	Target for Compliance	Compliance Rating	Findings
<b>9.3</b>	<b>Water Demand and Supply Indicators: Losses from the Water System</b>				
<b>9.3.5</b>	Hunter Water must report against each of the components in the Water Balance Table	Medium. Less opportunity for pre-empting adverse trends	Report provided	<b>Full Compliance</b>	Hunter Water provided its Water Balance calculation table, examples of its validation and calibration processes and a description of its methodology for calculating the various components. It is noted that Hunter Water utilises the industry best appropriate practice Benchloss approach to calculate its water balance.
<b>9.3.6</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	Medium. Less opportunity for pre-empting adverse trends	Report provided and analysis sound	<b>Full Compliance</b>	Hunter Water conducts extensive data collection and monitors and reports changes in its IWRP Annual Report (p39).
<b>9.3</b>	<b>Water Demand and Supply Indicators: Recycled Water</b>				
<b>9.3.7</b>	<p>Hunter Water must report on the quantity of Recycled water (in megalitres) supplied in a Reporting period for the following applications:</p> <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. IPART un-informed, overall monitoring of strategy implementation hindered.	Report provided	<b>Full Compliance</b>	Hunter Water provided a breakdown of the quantity of recycled water supplied for the various customer uses. It also provided detailed information on the 'indirect' recycling of water, i.e. Where Hunter Water discharges to local creeks and the downstream consumers extract this water according to their entitlements. Given the background and available information on how this indirect recycling is conducted and calculated, the auditor agrees with Hunter Water's approach and methodology.
<b>9.3</b>	<b>Water Demand and Supply Indicators: Demand Management</b>				
<b>9.3.8</b>	Hunter Water must report on the total quantity of water (in	Low. IPART un-informed,	Report provided	<b>Full Compliance</b>	Hunter Water provided a breakdown of the total water consumed by the various customer types.

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Clause	Requirement	Risk	Target for Compliance	Compliance Rating	Findings
	<p>megalitres) 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>overall monitoring of strategy implementation hindered.</p>			
9.3.9	<p>In its report, Hunter Water must compare each application in 9.3.8, with the corresponding application in the immediately preceding Reporting period, 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> <ul style="list-style-type: none"> <li>• Growth in the Customer base;</li> <li>• Climatic impact;</li> <li>• The nature or extent of consumption of Recycled water; or</li> <li>• Demand management initiatives.</li> </ul>	<p>Medium. Less opportunity for pre-empting adverse trends</p>	<p>Report provided and analysis sound</p>	<p><b>Full Compliance</b></p>	<p>Hunter Water conducts extensive data collection and monitors and reports changes in its IWRP Annual Report</p>
9.4	<b>Annual Reporting on Water Demand and Supply Indicators</b>				
9.4.1 – 9.4.2				SoC	



**Appendix A    Historical Performance Comparison**

## Performance Comparison for period 2003/04 to 2009/10

We have reviewed Hunter Water's performance in meeting its Licence Obligations over the period 2003/04 to 2009/10. In considering how to most usefully present this data a number of issues were identified:

- Licence's are upgraded every five years, this includes removal, addition and changes to Clauses.
- The Licence Parts and/or Clauses audited in any specific year change, therefore trends in performance over time against specific Parts or Clauses is unavailable or, when combined with the five yearly modifications, make such data unreliable or meaningless.
- While variations in auditing practice and reporting can vary between auditors, IPART and the agency provide some 'leveling' or consistency over time.
- The number of Clauses to be audited is substantial and information requires summarising to provide meaningful and comprehensible outputs.
- The reporting by auditors over the years, and between subject matter experts reporting against particular Licence Parts in any year, varied between rating of compliance against Clauses, sub-clauses and, on occasion, dot points in Clauses – there is no ready means to categorise the finer reporting against the courser reporting.

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

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

**Figure A-1 HWC Aggregate Compliance against Licence – Alternative View**

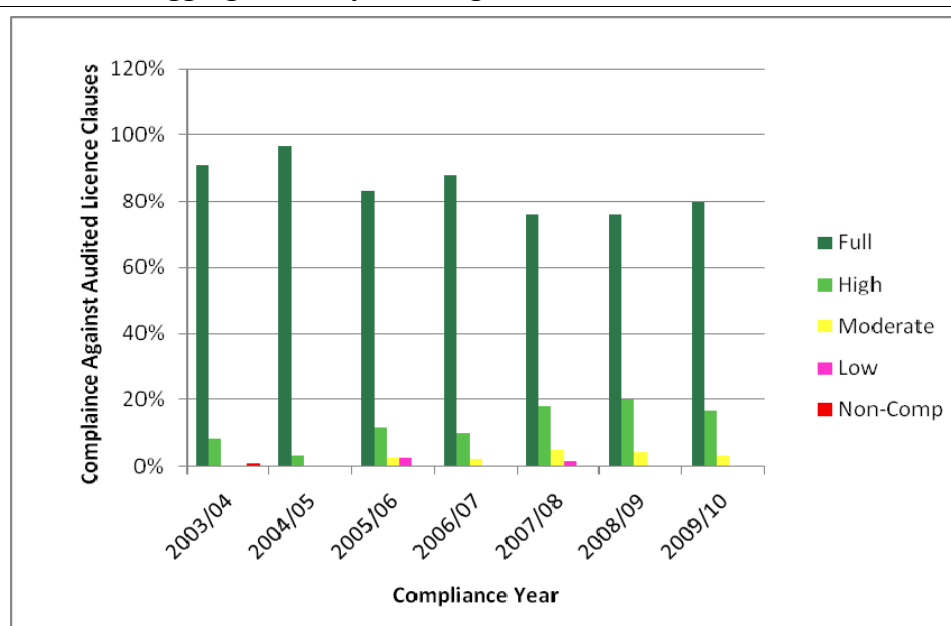
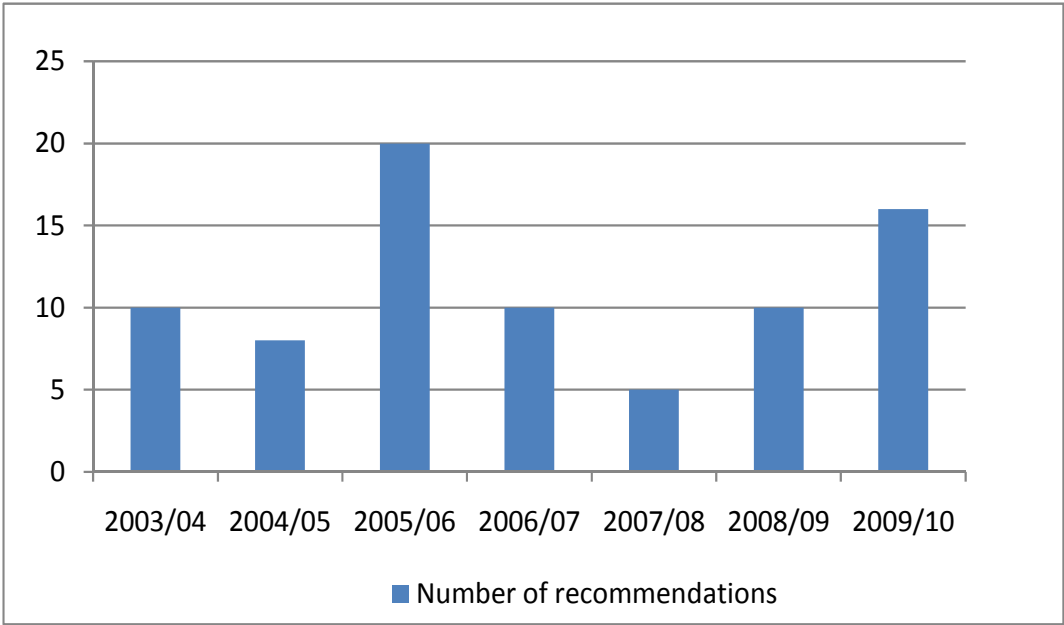




Figure A-2      HWC - Number of Recommendations made in any Licence Year





**Appendix B    Audit Scope**

## Audit Scope for Hunter Water Corporation's Operational Audit in 2009/10

(Extracted from IPART Operational Audits of Sydney Water, Hunter Water, SCA and State Water RFT for 2009, Attachment 1 Audit Scope for Water Utilities)

S of C self-audit by Hunter Water, where a Statement of Compliance signed by the Chief Executive and the Chairman of the Board of Hunter Water is submitted to IPART as evidence, clause is not subject to independent audit this year.

NR signifies No Requirement to audit.

Licence Clause	Operating Licence Section Title	Scope	COMMENT
<b>3.1</b>	<b>Drinking Water Quality – Planning</b>		
3.1.1		S of C	<b>Prior notice of No Change</b> Prior to commencement of the audit, HWC is to advise any changes. This clause only needs to be audited if circumstances have changed, otherwise Statement of Compliance. The requirement relates to the preparation of a plan, and is not relate directly to water quality.
3.1.2		NR	
3.1.3		S of C	<b>Prior notice of No Change</b> The 5 year plan was audited in 07/08. Prior to commencement of the audit, HWC is to advise any changes and confirm that the two plans are current and that any required updates of procedures have been carried out. This clause only needs to be audited if circumstances have changed, otherwise Statement of Compliance.
3.1.4		Audit	
<b>3.2</b>	<b>Drinking Water Quality – Standards</b>		
3.2.1		Audit	NSW Health has again requested a detailed audit and that the audit should include chlorine residual in distribution network, especially at extremes.
3.2.2		Audit	Audit only for exceptions where HWC did not comply with Health Guideline Values.
<b>3.3</b>	<b>Drinking Water Quality – Monitoring</b>		
3.3.1		Audit	NSW Health has requested that the audit should include a check of Chlorine residual in distribution network, especially at extremes. High compliance at the 2008/09 audit related to minor issues – not getting report to Health on time.
3.3.2		Audit	This is a requirement to do the monitoring. High risk but monitoring doesn't change greatly from year to year. Monitoring results are audited every year under clause 3.4.1 High compliance at the 2008/09 audit related to minor discrepancy between planned and actual samples.

Licence Clause	Operating Licence Section Title	Scope	COMMENT
3.3.3		S of C	<b>Prior notice of No Change</b> The 5 year plan was audited in 07/08. Prior to commencement of the audit, HWC is to advise any changes and confirm that the two plans are current and that any required updates of procedures have been carried out. This clause only needs to be audited if circumstances have changed, otherwise Statement of Compliance.
3.3.4		S of C	Requirement is to provide IPART with the report from 3.3.1. Content of report is audited at 3.3.1
3.3.5		S of C	<b>Prior notice of No Change</b> Prior to commencement of the audit, HWC is to advise any areas of disagreement. This clause only needs to be audited if circumstances have changed, otherwise Statement of Compliance.
<b>3.4</b>	<b>Drinking Water Quality – Reporting</b>		
3.4.1		Audit	NSW Health has requested this clause be included in the audit.
3.4.2		Audit	
3.4.3		S of C	Requirement to provide IPART with the report from 3.4.2. Content of report is audited at 3.4.2.
3.4.4		Audit	
<b>3.5</b>	<b>Drinking Water - Incident Management</b>		
3.5.1		Audit	2009/10 Audit should consider 2008/09 audit recommendation about tightening definition of multiple customer complaints in “Table 1 – Water Quality – Criteria for Potential Public Health Issues requiring notification to NSW Health” in the MOU.
3.5.2		Audit	Audit to check that the plan has been maintained with reference to current contacts.
3.5.3		S of C	Requirement to have the plan is at 3.5.2 and has been audited.
3.5.4		S of C	<b>Prior notice of No Change</b> Prior to commencement of the audit, HWC is to advise if a new plan has been developed. This clause only needs to be audited if new plan has been developed.
<b>3.6</b>	<b>Waste Water and Recycling Operations</b>		
3.6.1		S of C	General requirement to adopt risk based approach.
3.6.2		Audit	The plan has not been completed with respect to subsequent work, and its development is a major task because it relates to a number of facilities. Audit every year until it has been finalised.
3.6.3		Audit	Component of the plan in 3.6.2.
3.6.4		Audit	Public health incident reporting should be audited every year.
<b>3.7</b>	<b>Other grades of water</b>		
3.7.1		Audit	
3.7.2		NR	
3.7.3		S of C	<b>Prior notice of No Change</b> Prior to commencement of the audit, HWC is to advise if any conflict exists. This clause only needs to be audited if conflict exists.

Licence Clause	Operating Licence Section Title	Scope	COMMENT
3.7.4		S of C	
3.7.5		S of C	
<b>3.8</b>	<b>Environmental water quality</b>		
3.8.1		S of C	Hunter Water is to verify that the report provided is complete.
<b>4</b>	<b>Infrastructure Performance</b>		
4.1		S of C	<b>Prior notice of No Change</b> Prior to commencement of the audit, HWC needs to provide a Statement of Compliance confirming that the assumptions and/or decisions made in applying the definitions in 4.1, 4.2 and 4.3 has not changed. Changes notified will allow appropriate audit criteria to be incorporated in 4.5.3 audits.
4.2		S of C	As per 4.1
4.3		S of C	As per 4.1
<b>4.4</b>	<b>Compliance with system performance standards</b>	Audit	Requirement to comply with SPS Audit to consider recommendation from the 2008/09 audit.
<b>4.5</b>	<b>Reporting on system performance standards</b>		
4.5.1		S of C	Report to IPART. Requirement to comply with standards is at 4.4. Hunter Water is to verify that the report provided is complete.
4.5.2		S of C	Requirement is to provide IPART with the report, results are in September 1 Report to IPART. Hunter Water is to verify that the report provided is complete.
4.5.3		S of C	<b>Prior notice of No Change</b> Prior to commencement of the audit, HWC needs to confirm that there has been no change to System Performance Standards record system. IPART will need to audit if changes have been made. Audit in 2010/11 takes account of changes to System Performance Standards to apply in 2010/11
4.5.4		S of C	Statement of Compliance needs to confirm that HWC will provide IPART with access to relevant records. Hunter Water is to verify that the information provided is complete.
<b>4.6</b>	<b>Review of system performance standards</b>		
4.6.1		NR	Requirement for IPART
4.6.2		NR	Requirement for IPART
4.6.3		NR	Requirement for IPART
4.6.4		S of C	Audit in 2010/11 after amendment to the standards.
4.6.5		S of C	This clause is important if HWC had not cooperated with IPART during the SPS review. Statement of Compliance will certify that HWC did cooperate fully during the SPS review.
<b>4.7</b>	<b>Service quality and system performance indicators</b>		

Licence Clause	Operating Licence Section Title	Scope	COMMENT
4.7.1		S of C	IPART can simply verify that this has been done, audit is really addressed under 4.7.2 and 4.7.4
4.7.2		S of C	<b>Prior notice of No Change</b> Prior to commencement of the audit, HWC needs to confirm that there has been no change in the way HWC manages its record systems relevant to this clause. IPART will need to audit if changes have been made.
4.7.3		S of C	IPART involvement, so reduced need to audit.
4.7.4		S of C	<b>Prior notice of No Change</b> Prior to commencement of the audit, HWC needs to confirm that there has been no change in the way HWC undertakes its analysis of systemic problems relevant to this clause. IPART will need to audit if changes have been made.
4.7.5		S of C	This clause is important if HWC has not cooperated with IPART in reporting the service quality and system performance indicators. Statement of Compliance will certify that HWC did cooperate fully in supplying data for these indicators.
<b>4.8</b>	<b>Asset management obligation</b>		
		S of C	Clause 4.8(a) requires that HWC maintain its capacity to meet licence obligations into the future. This means that the overall long-term AM strategy should be maintained and not subject to minor operational changes without context. This is relevant to the audit opinion about future compliance and for the auditor to verify that the AM system incorporates service targets that are consistent with licence requirements.
<b>4.9</b>	<b>Reporting on the asset management plan</b>		
4.9.1		NR	
4.9.2		S of C	Audit program calls for one audit to verify that the AM plan as submitted for pricing determination is being implemented as proposed.  After the full compliance at the 2008/09 audit. Statement of Compliance to verify that the AM plan is being implemented as proposed and that the recommendations from the 2008/09 audit have been addressed.
<b>4.10</b>	<b>Auditing the Asset Management Plan</b>		
4.10.1		NR	
4.10.2		NR	
4.10.3		NR	
4.10.4		NR	
4.10.5		NR	
<b>5.1</b>	<b>Customer Contract</b>		
5.1.1		NR	Definition
5.1.2		NR	Definition
5.1.3		NR	Definition
5.1.4		S of C	
5.1.5		NR	Requirement for IPART

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<b>Licence Clause</b>	<b>Operating Licence Section Title</b>	<b>Scope</b>	<b>COMMENT</b>
5.1.6		NR	Requirement for IPART
5.1.7		S of C	Audit only after the review
5.1.8		S of C	Audit only after the review
5.1.9		S of C	Audit only after the review
5.1.10		NR	Definition
<b>5.2</b>	<b>Consumers</b>		
5.2.1		S of C	
5.2.2		S of C	
<b>5.3</b>	<b>Code of practice and procedure on debt and disconnection</b>		
5.3.1		S of C	High compliance for minor web link omission Statement of Compliance is to include verification that the issue raised in the 2008/09 audit has been addressed.
5.3.2		Audit	2008/09 audit identified that insufficient advice about payment options was provided to customers with bills and in the Code of Practice on Debt and Disconnection. This warrants a second audit in 2009/10
5.3.3		S of C	
5.3.4		S of C	
<b>5.4</b>	<b>Consultative Forum</b>		
5.4.1		S of C	
5.4.2		S of C	
5.4.3		S of C	
5.4.4		S of C	
5.4.5		S of C	
5.4.6		S of C	
5.4.7		S of C	
5.4.8		NR	Requirement for IPART
<b>5.5</b>	<b>Customer Service Indicators (CSI)</b>		
5.5.1		S of C	
5.5.2		S of C	Hunter Water is to verify that the record systems are complete.
5.5.3		NR	
5.5.4		S of C	Auditor noted substantial improvement in the 2008/09 audit. High compliance was for minor formatting issues. Hunter Water is to verify that the information provided is complete.
5.5.5		NR	
5.5.6		S of C	This clause is important if HWC has not cooperated with IPART in reporting the service quality and system performance indicators. Statement of Compliance will certify that HWC did cooperate fully in supplying data for these indicators.
<b>6.1</b>	<b>Internal Dispute Resolution Process</b>		
6.1.1		S of C	
6.1.2		S of C	
6.1.3		S of C	



Licence Clause	Operating Licence Section Title	Scope	COMMENT
6.1.4		S of C	
6.1.5		S of C	
6.1.6		S of C	
<b>6.2</b>	<b>External dispute resolution scheme</b>		
6.2.1		S of C	
6.2.2		S of C	
6.2.3		S of C	
6.2.4		S of C	
6.2.5		S of C	Hunter Water is to verify that the report provided is complete.
6.2.6		S of C	Hunter Water is to verify that the report provided is complete.
6.2.7		S of C	
<b>6.3</b>	<b>Complaints to other bodies</b>		
6.3.1		S of C	
6.3.2		S of C	
6.3.3		S of C	Hunter Water is to verify that the reports provided is complete.
<b>7.1</b>	<b>Environmental Performance Indicators</b>		
7.1.1		S of C	
7.1.2		S of C	Hunter Water is to verify that the information provided is complete.
7.1.3		NR	
7.1.4		S of C	
7.1.5		S of C	Hunter Water is to verify that the information provided is complete.
7.1.6		S of C	2008/09 audit was to follow-up on poor performance in 2007/08. Auditor noted substantial improvement in the 2008/09 audit. High compliance was for minor reporting issues.
7.1.7		S of C	
<b>7.2</b>	<b>Environmental Management</b>		
7.2.1		S of C	
7.2.2		S of C	
7.2.3		S of C	
7.2.4		S of C	
7.2.5		S of C	
7.2.6		S of C	
7.2.7		S of C	
<b>7.3</b>	<b>Catchment Report</b>		
7.3.1		Audit	A key audit area, however performance has improved. High performance was due to some minor issues Audit to consider recommendation from the 2008/09 audit
7.3.2		Audit	Audit at the same time as clause 7.3.1
<b>8</b>	<b>Pricing</b>		
8.1.1		S of C	IPART to confirm with Pricing Team

Licence Clause	Operating Licence Section Title	Scope	COMMENT
<b>9.1</b>	<b>Water Conservation Target</b>		
9.1.1		S of C	
9.1.2		S of C	
9.1.3		S of C	Audit is triggered by a change in the Target
<b>9.2</b>	<b>The Integrated Water Resources Plan (IWRC)</b>		
9.2.1		S of C	
9.2.2		S of C	
9.2.3		S of C	
9.2.4		S of C	
9.2.5		S of C	
9.2.6		S of C	
9.2.7		NR	Requirement on IPART
9.2.8		S of C	
9.2.9		S of C	
9.2.10		S of C	
9.2.11		S of C	
9.2.12		S of C	
9.2.13		S of C	Moderate compliance reflected the need for a more comprehensive options analysis. Full Tribunal recommended that Hunter Water attend to this comment in any future development or revision of the Integrated Water Resources Plan.
9.2.14		S of C	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		S of C	Moderate compliance reflected the need for a more comprehensive sensitivity analysis. Full Tribunal recommended that Hunter Water attend to this comment in any future development or revision of the Integrated Water Resources Plan.
9.2.16		S of C	Moderate compliance reflected matters discussed above in 9.2.13 – 9.2.15.
9.2.17		S of C	This clause applies to the End of Term Review.
9.2.18		Audit	
<b>9.3</b>	<b>Security of Supply</b>		
9.3.1		NR	
9.3.2		Audit	
9.3.3		Audit	Audit is triggered if a water restriction is requested
9.3.4		Audit	
9.3.5		Audit	
9.3.6		Audit	
9.3.7		Audit	
9.3.8		Audit	
9.3.9		Audit	

Licence Clause	Operating Licence Section Title	Scope	COMMENT
<b>9.4</b>	<b>Annual Reporting on Water demand and supply indicators</b>		
9.4.1		S of C	Performance is audited under clauses 9.3.1 to 9.3.9 Hunter Water is to verify that the information provided is complete.
9.4.2		S of C	
<b>11.2</b>	<b>Damage and compensation to persons</b>		
		S of C	
<b>11.3</b>	<b>Competitive neutrality</b>		
11.3.1		S of C	

## B Hunter Water Corporation 2010 Risk-based Audit Scope

Clause	Hunter Water Corporation Operating Licence	2009/10 Audit Scope
<b>3</b>	<b>Water Quality</b>	
3.1	Drinking Water Quality – Planning	Audit (Clause 3.1.4)
3.2	Drinking Water Quality – Standards	Audit (Clauses 3.2.1 and 3.2.2)
3.3	Water Quality – Monitoring	Audit (Clauses 3.3.1 and 3.3.2)
3.4	Water Quality – Reporting	Audit (Clauses 3.4.1, 3.4.2 and 3.4.4)
3.5	Water – Incident Management Plan	Audit (Clauses 3.5.1 and 3.5.2)
3.6	Waste Water and Recycling Operations	Audit (Clauses 3.6.2, 3.6.3 and 3.6.4)
3.7	Other grades of water	Audit (Clause 3.7.1)
<b>4</b>	<b>Infrastructure Performance</b>	
4.4	Compliance with System Performance Standards	Audit (Clause 4.4.1)
<b>5</b>	<b>Customer and Consumer Rights</b>	
5.3	Code of practice and procedure on debt and disconnection	Audit (Clause 5.3.2)
<b>7</b>	<b>Environment – Indicators and management</b>	
7.3	Catchment Report	Audit (Clauses 7.3.1 and 7.3.2)
<b>9</b>	<b>Managing Supply and Demand</b>	
9.2	Demand management strategy	Audit (Clause 9.2.18)
9.3	Water demand and supply indicators	Audit (Clauses 9.3.2 to 9.3.9)



## C | Hunter Water Corporation Statement of Compliance



# Annual Compliance Report

for 2009 /10

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 2009/10 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 2009/10.

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 *[insert date]*.

Signed:

K Young

Name:

Managing Director

Title:

Signed:

J Eather

Name:

Relieving Chairman

Title:

Date: 29 October 2010

Date: 29 October 2010



**Schedule A: Licence obligations for Hunter Water Corporation not audited in 2009/10**

*[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	Audit or SC 2009/10	Compliance  Yes/No
<b>Drinking Water Quality – Planning</b>	<b>3.1</b>		
	3.1.1	SC	Yes
	3.1.3	SC	Yes
<b>Drinking Water Quality – Monitoring</b>	<b>3.3</b>		
	3.3.3	SC	Yes
	3.3.4	SC	Yes
	3.3.5	SC	Yes
<b>Drinking Water Quality – Reporting</b>	<b>3.4</b>		
	3.4.3	SC	Yes
<b>Drinking Water - Incident Management</b>	<b>3.5</b>		
	3.5.3	SC	Yes
	3.5.4	SC	Yes
<b>Waste Water and Recycling Operations</b>	<b>3.6</b>		
	3.6.1	SC	Yes
<b>Other grades of water</b>	<b>3.7</b>		
	3.7.3	SC	Yes
	3.7.4	SC	Yes
	3.7.5	SC	Yes
<b>Environmental water quality</b>	<b>3.8</b>		
	3.8.1	SC	Yes
<b>System Performance Standards</b>			
<b>Water Pressure Standard</b>	<b>4.1</b>	SC	Yes
<b>Water Continuity Standard</b>	<b>4.2</b>	SC	Yes
<b>Sewage Overflows on Private Property Standard</b>	<b>4.3</b>	SC	Yes

Operating Licence Section Title	Licence Clause	Audit or SC 2009/10	Compliance Yes/No
<b>Reporting on system performance standards</b>	<b>4.5</b>		
	4.5.1	SC	Yes
	4.5.2	SC	Yes
	4.5.3	SC	Yes
	4.5.4	SC	Yes
<b>Review of system performance standards</b>	<b>4.6</b>		
	4.6.4	SC	Yes
	4.6.5	SC	Yes
<b>Service quality and system performance indicators</b>	<b>4.7</b>		
	4.7.1	SC	Yes
	4.7.2	SC	Yes
	4.7.3	SC	Yes
	4.7.4	SC	Yes
	4.7.5	SC	Yes
<b>Asset management obligation</b>	<b>4.8</b>	SC	Yes
<b>Reporting on the asset management plan</b>	<b>4.9</b>		
	4.9.2	SC	Yes
<b>Customer Contract</b>	<b>5.1</b>		
	5.1.4	SC	Yes
	5.1.7	SC	Yes
	5.1.8	SC	Yes
	5.1.9	SC	Yes
<b>Consumers</b>	<b>5.2</b>		
	5.2.1	SC	Yes
	5.2.2	SC	Yes
<b>Code of practice and procedure on debt and disconnection</b>	<b>5.3</b>		
	5.3.1	SC	Yes
	5.3.3	SC	Yes
	5.3.4	SC	Yes
<b>Consultative Forum</b>	<b>5.4</b>		
	5.4.1	SC	Yes
	5.4.2	SC	Yes
	5.4.3	SC	Yes
	5.4.4	SC	Yes
	5.4.5	SC	Yes
	5.4.6	SC	Yes



Operating Licence Section Title	Licence Clause	Audit or SC 2009/10	Compliance  Yes/No
	5.4.7	SC	Yes
<b>Customer Service Indicators (CSI)</b>	<b>5.5</b>		
	5.5.1	SC	Yes
	5.5.2	SC	Yes
	5.5.4	SC	Yes
	5.5.6	SC	Yes
<b>Internal Dispute Resolution Process</b>	<b>6.1</b>		
	6.1.1	SC	Yes
	6.1.2	SC	Yes
	6.1.3	SC	Yes
	6.1.4	SC	Yes
	6.1.5	SC	Yes
	6.1.6	SC	Yes
<b>External dispute resolution scheme</b>	<b>6.2</b>		
	6.2.1	SC	Yes
	6.2.2	SC	Yes
	6.2.3	SC	Yes
	6.2.4	SC	Yes
	6.2.5	SC	Yes
	6.2.6	SC	Yes
	6.2.7	SC	Yes
<b>Complaints to other bodies</b>	<b>6.3</b>		
	6.3.1	SC	Yes
	6.3.2	SC	Yes
	6.3.3	SC	Yes
<b>Environmental Performance Indicators</b>	<b>7.1</b>		
	7.1.1	SC	Yes
	7.1.2	SC	Yes
	7.1.4	SC	Yes
	7.1.5	SC	Yes
	7.1.6	SC	Yes
	7.1.7	SC	Yes
<b>Environmental Management</b>	<b>7.2</b>		
	7.2.1	SC	Yes
	7.2.2	SC	Yes
	7.2.3	SC	Yes
	7.2.4	SC	Yes

Operating Licence Section Title	Licence Clause	Audit or SC 2009/10	Compliance  Yes/No
	7.2.5	SC	Yes
	7.2.6	SC	Yes
	7.2.7	SC	Yes
<b>Pricing</b>	<b>8</b>		
	8.1.1	SC	Yes
<b>Water Conservation Target</b>	<b>9.1</b>		
	9.1.1	SC	Yes
	9.1.2	SC	Yes
	9.1.3	SC	Yes
<b>The Integrated Water Resources Plan (IWRC)</b>	<b>9.2</b>		
	9.2.1	SC	Yes
	9.2.2	SC	Yes
	9.2.3	SC	Yes
	9.2.4	SC	Yes
	9.2.5	SC	Yes
	9.2.6	SC	Yes
	9.2.8	SC	Yes
	9.2.9	SC	Yes
	9.2.10	SC	Yes
	9.2.11	SC	Yes
	9.2.12	SC	Yes
	9.2.13	SC	Yes
	9.2.14	SC	Yes
	9.2.15	SC	Yes
	9.2.16	SC	Yes
	9.2.17	SC	Yes
<b>Annual Reporting on Water demand and supply indicators</b>	<b>9.4</b>		
	9.4.1	SC	Yes
	9.4.2	SC	Yes
<b>Liability Issues</b>	<b>11</b>		
Damage and compensation to persons	11.2	SC	Yes
Competitive neutrality	11.3.1	SC	Yes
<b>What the audit is to Report on</b>	<b>12.2</b>		
MOU	12.2.1 (b)	SC	Yes

**Schedule B: Non-Compliances for Hunter Water Corporation's licence obligations not audited in 2009/10**

*[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.]*

<b>Licence clause</b>	<b>Obligation</b>	<b>Description of non-compliance</b>
<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>NIL</b>	

**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.]*

<b>Licence clause</b>	<b>Obligation</b>	<b>Description of emerging issue</b>
<i>List licence clauses</i>	<i>List obligations including a brief description of each obligation</i>	<ul style="list-style-type: none"><li>➤ <i>Describe the issue</i></li><li>➤ <i>Explain how the issue could affect compliance in the future with licence clause</i></li><li>➤ <i>Outline how the issue is being managed</i></li><li>➤ <i>Explain any impedance to management.</i></li></ul>
	<b>NIL</b>	