

Steve Hall

From: GOLLAND, TIMOTHY <TIMOTHY.GOLLAND@sydneywater.com.au>
Sent: Tuesday, 28 January 2014 9:28 AM
To: Steve Hall
Cc: BENNETT, KATRINA; Terry Leckie
Subject: Discovery Point - drinking water servicing

Steve,

Sydney Water confirms that drinking water services to Discovery Point will be provided by Flow Systems and/or Sydney Water.

Customers will have the choice, but irrespective of this the entire development will be serviced.

Regards,

Tim Golland | **A/ Manager Business Customer Services**

Business Customer Services | Sydney Water

1 Smith Street Parramatta NSW 2124

T 8849 4303

M 0408 256 470

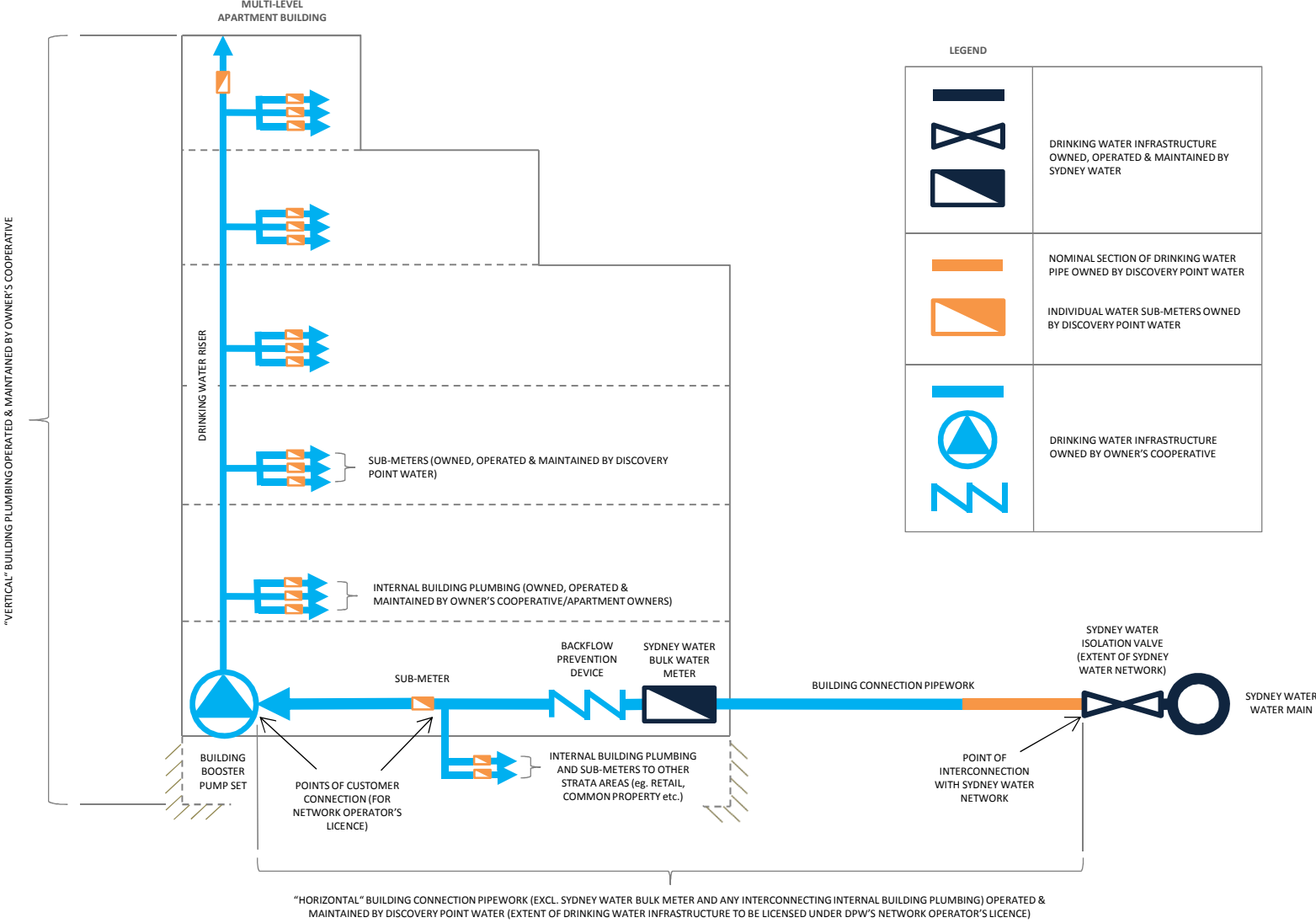
timothy.golland@sydneywater.com.au | sydneywater.com.au

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DRINKING WATER INFRASTRUCTURE – OWNERSHIP & RESPONSIBILITY SCHEMATIC





Cobbitty Consulting
Engineering and Advisory Services

New Infrastructure Audit

Audit Report

Central Park Water Factory Pty Ltd

Independent Pricing and Regulatory Tribunal
Water Industry Competition Act 2006

Network Operator's Licence Audit Report
(Follow-up Audit to the 2012 audit of the regulated management plans)

Licence No. 12_022: Central Park Water Factory Pty Ltd
(also known as the Central Park Scheme)

Licence Holder: Central Park Water Factory Company Pty Ltd (ACN 151 072 838)

This document is a final version (Version 2), submitted to the Licence Holder 14th November 2013

1. Executive Summary

This report presents the findings of an audit undertaken for the Independent Pricing and Regulatory Tribunal (IPART) under the *Water Industry Competition Act 2006*.

The subject matter of the audit was the infrastructure that is operated under network operator's licence No. 12_022 for the water services at Central Park operated by the licence holder Central Park Water Factory Company Pty Ltd.

The scope of the audit was a new infrastructure audit. An associated Licence Plan audit is reported separately alongside this new infrastructure audit report.

The auditors were provided with sufficient and appropriate evidence, as described in *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines (July 2013)*, on which to base the conclusions reached during the audit.

The auditors have observed the requirements of the *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines (July 2013)* and the audit deed in conducting the audit, determining audit findings and preparing the report.

The audit report findings accurately reflect the professional opinion of the auditors. The findings have not been unduly influenced by the Licence Holder nor any of its associates and expresses the auditors' opinions as to whether the Licence Holder has met the licence conditions and regulatory requirements as specified in the scope.

A summary of the audit findings is given in the following chapters and a detailed breakdown of the full audit findings against the audited criteria is given in the appendix.

The Licence Holder (Central Park Water Factory Company Pty Ltd) was found to be constructing, repairing, maintaining and operating the infrastructure in compliance with all but six of the assessed audit criteria. Insignificant non-compliances were recorded against six criteria. No significant non-compliances were recorded. No opportunities for improvement were identified. The six insignificant non-compliances were as follows:

- Central Park Water has demonstrated that it currently holds the technical and organisational capacity to carry out the activities authorised by the Licence. Furthermore, IPART assessed that it also held the financial capacity to do so at the time the Licence Application was assessed (December 2012). Central Park Water does not, however, have in place procedures for identifying, and reporting to IPART, if it ceases to have the technical, financial and organisational capacity required to carry out the activities authorised by the Licence. See section 3 and Table A1.1 for further details.
- Central Park Water has brought new water and sewerage infrastructure into commercial operation without the written approval of the Minister. This is a technical non-compliance but does not present a significant operational risk since the infrastructure is of a small scale and is of a passive nature. See section 3 and Table A1.2 for further details.
- Central Park Water demonstrated that the infrastructure in service at the time of the Audit has been designed and constructed in accordance with the relevant publicly available standards and codes; it was also assessed that the infrastructure is operated and maintained in accordance with industry practice. Central Park Water does not, however, have in place procedures for identifying changes to publicly available standards or codes, and ensuring that it remains up to date with such standards and codes. See section 3 and Table A1.6 for further details.
- Whilst it is considered that Central Park Water is fully implementing the Infrastructure Operating Plan (as it is currently presented), Central Park Water has also acknowledged that the Plan requires update; this is reflected in its Implementation Plan. Notwithstanding, there is not currently a procedure in place to ensure that the Plan is kept under regular review. See section 3 and Table A1.7 for further details.
- Central Park Water has demonstrated that water meters connected to its water mains comply with the Plumbing Code of Australia. Whilst residential customer meters are not typically maintained or tested other than in response to a customer complaint, it is appropriate that the approach to water meter

maintenance, testing and renewal is documented in an Asset Management Plan; this is yet to be developed by Central Park Water. See section 3 and Table A1.8 for further details.

- Central Park Water and Sydney Water have developed an excellent interim draft Utility Services Agreement. The intent of these clauses is largely met through this agreement. However, at the time of the audit, the agreement was still in draft, interim form. The gaps that are not yet completed within the agreement are highlighted. Central Park Water should complete and finalise the agreement and address all of the relevant criteria identified in the Network Operator Licence. See section 3 and Table A1.17 for further details.

Note that a related Licence Plan audit that was carried out at the same time is reported separately.

In summary, the audited infrastructure complied with the audited requirements of the Regulation and Licence conditions, and was found to be capable of operating safely and in accordance with its Infrastructure Operating Plan, Water Quality Plan (drinking water) and Sewage Management Plan. The licence holder audited (Central Park Water Factory Company Pty Ltd) was found to be operating the infrastructure in compliance with the audit criteria. In the opinion of the auditors, the licence holder can begin commercial operation for the safe and reliable supply of drinking water and the provision of sewerage services. The auditors support IPART in providing a permit to approve the commercial operation of the assets operated under this WICA licence.

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2. Introduction

2.1 Objective

This report presents the findings of an audit undertaken for the Independent Pricing and Regulatory Tribunal (IPART) under the *Water Industry Competition Act 2006*.

The subject matter of the audit was the infrastructure that is operated by under network operator's licence No. 12_022 for the water services at Central Park.

The Licence Holder is *Central Park Water Factory Company Pty Ltd* (ACN 151 072 838) (CPWFC).

The scope of the audit was a new infrastructure audit. A Licence Plan audit was undertaken and is reported separately.

2.2 Licensee's infrastructure, systems and procedures

The Licence Holder's infrastructure, systems and procedures audited were those related to the Central Park Water scheme (centralparkwater.com.au), (the Scheme).

CPWFC is the Licence Holder, holding network operator's licence No. 12_022. CPWFC is responsible for the operation and maintenance of parts of the Central Park potable and recycled water supply and the sewerage network.

Water Factory Company Pty Limited (ABN 28 136 272 298) and Permeate Partners Pty Limited (ABN 54 130 112 257) are 'Authorised Persons' named under this Licence.

2.3 Audit method

Audit scope

This compliance audit covers design, construction, operation, repair and maintenance of the Scheme and addresses the following scope:

- New Infrastructure Audit.

Audit standard

The audit broadly followed the generic principles of auditing given in *ISO 19011:2011 - Guidelines for auditing management systems*. The principal document used to guide the audit was the *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines (July 2013)* (WICA Audit Guideline).

Audits are by necessity limited to sampling processes. It is not practicable, nor necessary, to inspect 100% of items within an audit scope. Auditing forms part of the broader risk management process - providing an independent check on the veracity of the processes and procedures in place to manage risk. Finding a balance between audit effort and practicality requires the exercise of experienced professional judgement. The amount of effort allocated to this audit has been kept to a reasonable minimum level.

The audit was reported in accordance with Appendices of the WICA Audit Guideline. The audit templates given in the IPART Guideline provided the reporting format for the audit as well as providing the detailed audit criteria.

Audit steps

An Audit Plan was submitted to both IPART and the licence holder some weeks prior to the audit taking place. Documentation was supplied by the licence holder to both the auditor and IPART prior to the audit taking place. Desktop auditing took place both prior and post the site audit. A site audit took place on Friday, 18th October 2013, starting with a field, site visit first thing in the morning and completing with a head office desktop audit for the remainder of the day. Evidence was followed up until early November 2013.

The audit process involved seeking objective evidence that the Licence Holder met the audit criteria set by IPART. The auditors collected evidence through interview, document review and site inspection. The auditors randomly sampled examples sufficient to verify claims made by the developer and Licence Holder.

Quality was assured using a professional review process. Each auditor's work was reviewed and approved by the other auditor.

Audit team

For efficiency, the various components of the audit were audited in an integrated manner. This document sets out the detailed audit agenda and audit criteria that were applied. The two-member team that conducted the audits included:

- Overall audit management and reporting and half of the audit: Dr Dan Deere.
- The remaining half of the audit: Mr Jim Sly.
- The audit team notes, and greatly appreciates, the presence of IPART staff member Dr Kaye Power and support and advice from Ms Zoe Moffat as valuable observers and commentators prior to and during the audit.
- The audit team notes, and greatly appreciates, the work and effort put in by those audited, including all CPWFC staff, particularly Andrew Horton.

Audit grades

Audit grades were awarded as recommended in the WICA Audit Guideline.

2.4 Regulatory regime

When auditing the items identified in the letter from IPART to PTWFC dated 28th March 2013, relevant aspects of the following standards and regulations were considered:

- *Water Industry Competition Act 2006 (WICA).*
- *Water Industry Competition (General) Regulation 2008.*
- Network Operator's Licence No. 12_022 signed 4th January 2013 made under the above framework.
- *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines (July 2013)* provided as part of the above framework.
- *Australian Drinking Water Guidelines 2011.*
- Relevant water industry and environmental NSW and national codes of practice and regulations, as applicable.

2.4.1.1 Audit findings

Audit findings are summarised in section 1, Executive Summary, in more detail in section 3, and in full detail in the Appendix.

3. New Infrastructure

3.1 Summary of findings

Central Park Water's compliance with the various relevant provisions of the *Water Industry Competition Act 2006*, the *Water Industry Competition (General) Regulation 2008* and the Network Operators Licence has been assessed as follows:

- *WIC Act s10(4)(a) & s13(2)(a)* and *Network Operator and Retail Supplier Licence cl.B1* – Non-compliant – Insignificant:

Central Park Water has demonstrated that it currently holds the technical and organisational capacity to carry out the activities authorised by the Licence. Furthermore, IPART assessed that it also held the financial capacity to do so at the time the Licence Application was assessed (December 2012).

Central Park Water does not, however, have in place procedures for identifying, and reporting to IPART, if it ceases to have the technical, financial and organisational capacity required to carry out the activities authorised by the Licence. See Table A1.1 for further details.

To be fully compliant, the following needs to be demonstrated: Documentation of procedures for identifying, and reporting to IPART, if Central Park Water ceases to have the technical, financial and organisational capacity to carry out the activities authorised by the Licence.

- *WIC Reg Sched 1 cl.2(1)* – Non-compliant – Insignificant:

Central Park Water has brought new water and sewerage infrastructure into commercial operation without the written approval of the Minister. This is a technical non-compliance but does not present a significant operational risk since the infrastructure is of a small scale and is of a passive nature. See Table A1.2 for further details.

To be fully compliant, the following needs to be demonstrated: Obtain written approval of the Minister to bring the new water and sewerage infrastructure into commercial operation.

- *WIC Reg Sched 1 cl. 3(c)* – Non-compliant – Insignificant:

Central Park Water demonstrated that the infrastructure in service at the time of the Audit has been designed and constructed in accordance with the relevant publicly available standards and codes; it was also assessed that the infrastructure is operated and maintained in accordance with industry practice. Central Park Water does not, however, have in place procedures for identifying changes to publicly available standards or codes, and ensuring that it remains up to date with such standards and codes. See Table A1.6 for further details.

To be fully compliant, the following needs to be demonstrated: Document procedures for identifying changes to publicly available standards or codes, and ensuring that Central Park Water remains up to date with such standards and codes.

- *WIC Reg Sched 1 cl.6(2)(a)* and *WIC Reg Sched 1 cl.13(2)(a)* – Non-compliant – Insignificant:

Whilst it is considered that Central Park Water is fully implementing the Infrastructure Operating Plan (as it is currently presented), Central Park Water has also acknowledged that the Plan requires update; this is reflected in its Implementation Plan. Notwithstanding, there is not currently a procedure in place to ensure that the Plan is kept under regular review. See Table A1.7 for further details.

To be fully compliant, the following needs to be demonstrated: When updating its Infrastructure Operating Plan, Central Park Water documents a procedure to ensure that the plan is kept under regular review.

- *WIC Reg Sched 1 cl.8* – Non-compliant – Insignificant:

Central Park Water has demonstrated that water meters connected to its water mains comply with the Plumbing Code of Australia. Whilst residential customer meters are not typically maintained or tested other than in response to a customer complaint, it is appropriate that the approach to water meter

maintenance, testing and renewal is documented in an Asset Management Plan; this is yet to be developed by Central Park Water. See Table A1.8 for further details.

To be fully compliant, the following needs to be demonstrated: Document procedures for the management of the meter fleet.

- *Network Operator Licence cl. B10.1, B10.2(a) to (h) inclusive, B10.3, B10.5 – Non-compliant – Insignificant:*

Central Park Water and Sydney Water have developed an excellent interim draft Utility Services Agreement. The intent of these clauses is largely met through this agreement. However, at the time of the audit, the agreement was still in draft, interim form. The gaps that are not yet completed within the agreement are highlighted. Central Park Water should complete and finalise the agreement and address all of the relevant criteria identified in the Network Operator Licence. See Table A1.17 for further details.

To be fully compliant, the following needs to be demonstrated: Complete and finalise the (current interim and draft) Utility Services Agreement with Sydney Water and address all of the relevant criteria identified in the Network Operator Licence.

3.2 Review of actions

The Licence Holder has not made suggestions for corrections or clarifications following the issue of the draft report prior to the final report being issued.

3.3 Opportunities for improvement

Nil identified.

Appendix 1 Detailed Audit Findings – New Infrastructure

Table A.1.1 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
WIC Act s10(4)(a) & s13(2)(a) and Network Operator and Retail Supplier Licence cl.B1	The Licensee must have the technical, financial and organisational capacity to carry out the activities authorised by this Licence. If the Licensee ceases to have this capacity, it must report this to IPART immediately in accordance with the Reporting Manual.	Non-compliant Insignificant
Risk	Target for Full Compliance	
This presents a high operational risk. Without the technical, financial and organisational capacity to carry out the activities authorised by the Licence, the Licensee may be unable to meet its obligations under the Licence, specifically the safe and effective delivery of agreed levels of service.	Documentation of procedures for identifying, and reporting to IPART, if Central Park Water ceases to have the technical, financial and organisational capacity to carry out the activities authorised by the Licence.	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>), undated.Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated.Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated.Central Park Water, <i>WFC-GL-Business Continuity Strategy</i> (Document No 115), 11 October 2011 [included as Appendix O to the <i>Infrastructure Operating Plan</i>].		
Summary of reasons for grade		
<p>Central Park Water has demonstrated that it currently holds the technical and organisational capacity to carry out the activities authorised by the Licence. Furthermore, IPART assessed that it also held the financial capacity to do so at the time the Licence Application was assessed (December 2012).</p> <p>Central Park Water does not, however, have in place procedures for identifying, and reporting to IPART, if it ceases to have the technical, financial and organisational capacity required to carry out the activities authorised by the Licence. Given that Central Park Water has acknowledged the need (and has an Implementation Plan) to further develop its documentation, this non-compliance is not considered significant.</p>		
Discussion and notes		
Technical Capacity:		
Operation and maintenance activities required to meet the requirements of the Licence are the responsibility of the Central Park Water Operations Manager, as outlined in the <i>Infrastructure Operating Plan</i> . ¹ Under the Flow Systems organisation structure, ² the Operations function includes		

¹ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated, section 5.4.

responsibility for Facility Operations, Network Operations, Asset Management and Network Operator Licences. The Operations Manager is supported in this role by a second Operator.

Review of curricula vitae³ for Flow Systems operational staff indicates that they are appropriately qualified and experienced for the purposes of operating and maintaining the required infrastructure. This assessment was further validated by Audit discussions with the Central Park Water Operations Manager. Central Park Water engages an appropriately qualified (and licensed),⁴ experienced and resourced contractor to support its maintenance activities.

In its *Business Continuity Strategy*,⁵ Central Park Water identifies key suppliers of technical services as well as alternative suppliers. Whilst these services are not all directly applicable to the infrastructure currently being operated under the Licence, it does demonstrate access to a range of technical support.

Financial Capacity:

The Auditor has not directly assessed this criterion. It is noted, however, that in the process of assessing Central Park Water's Licence Application, IPART assessed that "*IPART considers that CPWF has satisfactorily met this criterion*".⁶

Organisational Capacity:

Flow Systems' organisation structure⁷ shows that Central Park Water has the organisational capacity to carry out the activities authorised by its Licence. In addition to its operation and maintenance capacity (as discussed above), it has capacity in respect of Marketing and Communications; Project Delivery; Retail Services; and Corporate Support.

During the Audit, Central Park Water advised⁸ that recent organisational changes had included:

- employment of a second operator from 1 July 2013; and
- employment of an additional person to hold responsibility for new project delivery, thereby relieving the Operations Manager of this responsibility.

These changes are considered to have improved the Licensee's capacity from both an organisational and technical perspective.

Loss of Capacity:

On the basis of observations made during the Audit, it is apparent that Flow Systems/Central Park Water currently retains the capacity to carry out the activities authorised by the Licence. Accordingly, it has not been necessary to report the contrary to IPART.

Documented procedures for identifying if there is insufficient capacity to carry out the licensed activity and for ensuring that IPART is informed immediately if capacity is not retained were not available for review.

Central Park Water has acknowledged that the *Infrastructure Operating Plan* is to be updated and an Asset Management Plan (and supporting procedures) are yet to be developed; it is expected that procedures for identifying and reporting insufficient capacity to carry out the licensed activity will be included.

² Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, Figure 6.

³ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, Appendix M.

⁴ Licence number of company principal sighted on website.

⁵ Central Park Water, *WFC-GL-Business Continuity Strategy* (Document No 115), 11 October 2011 [included as Appendix O to the *Infrastructure Operating Plan*].

⁶ IPART, Application for a network operator's licence from Central Park Water Factory Pty Ltd; IPART's report to the Minister, December 2012, page 9.

⁷ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, Figure 6.

⁸ Personal comment by Central Park Water personnel.

Table A.1.2 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.2(1)	The licensee must not bring any new water or sewerage infrastructure into commercial operation without the written approval of the Minister.	Non-compliant Insignificant
<hr/>		
Risk	Target for Full Compliance	
This is a technical non-compliance but not a significant operational risk since the infrastructure is of a small scale and is of a passive nature.	Obtain written approval of the Minister to bring the new water and sewerage infrastructure into commercial operation.	
<hr/>		
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>), undated.Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated.Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated.Personal communication with licence holder – Andrew Horton.		
<hr/>		
Summary of reasons for grade		
Central Park Water has brought new water and sewerage infrastructure into commercial operation without the written approval of the Minister. However, this is a technical non-compliance but does not present a significant operational risk since the infrastructure is of a small scale and is of a passive nature.		
<hr/>		
Discussion and notes		
Flow Systems owned a retail licence but owned infrastructure that was operating and, therefore, were then in technical breach as they didn't have a network operator's licence to operate. This appears to have been an innocent oversight due to the very small and passive scale of the infrastructure involved.		
Due to assumptions being made and misunderstandings, the infrastructure has been operating for some months without being approved by the Minister.		
However, although this is a technical non-compliance it does not present a significant operational risk since the infrastructure is of a small scale and is of a passive nature.		

Table A.1.3 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.2(2)(b)	The infrastructure is capable of operating safely.	Compliant
Risk		Target for Full Compliance
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>), undated.Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated.Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated.		
Summary of reasons for grade		
A separate audit of the Licence Plans identified that the infrastructure is capable of operating safely.		
Discussion and notes		

Table A.1.4 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.2(2)(b)	The infrastructure is capable of operating in accordance with its Infrastructure Operating Plan and its Water Quality Plan or Sewage Management Plan, as the case requires.	Compliant
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>), undated.Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated.Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated.		
Summary of reasons for grade		
<p>Central Park Water has demonstrated that the infrastructure in service at the time of the Audit is capable of operating in accordance with the relevant management plan(s) (<i>Infrastructure Operating Plan</i>, <i>Sewage Management Plan</i> and/or <i>Water Quality Plan</i>, as appropriate). Accordingly, it is assessed that Central Park Water is compliant with this requirement. Any non-compliances relating to the management plans themselves are covered under the separately reported Licence Plan audit.</p>		
Discussion and notes		
<p>Operation of the infrastructure is addressed in each of the <i>Infrastructure Operating Plan</i>,⁹ <i>Sewage Management Plan</i>¹⁰ (by reference to the <i>Infrastructure Operating Plan</i>) and <i>Water Quality Plan</i>.¹¹</p> <p>Audit of the provisions of the <i>Infrastructure Operating Plan</i> in respect of the continued safe and reliable performance of the infrastructure led to the assessment that (notwithstanding the need for documentation improvements) Central Park Water is able effectively manage the continued safe and reliable performance of the existing infrastructure. By inference, this also means that the infrastructure that is currently in service is capable of operating in accordance with (the intent of) the <i>Infrastructure Operating Plan</i>.</p> <p>As the <i>Water Quality Plan</i> reflects the provisions of the <i>Infrastructure Operating Plan</i> in respect of operation of the existing infrastructure, it is further assessed that the infrastructure that is currently in service is capable of operating in accordance with the <i>Water Quality Plan</i>.</p> <p>As acknowledged in each of the management plans, update will be required to reflect the more extensive operational requirements associated with the proposed Recycled Water Centre; existing infrastructure comprises a relatively small extent of passive assets (water and sewage pipelines) only.</p>		

⁹ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated, section 5.

¹⁰ Flow Systems, *Central Park Water; Sewage Management Plan* (file: *CPW Sewage Management Plan_FINAL v2*); undated.

¹¹ Flow Systems, *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)* (file: *CPW - Water Quality Plan - DW & RW_V3 compressed*), undated, section 5.

Table A.1.5 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.3(a),(b)	<p>The water or sewerage infrastructure is properly designed and constructed, operated in a safe and reliable manner and maintained in a proper condition, having regard to:</p> <p>(a) the purposes for which it is licensed, and</p> <p>(b) the Licence conditions.</p>	Compliant

Risk	Target for Full Compliance
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Evidence sighted

- Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated.
- Flow Systems, *Central Park Water; Sewage Management Plan* (file: *CPW Sewage Management Plan_FINAL v2*); undated.
- Flow Systems, *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)* (file: *CPW - Water Quality Plan - DW & RW_V3 compressed*), undated.
- Boone and Willard, *Building Component Certification* (several certificates provided) [included as Appendix D to the *Sewage Management Plan*].

Summary of reasons for grade

Central Park Water provided appropriate certification that the infrastructure had been designed and constructed in accordance with the appropriate performance standards. It was also observed that the infrastructure in service at the time of the Audit is being operated in a safe and reliable manner and is being properly maintained. Accordingly, it is assessed that Central Park Water is compliant with this requirement.

Discussion and notes**Design and Construction:**

The *Infrastructure Operating Plan* indicates that infrastructure (both water supply and sewerage) owned and/or operated by Central Park Water was designed and built by other contractors.¹² It further notes that designs were approved by the Office of Fair Trading and Sydney Water, and refers to evidence provided in Appendix D of the *Sewage Management Plan* and Appendix T of the *Water Quality Plan* (it is noted that both Appendices contain the same documentation).

The referenced evidence comprises *Building Component Certification* in respect of Hydraulic Services installed in the following locations at One Central Park:

- West Tower (whole) and Basement Levels (part);¹³
- East Tower (GF and up to Level 28) and Basement Levels (part);¹⁴ and
- Podium Retail (whole) and Basement Levels (part).¹⁵

¹² Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated, section 4.1.2 and section 4.3.2.

¹³ Boone and Willard, *Building Component Certification, Design and Installation Certificate (Stage 5 – West Tower and Basements)*, signed 11 February 2013.

¹⁴ Boone and Willard, *Building Component Certification, Design and Installation Certificate (Stage 6 – East Tower and Basements)*, signed 30 July 2013.

¹⁵ Boone and Willard, *Building Component Certification, Design Installation Certificate – BooneWillard (Stage 4)*, signed 18 July 2013.

Each certificate refers to “*Design Certification from Harris Page & Associates Pty Ltd dated 25 January 2013*”, however, a copy of such certification is not attached or otherwise provided. A web search indicates that Harris Page & Associates Pty Ltd provide engineering design services in respect of building services, which suggests that they are likely to be qualified to undertake this work.

Each certificate identifies the relevant parts of AS/NZS 3500:2003¹⁶ as the Standard of Performance with which the water supply and sewerage hydraulic services comply; reference is also made to the *New South Wales Code of Practice; Plumbing and Drainage*.¹⁷

Whilst, as mentioned above, the *Infrastructure Operating Plan* indicates that infrastructure designs were approved by the Office of Fair Trading and Sydney Water, the evidence provided does not specifically demonstrate this. It is noted, however, the provision of a Certificate of Compliance is consistent with the requirements set out in the *New South Wales Code of Practice; Plumbing and Drainage*.¹⁸ It is therefore considered that the appropriate compliance requirements have been met.

The *Building Component Certification* referenced above addresses both the design and installation of the hydraulic services, including those owned and/or operated by Central Park Water. On this basis, construction of the infrastructure is considered to be compliant with the relevant Standard of Performance.

Inspection of elements of the infrastructure during the Audit revealed that materials and quality of work was of an expected standard.

Operation and Maintenance:

Only passive assets (water and sewage pipelines) were in operation at the time of the audit. Accordingly, minimal operational activity is required and no monitoring is currently undertaken by Central Park Water; there is also minimal requirement for maintenance of the infrastructure.

The *Infrastructure Operating Plan* indicates that Central Park Water will undertake annual visual inspections of the sewer network¹⁹ and six monthly visual inspections of the drinking water reticulation system;²⁰ this is considered appropriate for the existing infrastructure.

Central Park Water advised that maintenance activities (including visual inspections) will be identified in the maintenance scheduling component of the Asset Management System. It also demonstrated that it has appropriate resources available to undertake any required maintenance activities.

On the basis of the site inspection undertaken as part of the Audit, it was assessed that the existing infrastructure is currently operated in a safe and reliable manner and is properly maintained.

¹⁶ Standards Australia, AS/NZS 3500:2003 *Plumbing and Drainage*, (specifically *Part 1 – Water services* and *Part 2 – Sanitary plumbing and drainage*).

¹⁷ Committee on Uniformity of Plumbing and Drainage Regulations in NSW, *New South Wales Code of Practice; Plumbing and Drainage* 1 July 2006.

¹⁸ Committee on Uniformity of Plumbing and Drainage Regulations in NSW, *New South Wales Code of Practice; Plumbing and Drainage* 1 July 2006, part B, clause 1.4(3)(viii).

¹⁹ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated, section 6.2.

²⁰ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated, section 6.4.

Table A.1.6 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl. 3(c)	The water or sewerage infrastructure is properly designed and constructed, operated in a safe and reliable manner and maintained in a proper condition, having regard to any publicly available standards or codes relating to its design, construction, operation and maintenance.	Non-compliant Insignificant

Risk	Target for Full Compliance
This represents high operational risk. Proper design and construction, safe and reliable operation and condition maintenance is essential to the effective (safe and reliable) delivery of agreed levels of service.	Document procedures for identifying changes to publicly available standards or codes, and ensuring that Central Park Water remains up to date with such standards and codes.

Evidence sighted

- Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated.
- Flow Systems, *Central Park Water; Sewage Management Plan* (file: *CPW Sewage Management Plan_FINAL v2*); undated.
- Flow Systems, *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)* (file: *CPW - Water Quality Plan - DW & RW_V3 compressed*), undated.
- Boone and Willard, *Building Component Certification* (several certificates provided) [included as Appendix D to the *Sewage Management Plan*].

Summary of reasons for grade

Central Park Water demonstrated that the infrastructure in service at the time of the Audit has been designed and constructed in accordance with the relevant publicly available standards and codes; it was also assessed that the infrastructure is operated and maintained in accordance with industry practice.

Central Park Water does not, however, have in place procedures for identifying changes to publicly available standards or codes, and ensuring that it remains up to date with such standards and codes. Given that Central Park Water has acknowledged the need (and has an Implementation Plan) to further develop its documentation, this non-compliance is not considered significant.

Discussion and notes

The existing infrastructure has been designed and constructed in accordance with the relevant parts of AS/NZS 3500:2003,²¹ as the Standard of Performance with which the water supply and sewerage hydraulic services comply; and the *New South Wales Code of Practice; Plumbing and Drainage*.²² On the basis of the Auditor's experience, it was also assessed that it is being operated and maintained in accordance with industry practice (no known specifically relevant standards or codes).

A documented procedure for identifying changes to publicly available standards or codes, and remaining up to date with such standards and codes, was not available for review.

As previously noted, Central Park Water has acknowledged that the *Infrastructure Operating Plan* is to be updated and an Asset Management Plan (and supporting procedures) is yet to be developed; it

²¹ Standards Australia, AS/NZS 3500:2003 *Plumbing and Drainage*, (specifically *Part 1 – Water services* and *Part 2 – Sanitary plumbing and drainage*).

²² Committee on Uniformity of Plumbing and Drainage Regulations in NSW, *New South Wales Code of Practice; Plumbing and Drainage* 1 July 2006.

is expected that procedures for ensuring that its practices are kept up to date with changes to publicly available standards or codes will be included.

Table A.1.7 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.6(2)(a) and WIC Reg Sched 1 cl.13(2)(a)	The Infrastructure Operating Plan is fully implemented and kept under regular review and all of the licensee's activities are carried out in accordance with that Plan.	Non-compliant Insignificant
Risk	Target for Full Compliance	
This represents high operational risk. Implementation of the <i>Infrastructure Operating Plan</i> ensures the effective (safe and reliable) delivery of agreed levels of service.	When updating its Infrastructure Operating Plan Central Park Water documents a procedure to ensure that the plan is kept under regular review.	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>), undated.		
Summary of reasons for grade		
<p>Whilst it is considered that Central Park Water is fully implementing the <i>Infrastructure Operating Plan</i> (as it is currently presented), Central Park Water has also acknowledged that the <i>Plan</i> requires update; this is reflected in its Implementation Plan. Notwithstanding, there is not currently a procedure in place to ensure that the <i>Plan</i> is kept under regular review.</p> <p>Given that Central Park Water has acknowledged the need (and has an Implementation Plan) to further develop its documentation, this non-compliance is not considered significant.</p>		
Discussion and notes		
<p>The <i>Infrastructure Operating Plan</i> has been assessed in detail in the separately reported Infrastructure Operating Plan audit. On the basis of observations made during that Audit, it is considered that the <i>Infrastructure Operating Plan</i> (as it is currently presented) is being fully implemented.</p> <p>Notwithstanding current implementation, the <i>Infrastructure Operating Plan</i> requires further development. This is acknowledged in the current version of the document, which makes repeated reference to updates required prior to commissioning of the proposed Recycled Water Centre, and is reflected in the Implementation Plan.²³</p> <p>Furthermore, the fully developed <i>Infrastructure Operating Plan</i> is dependent upon development of an Asset Management Plan, which will be included as Appendix P of the <i>Plan</i>.</p> <p>Whilst update of the <i>Infrastructure Operating Plan</i> is already planned, processes for ensuring that it is kept under regular review have not yet been documented. Central Park Water advised²⁴ that update of documentation will be captured as a 'maintenance activity' in NetSuite (Asset Management System), however, this mechanism is not yet in place.</p>		

²³ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated, section 8.

²⁴ Personal comment by Central Park Water personnel during Audit interviews.

Table A.1.8 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.8	<p>The water meters connected to a licensee's water main comply with the requirements of the <i>Plumbing Code of Australia</i>.</p> <p>The licensee has ensured the water meter is properly maintained and periodically tested, and the water meter is read at least every 4 months, and written notice of each meter reading is sent to the relevant licensed retail supplier.</p>	Non-compliant Insignificant

Risk	Target for Full Compliance
This represents medium business risk. Non-compliant and/or inaccurate water meters may result in incorrect water consumption readings which are then reflected in customer billing.	Document procedures for the management of the meter fleet.

Evidence sighted

- Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated.
- Flow Systems, *Central Park Water; Sewage Management Plan* (file: *CPW Sewage Management Plan_FINAL v2*); undated.
- Boone and Willard, *Building Component Certification* (several certificates provided) [included as Appendix D to the *Sewage Management Plan*].

Summary of reasons for grade

Central Park Water has demonstrated that water meters connected to its water mains comply with the *Plumbing Code of Australia*. Whilst residential customer meters are not typically maintained or tested other than in response to a customer complaint, it is appropriate that the approach to water meter maintenance, testing and renewal is documented in an Asset Management Plan; this is yet to be developed by Central Park Water.

Given that Central Park Water has acknowledged the need (and has an Implementation Plan) to further develop its documentation, this non-compliance is not considered significant.

Discussion and notes

The *Building Component Certification* relates to the hydraulic services in the buildings occupied by Central Park Water's customers as well as the infrastructure owned and/or operated by Central Park Water. The building hydraulic services include the provision of meters; accordingly, the meters connected to the Licensee's water main can be deemed to comply with the *Plumbing Code of Australia* (i.e. AS/NZS 3500:2003).

There is no evidence that the water meters are properly maintained or periodically tested, however, it is noted that:

- at the time of audit, meters had only been in operation for periods of less than four (4) months; and
- customer water meters are not typically tested other than in response to a customer complaint; meter accuracy is generally addressed by periodical meter replacement (typically on a ten (10) year cycle).

Central Park Water's approach to water meter maintenance, testing and renewal should be documented in its Asset Management Plan, which is yet to be developed.

Given that, at the time of the Audit, Central Park Water had only been providing water services for less than four (4) months, requirements in respect of water meter readings were not yet applicable. Accordingly, no evidence of meter reading was either sought or provided.

Table A.1.9 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.11	Customer's installations are not connected to the licensee's water main or sewer main unless the installation complies with the <i>Plumbing and Drainage Act 2011</i> (NSW).	Compliant
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>), undated.Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated.Boone and Willard, <i>Building Component Certification</i> (several certificates provided) [included as Appendix D to the <i>Sewage Management Plan</i>].		
Summary of reasons for grade		
Central Park Water has demonstrated that customer installations connected to its water mains comply with the <i>Plumbing and Drainage Act 2011</i> (NSW). Accordingly, it is assessed that Central Park Water is compliant with this requirement.		
Discussion and notes		
Under the provisions of Section 7(1) of the <i>Plumbing and Drainage Act 2011</i> (NSW), ²⁵ plumbing and drainage works must comply with the <i>Plumbing Code of Australia</i> and any other standards or requirements prescribed by the regulations. The <i>Plumbing and Drainage Regulation 2012</i> ²⁶ does not prescribe any other standards or requirements.		
The <i>Building Component Certification</i> relates to the hydraulic services in the buildings occupied by Central Park Water's customers as well as the infrastructure owned and/or operated by Central Park Water. The building hydraulic services include the customer's installations; accordingly, the customer's installations connected to the Licensee's water main can be deemed to comply with the <i>Plumbing Code of Australia</i> (i.e. AS/NZS 3500:2003). Certification was dated prior to the provision of services to respective certified components of the development.		

²⁵ http://www.austlii.edu.au/au/legis/nsw/consol_act/pada2011174/s7.html accessed on 30 October 2013.

²⁶ http://www.austlii.edu.au/au/legis/nsw/consol_reg/padr2012265/ accessed on 30 October 2013.

Table A.1.10 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
Network Operator Licence cl.A1.1, A2.1, A3.1	The Licensee and the authorised third parties have constructed, operated and/or maintained the water industry infrastructure.	Compliant
Risk		Target for Full Compliance
Evidence sighted		
<ul style="list-style-type: none"> Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>), undated. Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated. Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated. Personal communication with licence holder – Andrew Horton. 		
Summary of reasons for grade		
Evidently it was the Licensee and the authorised third parties that have constructed, operated and/or maintained the water industry infrastructure.		
Discussion and notes		

Table A.1.11 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
Network Operator Licence cl. A1.1(a), A2.1(a), A3.1(a)	The Licensee and the authorised third parties have constructed, operated and/or maintained the water industry infrastructure specified in the Licence.	Compliant
Risk		Target for Full Compliance
Evidence sighted		
<ul style="list-style-type: none"> Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>), undated. Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated. Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated. Personal communication with licence holder – Andrew Horton. 		
Summary of reasons for grade		
Evidently the Licensee and the authorised third parties have constructed, operated and/or maintained the water industry infrastructure that was specified in the Licence and not some other infrastructure.		
Discussion and notes		

Table A.1.12 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
Network Operator Licence cl. A1.1(b), A2.1(b), A3.1(b)	The Licensee and the authorised third parties have constructed, operated and/or maintained the water industry infrastructure for the authorised purposes.	Compliant
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>), undated.Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated.Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated.Personal communication with licence holder – Andrew Horton.		
Summary of reasons for grade		
Evidently the Licensee and the authorised third parties have constructed, operated and/or maintained the water industry infrastructure for the authorised purposes that was specified in the Licence and not some other purposes.		
Discussion and notes		

Table A.1.13 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
Network Operator Licence cl. A1.1(c), A2.1(c), A3.1(c)	The water industry infrastructure constructed, operated and/or maintained by the Licensee or an authorised third party does not extend outside the area of operations.	Compliant
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>), undated.Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated.Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated.Personal communication with licence holder – Andrew Horton.		
Summary of reasons for grade		
Evidently the Licensee and the authorised third parties have constructed, operated and/or maintained the water industry infrastructure within the area of operations specified in the Licence and not some other area.		
Discussion and notes		

Table A.1.14 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
Network Operator Licence cl. B2.1(a),(b),(c); cl. B3.1; cl. B3.2; cl. B3.3; cl. B3.4	<p>Before commencing to commercially operate the Specified Water Industry Infrastructure under this Licence, the Licensee must:</p> <ul style="list-style-type: none">• obtain insurance that is appropriate for the size and nature of the activities authorised under this Licence.• provide a copy of each certificate of currency of the insurance obtained to IPART.• demonstrate that the insurance obtained is appropriate for the size and nature of the activities authorised under the Licence by providing a report to IPART from an Insurance Expert that:<ul style="list-style-type: none">(i) certifies that in the Insurance Expert’s opinion, the type and level of the insurance obtained by the Licensee is appropriate for the size and nature of the activities authorised by the Licence(ii) is in the form prescribed by the Reporting Manual. <p>The Licensee must maintain insurance that is appropriate for the size and nature of the activities authorised under the Licence.</p> <p>The Licensee must provide a copy of each certificate of currency of the insurance maintained by the Licensee to IPART in accordance with the Reporting Manual.</p> <p>Whenever there is a change in the type, or level of insurance held by the Licensee in relation to the activities authorised under the Licence, the Licensee must provide a copy of the certificate of currency to IPART within 10 days of the change being made.</p> <p>When requested in writing by IPART, the Licensee must provide a report to IPART, in the manner, form and time specified by IPART, from an Insurance Expert, certifying that in the Insurance Expert’s opinion, the type and level of insurance held by the Licensee is appropriate for the size and nature of the activities authorised under the Licence.</p>	Compliant
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">▪ Email from Stephen McKewen to Kaye Power dated 7th November 2013 including insurance expert’s report.▪ Email from Kaye Power to auditor (Dan Deere) dated 7th November 2013 identifying that IPART has received the insurance report for CPWF from Flow Systems and noting that this should allow closure of this section of the audit report.		
Summary of reasons for grade		
The insurance expert is satisfied with Flow Systems insurance for this infrastructure and IPART has		

been duly informed of the nature of that insurance.

Discussion and notes

Table A.1.15 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
Network Operator Licence cl. B4	The Licensee must carry out activities authorised by the licence in compliance with any requirements of NSW Health that IPART has agreed to and are notified from time to time to the Licensee by IPART in writing.	Compliant
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems CRMS health information capture section with evidence of correspondence with NSW Health.Health notification form used by Flow Systems to notify NSW Health in the event of an incident.Personal communication with licence holder – Andrew Horton.		
Summary of reasons for grade		
Flow Systems had organised a site tour with Graham Burgess from NSW Health. Thereby, CPW has established a relationship with NSW Health relating to this scheme.		
Flow Systems is formally capturing correspondence with NSW Health in its CRM system in relation to the scheme.		
Flow Systems uses a notification form to notify NSW Health in the event of an incident.		
Discussion and notes		

Table A.1.16 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
Network Operator Licence cl. B7(a) to (g), inclusive.	<p>Within 14 days of any change to:</p> <ul style="list-style-type: none">any source from which the water handled by the Specified Water Industry Infrastructure is derived;the Authorised Purposes of the water handled by the Specified Water Industry Infrastructure;the identity of each licensed retail supplier or public water utility that has access to the infrastructure services provided by the Specified Water Industry Infrastructure for the purpose of supplying water to its customers;any other water infrastructure to which the Specified Water Industry Infrastructure is connected;the identity of each licensed retail supplier or public water utility that has access to infrastructure services provided by the Specified Water Industry Infrastructure for the purpose of providing sewerage services to its customers;any other sewerage infrastructure to which the Specified Water Industry Infrastructure is connected; andthe arrangements for the disposal of waste from the Specified Water Industry Infrastructure; <p>the Licensee must notify IPART, and provide details, of the change in accordance with the Reporting Manual.</p>	Compliant
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">Personal communication with licence holder – Andrew Horton.		
Summary of reasons for grade		
There is no evidence that any change in the above characteristics of the infrastructure has occurred without IPART being duly notified.		
Discussion and notes		

Table A.1.17 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
Network Operator Licence cl. B10.1, B10.2(a) to (h) inclusive, B10.3, B10.5	<p>If a code of conduct has not been established under cl. 25 of the Regulation, the Licensee must establish its own code of conduct by the date specified by IPART. The Licensee's Code of Conduct must set out the respective responsibilities of the Licensee.</p> <ul style="list-style-type: none">the respective responsibilities of each licensed network operator, licensed retail supplier and/or public water utility that supplies water, provides sewerage services or constructs, maintains or operates any other water industry infrastructure in the Specified Area of Operations, by, at a minimum, providing for, if the Specified Water Industry Infrastructure is connected to any other water industry infrastructure, who is responsible for repairing, replacing or maintaining any pipes, pumps, valves, storages or other infrastructure connecting the Specified Water Industry Infrastructure to the water industry infrastructure.who is responsible for water quality.who is liable in the event of unavailability of water.who is liable in the event of failure of the Specified Water Industry Infrastructure.the fees and charges payable in respect of the use of the Specified Water Industry Infrastructurewho is responsible for handling customer complaints <p>Before the Licensee brings the Specified Water Industry infrastructure into commercial operation or by a later date specified by IPART (if any), the Licensee's Code of Conduct must be agreed in writing between the Licensee and other licensed network operators, licensed retail suppliers and/or public water utilities</p> <p>The Licensee must not contravene the Licensee's Code of Conduct to the extent that it makes the Licensee responsible or liable for the matters set out in it.</p>	Non-compliant Insignificant
Risk	Target for Full Compliance	
This is a small operational risk since the infrastructure is of a small scale and is of a passive nature.	Complete and finalise the (current interim and draft) Utility Services Agreement with Sydney Water and address all of the relevant criteria identified in the Network Operator Licence.	
Evidence sighted		
▪ Interim draft Utility Services Agreement with Sydney Water.		
Summary of reasons for grade		
Central Park Water and Sydney Water have developed an excellent interim draft Utility Services		

Agreement. The intent of these clauses is largely met through this agreement. However, at the time of the audit, the agreement was still in draft, interim form. The gaps that are not yet completed within the agreement are highlighted. Central Park Water should complete and finalise the agreement and address all of the relevant criteria identified in the Network Operator Licence.

Discussion and notes

Table A.1.18 Detailed Audit Findings – New Infrastructure

Clause	Requirement	Compliance Grade
Network Operator Licence cl. B11	If the Licensee proposes to operate the Specified Water Industry Infrastructure to supply water for an end-use which is not set out in the most recent Water Quality Plan provided to IPART, the Licensee must notify IPART in writing at least 3 months before commencing such operation.	Compliant
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated.Personal communication with licence holder – Andrew Horton.		
Summary of reasons for grade		
Evidently the Licensee has not proposed to operate the Specified Water Industry Infrastructure to supply water for an end-use which is not set out in the most recent Water Quality Plan provided to IPART. Therefore, the Licensee has not failed to notify IPART in writing at least 3 months before commencing such operation.		
Discussion and notes		



Cobbitty Consulting
Engineering and Advisory Services

Licence Plan Audit

Audit Report

Central Park Water Factory Pty Ltd

Independent Pricing and Regulatory Tribunal
Water Industry Competition Act 2006

Network Operator's Licence Audit Report
(Follow-up Audit to the 2012 audit of the regulated management plans)

Licence No. 12_022: Central Park Water Factory Pty Ltd
(also known as the Central Park Scheme)

Licence Holder: Central Park Water Factory Company Pty Ltd (ACN 151 072 838)

This document is a final version (Version 2), submitted to the Licence Holder 14th November 2013

1. Executive Summary

This report presents the findings of an audit undertaken for the Independent Pricing and Regulatory Tribunal (IPART) under the *Water Industry Competition Act 2006*.

The subject matter of the audit was the infrastructure that is operated under network operator's licence No. 12_022 for the water services at Central Park operated by the licence holder Central Park Water Factory Company Pty Ltd.

The scope of the audit was compliance audit of the management plans required under the licence. An associated new infrastructure audit is reported separately alongside this Licence Plan audit report. The Licence Plans subjected to audit were as follows:

- Infrastructure Operating Plan.
- Water Quality Plan (drinking water).
- Sewage Management Plan.

The auditors were provided with sufficient and appropriate evidence, as described in *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines (July 2013)*, on which to base the conclusions reached during the audit.

The auditors have observed the requirements of the *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines (July 2013)* and the audit deed in conducting the audit, determining audit findings and preparing the report.

The audit report findings accurately reflect the professional opinion of the auditors. The findings have not been unduly influenced by the Licence Holder nor any of its associates and expresses the auditors' opinions as to whether the Licence Holder has met the licence conditions and regulatory requirements as specified in the scope.

A summary of the audit findings is given in the following chapters and a detailed breakdown of the full audit findings against the audited criteria is given in the appendices.

The Licence Holder (Central Park Water Factory Company Pty Ltd) was found to be constructing, repairing, maintaining and operating the infrastructure in compliance with all but six of the assessed audit criteria. Insignificant non-compliances were recorded against six criteria. No significant non-compliances were recorded. A total of nine opportunities for improvement were identified.

The Infrastructure Operating Plan will need re-auditing for Licence Plan adequacy with respect to the two specific insignificant non-compliances as well as the as yet unbuilt assets that will form the future recycled water scheme. The insignificant non-compliances were as follows:

- Whilst the Infrastructure Operating Plan addresses most of the aspects required, it requires further development. Furthermore, the fully developed Plan is dependent upon development of an Asset Management Plan.
- Although Central Park Water has demonstrated that it is able effectively manage the continued safe and reliable performance of the existing infrastructure, full compliance with this requirement requires preparation of the Asset Management Plan and documentation of the relevant operation and maintenance procedures.

The Water Quality Plan (drinking water) will not need re-auditing for Licence Plan adequacy, other than to review progress against the two specific insignificant non-compliances. The insignificant non-compliances were as follows:

- The lack of up to date contact details for stakeholders presents a small operational risk for this scheme and is something that is currently being addressed by the licence holder.
- The lack of an uncertainty analysis in the risk assessment presents no operational risk but is a non-compliance with the ADWG. It is a matter for the licence holder to determine whether or not to address this non-compliance.

- The lack of a completed drinking water quality incident and emergency management plan and up to date emergency contact details presents a small, but ever increasing, operational risk for this scheme and is something that is currently being addressed by the licence holder.

The Sewage Management Plan will not need re-auditing for Licence Plan adequacy, other than to review progress against the one specific insignificant non-compliance. The insignificant non-compliance was as follows:

- The lack of a completed sewage incident and emergency management plan and up to date emergency contact details presents a small, but ever increasing, operational risk for this scheme and is something that is currently being addressed by the licence holder

There was intent to audit the Water Quality Plan (non-potable water) Licence Plan at the same time. However, it eventuated that the recycled water scheme was still at very early stages and wasn't yet close to operation. Therefore, the Water Quality Plan (non-potable water) could not be meaningfully audited and will need to be fully audited in due course. Nonetheless, the overlaps between the Water Quality Plan (non-potable water) and the Water Quality Plan (drinking water) and the Sewage Management Plan mean that the Water Quality Plan (non-potable water) audit should be somewhat reduced in scope by referencing the findings of this audit.

Note that a related New Infrastructure audit that was carried out at the same time is reported separately.

In summary, the Licence Plans relating to the audited infrastructure were adequate and complied with of the relevant guidelines, standards, and legal and formal requirements. The Licence Plans did not contain any significant items that were not compliant with the guidelines and standards. The Licence Plans (as a whole) were adequate albeit containing some insignificant items that were not compliant with the guidelines and standards. In the opinion of the auditors, the licence holder can begin commercial operation for the safe and reliable supply of drinking water and the provision of sewerage services. The auditors support IPART in providing a permit to approve the commercial operation of the assets operated under this WICA licence.

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2. Introduction

2.1 Objective

This report presents the findings of an audit undertaken for the Independent Pricing and Regulatory Tribunal (IPART) under the *Water Industry Competition Act 2006*.

The subject matter of the audit was the infrastructure that is operated by under network operator's licence No. 12_022 for the water services at Central Park.

The Licence Holder is *Central Park Water Factory Company Pty Ltd* (ACN 151 072 838) (CPWFC).

The scope of the audit was a compliance audit of the management plans required under the licence. A new infrastructure audit was undertaken and is reported separately.

The Licence Plans subject to audit were as follows:

- Infrastructure Operating Plan (IOP).
- Water Quality Plan (drinking water) (WQP dw).
- Sewage Management Plan (SMP).

2.2 Licensee's infrastructure, systems and procedures

The Licence Holder's infrastructure, systems and procedures audited were those related to the Central Park Water scheme (centralparkwater.com.au), (the Scheme).

CPWFC is the Licence Holder, holding network operator's licence No. 12_022. CPWFC is responsible for the operation and maintenance of parts of the Central Park potable and recycled water supply and the sewerage network.

Water Factory Company Pty Limited (ABN 28 136 272 298) and Permeate Partners Pty Limited (ABN 54 130 112 257) are 'Authorised Persons' named under this Licence.

2.3 Audit method

Audit scope

This compliance audit covers design, construction, operation, repair and maintenance of the Scheme and addresses the following scope:

- Licence Plan audit for the following plans: IOP, WQP (pw) and SMP.

Audit standard

The audit broadly followed the generic principles of auditing given in *ISO 19011:2011 - Guidelines for auditing management systems*. The principal document used to guide the audit was the *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines (July 2013)* (WICA Audit Guideline).

Audits are by necessity limited to sampling processes. It is not practicable, nor necessary, to inspect 100% of items within an audit scope. Auditing forms part of the broader risk management process - providing an independent check on the veracity of the processes and procedures in place to manage risk. Finding a balance between audit effort and practicality requires the exercise of experienced professional judgement. The amount of effort allocated to this audit has been kept to a reasonable minimum level.

The audit was reported in accordance with Appendices of the WICA Audit Guideline. The audit templates given in the IPART Guideline provided the reporting format for the audit as well as providing the detailed audit criteria.

Audit steps

An Audit Plan was submitted to both IPART and the licence holder some weeks prior to the audit taking place. Documentation was supplied by the licence holder to both the auditor and IPART prior to the audit taking

place. Desktop auditing took place both prior and post the site audit. A site audit took place on Friday, 18th October 2013, starting with a field, site visit first thing in the morning and completing with a head office desktop audit for the remainder of the day. Evidence was followed up until early November 2013.

The audit process involved seeking objective evidence that the Licence Holder met the audit criteria set by IPART. The auditors collected evidence through interview, document review and site inspection. The auditors randomly sampled examples sufficient to verify claims made by the developer and Licence Holder.

Quality was assured using a professional review process. Each auditor's work was reviewed and approved by the other auditor.

Audit team

For efficiency, the various components of the audit were audited in an integrated manner. This document sets out the detailed audit agenda and audit criteria that were applied. The two-member team that conducted the audits included:

- Overall audit management and WQP (pw) and SMP components: Dr Dan Deere.
- IOP components: Mr Jim Sly.
- The audit team notes, and greatly appreciates, the presence of IPART staff member Dr Kaye Power and support and advice from Ms Zoe Moffat as valuable observers and commentators prior to and during the audit.
- The audit team notes, and greatly appreciates, the work and effort put in by those audited, including all CPWFC staff, particularly Andrew Horton.

Audit grades

Audit grades were awarded as recommended in the WICA Audit Guideline.

2.4 Regulatory regime

When auditing the items identified in the letter from IPART to PTWFC dated 28th March 2013, relevant aspects of the following standards and regulations were considered:

- *Water Industry Competition Act 2006 (WICA).*
- *Water Industry Competition (General) Regulation 2008.*
- Network Operator's Licence No. 12_022 signed 4th January 2013 made under the above framework.
- *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines (July 2013)* provided as part of the above framework.
- *Australian Drinking Water Guidelines 2011.*
- Relevant water industry and environmental NSW and national codes of practice and regulations, as applicable.

2.4.1.1 Audit findings

Audit findings are summarised in section 1, Executive Summary, in more detail in section 3, and in full detail in the following Appendices:

- Appendix 1 for the Infrastructure Operating Plan (IOP).
- Appendix 2 for the Water Quality Plan (potable water) (WQP dw).
- Appendix 3 for the Sewage Management Plan (SMP).

3. Infrastructure Operating Plan Audit

3.1 Summary of findings

Central Park Water's compliance with Schedule 1 clause 6(1) and/or clause 13(1) of the *Water Industry Competition (General) Regulation 2008* has been assessed as follows:

- *WIC Reg Sched 1 cl.6(1)(a) and/or cl.13(1)(a)* – Non-compliant – Insignificant:

Whilst the Infrastructure Operating Plan addresses most of the aspects required, it requires further development. Furthermore, the fully developed Plan is dependent upon development of an Asset Management Plan (refer Table A.1.1 for detailed findings).

To be fully compliant, the following needs to be demonstrated: Finalise development of the *Infrastructure Operating Plan*, including development of an Asset Management Plan, and demonstrate implementation of the infrastructure management practices documented therein.

- *WIC Reg Sched 1 cl.6(1)(b) and/or cl.13(1)(b)* – Non-compliant – Insignificant:

Although Central Park Water has demonstrated that it is able effectively manage the continued safe and reliable performance of the existing infrastructure, full compliance with this requirement requires preparation of the Asset Management Plan and documentation of the relevant operation and maintenance procedures (refer Table A.1.2 for detailed findings).

To be fully compliant, the following needs to be demonstrated: Prepare of an Asset Management Plan and supporting procedural documentation, and demonstrate implementation of appropriate infrastructure management practices.

It is further noted that Central Park Water plans to implement additional infrastructure to support ongoing development of the Central Park site (refer Table A.1.1). It is recommended that a further audit be undertaken to review updated documentation (including the *Infrastructure Operating Plan*) prior to commissioning of the proposed Recycled Water Centre. It is also recommended that compliance in respect of proposed future service connections to Sydney Water's infrastructure is assessed as part of the next scheduled operational audit (provided they are of a similar nature/arrangement to those currently in service) rather than undertaking a further Licence Plan Audit.

3.2 Review of actions

The Licence Holder has not made suggestions for corrections or clarifications following the issue of the draft report prior to the final report being issued.

3.3 Opportunities for improvement

A number of opportunities for improvement have been identified, as follows:

- It is suggested that the full extent of sewage pumping station rising mains be included in (or shown additional to) Figure 3 of the *Infrastructure Operating Plan*, thereby reflecting the full extent of infrastructure that Central Park Water is responsible for operating.
- There are a number of incorrect cross-references (to figures and appendices) within the *Infrastructure Operating Plan*; these should be addressed in the next update of the Plan.
- A document control mechanism, which clearly identifies both the version/revision number and date of the document, should be introduced for all documentation.
- In the event that alternative water supply connections from Sydney Water's mains are provided to service future development at the Central Park site, Central Park Water may consider providing internal cross connections between alternative source points, thereby providing a higher security of service.
- Central Park Water may wish to consider the implementation of some form of ongoing or periodic monitoring of service standards at customer supply points.

4. Water Quality Plan – Drinking Water Audit

4.1 Summary of findings

Central Park Water's compliance with Schedule 1 clause 7(1) and/or Schedule 1 clause 7(2) and/or Schedule 1 clause 9 of the *Water Industry Competition (General) Regulation 2008* has been assessed as follows:

- *WIC Reg Sched 1 cl.7(1)(a)* – ADWG element one – Non-compliant – Insignificant:

The lack of up to date contact details for stakeholders presents a small operational risk for this scheme and is something that is currently being addressed by the licence holder.

To be fully compliant, the following needs to be demonstrated: Update the stakeholder contact list.

- *WIC Reg Sched 1 cl.7(1)(a)* – ADWG element two – Non-compliant – Insignificant:

The lack of an uncertainty analysis in the risk assessment presents no operational risk but is a non-compliance with the ADWG. It is a matter for the licence holder to determine whether or not to address this non-compliance.

To be fully compliant, the following needs to be demonstrated: Augment the risk assessment to include the major sources of uncertainty associated with each hazard and hazardous event and outline the actions considered to reduce uncertainty.

- *WIC Reg Sched 1 cl.7(1)(a)* – ADWG element six – Non-compliant – Insignificant:

The lack of a completed drinking water quality incident and emergency management plan and up to date emergency contact details presents a small, but ever increasing, operational risk for this scheme and is something that is currently being addressed by the licence holder.

To be fully compliant, the following needs to be demonstrated: Complete the incident and emergency management plan and update the stakeholder contact list.

4.2 Review of actions

The Licence Holder has not made suggestions for corrections or clarifications following the issue of the draft report prior to the final report being issued.

4.3 Opportunities for improvement

A number of opportunities for improvement have been identified, as follows:

- In relation to ADWG element two: The process flow diagrams were compliant and adequate for their purpose in the context - in the hands of the licence holder - but were not particularly clear or helpful upon first sight to third parties. Given the central role of the process flow diagrams in communicating the scheme arrangements it would be preferable to produce much more communicative process flow diagrams. It might be helpful to expand the conceptual diagram to show more of the "catchment" and "consumer" part of the system as well, even if that is beyond the Central Park Water direct management.
- In relation to ADWG element four: The licence holder places heavy reliance on third parties that are not named on the licence, e.g. in this case Mono Pumps and RVE. These parties could be changed at any time. It would be useful to hold evidence of the credentials of these parties on file and the currency and scope of those credentials, e.g. plumbing licences, evidence of capacity and details of contractual obligations to Central Park Water.

5. Sewage Management Plan Audit

5.1 Summary of findings

Central Park Water's compliance with Schedule 1 clause 14(1) of the *Water Industry Competition (General) Regulation 2008* has been assessed as follows:

- *WIC Reg Sched 1 cl.14(1)(a) and (b)* – Non-compliant – Insignificant:

The lack of a completed sewage incident and emergency management plan and up to date emergency contact details presents a small, but ever increasing, operational risk for this scheme and is something that is currently being addressed by the licence holder.

To be fully compliant, the following needs to be demonstrated: Complete the incident and emergency management plan and update the stakeholder contact list.

5.2 Review of actions

The Licence Holder has not made suggestions for corrections or clarifications following the issue of the draft report prior to the final report being issued.

5.3 Opportunities for improvement

A number of opportunities for improvement have been identified, as follows:

- The process flow diagrams were compliant and adequate for their purpose in the context - in the hands of the licence holder - but were not particularly clear or helpful upon first sight to third parties. Given the central role of the process flow diagrams in communicating the scheme arrangements it would be preferable to produce much more communicative process flow diagrams. It might be helpful to expand the conceptual diagram to show more of the "catchment" and "consumer" part of the system as well, even if that is beyond the Central Park Water direct management.
- The licence holder places heavy reliance on third parties that are not named on the licence, e.g. in this case Mono Pumps and RVE. These parties could be changed at any time. It would be useful to hold evidence of the credentials of these parties on file and the currency and scope of those credentials, e.g. plumbing licences, evidence of capacity and details of contractual obligations to Central Park Water.

Appendix 1 Detailed Audit Findings – Infrastructure Operating Plan (IOP)

Table A.1.1 Detailed Audit Findings – Infrastructure Operating Plan (IOP)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.6(1)(a) and/or cl.13(1)(a)	The IOP indicates the arrangements in relation to the design, construction, operation and maintenance of the infrastructure, including particulars as to the life-span of the infrastructure, the system redundancy built into the infrastructure and the arrangements for renewal of the infrastructure.	Non-compliant Insignificant

Risk	Target for Full Compliance
This presents a high operational risk. Knowledge of the capacity and constraints associated with the infrastructure is essential to the effective management of the infrastructure assets in delivering agreed levels of service.	Full development of the Infrastructure Operating Plan, including development of an Asset Management Plan and demonstrated implementation of the infrastructure management practices documented therein.

Evidence sighted

- Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated.
- Flow Systems, *Central Park Water; Sewage Management Plan* (file: *CPW Sewage Management Plan_FINAL v2*), undated.
- Flow Systems, *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)* (file: *CPW - Water Quality Plan - DW & RW_V3 compressed*), undated.

Summary of reasons for grade

Whilst the *Infrastructure Operating Plan* addresses most of the aspects required, it requires further development. Furthermore, the fully developed *Plan* is dependent upon development of an Asset Management Plan.

Accordingly, Central Park Water is not considered to have demonstrated full compliance with this requirement. However, given the state of development of the *Plan* and the minimal extent of passive infrastructure currently in service, the non-compliance is not deemed to be significant.

Discussion and notes

Overview:

Infrastructure currently in operation, which is owned and or operated by Central Park Water, comprises:

- Water – connection from the Sydney Water main in Broadway to the suction side of the Central Park development site reticulation booster pumps. There are two (2) parallel supply lines; one supplies water to the Block 2 buildings whilst the other supplies to Block 5. There is no cross-connection between the two systems within the site.
- Sewerage – sewer rising mains from sewage pumping stations within the site and discharge lines to Sydney Water's sewers in Chippendale Way and Kensington Street. There is currently a gravity discharge to a Sydney Water sewer in Chippendale Way; a gravity overflow from a site pumping station discharges to a Sydney Water sewer in Kensington Street.¹

Infrastructure (both water supply and sewerage) between the connection point to Sydney Water's main and the property boundary is owned and operated by Central Park Water; infrastructure between the property boundary and limit of responsibility identified above are operated by

¹ At the time of the Audit, the site pumping station was not yet in service and all sewage flows were being diverted under gravity to the Sydney Water sewer in Kensington Street.

Central Park Water and owned by the Central Park development Body Corporate (with the exception of the bulk supply water meters which are owned and operated by Sydney Water).

The extent of the infrastructure and ownership/operational responsibilities is clearly illustrated by simplified diagrams presented in the *Infrastructure Operating Plan*.²

[*Opportunity for Improvement* – It is suggested that the full extent of sewage pumping station rising mains be included in (or shown additional to) Figure 3 of the *Infrastructure Operating Plan*, thereby reflecting the full extent of infrastructure that Central Park Water is responsible for operating.]

Planned future infrastructure includes:

- Recycled Water Centre (treatment plant), to which all sewage flows discharging from the site will be diverted.
- Additional sewage rising mains within the site.
- Sewer mining infrastructure (to be located in Chippendale Way); this will deliver additional sewage flows to the proposed Recycled Water Centre.
- Additional water supply connection(s) from Sydney Water's water mains.

It is noted that the *Infrastructure Operating Plan* is to be updated prior to the Recycled Water Treatment Plant being commissioned and brought into service (currently expected February 2014).

Design:

The *Infrastructure Operating Plan* indicates that infrastructure (both water supply and sewerage) owned and/or operated by Central Park Water was designed and built by other contractors.³ It further notes that designs were approved by the Office of Fair Trading and Sydney Water, and refers to evidence provided in Appendix D of the *Sewage Management Plan* and Appendix T of the *Water Quality Plan* (it is noted that both Appendices contain the same documentation).

The referenced evidence comprises *Building Component Certification* in respect of Hydraulic Services installed in the following locations at One Central Park:

- West Tower (whole) and Basement Levels (part);⁴
- East Tower (GF and up to Level 28) and Basement Levels (part);⁵ and
- Podium Retail (whole) and Basement Levels (part).⁶

Each certificate refers to “*Design Certification from Harris Page & Associates Pty Ltd dated 25 January 2013*”, however, a copy of such certification is not attached or otherwise provided. A web search indicates that Harris Page & Associates Pty Ltd provide engineering design services in respect of building services, which suggests that they are likely to be qualified to undertake this work.

Each certificate identifies the relevant parts of AS/NZS 3500:2003⁷ as the Standard of Performance with which the water supply and sewerage hydraulic services comply; reference is also made to the *New South Wales Code of Practice; Plumbing and Drainage*.⁸

Whilst, as mentioned above, the *Infrastructure Operating Plan* indicates that infrastructure designs were approved by the Office of Fair Trading and Sydney Water, the evidence provided does not specifically demonstrate this. It is noted, however, the provision of a Certificate of Compliance is

² Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, Figures 3, 4 and 5.

³ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, section 4.1.2 and section 4.3.2.

⁴ Boone and Willard, *Building Component Certification, Design and Installation Certificate (Stage 5 – West Tower and Basements)*, signed 11 February 2013.

⁵ Boone and Willard, *Building Component Certification, Design and Installation Certificate (Stage 6 – East Tower and Basements)*, signed 30 July 2013.

⁶ Boone and Willard, *Building Component Certification, Design Installation Certificate – BooneWillard (Stage 4)*, signed 18 July 2013.

⁷ Standards Australia, *AS/NZS 3500:2003 Plumbing and Drainage*, (specifically *Part 1 – Water services* and *Part 2 – Sanitary plumbing and drainage*).

⁸ Committee on Uniformity of Plumbing and Drainage Regulations in NSW, *New South Wales Code of Practice; Plumbing and Drainage* 1 July 2006.

consistent with the requirements set out in the *New South Wales Code of Practice; Plumbing and Drainage*.⁹ It is therefore considered that the appropriate compliance requirements have been met.

Construction:

The *Building Component Certification* referenced above addresses both the design and installation of the hydraulic services, including those owned and/or operated by Central Park Water. On this basis, construction of the infrastructure is considered to be compliant with the relevant Standard of Performance.

Inspection of elements of the infrastructure during the Audit revealed that materials and quality of work was of an expected standard.

Operation:

At the time of the audit, only passive assets (water and sewage pipelines) were in operation. Accordingly, minimal operational activity is required and no monitoring is currently undertaken by Central Park Water.

Suction pressure at the water supply booster pumps (owned and operated by the Central Park development Body Corporate) is monitored, with an alarm raised in the Building Management System in the event of inadequate pressure.¹⁰ This will result in notification to Central Park Water.

Operation of the infrastructure is the responsibility of the Central Park Water Operations Manager, as outlined in the *Infrastructure Operating Plan*.¹¹ Under the Flow Systems organisation structure,¹² the Operations function includes responsibility for Facility Operations, Network Operations, Asset Management and Network Operator Licences.

Maintenance:

Given that, at the time of the audit, only passive assets were in operation and these had only been in operation for less than four (4) months, there is currently minimal requirement for maintenance of the infrastructure. The *Infrastructure Operating Plan* indicates that Central Park Water will undertake annual visual inspections of the sewer network¹³ and six monthly visual inspections of the drinking water reticulation system;¹⁴ this is considered appropriate in both cases.

Central Park Water advised that maintenance activities (including visual inspections) will be identified in the maintenance scheduling component of the Asset Management System (refer discussion below).

Central Park Water advised that it engages an independent company (licenced plumber)¹⁵ to undertake its maintenance activities. This independent company has the required equipment to provide maintenance services for the existing infrastructure and provides 24/7 service.

Asset Management:

Whilst the *Infrastructure Operating Plan* identifies the nature and extent of the existing infrastructure, it also notes that Central Park Water does not yet have an asset register or an Asset Management Plan for the infrastructure it owns and/or operates at Central Park site.¹⁶ Central Park Water did, however, advise that the infrastructure will be captured in its NetSuite Asset Management System;

⁹ Committee on Uniformity of Plumbing and Drainage Regulations in NSW, *New South Wales Code of Practice; Plumbing and Drainage* 1 July 2006, part B, clause 1.4(3)(viii).

¹⁰ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, section 5.3.

¹¹ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, section 5.4.

¹² Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, Figure 6.

¹³ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, section 6.2.

¹⁴ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, section 6.4.

¹⁵ Licence number of company principal sighted on website.

¹⁶ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, section 6.6.

this system will be used for ongoing maintenance management.

In its Implementation Plan,¹⁷ Central Park Water identifies that an Asset Management Plan, which will be used as a basis to ensure that the infrastructure is adequately maintained and upgraded/replaced as necessary, is to be developed by December 2013.

It is noted that:

- on the basis of the auditor's experience, it is not unusual in the water industry for assets (and particularly passive assets) not to be captured in an asset register/Asset Management System this soon after commissioning.
- the auditor has previously reviewed the NetSuite Asset Management System implemented by Flow Systems and found it to be used in a manner that enables effective management of the asset portfolio.¹⁸

It is recommended that the Asset Management Plan (and other asset management mechanisms) be reviewed as part of the next Licence Audit.

Documentation:

As noted above, Central Park Water advised that the *Infrastructure Operating Plan* is to be updated prior to the proposed Recycled Water Treatment Plant (currently under construction) being commissioned and brought into service (currently expected February 2014).

In reviewing the *Infrastructure Operating Plan*, some opportunities for improvement of the documentation have been identified.

[Opportunity for Improvement – There are a number of incorrect cross references (to figures and appendices) within the *Infrastructure Operating Plan*; these should be addressed in the next update of the *Plan*.]

[Opportunity for Improvement – A document control mechanism, which clearly identifies both the version/revision number and date of the document, should be introduced for all documentation.]

Summary:

Whilst the *Infrastructure Operating Plan* addresses most of the aspects required, it requires further development. This is acknowledged in the current version of the document, which makes repeated reference to updates required prior to commissioning of the proposed Recycled Water Centre.

Furthermore, the fully developed *Infrastructure Operating Plan* is dependent upon development of an Asset Management Plan, which will be included as Appendix P of the *Plan*.

Accordingly, Central Park Water is not considered to have demonstrated full compliance with this requirement.

¹⁷ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: CPW - Infrastructure Operating Plan FINAL v2), undated, section 8.

¹⁸ Water Futures and CH2M HILL, *Follow-up Licence Plan Audit; Audit Report; Pitt Town Water Factory Recycled Water Scheme*, June 2013.

Table A.1.2 Detailed Audit Findings – Infrastructure Operating Plan (IOP)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.6(1)(b) and/or cl.13(1)(b)	The continued safe and reliable performance of the infrastructure.	Non-compliant Insignificant
<hr/>		
Risk	Target for Full Compliance	
This presents a high operational risk. The risk is generally managed by the implementation of an asset management system/framework that is outlines the basis for the ongoing management of the infrastructure assets.	Preparation of an Asset Management Plan and supporting procedural documentation and demonstrated implementation of appropriate infrastructure management practices.	
<hr/>		
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>); undated.Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated.Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated.		
<hr/>		
Summary of reasons for grade		
Although Central Park Water has demonstrated that it is able effectively manage the continued safe and reliable performance of the existing infrastructure, full compliance with this requirement requires preparation of the Asset Management Plan and documentation of the relevant operation and maintenance procedures. The non-compliance is not, however, deemed to be significant given the minimal extent of passive infrastructure currently in service and the demonstrated knowledge of Central Park Water operational personnel.		
<hr/>		
Discussion and notes		
Continued safe and reliable performance of the infrastructure is dependent upon the implementation of effective operational, maintenance, condition monitoring and refurbishment/replacement practices. These practices would typically be documented in an Asset Management Plan and/or supporting Standard Operating Procedures.		
As noted in Table A.1.1, Central Park Water has not yet developed an Asset Management Plan for the infrastructure it owns and/or operates at Central Park site, although has identified the need to so as part of its Implementation Plan. ¹⁹ The auditor has previously reviewed operational procedures implemented in respect of another scheme operated by Flow Systems ²⁰ and, whilst there were some issues regarding site specificity, they were found to be generally appropriate to the activity involved.		
As also noted in Table A.1.1, the infrastructure currently in service at the Central Park development site comprises only passive infrastructure (pipeline assets) which had only been in service for a period of approximately four (4) months at the time of Audit.		
For the existing infrastructure, continuity of infrastructure performance is related to failure which may comprise:		
<ul style="list-style-type: none">Pipe breakage;		

¹⁹ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated, section 8.

²⁰ Water Futures and CH2M HILL, *Follow-up Licence Plan Audit; Audit Report; Pitt Town Water Factory Recycled Water Scheme*, June 2013.

-
- Valve operational failure; or
 - Operation of fail-safe mechanisms in the event of power failure (although these would not be of direct impact at this stage).

Operational plans currently in place (although not yet captured in Flow System's Asset Management System or documented in an Asset Management Plan/Operational Procedures) include:

- inspections of accessible pipework (e.g. in building basements);²¹
- monitoring of water supply pressure at booster pumps;²² and
- monitoring of water supply flows into the building (flow to each building and booster pump is metered).²³

Arrangements in place for maintenance of the existing infrastructure are discussed in Table A.1.1; condition monitoring and planning for refurbishment/replacement of infrastructure is to be addressed in the Asset Management Plan when developed.

Effective performance of infrastructure is in part dependent upon the resources engaged for operation and maintenance. Review of curricula vitae²⁴ for Flow Systems operational staff (two (2) persons) indicate that they are appropriately qualified and experienced for the purposes of operating the infrastructure. This assessment was further validated by Audit discussions with the Central Park Water Operations Manager.

As reported in Table A.1.1, Central Park Water engages an appropriately qualified, experienced and resourced contractor to support its maintenance activities.

Although satisfied that Central Park Water is able effectively manage the continued safe and reliable performance of the existing infrastructure, full compliance with this requirement requires preparation of the Asset Management Plan and documentation of the relevant operation and maintenance procedures.

²¹ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated, sections 6.2 and 6.4.

²² Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated, sections 5.3.

²³ Personal comment by Central Park Water personnel during Audit interviews.

²⁴ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*), undated, Appendix M.

Table A.1.3 Detailed Audit Findings – Infrastructure Operating Plan (IOP)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.6(1)(c) and/or cl.13(1)(c)	The continuity of the water supply.	Compliant

Risk	Target for Full Compliance
This presents a high operational risk. The risk is generally managed by operating in accordance with agreed protocols for both planned and unplanned service interruptions.	Development and implementation of appropriate protocols for both unplanned and planned service interruptions.

Evidence sighted

- Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*); undated.
- Flow Systems, *Central Park Water; Sewage Management Plan* (file: *CPW Sewage Management Plan_FINAL v2*); undated.
- Flow Systems, *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)* (file: *CPW - Water Quality Plan - DW & RW_V3 compressed*), undated.
- Flow Systems, *Customer Contract*, undated [included as Appendix G to the *Infrastructure Operating Plan*].
- Sydney Water, *Interim Utility Services Agreement; General Terms and Conditions* (reference SW275 02/13), draft sent to Water Factory 22 May 2013 [included as Appendix L to the *Water Quality Plan*].

Summary of reasons for grade

Central Park Water has developed protocols (commitments), documented in its *Customer Contract*, in respect of unplanned and planned service interruptions; these protocols are consistent with industry standards. Accordingly, it is assessed that Central Park Water is compliant with this requirement.

Discussion and notes

The continuity of both water supply and wastewater services may be subject to either planned or unplanned interruptions. This is consistent with the servicing provisions provided to similar 'strata type' developments (and the broader community).

The *Customer Contract*²⁵ sets out Central Park Water's commitment to its customers in the event of either unplanned or planned interruptions. This commitment is generally consistent with the commitment to residential customers in Sydney Water's Customer Contract.²⁶

The *Customer Contract* also sets out Central Park Water's commitment to its customers in the event of water restrictions resulting from drought or a major operational difficulty.

The *Interim Utility Services Agreement*²⁷ between Sydney Water and Central Park Water outlines Sydney Water's commitment to Central Park Water in the event of either planned or unplanned interruptions. It is noted that Sydney Water is required to provide seven (7) days' notice of planned

²⁵ Flow Systems, *Customer Contract*, undated [included as Appendix G to the *Infrastructure Operating Plan*].

²⁶ Sydney Water, *Operating Licence 2010-2015; Schedule 2 Customer Contract*, undated, sections 3.4.2 and 3.4.3 (as accessed at: [http://www.sydneypwater.com.au/web/groups/publicwebcontent/documents/document/zgrf/mdq1/~edisp/dd_045061.pdf#search="customer%20contract"](http://www.sydneypwater.com.au/web/groups/publicwebcontent/documents/document/zgrf/mdq1/~edisp/dd_045061.pdf#search=) on 30 October 2013).

²⁷ Sydney Water, *Interim Utility Services Agreement; General Terms and Conditions* (reference SW275 02/13), draft sent to Water Factory 22 May 2013 [included as Appendix L to the *Water Quality Plan*].

interruptions, which enables Central Park Water to meet its commitment of providing two (2) days' notice to its customers.

Given that Central Park Water's protocols in respect of unplanned and planned service interruptions are consistent with industry standards, it is assessed as being compliant with this requirement.

Table A.1.4 Detailed Audit Findings – Infrastructure Operating Plan (IOP)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.6(1)(d) and/or cl.13(1)(d)	Alternative water supplies when the infrastructure is inoperable.	Compliant
Risk	Target for Full Compliance	
This presents a high operational risk. The risk is generally managed by operating in accordance with agreed protocols for both planned and unplanned service interruptions.	Development and implementation of appropriate protocols for both unplanned and planned service interruptions.	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>); undated.Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated.Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated.Flow Systems, <i>Customer Contract</i>, undated [included as Appendix G to the <i>Infrastructure Operating Plan</i>].Sydney Water, <i>Interim Utility Services Agreement; General Terms and Conditions</i> (reference SW275 02/13), draft sent to Water Factory 22 May 2013 [included as Appendix L to the <i>Water Quality Plan</i>].		
Summary of reasons for grade		
Central Park Water has developed protocols (commitments), documented in its Customer Contract, in respect of maintaining supply of service; these protocols are consistent with industry standards. Accordingly, it is assessed that Central Park Water is compliant with this requirement.		
Discussion and notes		
Central Park Water’s <i>Customer Contract</i> indicates that, in the event of an unplanned interruption, it will provide “access to emergency supplies of water and/or toilet facilities where reasonably practicable having regard for the particular circumstances”. ²⁸		
The Customer Contract also indicates that:		
“If you require a water supply to operate a life support machine or for other special health needs you must notify us. We will include you on our list of critical Customers and ensure all practical steps are taken to provide a water supply to meet your reasonable health needs. However, disruptions to your water supply may not always be preventable, so you should be ready to make alternative arrangements if necessary.”		
In the <i>Infrastructure Operating Plan</i> , ²⁹ Central Park Water notes that: ³⁰		
“Under the Commercial Customer Contract with Sydney Water, Sydney Water categorise Central Park Water as a “Critical Customer”. Therefore Central Park Water will have access to		

²⁸ Flow Systems, *Customer Contract*, undated [included as Appendix G to the *Infrastructure Operating Plan*], page 9.

²⁹ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*); undated, page 19.

³⁰ Similar comment is provided in: Flow Systems, *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)* (file: *CPW - Water Quality Plan - DW & RW_V3 compressed*), undated, page 30.

alternative supplies of drinking water in the event of a Sydney Water supply interruption. Sydney Water prioritises all Critical Customers when repairing drinking water services.”

Sydney Water “Critical Customer” status is not apparent from reference to the *Interim Utility Services Agreement* (a separate *Commercial Customer Contract* has not been provided for review and is assumed to be a reference to the same document); however, reference to Sydney Water’s website reveals that “Water Critical Customers are identified as:³¹

“Water critical customers rely on a continuous supply of water to maintain health and safety or continue business operations. They include hospitals, kidney dialysis customers, public swimming pools, and some manufacturing businesses.”

Providing notification in respect of water critical customers is provided to Sydney Water by Central Park Water, it is expected that the appropriate protocols would be implemented in respect of maintaining supply.

Given that Central Park Water’s protocols in respect of maintaining supply appear to be consistent with industry standards, it is assessed as being compliant with this requirement.

Notwithstanding, it is noted (refer Table A.1.1) that Central Park Water proposes to install additional water supply connection(s) from Sydney Water’s mains to service future development at the Central Park site. In the event that such additional connection(s) are provided, it may be appropriate to consider providing internal cross connections between alternative source points, thereby providing a higher security of service.³²

[Opportunity for Improvement – In the event that alternative water supply connections from Sydney Water’s mains are provided to service future development at the Central Park site, Central Park Water may consider providing internal cross connections between alternative source points, thereby providing a higher security of service.]

It is also noted that Central Park Water has reported^{33,34} its intent to develop a site specific *Business Continuity Plan* prior to commissioning of the proposed Recycled Water Centre. The Business Continuity Plan is intended to address “...issues such as procedures and contingency plans for major planned and unplanned infrastructure outages. This may include decision flow charts, and should include key stakeholders and their contact details”.³⁵ This proposed action is supported.

³¹ Sydney Water, *Getting connected; How to connect to Sydney Water services and what to do once you are*, (Publication SW75 09/12; Revision 4, 1 July 2013), page 84 (accessed at: http://www.sydneywater.com.au/web/groups/publicwebcontent/documents/document/zgrf/mdqz/~edisp/dd_043556.pdf on 30 October 2013).

³² Note that cross connection between the existing connection points, which are immediately adjacent to each other, is unlikely to be beneficial.

³³ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*); undated, page 19.

³⁴ Flow Systems, *Central Park Water; Sewage Management Plan* (file: *CPW Sewage Management Plan_FINAL v2*); undated, page 9.

³⁵ Ibid.

Table A.1.5 Detailed Audit Findings – Infrastructure Operating Plan (IOP)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.6(1)(e) and/or cl.13(1)(e)	The IOP indicates the arrangements in relation to the maintenance, monitoring and reporting of standards of service.	Compliant
Risk	Target for Full Compliance	
This presents a medium operational risk in that the Licensee may be unaware that standards of service are not being met in the absence of performance monitoring.		Implementation of appropriate systems to monitor the service delivery performance of the infrastructure.
Evidence sighted		
<ul style="list-style-type: none"> Flow Systems, <i>Central Park Water; Infrastructure Operating Plan</i> (file: <i>CPW - Infrastructure Operating Plan FINAL v2</i>); undated. Flow Systems, <i>Central Park Water; Sewage Management Plan</i> (file: <i>CPW Sewage Management Plan_FINAL v2</i>); undated. Flow Systems, <i>Customer Contract</i>, undated [included as Appendix G to the <i>Infrastructure Operating Plan</i>]. 		
Summary of reasons for grade		
Although no monitoring of performance standards is currently implemented by Central Park Water, given the nature of the infrastructure currently owned and/or operated by Central Park Water, i.e. passive (pipeline) assets, this is consistent with practices adopted in similar strata developments which also rely on customer (tenant) complaints to identify failure to meet the specified standards. Accordingly, Central Park Water is assessed as being compliant with this requirement.		
Discussion and notes		
Given the nature of the infrastructure currently owned and/or operated by Central Park Water, i.e. passive (pipeline) assets, no direct monitoring of standards of service is currently undertaken.		
Suction pressure at the water supply booster pumps (owned and operated by the Central Park development Body Corporate) is monitored, with an alarm raised in the Building Management System in the event of inadequate pressure. This will result in notification to Central Park Water.		
Under the provisions of the Customer Contract, Central Park Water is obligated to supply drinking water compliant with: ³⁶		
“... the health taste and odour related guidelines provided in the Australian Drinking Water Guidelines 2004 as specified by the relevant Federal and/or State health authorities and any other taste and odour related guidelines, as required by our Licence.”		
It is also required to: ³⁷		
“... use our best endeavours to ensure that the drinking water we supply to your property is at the minimum pressure of 15 metres of head (or such other level as required under our Licence).”		
In order to meet its obligations to its customers Central Park Water is dependent upon:		
<ul style="list-style-type: none"> the supply obligations of Sydney Water in respect of water quality; and effective operation of the water supply booster pumps by the Central Park development Body 		

³⁶ Flow Systems, *Customer Contract*, undated [included as Appendix G to the *Infrastructure Operating Plan*], page 6.

³⁷ Ibid.

Corporate.

Whilst the absence of monitoring, which effectively means that Central Park Water is reliant upon customer complaints to identify any failure to meet performance standards, is consistent with practices adopted in similar strata developments, there is an opportunity to implement some form of ongoing or periodic monitoring.

[Opportunity for Improvement – Central Park Water may wish to consider the implementation of some form of ongoing or periodic monitoring of service standards at customer supply points.]

Notwithstanding, Central Park Water has noted its intention to review its monitoring requirements as part of a risk assessment to be undertaken prior to commissioning of the proposed Recycled Water Centre.³⁸

³⁸ Flow Systems, *Central Park Water; Infrastructure Operating Plan* (file: *CPW - Infrastructure Operating Plan FINAL v2*); undated, page 15.

Appendix 2 Detailed Audit Findings – Water Quality Plan (drinking water) (WQP (dw))**Table A.2.1 WQP (dw) element one**

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	Element one The WQP (dw) shows a commitment to water quality management.	Non-compliant Insignificant
<hr/>		
Risk	Target for Full Compliance	
The lack of up to date contact details for stakeholders presents a small operational risk for this scheme and is something that is currently being addressed by the licence holder.	Update the stakeholder contact list	
<hr/>		
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP.Appendices A, J, L, R, S, V and W of the above WQP.Personal communication with licence holder – Andrew Horton.		
<hr/>		
Summary of reasons for grade		
Whilst the WQP addresses most of the aspects required, the stakeholder contact information is some years out of date. Accordingly, Central Park Water is not considered to have demonstrated full compliance with this requirement. However, given the state of development of the WQP and the minimal extent of passive infrastructure currently in service, the non-compliance is not deemed to be significant.		
<hr/>		
Discussion and notes		
Policy:		
The policy was completed and is appropriate (Appendix A of the WQP).		
It is too early to assess how well the new policy has been communicated. However, staff responsible for operating or managing drinking water assets will be required sign a register to acknowledge they have read, understand and will implement both the WQP and the policy.		
Regulatory and formal requirements:		
There is a list of regulatory and formal requirements in the WQP. The list is not exhaustive, but it covers the main requirements relevant to water quality management.		
The Codes of Conduct are attached as part of the WQP (Appendices V and W).		
The Customer Contract is attached as Appendix S of the WQP.		
The Utility Services Agreement with Sydney Water is given as Appendix L of the WQP.		
The WQP does not make it explicit how responsibility for compliance has been allocated to specific employees but in general the WQP is used to communicate these regulatory and formal requirements to stakeholders.		
The WQP commits Central Park Water to updating the list of requirements but it's too early to assess whether or not that has occurred.		
Stakeholders:		
There is a list of stakeholders in the WQP. The list is not exhaustive, but it covers the main		

stakeholders relevant to water quality management.

No specific process is in place to engage external stakeholders beyond those relevant to regulatory requirements, however that is sufficient from a compliance perspective.

The WQP commits Central Park Water to updating the list of stakeholders but it's too early to assess whether or not that has occurred.

One problem with the contact list for the stakeholders (Appendix J of the WQP) is that it is way out of date with respect to contact details. In practice, Flow Systems are well-networked enough to get around this without presenting undue risks to the community making this non-compliance insignificant. However, it needs to be resolved.

Table A.2.2 WQP (dw) element two

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	Element two The WQP (dw) includes an analysis of the drinking water supply system.	Non-compliant Insignificant
<hr/>		
Risk	Target for Full Compliance	
The lack of an uncertainty analysis in the risk assessment presents no operational risk but is a non-compliance with the ADWG. It is a matter for the licence holder to determine whether or not to address this non-compliance.		
Augment the risk assessment to include the major sources of uncertainty associated with each hazard and hazardous event and outline the actions considered to reduce uncertainty.		
<hr/>		
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP.Appendices A, B, F, J, L, R and T of the above WQP.Lincolne Scott WFC Interfaces document April 2011.Frasers As-built pdf layered drawings.Sydney Water network drawings.Personal communication with licence holder – Andrew Horton.		
<hr/>		
Summary of reasons for grade		
Whilst the WQP addresses most of the aspects required, the risk assessment did not include an uncertainty analysis. Accordingly, Central Park Water is not considered to have demonstrated full compliance with this requirement. However, given the state of development of the WQP and the minimal extent of passive infrastructure currently in service, the non-compliance is not deemed to be significant.		
<hr/>		
Discussion and notes		
Risk assessment team:		
The team is sufficiently skilled to conduct the risk assessment.		
Flow diagram:		
Basic flow diagrams have been prepared but on their own are not quite clear enough and comprehensive enough to meet the intent of the ADWG. However, in combination with the other diagrams and drawings that are present, and since the system is so simple, this is sufficient.		
Opportunity for improvement: The process flow diagrams were compliant and adequate for their purpose in the context - in the hands of the licence holder - but were not particularly clear or helpful upon first sight to third parties. Given the central role of the process flow diagrams in communicating the scheme arrangements it would be preferable to produce much more communicative process flow diagrams. It might be helpful to expand the conceptual diagram to show more of the “catchment” and “consumer” part of the system as well, even if that is beyond the Central Park Water direct management.		
Documentation of pertinent information:		
Very basic information was assembled for the purposes of the risk assessment workshop and it did not include key documented information on a number of items relevant to the risk assessment.		

In practice, noting that the existing assets are inherited from Sydney Water, and that key in-house staff were involved in the risk assessment, and that recycled water isn't currently being supplied, and that most of the relevant information is in fact documented elsewhere by Central Park Water, this is not considered a non-compliance.

Sydney Water shows its assets on its network electronic plotting system, including the valves and has provided a plot of its assets on the relevant area to Flow Systems. This provides some important information on assets and where interface points and areas of responsibility lie.

Frasers is currently completing "as-builts" of the assets and is providing those to Flow Systems as they are constructed.

The site MasterPlan drawings are given as Appendix R of the WQP.

The veracity of the initial plumbing installations has been verified by Boone and Willard in a series of plumbing verification certificates, given as Appendix T of the WQP.

The Utility Services Agreement (Appendix L of the WQP) provides some important information on assets and where interface points and areas of responsibility lie.

A summary document sets out all of the interfaces and explains where the various water sources go to and come from.

Roof harvested and surface-harvested stormwater are captured in a rainwater storage tank that can be used to blend into the recycled water if appropriate. This will need to be considered under the WQP (npw) audit.

Periodic review:

The WQP commits Central Park Water to updating the relevant information but it's too early to assess whether or not that has occurred.

Review of historical data and exceedances:

A decision has been made not to analyse any of the existing water quality data and exceedance from Sydney Water – even though that data is readily available and is publicly reported. Therefore, these actions haven't been completed. However, as noted in the WQP, Sydney Water can be assumed to be supplying water that is fit for purpose, it warrants that it will in the Utility Services Agreement and it is audited by IPART. Therefore, this assumption is reasonable in the context of the Sydney Water supply to the CBD.

Hazard identification and risk and uncertainty assessment:

The risk assessment methodology followed is a standard ADWG approach and has been documented in Appendix F of the WQP. The assessment is fully compliant with the ADWG except for the lack of documentation of the major sources of uncertainty associated with each hazard and hazardous event and an outline the actions considered to reduce uncertainty. Almost all ADWG assessments conducted by WICA licence holders fail to address this assessment of uncertainty and whilst that doesn't pose an operational risk in this context, it is a verbatim non-compliance with the ADWG.

Table A.2.3 WQP (dw) element three

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	Element three The WQP (dw) outlines the preventive measures for drinking water quality management.	Compliant
Risk		Target for Full Compliance
Evidence sighted		
<ul style="list-style-type: none"> Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP. Appendices A, F and J of the above WQP. Personal communication with licence holder – Andrew Horton. 		
Summary of reasons for grade		
Central Park Water has provided sufficient detail in relation to its drinking water risk management measures for this minimal, passive infrastructure. Accordingly, it is assessed that Central Park Water is compliant with this requirement.		
Discussion and notes		
Identification of preventive measures and residual risk assessment:		
The methodology for documenting the preventive measures and residual risk assessment followed is a standard ADWG approach and has been documented in Appendix F of the WQP. The assessment is fully compliant with the ADWG.		
Most of the controls, such as being involved in the dial-before-you-dig system, are somewhat generic. Most of the specific drinking water quality controls noted are in fact Sydney Water controls – as noted in the document.		
However, there is some reasonably sophisticated information in the water infrastructure that goes beyond what is present on conventional main to building transfer assets in parallel non-WICA situations. At the Central Park site, information on aspects such as valve position, pump operation, level gauges and some meters (pulse or flow signals) are fed to the Building Management System which is accessed from the Control Room. SCADA systems as the human interface into the PLCs to help interrogate and control the systems.		
The operational controls relating to prevention of cross-connections with the recycled water system are noted but these will be subject to full review under the WQP (npw) and so are not discussed further here.		

Table A.2.4 WQP (dw) element four

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	<p>Element four</p> <p>The WQP (dw) outlines the operational procedures and process control for the scheme.</p>	Compliant
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP.Verification certificates for on-site plumbing and drainage (Appendix T of the above document).Internet site of RVE plumbing (http://www.rveplumbing.com.au).Personal communication with licence holder – Andrew Horton.		
Summary of reasons for grade		
<p>Central Park Water has provided sufficient detail in relation to its operational procedures and process control for this minimal, passive infrastructure. Accordingly, it is assessed that Central Park Water is compliant with this requirement.</p>		
Discussion and notes		
Operational procedures:		
<p>The details operational procedures are not directly held by Flow Systems. Rather, pipe repair and maintenance are carried out by RVE plumbing, engaged via Mono Pumps. Flow Systems would engage an alternative contractor if there were an issue with RVE.</p> <p>Since the relevant procedures are held by the contractor, not by Flow Systems, these could not be directly subject to audit. Therefore, the credentials of RVE plumbing were checked using the internet. Upon checking its internet site (www.rveplumbing.com.au) the firm claimed to have a relevant plumbing licence and offer a range of plumbing and drainage services. Since the nature of the work is essentially conventional plumbing work, it was not considered necessary for this audit to seek to see copies of the documented operational procedures of the contractor.</p> <p><i>Opportunity for improvement:</i> The licence holder places heavy reliance on third parties that are not named on the licence, e.g. in this case Mono Pumps and RVE. These parties could be changed at any time. It would be useful to hold evidence of the credentials of these parties on file and the currency and scope of those credentials, e.g. plumbing licences, evidence of capacity and details of contractual obligations to Central Park Water.</p>		
Operational monitoring and corrective actions:		
<p>Through the Building Management System, which is accessed from the Control Room, operational monitoring takes place of information on aspects such as valve position, pump operation, level gauges and some meters (pulse or flow signals). Valves can be shut off in response to adverse monitoring signals.</p> <p>The veracity of the initial plumbing installations has been verified by Boone and Willard in a series of plumbing verification certificates, given as Appendix T of the WQP.</p> <p>Note that the principal intent of this clause refers to on-line monitoring equipment in treatment plants and large networks and doesn't apply directly to these assets.</p>		
Inspection and maintenance of equipment:		
<p>The asset management system covers the required routine inspection and maintenance requirements</p>		

for these systems (in this case under “NetSuite”). However, at present the assets covered by this site are not all captured within NetSuite. Since the issue of the coverage of NetSuite is dealt with in detail in the IOP audit, and since risks presented by these assets not being covered are of a longer term nature, this gap is not identified as a non-conformance here and has been allocated as a non-conformance under the IOP audit reported above.

The assets present at the site are largely standard, readily available, normal plumbing assets that should be relatively easy to repair and replace.

The assets present at the site are largely readily inspectable, accessible, in-basement assets. In general, the pipes are physically more towards the wall or ceiling than other pipes that are found at the site and, in effect, are protected from mechanical damage by those other assets. As a result, failure rates should be extremely low for the foreseeable future.

Note that the principal intent of this clause refers to on-line monitoring equipment in treatment plants and large networks and doesn't apply directly to these assets.

Use of approved materials and chemicals:

Materials are retained by the contractor, in this case RVE, and not by Flow Systems. This contractor will provide the required parts and repair and replace the parts. The contract with RVE is a sub-contract under the contract with Mono Pumps, as used for the Pitt Town scheme.

There are no 'chemicals' as such of relevance to this drinking water scheme that are added by the licence holder making this clause not applicable.

Table A.2.5 WQP (dw) element five

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	Element five The WQP (dw) outlines the process for verification of drinking water quality.	Compliant
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP.CRMS records for Central Park Water.Frasers Central Park Water internet site.Flow Systems Central Park Water internet site (http://centralparkwater.com.au/).The Homeowners Manual for Central Park.Personal communication with licence holder – Andrew Horton.		
Summary of reasons for grade		
Central Park Water has provided sufficient detail in relation to its drinking water quality verification for this minimal, passive infrastructure. Accordingly, it is assessed that Central Park Water is compliant with this requirement.		
Discussion and notes		
Verification of drinking water quality:		
This aspect is not applicable to this scheme – Sydney Water provides the verification of drinking water quality for the CBD as a whole and since no treatment or chemical addition is practiced by Flow Systems, and since it is a small system, that verification should be sufficient.		
Public and media communication:		
Frasers use The Hub (as they call their intranet site) as well as the new purchaser settlement pack and Homeowners Manual to set out who owns and supplies the utility services for the site and how to contact those suppliers. More broadly, Flow Systems describes and discusses the water supply system on its internet site.		
Customer complaint management and response:		
Flow Systems enters its customers into the Customer Relationship Management System (CRMS). The CMRS is then used to manage records of customer complaints and responses.		
At present, customers from Central Park are being entered as they purchase properties. A high proportion of these customers are tenants.		
Central Park Water has set itself internal targets for customer complain resolution and has stated within the WQP that it will resolve complaints promptly and appropriately. These commitments are appropriate and compliance of the licence holder with its commitments will need to be checked in the future operational audit.		
Even with all reasonable communication measures taken, it is likely that there will be at least some confusion between the licence holder and Sydney Water as to who the water supplier is. However each party can divert customers to one another in such an event.		

Table A.2.6 WQP (dw) element six

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	Element six The WQP (dw) includes details on the management of incidents and emergencies.	Non-compliant Insignificant
Risk	Target for Full Compliance	
The lack of a completed drinking water quality incident and emergency management plan and up to date emergency contact details presents a small, but ever increasing, operational risk for this scheme and is something that is currently being addressed by the licence holder.		Complete the incident and emergency management plan and update the stakeholder contact list.
Evidence sighted		
<ul style="list-style-type: none"> Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP. Appendices I and J of the above WQP. Personal communication with licence holder – Andrew Horton. 		
Summary of reasons for grade		
Central Park Water has yet to complete a coherent incident and emergency management plan for this scheme and has out dated contact details for key stakeholders. However, given the demonstrated competence of Flow Systems in managing incidents and emergencies under a WICA regime along with the fact that Flow Systems are currently remedying this gap, and noting the minimal and passive nature of this infrastructure, this non-compliance is considered insignificant.		
Discussion and notes		
<i>Incident and emergency management:</i>		
To date, Central Park Water by its own admission lacks a coherent incident and emergency management plan for this infrastructure. As a result, specific incidents have yet to be defined and an incident response plan, as such, does not cover Central Park Water and drinking water. Therefore, on the face of it, this is an area of significant non-compliance.		
Upon further analysis, Flow Systems had much of the necessary information and knowledge to competently respond to incidents and emergencies and following detailed discussion and review of documentation, the finding was reduced to an insignificant non-compliance.		
Based on the observations of the Central Park Water audit, and the recent Pitt Town audit, it was evidence that staff do have the generic expertise to identify, isolate and repair these assets under emergency conditions and to respond appropriately.		
Flow Systems staff are fully cognisant of the IPART notification requirements and have to hand copies of the relevant documentation.		
Flow Systems staff have to hand the required notification names and contact details of key third parties, such as NSW Health and IPART.		
Examples of recent incidents from Pitt Town were shown covering recycled water and sewer. The incidents appeared to be managed appropriately and the correct notification forms and procedures were used.		
A draft Incident and Emergency Response Management Plan is given as Appendix I of the WQP. The		

document is a draft based entirely on the Pitt Town scheme but demonstrates a coherent framework from which Flow Systems can rapidly produce an appropriate plan for the Central Park Scheme and shows that Flow Systems is across its generic requirements.

One problem with the contact list for the stakeholders (Appendix J of the WQP) is that it is way out of date with respect to contact details. In practice, Flow Systems are well-networked enough to get around this without presenting undue risks to the community making this non-compliance insignificant. However, it needs to be resolved.

Table A.2.7 WQP (dw) element seven

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	Element seven. The WQP (dw) outlines employee training and awareness requirements.	Compliant
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP.Appendix K of the above document.Personal communication with licence holder – Andrew Horton.		
Summary of reasons for grade		
Central Park Water has provided sufficient detail in relation to its employee training and awareness requirements for this minimal, passive infrastructure. Accordingly, it is assessed that Central Park Water is compliant with this requirement.		
Discussion and notes		
Two key staff, Andrew Horton and Ralph Wardell, will play the main roles in managing the infrastructure. Andrew will take the main day-to-day role.		
The staff have their CVs provided as Appendix K of the WQP. The staff have ample experience, given the scale of this drinking water transfer scheme.		

Table A.2.8 WQP (dw) element eight

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	Element eight.	Compliant
	The WQP (dw) outlines the process for community consultation, awareness and involvement.	
Risk	Target for Full Compliance	
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP.Flow Systems Central Park Water internet site (http://centralparkwater.com.au/)The Homeowners Manual for Central Park.Personal communication with licence holder – Andrew Horton.		
Summary of reasons for grade		
<p>Central Park Water has provided sufficient detail in relation to its process for community consultation, awareness and involvement for this minimal, passive infrastructure. Accordingly, it is assessed that Central Park Water is compliant with this requirement.</p>		
<p>Fraser's use The Hub (as they call their intranet site) as well as the new purchaser settlement pack to set out who owns and supplies the utility services for the site and how to contact those suppliers.</p> <p>A Homeowners Manual has been developed for Central Park customers.</p> <p>More broadly, Flow Systems describes and discusses the water supply system on its internet site.</p> <p>There is no particularly special communication required on this site relating to potable water.</p> <p>The recycled water scheme is covered separately.</p> <p>Given the very minimal scale of the Central Park potable water scheme, the level of detail provided is sufficient.</p>		

Table A.2.9 WQP (dw) element nine

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	<p>Element nine.</p> <p>The WQP (dw) outlines the validation process for the scheme.</p>	Compliant
Risk		Target for Full Compliance
Evidence sighted		
<ul style="list-style-type: none"> Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP. Personal communication with licence holder – Andrew Horton. 		
Summary of reasons for grade		
<p>Central Park Water has provided sufficient detail in relation to its validation process for the scheme for this minimal, passive infrastructure. Accordingly, it is assessed that Central Park Water is compliant with this requirement.</p>		
<p>The relevant codes and standards are given in the WQP and beyond that, no specific validation is required for a drinking water conveyance process. Given the very minimal scale of the Central Park potable water scheme, the level of detail provided is sufficient.</p>		

Table A.2.10 WQP (dw) element ten

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	<p>Element ten.</p> <p>The WQP (dw) outlines the process for management of documentation and records as well as the reporting requirements.</p>	Compliant
Risk		Target for Full Compliance
Evidence sighted		
<ul style="list-style-type: none"> Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP. Appendix N of the above WQP. Personal communication with licence holder – Andrew Horton. 		
Summary of reasons for grade		
<p>Central Park Water has provided sufficient detail in relation to its process for management of documentation and records as well as the reporting requirements for this minimal, passive infrastructure. Accordingly, it is assessed that Central Park Water is compliant with this requirement.</p>		
<p>Documentation and records and reporting is described under Section 11 Table 7 of the WQP.</p> <p>A useful summary table provides the key monthly, annual and event-related reports and summarises those correctly.</p> <p>The Flow Systems document management system is described under Appendix N of the WQP.</p> <p>Given the very minimal scale of the Central Park potable water scheme, the level of detail provided is sufficient.</p>		

Table A.2.11 WQP (dw) element eleven

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	Element eleven. The WQP outlines the process for long-term evaluation of results and the audit of the Plan.	Compliant
Risk		Target for Full Compliance
Evidence sighted		
<ul style="list-style-type: none">Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP.		
Summary of reasons for grade		
Central Park Water has provided sufficient detail in relation to its long-term evaluation of results and the audit of the Plan for this minimal, passive infrastructure. Accordingly, it is assessed that Central Park Water is compliant with this requirement.		
Auditing and evaluation is described very briefly under Section 12 of the WQP. A detailed review is scheduled annually and the external WICA audits provide a key ongoing critical review opportunity. Given the very minimal scale of the Central Park potable water scheme, the level of detail provided is sufficient.		

Table A.2.12 WQP (dw) element twelve

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(a)	<p>Element twelve.</p> <p>The WQP outlines a process for review and continual improvement.</p>	Compliant
Risk		Target for Full Compliance
Evidence sighted		
<ul style="list-style-type: none"> Flow Systems, <i>Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)</i> (file: <i>CPW - Water Quality Plan - DW & RW_V3 compressed</i>), undated; from here on referred to as the WQP. Personal communication with licence holder – Andrew Horton. 		
Summary of reasons for grade		
<p>Central Park Water has provided sufficient detail in relation to its process for review and continual improvement for this minimal, passive infrastructure. Accordingly, it is assessed that Central Park Water is compliant with this requirement.</p>		
<p>Review and continual improvement is under Section 13 of the WQP. The information given within Section 13 is very brief, but refers to a detailed annual review and improvement process linked to the audit process or any other changes. In addition, Section of the WQP provides a table of planned improvements. This level of review is sufficient for the potable water scheme.</p>		

Appendix 3 Detailed Audit Findings – Sewage Management Plan (SMP)

Table A.3.1 SMP – all aspects

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.14(1)(a) and (b)	<p>The manner in which the health and ecological assessments will be undertaken and any concerns arising from any such assessment.</p> <p>The arrangements for the disposal of waste from the infrastructure.</p>	Non-compliant Insignificant

Risk	Target for Full Compliance
The lack of a completed sewage incident and emergency management plan and up to date emergency contact details presents a small, but ever increasing, operational risk for this scheme and is something that is currently being addressed by the licence holder.	Complete the incident and emergency management plan and update the stakeholder contact list.

Evidence sighted

- Flow Systems, *Central Park Water; Sewage Management Plan* (file: *CPW Sewage Management Plan_FINAL v2*); undated; from here on referred to as the SMP.
- Appendices A, B, C, D, E, F, G, H, I, J, K and L of the above SMP.
- Recent laboratory results from ALS characterising the basic properties of the sewage at the site.
- Lincolne Scott WFC Interfaces document April 2011.
- Frasers As-built pdf layered drawings.
- Sydney Water network drawings.
- Flow Systems Central Park Water internet site (<http://centralparkwater.com.au/>)
- The Homeowners Manual for Central Park.
- Flow Systems, *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)* (file: *CPW - Water Quality Plan - DW & RW_V3 compressed*), undated; from here on referred to as the WQP.
- Personal communication with licence holder – Andrew Horton.

Summary of reasons for grade

Central Park Water has yet to complete a coherent incident and emergency management plan for this scheme and has out dated contact details for key stakeholders. However, given the demonstrated competence of Flow Systems in managing incidents and emergencies under a WICA regime along with the fact that Flow Systems are currently remedying this gap, and noting the minimal and passive nature of this infrastructure, this non-compliance is considered insignificant.

Discussion and notes

Risk assessment team:

The team is identified in the SMP and is sufficiently skilled to conduct the risk assessment.

Flow diagram:

Basic flow diagrams have been prepared that are sufficient to explain the overall process (Appendices A and H of the SMP). On their own these are not quite clear enough and comprehensive enough since they don't include details such all pump locations. However, in combination with the other diagrams and drawings that are present, and since the system is so simple, the diagrams are

sufficient.

Opportunity for improvement: The process flow diagrams were compliant and adequate for their purpose in the context - in the hands of the licence holder - but were not particularly clear or helpful upon first sight to third parties. Given the central role of the process flow diagrams in communicating the scheme arrangements it would be preferable to produce much more communicative process flow diagrams. It might be helpful to expand the conceptual diagram to show more of the “catchment” and “consumer” part of the system as well, even if that is beyond the Central Park Water direct management.

Waste characterisation of the source of the sewage:

Flow Systems has analysed the sewage at the site three times as part of informing membrane selection. Another three samples have been taken. This level of analysis is sufficient for the scale of operation and the nature of the source. The results were reported by independent NATA accredited lab ALS.

Documentation of pertinent information:

Very basic information was assembled for the purposes of the risk assessment workshop (Appendix H of the SMP) and it did not include some information on a number of items relevant to the risk assessment. However, in practice, since key in-house staff were involved in the risk assessment, and since all other relevant information is in fact documented elsewhere by Central Park Water, this is not considered a non-compliance.

Sydney Water shows its assets on its network electronic plotting system and has provided a plot of its assets on the relevant area to Flow Systems. This provides some important information on assets and where interface points and areas of responsibility lie.

Frasers is currently completing “as-builts” of the assets and is providing those to Flow Systems as they are constructed. In addition, the sewage servicing plan is given as Appendix B of the SMP.

The veracity of the initial plumbing installations has been verified by Boone and Willard in a series of plumbing verification certificates, given as Appendix D of the SMP.

The Utility Services Agreement (Appendix L of the WQP) provides some important information on assets and where interface points and areas of responsibility lie.

A summary document sets out all of the interfaces and explains where the various water sources go to and come from.

Hazard identification and risk and uncertainty assessment:

The risk assessment methodology followed is a standard approach and has been documented in Appendix H of the SMP. The assessment is fully compliant with expectations.

Identification of preventive measures and residual risk assessment:

The methodology for documenting the preventive measures and residual risk assessment followed is a standard approach and has been documented in Appendix H of the SMP. The assessment is fully compliant with expectations.

Most of the controls, such as being involved in the dial-before-you-dig system, are somewhat generic. All of the final sewage quality management controls are Sydney Water controls or recycled water scheme controls since the sewage is either supplied to Sydney Water or to the recycled water scheme. These other controls are not evaluated within the SMP audit.

There is some reasonably sophisticated information in the water infrastructure that goes beyond what is present on conventional main to building transfer assets in parallel non-WICA situations. At the Central Park site, information on aspects such as valve position, pump operation, level gauges and some meters (pulse or flow signals) are fed to the Building Management System which is accessed from the Control Room. SCADA systems as the human interface into the PLCs to help interrogate and control the systems.

Flow Systems owns the Trade Waste agreements. In order to manage these, there is a requirement for bucket traps and grease arrestors traps for flows of up to 5,000 kL/day and then above that, a DAFF plant is required. However, the Flow Systems' requirements are not as stringent as Sydney

Water leading to an approximately ten times additional charge for the trade waste discharges of up to 15,000 kL/day.

Operational monitoring and corrective actions:

Through the Building Management System, which is accessed from the Control Room, operational monitoring takes place of information on aspects such as valve position, pump operation, level gauges and some meters (pulse or flow signals). Valves can be shut off in response to adverse monitoring signals.

Excess sewage discharges or pump station failure events lead to sewage diverting to the Sydney Water main. Sydney Water and Flow Systems are to be commended for arriving at a practicable solution to estimating sewer flow rates during such periods, i.e. avoiding the need for a costly and problematic plume or meter.

The veracity of the initial plumbing installations has been verified by Boone and Willard in a series of plumbing verification certificates, given as Appendix D of the SMP.

Opportunity for improvement: The licence holder places heavy reliance on third parties that are not named on the licence, e.g. in this case Mono Pumps and RVE. These parties could be changed at any time. It would be useful to hold evidence of the credentials of these parties on file and the currency and scope of those credentials, e.g. plumbing licences, evidence of capacity and details of contractual obligations to Central Park Water

Periodic review:

The SMP commits Central Park Water to updating the relevant information but it's too early to assess whether or not that has occurred.

Monitoring of sewage and the receiving environment:

This aspect is not applicable to this scheme in relation to the SMP. Sydney Water provides the sewage discharge services for the site and takes raw sewage to its ocean outfall plants.

Incident and emergency management:

Excess sewage discharges to the Sydney Water main. However, it is possible that sewage might discharge to the local receiving environment via a sewer spill.

To date, Central Park Water by its own admission lacks a coherent incident and emergency management plan for this infrastructure. As a result, specific incidents have yet to be defined and an incident response plan, as such, does not cover Central Park Water. Therefore, on the face of it, this is an area of significant non-compliance.

Upon further analysis, Flow Systems had much of the necessary information and knowledge to competently respond to incidents and emergencies and following detailed discussion and review of documentation, the finding was reduced to an insignificant non-compliance.

Based on the observations of the Central Park Water audit, and the recent Pitt Town audit, it was evident that staff had the generic expertise to identify, isolate and repair these assets under emergency conditions and to respond appropriately.

Flow Systems staff are fully cognisant of the IPART notification requirements and have to hand copies of the relevant documentation.

Flow Systems staff have to hand the required notification names and contact details of key third parties, such as NSW Health and IPART.

Examples of recent incidents from Pitt Town were shown covering recycled water and sewer. The incidents appeared to be managed appropriately and the correct notification forms and procedures were used.

A draft Incident and Emergency Response Management Plan is given as Appendix C of the SMP. The document is a draft based entirely on the Pitt Town scheme but demonstrates a coherent framework from which Flow Systems can rapidly produce an appropriate plan for the Central Park Scheme and shows that Flow Systems is across its generic requirements.

One problem with the contact list for the stakeholders (Appendix G of the SMP) is that it is way out of

date with respect to contact details. In practice, Flow Systems are well-networked enough to get around this without presenting undue risks to the community making this non-compliance insignificant. However, it needs to be resolved.



Water Futures
t-cAM Consulting

Independent Pricing and Regulatory Tribunal

Water Industry Competition Act 2006

Network Operator's Licence Audit Report
(initial (pre-commercial operation) stage audit)

Licence No. 10_014: Pitt Town Water Factory Pty Ltd, Pitt Town, Sydney, NSW
(also known as the Pitt Town Scheme)

Pitt Town Water Factory Pty Ltd (ACN 141 705660)

Final Report
30th May 2012

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1 Executive Summary

The purpose of this audit was to assess the adequacy of licence plans in meeting the requirements of the legislation. This infrastructure subject to audit was the Pitt Town Water Factory Pty Ltd (PTWF) Pitt Town Recycled Water Scheme (the Scheme). The scope of this audit was the operation and maintenance of the Scheme which is operated under a WICA Network Operator's Licence. Under the Licence, PTWF must have the licence plans audited by an auditor approved by IPART. The audit was an initial (pre-commercial operation) stage audit of the adequacy of the plans and not a compliance audit.

The auditors referenced the requirements of the audit deed poll and noted the *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines Revision 4 (February 2012)* in conducting the audit, determining audit findings and preparing the report. However, since the audit was started, and the field audit took place, during November 2011, this audit report does not fully reflect the 2012 guidance, even though the report has been issued post the issue of the later guidance. This report fully addresses the *IPART Audit Guideline Water Licence Audits Revision 2 (September 2009)* and partly addresses some aspects of the later guidance. This audit report should not be considered to constitute a document that complies with the later guidance and should not be used as a template or an example by other auditors or Licence Holders that are being audited against the more recent guidance.

The auditors were provided with sufficient and appropriate evidence, as described in *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines Revision 4 (February 2012)* on which to base their conclusions. The audit report findings accurately reflect the professional opinion of the auditors.

The audit report findings have not been unduly influenced by the licence holder nor any of its associates and expresses the auditors' opinions as to whether the licence holder has met the licence conditions and regulatory requirements as specified in the scope.

The audited infrastructure complied with the audited requirements of the Regulation and licence conditions, and was found to be capable of operating safely and in accordance with its Infrastructure Operating Plan (IOP), Water Quality Plan (WQP) and Sewage Management Plan (SMP) and other aspects of the licence and regulations. The licence holder audited (PTWF) was found to be operating the infrastructure in compliance with the audit criteria.

In the opinion of the auditors, the licence holder can commence commercial operation for the safe and reliable supply of fit-for-purpose water. There need be no hesitation in approving the commercial operation of the assets operated under this WICA licence.

The audit finding for a number of the assessed criteria was Adequate rather than Fully Adequate. In addition, some opportunities for improvement were identified against criteria that were assessed as Fully Adequate. However, there were no non-compliances or inadequacies that presented an immediate, significant risk to public health and safety, the environment, customer relations, operations, financial viability or scheme reliability.

The detailed audit findings are presented against the relevant criteria in five attachments, as follows:

- Attachment 1. Infrastructure Operating Plan
- Attachment 2. Water Quality Plan
- Attachment 3. Sewage Management Plan
- Attachment 4. Network Operator's Licence
- Attachment 5. Water Industry Competition (General) Regulation 2008

2 Introduction

2.1 Objectives

The purpose of this audit was to assess the adequacy of licence plans in meeting the requirements of the legislation.

2.2 Licensee's infrastructure, systems and procedures

This infrastructure subject to audit was the Pitt Town Water Factory Company Pty Ltd (PTWF) Pitt Town Recycled Water Scheme (the Scheme). There were three plans that were audited, as follows:

- The Infrastructure Operating Plan (IOP) (for both the Sewerage System and the Recycled Water Treatment Plant).
- The Water Quality Plan (WQP).
- The Sewage Management Plan (SMP).

2.3 Audit method

2.3.1 Audit scope

The scope of this audit was the operation and maintenance of the Scheme which is operated under a WICA Network Operator's Licence. Under the Licence, PTWF must have the licence plans audited by an auditor approved by IPART. The audit was an initial (pre-commercial operation) stage audit of the adequacy of the plans and not a compliance audit. The criteria for the audit for are defined under the *IPART Audit Guideline Water Licence Audits Revision 2 (September 2009)* and some aspects of the *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines Revision 4 (February 2012)*.

2.3.2 Audit standard

The audit approach followed standard audit guidance as set out in, for instance, ISO 19011:2011 Guidelines for auditing management systems.

The auditor and IPART recognise that some information (such as documented reactive maintenance events and performance history) was not be available as the plant and systems are not all operational. Where such exceptions to data availability exist, IPART have advised they will be practical and realistic and the auditor will be reviewing from a system, process and practice perspective. However, where there was no reasonable justification for such omissions (such as the licensee not having installed the asset concerned at the time of audit), then this would likely result in an adverse audit finding.

Audits are by necessity limited to sampling processes. It is not practicable, nor necessary, to inspect 100% of items within an audit scope. Auditing forms part of the broader risk management process by providing an independent check on the veracity of the processes and procedures in place to manage risk. Finding a balance between audit effort and practicality requires the exercise of experienced professional judgement. The amount of effort allocated to this audit has been kept to a reasonable minimum and is summarised in Table 1. More detailed sub-plans are given in following sections of this document.

2.3.3 Audit steps

The audit steps are indicated in Table 1. The field audit, involving interviews on site, took place on Wednesday 23rd November 2011. The detailed audit agenda are given in Tables 2 to 4.

The audit templates used during the audit are attached and form the audit report template. The focus was on substantiating claims and references in the plans and verifying that the plans can and are being operationalised. Where appropriate, the auditors randomly sampled examples sufficient to verify claims made by the licensee.

Quality was assured using a professional review process. Components of the audit report were reviewed by another Panel Member. Specifically, aspects of Dr Deere's work were reviewed and approved by Mr Carpenter, and vice versa.

2.3.3.1 Infrastructure Operating Plan audit

Purpose:	Verify that the Infrastructure Operating Plan (IOP) was complete and capable of ensuring effective operation of the infrastructure to meet customer level of service and related regulatory compliance requirements.
Nature of Audit:	Initial (pre-commercial operation) audit of the adequacy of the Infrastructure Operating Plan in accordance with the requirements of Schedule 1 clause 6 (1) and/or clause 13 (1) of the <i>Water Industry Competition (General) Regulation 2008</i> .
Category to be Assessed:	Infrastructure Performance.
Audit activities:	<p>The site audit focused on assessing the degree of conformity between the as-built system and the descriptions of the system as given in the IOP. In order to test the IOP the auditor reviewed the following referenced systems, processes and practices (as appropriate to the Section of the Plan):</p> <ul style="list-style-type: none">• Policies.• Strategies.• Plans.• Life cycle analyses.• Processes and Practices.• Data and Knowledge Management Systems.• Data and Knowledge.• Maintenance and Operation Strategies and associated implementation via Work Instructions and Work Orders for Predictive and Preventive Maintenance and Condition Monitoring Activities.• Contingency and Business Continuity Planning.• Skills, Training and Resourcing Plans and Records linked to Asset Maintenance and Operational Strategies and Level of Service Specifications.

2.3.3.2 Water Quality Plan audit

Purpose:	Verify that the Water Quality Plan (WQP) was complete and capable of ensuring that water quality objectives are consistently achieved so that water is fit-for-purpose, and that recycled water is not used for purposes other than those intended and for which it is fit.
Nature of Audit:	Initial (pre-commercial operation) audit of the adequacy of the Water Quality Plan in accordance with the requirements of Schedule 1 clause 7 (1) of the <i>Water Industry Competition (General) Regulation 2008</i> .
Category to be Assessed:	Water Quality.
Audit activities:	<p>The site audit focused on assessing the degree of conformity between the as-built system and the descriptions of the system as given in the WQP. In order to test the WQP the auditor reviewed the following referenced systems, processes and practices (as appropriate to the Section of the Plan):</p> <ul style="list-style-type: none">• Recycled Water Quality Policy (or other policy/ies covering this aspect).• System description, including water quality process flow diagram, water quality process description and review of historical water quality data.• Water quality risk assessment – process adopted and results of assessment.

- Water quality risk management including preventive measures, critical control points, target criteria and critical limits.
- Process control procedures relevant to water quality management including operation, maintenance, calibration, monitoring and response.
- Verification of recycled water quality including laboratory analysis and response to customer complaints and enquiries.
- Recycled water quality incident response plans including notifying customers in the event of recycled water not necessarily being fit-for-purpose.
- Training, awareness and competency systems for operators related to water quality.
- Customer communication protocols related to recycled water quality and use.
- Validation of process controls and systems.
- Supporting documentation, reporting, review and audit, including audit of customers to ensure conformity to intended use restrictions.

2.3.3.3 Sewage Management Plan audit

Purpose: Verify that the Sewage Management Plan (SMP) was complete and capable of ensuring effective management of sewage, involving its conveyance, treatment and disposal, in a manner that meets health, ecological and waste disposal requirements.

Nature of Audit: Initial (pre-commercial operation) audit of the adequacy of the Sewage Management Plan in accordance with the requirements of Schedule 1 clause 14 of the *Water Industry Competition (General) Regulation 2008*.

Category to be Assessed: Sewage Management.

Audit activities: The site audits focused on assessing the degree of conformity between the as-built system and the descriptions of the system as given in the SMPs. In order to test the SMP the auditor reviewed the following referenced systems, processes and practices (as appropriate to the Section of the Plan):

Policy and context:

- Licence conditions issued under the POEO Act 1997 relevant to sewage management (Schedule 1, Clause 14(2)).
- Sewage Management policies and strategies.
- Programs of activities to fully implement the plan, including regular reviews for adequacy and proposed improvement.
- Contingency and Business Continuity Planning, including additional preventative measures where improvements are required.

Waste and site characterisation:

- Processes and Practices of waste characterisation of the sources, characterisation of receiving environment including precursor EIS commitments and approval conditions.
- Flow diagram of the sewage system.

Hazard and risk assessment/management:

- Health assessment including identification of hazardous sources and risk assessment (i.e. events for each component, probability of occurrence of events and measure to prevent occurrences or minimise impacts, and provision of alternate sewerage services, as well as complaints and bad debt recovery procedures).

- Ecological assessment and risk assessment characteristics and sensitivity of receive environment).

Data, monitoring and sampling:

- Data, sampling and knowledge of key characteristics (including performance history) of the sewerage system.

Communications and training:

- Communication strategies with government agencies and the community.
- Skills, Training and Resourcing Plans and Records linked to Asset Maintenance and Operational Strategies and Level of Service Specifications.

Table 1. Approximate time allocated to audit (days) – overall combined audit plan.

Task	Description	Infrastructure Operation Plan and related criteria	Water Quality Plan and related criteria	Sewage Management Plan and related criteria
1	Program and project management of the job in accordance with IPART WICA Auditing Guidelines	0.1	0.1	0.1
2	Plan review, questionnaire and audit preparation	1.5	0.5	0.5
3	Interviews and on site audit assessment against guidelines	1.5	1	0.5
4	Audit gap analysis	1.5	0.5	0.5
5	Prepare draft report	0.2	0.2	0.1
6	IPART/stakeholder/licensee liaison on draft	0.1	0.1	0.1
7	Final report	0.2	0.2	0.1
	Total days	5.1	2.6	1.9

Table 2. Desktop audit agenda of IOP and site visit. Wednesday 23rd November 2011.

Timing	Item	Location
08:00 to 08:15	On site inception meeting	Pitt Town
08:15 to 09:45	Site inspection	Pitt Town
09:45 to 10:45	Travel to Head Office	
10:45 to 11:00	Functional design/process briefing (contextualisation for following agenda items)	Sydney Head Office
11:00 to 11:15	Briefing on Corporate Quality Management and Knowledge Management Frameworks (contextualisation for following agenda items)	Sydney Head Office
11:15 to 11:30	Briefing and demonstration of asset hierarchy, data structures and data in asset management and maintenance management systems	Sydney Head Office
11:30 to 12:15	Provision of details of operational analysis including development of LoS specifications, performance criteria and performance monitoring framework.	Sydney Head Office
12:15 to 12:45	Lunch	Sydney Head Office
12:45 to 13:30	Provision of details of risk assessment processes and practices and application to the facility.	Sydney Head Office
13:30 to 13:45	Review of condition monitoring regime and monitoring and control systems.	Sydney Head Office
13:45 to 14:00	Review Contingency and Business Continuity Planning	Sydney Head Office
14:00 to 14:15	Life cycle planning and forecasting. Demonstration and review of application to the facility.	Sydney Head Office
14:15 to 14:45	Review of maintenance strategy, tactics, processes and practices and supporting systems.	Sydney Head Office
14:45 to 16:30	Review of operational structures, allocation of responsibilities, resourcing arrangements including contracted support services, provision of spare parts and logistics.	Sydney Head Office
16:30 to 17:00	Close out meeting including follow up of any issues identified and preliminary findings	Sydney Head Office

Table 3. Desktop audit agenda of WQP and site visit. Wednesday 23rd November 2011.

Timing	Item	Location
08:00 to 08:15	On site inception meeting	Pitt Town
08:15 to 09:45	Site inspection	Pitt Town
09:45 to 10:45	Travel to Head Office	
10:45 to 11:00	Desktop assessment of the risk assessment and CCP identification process.	Sydney head office
11:00 to 11:15	Review of validation	Sydney head office
11:15 to 11:30	Detailed assessment of nominated Critical Control Points including location of sampling lines for monitoring instruments, SCADA settings, calibration SOPs and records, operational SOPs, monitoring SOPs and corrective action SOPs.	Sydney head office
11:30 to 11:45	Desktop assessment of communication procedures and protocols for recycled water quality incidents including training and awareness of those procedures. Desktop assessment of communication and reporting both under routine and incident conditions.	Sydney head office
11:45 to 12:00	Desktop assessment of water quality monitoring and reporting systems including SCADA systems, quality assurance of data, both on line and laboratory acquired (e.g. laboratory test procedure accreditation and on line instrument calibration).	Sydney head office
12:00 to 12:15	Review of material and chemical receipt, storage and quality control facilities and procedures.	Sydney head office
12:15 to 12:45	Lunch	Sydney head office
12:45 to 16:30	No activity (auditor undertaking SMP audit)	
16:30 to 17:00	Close out meeting including follow up of any issues identified and preliminary findings	Sydney Head Office

Table 4. Desktop audit agenda and site audit of SMP. Wednesday 23rd November 2011.

Timing	Item	Location
08:00 to 08:15	On site inception meeting	Pitt Town
08:15 to 09:45	Site inspection	Pitt Town
09:45 to 10:45	Travel to Head Office	
10:45 to 12:45	No activity (auditor undertaking WQP audit)	
12:45 to 13:30	Policy and Context of the SMP: As detailed under Audit template: Sewage Management Plan (SMP): 'Policy and Context'.	Sydney head office
13:30 to 13:45	Waste and Site Characterisation As detailed under Audit template: Sewage Management Plan (SMP): Waste and Site Characterisation i.e. 2009 guidance paragraphs Number 1-4.	Sydney head office
13:45 to 14:00	Hazard and Risk Assessment/Management As detailed under Audit template: Sewage Management Plan (SMP): Hazard and Risk Assessment/Management i.e. 2009 guidance paragraphs Number 5-10 and 16.	Sydney head office
14:00 to 14:45	Data Monitoring and Sampling As detailed under Audit template: Sewage Management Plan (SMP): Data Monitoring and Sampling i.e. 2009 guidance paragraphs Number 11-15.	Sydney head office
14:45 to 16:30	Communications and Training: As detailed under Audit template: Sewage Management Plan (SMP): Communications and Training i.e. 2009 guidance paragraphs Number 17-18.	Sydney head office
16:30 to 17:00	Close out meeting including follow up of any issues identified and preliminary findings.	Sydney Head Office

2.3.4 Audit team

The Licence Holder (auditee) was Pitt Town Water Factory Pty Ltd (ACN 141 705660) (PTWF). For efficiency, all criteria were audited together using a combined auditing approach. This document sets out the detailed audit report against the audit criteria. The two auditors that conducted the audits were as follows:

- The Water Quality Plan and Sewage Management Plan auditor is Dr Dan Deere: Lead Auditor and Technical Professional, Water Quality and Sewage Management, Water Licensing and Technical Services Panel, Independent Pricing and Regulatory Tribunal, NSW Government.
- The Infrastructure Operating Plan Auditor is Tom Carpenter: Lead Auditor, Infrastructure Performance, Water Licensing and Technical Services Panel, Independent Pricing and Regulatory Tribunal, NSW Government.

2.3.5 Audit grades

The audit was graded as described in Table 2.3 of the IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines Revision 4 (February 2012). Briefly, the audit grades are defined as shown in Table 5.

Table 5. Audit grades used in this audit.

Grades of adequacy or compliance	Description
Fully Adequate	Sufficient evidence to confirm that the requirements have been fully met.
Adequate	Sufficient evidence to confirm that the requirements have generally been met apart from a minor shortcoming which does not compromise the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes. For example: the inadequacy is administrative in nature; or the potential impact of the inadequacy is not likely to present a risk to public health, the environment and/or level of service if not rectified.
Inadequate	Sufficient evidence has not been provided to confirm that all major requirements are being met and the deficiency adversely impacts on the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes
No Requirement	The requirement to comply with the licence condition does not occur within the audit period or there is no requirement for the licensee to meet this assessment criterion.

2.4 Regulatory regime

The scheme operates under the *Water Industry Competition Act 2006* (WICA) which in turn calls up the following requirements:

- WICA Licence conditions of Network Operator's Licence No. 10_014 signed 11th November 2010.
- *Water Industry Competition (General) Regulation (2008)*.
- Relevant aspects of the national *Australian Guidelines for Water Recycling (Phase 1) Managing Health and Environmental Risks (2006)*.
- *IPART Audit Guideline Water Licence Audits Revision 2 (September 2009)* and latterly the *IPART Audit Guideline Water Industry Competition Act 2006 Water – Guidelines Revision 4 (February 2012)*.



2.5 Reporting

The audit findings are presented against the relevant criteria in five attachments, as follows:

- Attachment 1. Infrastructure Operating Plan.
- Attachment 2. Water Quality Plan.
- Attachment 3. Sewage Management Plan.
- Attachment 4. Network Operator's Licence.
- Attachment 5. Water Industry Competition (General) Regulation 2008.

Attachment 1. Detailed Audit Findings: Infrastructure Operating Plan (IOP) WIC Reg Sched 1 cl.6(1) and cl.13(1)

Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(a) and/or cl.13(1)(a)	The IOP indicates the arrangements in relation to the design, construction, operation and maintenance of the infrastructure, including particulars as to the life-span of the infrastructure, the system redundancy built into the infrastructure and the arrangements for renewal of the infrastructure.	<p>The IOP includes a detailed asset register. As a minimum the asset register will include:</p> <ul style="list-style-type: none"> ▼ A list of all assets ▼ Basic physical data (material, size, age) ▼ Relative locations of major infrastructure ▼ Capacities of infrastructure (eg, pumps, reservoirs, etc) – where applicable current and ultimate ▼ Location of secondary, alternative sources and/or infrastructure 	<p>Comments:</p> <p>PTWF has prepared asset registers in excel (as noted below) in anticipation of uploading it in to a suitable database/management program (MainPlan) within six months of operation. All assets are identified in P&ID's. Base data collected is sufficient to form the basis of a full asset register and management system. Collection and supply system registers are PTWF assets. The GE treatment plant asset register is mirrored in the PTWF register.</p> <p>Asset operation, location and operating characteristics documented.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-0203-111004120308.pdf Section 2</p> <p>SCH-004 Equipment Schedule Pitt Town Rev1 to Peter G.XLS</p> <p>SCH-003 Valve Schedule Pitt Town Rev1 to Peter G.XLS</p> <p>SCH-001 Instrument Schedule Pitt Town Rev1 to Peter G.XLS</p> <p>PTWF-MP-MAINPLAN Asset register-02-111128.xls</p> <p>Pitt Town_PIDs31MAR11-235528-P All.pdf</p>	<p><input checked="" type="checkbox"/> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> • Demonstrate confirmation of acquisition and implementation of MainPlan as part of the operating audit.

Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(a) and/or cl.13(1)(a) (continued...)	The IOP indicates the arrangements in relation to the design, construction, operation and maintenance of the infrastructure, including particulars as to the life-span of the infrastructure, the system redundancy built into the infrastructure and the arrangements for renewal of the infrastructure (continued...)	The IOP includes an operational analysis of the assets to meet present and future needs. Outputs from the operational analysis include a schedule of required capital works for asset renewal, replacement and development.	<p>Comments:</p> <p>PTWF has fully documented the operational requirements and capacity needs for the sewage services, and recycled water treatment and distribution, including staged development and full development capacities and required assets.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-0203-111004120308.pdf Section 2</p> <p>PTWF - MP-RWSMP-0304-111129120308.pdf</p>	 Fully Adequate
		<p>The IOP includes details of the:</p> <ul style="list-style-type: none"> ▼ System operating rules to operate the infrastructure in the most effective manner during normal and breakdown conditions ▼ Performance requirements for assets. 	<p>Comments:</p> <p>Operating rules are defined and performance requirements of assets documented. Also documents operation under failure conditions.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-0203-111004120308.pdf Section 3</p> <p>PTWF - MP-RWSMP-0304-111129120308.pdfPTWF-PR-Ancillary functional description-01-110803.pdf</p> <p>45000002231-REP-001 Pitt Town MBR Control Philosophy RevB.pdf</p> <p>3464814_OSC_Pitt Town_RevB.xls</p> <p>3464814_CLSC_Pitt Town_RevB.xls</p>	 Fully Adequate

Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(b) and/or cl.13(1)(b)	The continued safe and reliable performance of the infrastructure	The IOP outlines the performance criteria and levels of service for the assets. These criteria are consistent with statutory obligations (if any) and there is a clearly defined process for documenting performance.	<p>Comments:</p> <p>Performance of treatment plant and reticulation systems are monitored via instrumentation linked to SCADA/telemetry systems. Performance criteria are documented and monitored for critical control points and for operational performance management of equipment. Performance management of asset maintenance will be logged and reported via the MMS (MainPlan).</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308.pdf</p> <p>PTWF - MP-RWSMP-04-120308.pdf</p>	<input checked="" type="checkbox"/> Fully Adequate

Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(b) and/or cl.13(1)(b) (continued...)	The continued safe and reliable performance of the infrastructure (continued...)	<p>The IOP includes an asset condition and risk assessment which is regularly updated and includes::</p> <ul style="list-style-type: none"> ▼ Asset condition; ▼ Asset criticality; and ▼ Asset assessment. 	<p>Comments:</p> <p>Asset criticality and assessment have been incorporated in to the initial risk assessment evaluation. Instrumentation and monitoring equipment are covered by a maintenance program. Their performance is specified in the IOP to be monitored every month and independent 3rd party calibration is proposed every 6 months. Pressure sewer units are telemetry monitored for fault or failure. Scheduling within the MMS could not be verified as the MMS is not yet operational.</p> <p>For the treatment plant itself, two manuals were provided, an early example from a similar plant at Gordon in the city's north and the full Pitt town manual as well. The manuals are comprehensive in particular with regard to the preventive maintenance tasks and inspections.</p> <p>The documentation includes reference to updating and maintenance of the risk register and definition of a period for formal review of plans in the circumstance that an event trigger has not occurred.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308.pdf</p> <p>Gordon Golf Course O&M Manual_0 (EXAMPLE).pdf</p> <p>Pitt Town WF RWTP O&M Manual_A.PDF</p>	<p><input checked="" type="checkbox"/> Fully Adequate</p> <p>OFls to further improve Fully Adequate findings:</p> <ul style="list-style-type: none"> • Provide evidence of the scheduling and reporting applied against schedule as part of the first operational audit.

Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(b) and/or cl.13(1)(b) (continued...)	The continued safe and reliable performance of the infrastructure (continued...)	The IOP documents, or includes reference to documents, that outline the operation and maintenance policies, procedures and schedules for all key infrastructure.	<p>Comments:</p> <p>The IOP and RWSMP contain extensive cross-referencing to support documentation, though some of those related to asset management/maintenance are statements of intent with provision of examples.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308.pdf</p> <p>PTWF - MP-RWSMP-04-120308PTWF.pdf</p> <p>GE Gordon Golf Course O&M Manual</p> <p>Pitt Town WF RWTP O&M Manual_A.PDF</p>	<p><input checked="" type="checkbox"/> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> As part of the first operational audit, demonstrate verification of the suite of required documentation and explain the final amendments made due to experience gained during commissioning.


Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(b) and/or cl.13(1)(b) (continued...)	The continued safe and reliable performance of the infrastructure (continued...)	The relevant operation and maintenance policies and procedures are available at all facilities, personnel are trained in the procedures and training is kept current where appropriate.	<p>Comments:</p> <p>List of SOP's to be developed/provided RWSMP Section 5.</p> <p>IOP documents monitoring and maintenance principles (Sections 3 & 4)</p> <p>Extensive suite of SOP's provided.</p> <p>Documented evidence was provided of training courses available and statements of training intention were made.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308.pdf</p> <p>GE O&M Manual and training documentation</p> <p>WFC-PR-Rectic Response Procedure-01-111010.pdf</p> <p>PTWF - MP-RWSMP-03-111129.pdf Section 5.</p> <p>Pitt Town WF RWTP O&M Manual_A.PDF</p> <p>Training course details and support documentation.pdf</p> <p>FSR Training Courses 2011-10 (CG).pdf</p> <p>NSW Team Training Summary Report.pdf</p> <p>CV Kevin Loughran.pdf</p> <p>CV William Kennedy.pdf</p> <p>SOP's</p>	<p><input checked="" type="checkbox"/> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> Demonstrate ongoing maintenance of training for personnel. Demonstrate completion of full suite of completed (and maintenance of) SOP's.


Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(b) and/or cl.13(1)(b) (continued...)	The continued safe and reliable performance of the infrastructure (continued...)	The operation and maintenance procedures contain sufficient information to address the complexity, criticality, condition and age of the infrastructure.	<p>Comments:</p> <p>Review of the IOP, RWSMP, O&M Manual, SOP's and emergency plans indicates that sufficient information will be in place.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308.pdf</p> <p>GE O&M Manual and training documentation</p> <p>PTWF - MP-RWSMP-04-120308.pdf Section 5.</p> <p>SOP's</p> <p>PTWF-MP-IncER-04-120308.pdf</p>	<p><input checked="" type="checkbox"/> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> • Demonstrate completion and ongoing maintenance of all important procedures.



Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(b) and/or cl.13(1)(b) (continued...)	The continued safe and reliable performance of the infrastructure (continued...)	<p>The maintenance procedures are linked to asset life cycle optimisation, safe and reliable performance of the infrastructure, service criticality and business risk and outline appropriate blends of:</p> <ul style="list-style-type: none"> ▼ Reactive maintenance ▼ Preventive maintenance ▼ Predictive maintenance. 	<p>Comments:</p> <p>A review of the documentation provided indicated appropriate blends of reactive, preventive and predicative maintenance according to asset type and criticality.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308.pdf GE O&M Manual and training documentation WFC-PR-Rectic Response Procedure-01-111010.pdf PTWF - MP-RWSMP-04-120308.pdf Section 5. Maintenance and Calibration Assessment form (303.APACWWPT.001.001).pdf Maintenance and Calibration Induction form (303.APACWWPT.001.002J).pdf Procedure on use of the Maintenance and Calibration Induction form (303 APACWWPT 001).pdf SERV-0001 Membrane Care, Handling and Storage Procedure _2553972.pdf SOP 0006 Ammonia testing procedure.pdf PTWF-MP-IncER-04-120308.pdf</p>	<input checked="" type="checkbox"/> Fully Adequate

Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(b) and/or cl.13(1)(b) (continued...)	The continued safe and reliable performance of the infrastructure (continued...)	<p>The infrastructure investment/capital works requirements identified in the IOP are based on sound strategic service planning including:</p> <ul style="list-style-type: none"> Required levels of service (including future growth in customer base and/or demand and documented performance targets). Security of supply or service provisions (including inherent reliability, redundancy, alternative sources of supply or service, emergency management and business continuity). Whole of life cycle cost evaluation. 	<p>Comments:</p> <p>The plans clearly link customer growth/demand and levels of service to capital requirements. Security of supply is adequately addressed.</p> <p>A whole of life cycle cost evaluation has been carried out and implemented. The estimated lives of assets, in particular elements of the buildings, are on the upper limit of an acceptable range and the auditor is of the opinion that there is no margin for error. However, it is possible that, with conscientious maintenance and renewal, they could be achieved.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308.pdf</p> <p>PTWF - MP-RWSMP-04-120308.pdf</p> <p>Detailed life cycle costing sheets (Confidential)</p>	<p><input checked="" type="checkbox"/> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> Critically evaluate the estimated lives of assets, in particular elements of the buildings, against the proposed approach to maintenance and renewal.
		<p>The IOP specifies future (life-cycle) expenditures based on forecast expenditure for:</p> <ul style="list-style-type: none"> Capital (new and replacement) Operations Maintenance Management and Administration. 	<p>Comments:</p> <p>A detailed life cycle analysis has been prepared incorporating identified costs including renewal and replacement and leasing. The estimated effective lives are generous as noted in the previous audit element.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308.pdf</p>	<p><input checked="" type="checkbox"/> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> Refer above audit element.

Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(b) and/or cl.13(1)(b) (continued...)	The continued safe and reliable performance of the infrastructure (continued...)	The assignment of responsibility, to appropriate management and staff, is clearly articulated for the IOP implementation and on going management, (including prioritising and programming).	<p>Comments:</p> <p>The senior and operations management are documented. Contracts exist for the operation and maintenance of the treatment plant and reticulation systems.</p> <p>Business contact list for service providers documented though contacts for day to day contract management are not nominated/specified in either GE or Mono-NOV contracts.</p> <p>The distribution system maintenance provider (Mono Pumps (Australia) Pty Ltd [Mono-NOV]) contract notes use of a sub-contractor for telemetry/SCADA maintenance.</p> <p>The performance requirements/scope are not attached to the contract.</p> <p>The GE contract refers to a Performance Guarantee to meet a specification 'the Proposal' that is not attached to the contract.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308.pdf</p> <p>PTWF-MP-CLIST-03-111125.xlsx</p>	<p>☑ Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> Confirm that the GE Performance Guarantee explicitly relates to a specified, and not an implied, Proposal.
		A review process is in place to ensure that the IOP and associated procedures are kept current	<p>Comments:</p> <p>Documented update procedures are in place, as is an ISO 9001 compliant management system.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308</p> <p>PTWF - MP-RWSMP-04-120308.pdf</p>	<p>☑ Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> Confirm that the reviews are conducted as scheduled or required in practice, not merely proposed.



Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(c) and/or cl.13(1)(c)	The continuity of the water supply	<p>Operational and maintenance procedures address both normal and abnormal (incident and emergency) conditions. The likelihood and consequences of asset failure are predicted.</p> <p>Other requirements included in the guidance above.</p>	<p>Comments:</p> <p>To the extent that the information available is incomplete (O&M Manual and SOP's) required operational and maintenance procedures are identified. Completed SOP's adequately address the conditions and failure events identified. The range of abnormal events identified is reflective of the operations of the business and the emergency plans adequate.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308</p> <p>PTWF - MP-RWSMP-04-120308.pdf</p> <p>PTWF-MP-IncER-04-120308.pdf</p> <p>PTWF-MP-RASMT-02-110917.pdf</p> <p>PTWF-MP-RVIEW-01-110707.pdf</p>	<p> Fully Adequate</p> <p>OFls to further improve Fully Adequate findings:</p> <ul style="list-style-type: none"> Provide evidence for confirmation of completeness and maintenance of SOP's as part of the first operational audit.


Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(d) and/or cl.13(1)(d)	Alternative water supplies when the infrastructure is inoperable	Requirements included in the guidance above.	<p>Comments:</p> <p>Alternative supplies of source water are identified and operable, including provision of potable water supplies. Telemetry and SCADA configuration is such that faster response to reticulation service failures are possible than with current public systems.</p> <p>Documentary evidence:</p> <p>PTWF-MP-InfOP-03-120308.pdf</p> <p>PTWF - MP-RWSMP-04-120308.pdf</p> <p>PTWF-MP-IncER-04-120308.pdf</p>	<p> Fully Adequate</p>

Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(e) and/or cl.13(1)(e)	The IOP indicates the arrangements in relation to the maintenance, monitoring and reporting of standards of service	An appropriate quality/performance management system is outlined for monitoring and implementing the IOP, and the system is documented.	<p>Comments:</p> <p>The RWSMP and IOP provide detailed documentation of the standards of service and monitoring for critical control.</p> <p>Documentary evidence:</p> <p>PTWF - MP-RWSMP-04-120308.pdf</p> <p>PTWF-MP-InfOP-03-120308.pdf</p>	<p> Fully Adequate</p>
		<p>The sophistication of the monitoring and control systems is proportional to the complexity of the scheme.</p> <p>The monitoring and control systems, where relevant, provide information on:</p> <ul style="list-style-type: none"> ▼ Leakage assessment and reduction ▼ Energy management ▼ Security of facilities ▼ Overflow events ▼ Flows and/or demands ▼ Warning of potential problems ▼ Internal performance indicators ▼ Regulatory performance indicators. 	<p>Comments:</p> <p>The monitoring systems are sophisticated and extensive, particularly in the distribution system. The level and detail is in excess of that currently provided to gravity sewerage service customers elsewhere. Future proofing has been ensured by the inclusion of electronic monitoring cable runs from the front yard meters to the house utility meter boxes.</p> <p>Not all performance (particularly internal) monitoring could be reviewed as many of the SCADA, telemetry and dashboard reporting screens and reports had not yet been developed. The process designs control narratives and descriptions do, however, document the requirements for internal and regulatory monitoring operation and reporting to a satisfactory level.</p> <p>Documentary evidence:</p> <p>PTWF - MP-RWSMP-04-120308.pdf</p> <p>PTWF-MP-InfOP-03-120308.pdf</p>	<p> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> • Confirm full operational implementation of the intended monitoring and control systems and review as part of the first operational audit.



Document reference	Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl.6(1)(e) and/or cl.13(1)(e) (continued...)	The IOP indicates the arrangements in relation to the maintenance, monitoring and reporting of standards of service (continued...)	The IOP documents the process for keeping records and reporting on operational and maintenance matters.	<p>Comments:</p> <p>These processes are documented in the IOP and in the RWSMP. The proposed recording of maintenance activities and performance via the MainPlan MMS and other records via the ISO 9001-compliant business systems. Evidence of ISO 9001 QA compliance certificate provided.</p> <p>Recommendation:</p> <p>Confirm reviews are conducted as scheduled, required.</p> <p>Documentary evidence:</p> <p>PTWF - MP-RWSMP-04-120308.pdf</p> <p>PTWF-MP-InfOP-03-120308.pdf</p>	<p><input checked="" type="checkbox"/> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> Confirm that the reviews are conducted as scheduled or required in practice, not merely proposed.


Attachment 2. Detailed Audit Findings: Water Quality Plan (non-potable water) (WQP (npw)) WIC Reg Sched 1 cl.7(1)(b)

Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
<p>Element one</p> <p>The WQP (npw) shows a commitment to responsible use and management of recycled water quality.</p>	<p>The organisation has a recycled water quality policy endorsed by the senior executive.</p> <p>The policy has been communicated in such a way that it is easily understood and implemented by employees.</p>	<p>Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 Appendix A provides a copy of PTWF's Recycled Water Policy (WFC-PO-Recycled Water-01-110930), highlighting the commitment to responsible, safe and sustainable use of recycled water. Awareness of the policy was evidence. The policy is Fully Adequate and fully compliant with good practice.</p>	<p> Fully Adequate</p>
<p>Element one (continued...)</p>	<p>The organisation has identified and documented its regulatory and formal requirements.</p> <p>The responsibilities for managing regulatory requirements are allocated and communicated to the appropriate employees.</p> <p>The organisation has a documented process for reviewing and updating the regulatory and formal requirements.</p>	<p>The summary of regulatory and formal requirements given on page 11 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 is just Adequate. However, a table similar Table (2) should be produced to properly set out the details of the requirements and demonstrate how they are met. The information will be reviewed and updated as part of an annual audit, review and update process (Section 12.1).</p>	<p> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> Develop a table analogous to Table (2) for Regulatory and Formal requirements.

Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
Element one (continued...)	<p>The organisation has employed suitable expertise for the design, management and regulation of the recycled water system.</p> <p>The organisation has a documented process for identifying and involving governmental agencies with responsibilities and expertise in protection of public health and the environment.</p> <p>The organisation has a documented process for identifying relevant stakeholders (government and public).</p> <p>The organisation has appropriate processes and practices in place to ensure stakeholders are engaged and all stakeholder activities and outcomes are documented. The process ensures that stakeholder responsibilities are identified and understood.</p> <p>There is a process in place to ensure the stakeholder list is regularly updated.</p>	<p>The expertise engaged for the design, management and regulation of the recycled water system is adequate and of sufficient depth to be Fully Adequate.</p> <p>Section 2.1 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 provides a comprehensive summary of the project stakeholders and their roles. The summary includes governmental agencies. The summary is Fully Adequate and compliant with good practice. An OFI would be to include key contact details in Table (2). The information will be reviewed and updated as part of an annual audit, review and update process (Section 12.1).</p>	<p> Fully Adequate</p> <p>OFIs to further improve Fully Adequate findings:</p> <ul style="list-style-type: none"> • Include key contact details in Table (2) of the RWSMP.



Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
Element two The WQP (npw) includes an analysis of the recycled water system	<p>The WQP (npw) clearly identifies the source(s) of the water.</p> <p>The intended end uses, routes of exposure, receiving environments, endpoints and effects are identified in the WQP (npw).</p> <p>Unintended and unauthorised end uses are identified and considered in the WQP (npw).</p> <p>The WQP (npw) documents pertinent information and key characteristics of the recycled water system consistent with the complexity of the system.</p> <p>The organisation assembled a team of people with appropriate knowledge and expertise on the recycled water system (from source to end use) to undertake the analysis of the system.</p> <p>There a verified flow diagram of the recycled water system from source to the application or receiving environment.</p> <p>There is a documented process to periodically review the recycled water system analysis.</p>	<p>Section 3.5 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 clearly summarises pertinent information regarding the system from source to point and nature of use and is Fully Adequate.</p> <p>Section 3.1 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 summarises the system assessment team. The risk assessment team was Adequate but was not Fully Adequate since specific, independent public health expertise was lacking, either through using suitable consultants and/or government, e.g. NSW Health, involvement. However, subsequent to the initial assessment, NSW Health was involved in reviewing and commenting on the draft risk assessment, bringing up the compliance to Fully Adequate.</p> <p>Appendices C and D of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 show the process flow diagrams and P&IDs and these are Fully Adequate. The diagrams were consistent with what was observed during the site audit. The diagrams go down to the level of the single lot (e.g. Pitt Town Pressure Sewer Masterplan Rev A Drawing S101. Illustrated the sewerage system to the level of the lot). The Observant Monitor Map system shows each property on a map which links to the telemetry system.</p> <p>The above items will be reviewed and updated as part of an annual audit, review and update process (Section 12.1).</p>	<p> Fully Adequate</p>


Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
Element two (continued...)	<p>The organisation has defined and documented the processes for the collection and retention of historical data about sewage, greywater or stormwater quality, as well as data from treatment plants and/or recycled water supplied to users (over time and following specific events). For brownfield schemes this data was used in the risk assessment.</p> <p>The organisation has documented the process for identifying, listing and examining exceedances.</p> <p>The organisation has processes in place for assessing data to identify trends and potential problems in the recycled water system.</p>	<p>Section 3.6 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 explains that water quality data from similar schemes was used in this case since data from the current scheme is not yet available. This is acceptable and, in the context, is Fully Adequate. Going forward, Permeate Partners have been contracted to provide monthly provide reports evaluating the trends of the key process parameters, which is Fully Adequate.</p>	<p> Fully Adequate</p>
Element two (continued...)	<p>The organisation has developed and documented the approach and methodology to be used for hazard identification and risk assessment, considering both public and ecological health.</p> <p>The organisation has a documented process to periodically review and update the hazard identification and risk assessment to incorporate any changes.</p> <p>The organisation has identified and documented hazards, sources and hazardous events for each component of the recycled water system.</p> <p>The organisation has estimated the level of risk for each identified hazard or hazardous event.</p> <p>The major sources of uncertainty associated with each hazard and hazardous event have been evaluated and actions have been considered to reduce uncertainty.</p> <p>The organisation has determined the significant risks and established documented priorities for risk management.</p> <p>The organisation has developed a process for periodically reviewing and updating the hazard identification and risk assessment to incorporate any changes to the system.</p>	<p>Section 3 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 and Appendix E provide the risk assessment. This is Fully Adequate. Actions for further reducing risks have been summarised and are set in context. Both maximum and residual risks have been assessed to health and environmental endpoints against likelihood and consequence criteria. However, uncertainties have not been explicitly assessed.</p> <p>The above items will be reviewed and updated as part of an annual audit, review and update process (Section 12.1).</p>	<p> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> When revising the risk assessment, explicitly capture and action relevant uncertainties.


Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
<p>Element three</p> <p>The WQP (npw) outlines the preventive measures for water quality management.</p>	<p>The organisation has identified existing preventive measures from source to customer for each significant hazard or hazardous event and estimated the residual risk.</p> <p>The organisation has completed an evaluation of alternative or additional preventive measures where improvement is required.</p> <p>The organisation has documented the preventive measures and strategies for addressing each significant risk in a plan.</p> <p>The organisation has assessed the preventive measures throughout the recycled water system to identify the critical control points.</p> <p>The organisation has established mechanisms for operational control at critical control points.</p> <p>The organisation has documented the critical control points, critical limits and target criteria.</p>	<p>Sections 3 and 4 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 and Appendices E provide the summary of preventive measures, control points, critical control points and relevant target criteria. This is Fully Adequate. The documented information was consistent with what was observed during the field audit.</p> <p>The scheme includes a number of best practice elements. For instance, the scheme is targeting a pressure differential between recycled and potable water although PTWF don't yet control the drinking water pressure – Sydney Water does. In addition, PTWF is planning to use its smart metering system to detect cross-connections. Currently however PTWF read the sewer and recycled water meters, not the potable meters. The Observant Monitor Map system shows each property and indicates sewer pump recycled water use via the telemetry system. This smart telemetry to the individual lot water and sewer meters should help detect cross-connections if so monitored.</p>	<p> Fully Adequate</p> <p>OFIs to further improve Fully Adequate findings:</p> <ul style="list-style-type: none"> Press ahead with pioneering attempts to utilise smart metering and pressure differentials to help prevent and detect cross-connections.



Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
<p>Element four</p> <p>The WQP (npw) outlines the operational procedures and process control for the scheme.</p>	<p>The organisation has developed a process for identifying operational procedures required for processes and activities from source to end use.</p> <p>All the identified procedures have been documented and compiled into an operations manual.</p> <p>The organisation has developed monitoring protocols for operational performance of the system, including the selection of operational parameters and criteria, and the routine analysis of results.</p> <p>The monitoring protocols have been documented and compiled into an operational monitoring plan.</p> <p>The organisation has established and documented procedures for corrective action where operational parameters are not met.</p> <p>The organisation has established rapid communication systems to deal with unexpected events.</p> <p>There are processes in place to ensure that equipment performs adequately and provides sufficient flexibility and process control.</p> <p>The organisation has developed a program for regular inspection and maintenance of all equipment, including monitoring equipment.</p> <p>There are processes and procedures in place to ensure that only approved materials and chemicals are used.</p> <p>The organisation has documented procedures for evaluating chemicals, materials and suppliers.</p>	<p>Sections 5 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 and Appendices F and G provide the summary of operational procedures. These are Adequate and in an appropriately final draft stage, given the current state of implementation of the project, prior to full operation. The documented information was consistent with what was observed during the field audit. Gaps between current and desirable levels of development were fully understood and openly acknowledged and are planned for improvement.</p> <p>Chemical and material suppliers were not specifically identified, although chemicals used were listed and requirements to comply with plumbing regulations were clearly set out. Since this is a non-potable water scheme, this gap is not critical, but nor is the situation Fully Adequate. In order to be Fully Adequate, chemical and material suppliers and specific chemical and material products to be used for the scheme should be explicitly listed, along with the process for ensuring quality</p> <p>This item was assessed in more detail in the IOP audit, above.</p>	<p><input checked="" type="checkbox"/> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> Finalise the relevant O&M information, as discussed in the IOP audit, above. Finalise the list of chemical/material suppliers and products to be used for the scheme and the procedures for ensuring adequate quality of chemicals/materials delivered/installed.


Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
<p>Element five</p> <p>The WQP (npw) outlines the process for verification of the water quality.</p>	<p>The organisation has determined the characteristics to be monitored in the recycled water system, the application site and the receiving environment (as appropriate).</p> <p>A sampling plan for each characteristic has been established and documented, including the location and frequency of sampling. The monitoring data is representative and reliable.</p> <p>The procedures for sampling and testing are fully documented and staff are appropriately trained (where relevant)</p> <p>The organisation has established an inquiry and response program for users of the recycled water. The program includes the appropriate training of employees.</p> <p>The organisation has developed procedures for the short term review of monitoring data and satisfaction of users of recycled water.</p> <p>Internal and external reporting mechanisms have been developed and documented by the organisation.</p> <p>The organisation has established and documented procedures for corrective action in response to non-conformances or feedback from users of recycled water.</p> <p>The organisation has in place rapid communication systems to deal with unexpected events.</p>	<p>Verification of water quality and user satisfaction, as designed, is Fully Adequate and is cross-referenced to specific process controls, for instance under Section 5 and Appendix U of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 and detailed in Section 6 and Appendices F, I and O. Verification is well-embedded within the document and is well integrated. Going forward, Permeate Partners have been contracted to provide monthly review and reporting including evaluating the trends of the key verification and process parameters.</p> <p>The corrective action responses would rapidly escalate to an incident response which may involve unnecessarily involving NSW Health, NOW and IPART. It would be more elegant to have more detailed internal procedures to prevent the need to adopt an 'incident' response in most readily controlled situations.</p> <p>There is a discrepancy between Tables (5) and (6) of Appendix O (no mention of pathogens) and Section 6.1 of the RWSMP (mentions pathogens and indicators). The point of truth was assumed to be Appendix O, and the schedule therein is Fully Adequate, but the discrepancy between the documents leads to an Adequate finding and needs to be resolved. There were a number of other similar minor discrepancies between documents.</p> <p>At the time of the field audit this aspect was Inadequate due to the absence of an agreed position with NSW Health. However, it is understood that at the time of writing this report, NSW Health is content with the verification in place.</p>	<p><input checked="" type="checkbox"/> Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> Clarify the discrepancy between Tables (5) and (6) of Appendix O and Section 6.1 of the RWSMP and seek to eliminate other discrepancies between documents. <p>OFIs to further improve Fully Adequate findings:</p> <ul style="list-style-type: none"> Develop corrective action procedures that encourage the control of excursions detected as part of verification monitoring in house rather than proceeding directly to incident response model

Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
<p>Element six</p> <p>The WQP (npw) includes details on the management of incidents and emergencies.</p>	<p>Communication protocols have been developed with the relevant (regulatory) agencies defined and a contact list of key people, agencies and businesses (both internal and external).</p> <p>The organisation has developed a public and media communications strategy.</p> <p>Potential incidents and emergencies have been identified and procedures and response plans documented, with the involvement of relevant agencies. The plans reflect the events identified in the risk assessment.</p> <p>Employees are trained in emergency response procedures and the plans are tested as appropriate.</p> <p>The organisation has developed procedures for the investigation of incidents or emergencies. The procedures outline the process for reviewing incidents or emergencies and making any necessary amendments to protocols.</p>	<p>Section 7 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 and Appendices J and K, and to some extent H and I, provide a Fully Adequate process for incident response. A number of foreseeable incidents are described and have protocols developed and agreed with relevant third parties.</p> <p>The above items, including Appendix K (contact list) will be reviewed and updated as part of an annual audit, review and update process (Section 12.1).</p> <p>At the time of the field audit this aspect was Inadequate due to the absence of an agreed position with NSW Health. However, it is understood that at the time of writing this report, NSW Health is content with the incident response plan that is now in place.</p>	<p> Fully Adequate</p>
<p>Element seven</p> <p>The WQP (npw) outlines operator, contractor and end user awareness and training requirements</p>	<p>The organisation has developed mechanisms and communication procedures to increase operator contractor and end user awareness of, and participation in managing recycled water quality and environmental protection.</p> <p>The organisation has a process in place for ensuring that employees, including contractors, and end users maintain the appropriate experience and qualifications.</p> <p>The organisation has developed a process for identifying employee training needs and there are appropriate resources available to support any training programs.</p> <p>There are processes and procedures for documenting training and maintaining records of all employees training.</p>	<p>Section 8 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 and Appendices L and V provide a Fully Adequate process for training management from the perspective of recycled water quality management. This item is discussed more broadly and in more detail under the IOP audit, above.</p>	<p> Fully Adequate</p>


Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
<p>Element eight</p> <p>The WQP (npw) outlines the process for community awareness and involvement.</p>	<p>The organisation as assessed the requirements for effective involvement of users of recycled water and the community.</p> <p>The organisation has developed a comprehensive strategy for community consultation.</p> <p>The organisation's communication strategy includes an active two-way communication program to inform users of recycled water and promote awareness of recycled water quality issues.</p> <p>The organisation has developed a process for providing information on unauthorised use as well as the benefits of recycled water to users and the community.</p>	<p>Section 9 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 and Appendices N and V provide a Fully Adequate process for community engagement and involvement from the perspective of recycled water quality management.</p>	<p> Fully Adequate</p>


Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
<p>Element nine</p> <p>The WQP (npw) outlines the validation, research and development processes for the scheme.</p>	<p>The organisation has developed validation processes and procedures to ensure that the system is effective at controlling hazards.</p> <p>The organisation has established processes and practices for periodical revalidation of processes when changes in conditions occur.</p> <p>The organisation has a process for validating the selection and design of new equipment and infrastructure to ensure continuing reliability.</p> <p>The organisation able to demonstrate a commitment to increasing their understanding of the recycled water system and to improving their management of the system.</p>	<p>Validation is Fully Adequate and is cross-referenced to specific process controls, for instance under Section 3.7.2, Table (8), Section 10 and Appendix O of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12. Validation is well-embedded within the document and is well integrated. Pathogen log reduction values are demonstrably, conservatively sufficient. Going forward, Permeate Partners have been contracted to provide monthly review and reporting including evaluating the trends of the key validated process critical limit parameters.</p> <p>At the time of the field audit this aspect was Inadequate. Most inadequacies were minor in nature and were addressed through minor operational monitoring changes. However, a major gap was the failure of the UV disinfection system supplier to attest to the pathogen log reduction capability of the UV disinfection system. This unfortunate event caused delays of approximately six months in scheme review and approval and supports. The experience with this scheme, (and some other schemes that hit the same difficulty), demonstrates the wisdom of the new IPART requirement for an early-state Technology Assessment. It is understood that at the time of writing this report, the auditor, NSW Health and IPART are no fully content that validation has been demonstrated.</p>	<p> Fully Adequate</p>


Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
<p>Element ten</p> <p>The WQP (npw) outlines the process management of documentation and records as well as the reporting requirements.</p>	<p>The organisation has a process for documenting information pertinent to all aspects of recycled water quality management.</p> <p>The organisation has an appropriate document control system to ensure current versions of key documents are in use.</p> <p>The organisation has established a records management system and ensures that employees are trained to fill out records.</p> <p>The organisation has developed a procedure or process to periodically review documentation and revise as necessary.</p> <p>The organisation has established procedures for effective internal and external reporting.</p> <p>The organisation has established processes and procedures for the production of an annual report aimed at the users of the recycled water, regulatory authorities and stakeholders.</p>	<p>Documentation and records and reporting is Fully Adequate and is described under Section 11 and Table (14) of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12.</p> <p>Going forward, Permeate Partners have been contracted to provide monthly review and reporting in addition to the annual PTWF reporting processes.</p>	<p> Fully Adequate</p>
<p>Element eleven</p> <p>The WQP (npw) outlines the process for long-term evaluation of results and the audit of the documentation.</p>	<p>The organisation has established processes and practices for the collection and evaluation of long-term data to assess performance and identify problems.</p> <p>The organisation has established processes and practices for documenting and reporting results.</p> <p>The organisation has established protocols for internal and external auditing to be conducted.</p> <p>The organisation has a process for documenting and communicating audit results to relevant stakeholders.</p>	<p>Auditing and evaluation is Fully Adequate and is described under Section 12 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12. Internal/external audits are scheduled annually/triennially, respectively. Detailed scheme evaluation, review and update is scheduled annually.</p> <p>On an ongoing (monthly) basis, Permeate Partners have been contracted to provide monthly review and reporting of data, including trends analysis.</p>	<p> Fully Adequate</p>



Requirement to be evaluated	Guidance	Evidence / comments	Assessment Finding
<p>Element twelve</p> <p>The WQP (npw) outlines a process for review and continual improvement.</p>	<p>The organisation has developed a process for senior executive to review the effectiveness of the management system and evaluate the need for change.</p> <p>Has the organisation has developed processes and procedures for the continual improvement of the plans and processes.</p> <p>There is a process for communicating and implementing the continual improvement actions.</p> <p>The improvement process is monitored for effectiveness.</p>	<p>Review and continual improvement is Fully Adequate and is described under Section 13 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12. The information given within Section 13 is very brief, but refers back to the detailed information that drives review and improvement, as noted above. Detailed scheme evaluation, review and update is scheduled annually.</p> <p>On an ongoing (monthly) basis, Permeate Partners have been contracted to provide monthly review and reporting of data, including trends analysis.</p>	<p> Fully Adequate</p>

Attachment 3. Detailed Audit Findings: Sewage Management Plan (SMP) WIC Reg Sched 1 cl.14(1)

Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
Licence conditions issued under the POEO Act 1997 relevant to sewage management (Schedule 1, Clause 14(2))	<p>Policy and Context:</p> <p>Advise if any POEO license was issued and, if so, the conditions that relate to sewage system. Based on the POEO and or WICA Licences outline how these conditions are reflected in:</p> <ul style="list-style-type: none"> The sewerage management policies and strategies applied to the site? The programs of activities to be implemented the SMP including regular reviews for adequacy and proposed improvement? Contingency and Business Continuity Planning, including additional preventative measures where improvements are required? 	<p>At the time of the field audit this aspect was Inadequate due to the absence of an agreed position with OEH. Consultation did take place with OEH who indicated that an EPL was not required for this system (letter dated 28/8/11). However, in the opinion of the auditors, that correspondence required additional information from PTWF and closure was not achieved by the time of the field audit. However, it is understood that at the time of writing this report, OEH is content that there is no need for an EPL for this scheme (letter from OEH to PTWF dated 1st March 2012) so that this aspect is Fully Adequate.</p> <p>Spills of sewerage and recycled water, from any assets that carry these grades of water, are unlikely by design. OEH did not require an agreement in relation to these matters. At the time of the field audit, response procedures for such eventualities, rare as they may be, were Inadequate. However, at the time of writing, these revised procedures are Fully Adequate (Section 7 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 and Appendices J and K, and to some extent H and I).</p>	<p> Fully Adequate</p>

Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
The manner in which the health and ecological assessments will be undertaken and any concerns arising from any such assessment.	<p>The organisation has developed and documented the approach and methodology to be used for the ecological and health assessment incorporating hazard identification and risk assessment.</p> <p>Waste and Site Characterisation:</p> <p>At a minimum the process includes:</p> <ol style="list-style-type: none"> 1 The development of a verified flow diagram of the sewage system from source to the receiving environment (including reticulation, treatment, disposal and by-product streams). 2 The process for waste characterisation of the source of the sewage 3 Identification and characterisation of the proposed site and the receiving environment (i.e. the sensitivity of the receiving environment) both for intended and unintended discharges. 4 Identification of pertinent information and key characteristics of the sewerage system consistent with the complexity of the system. 	<p>Section 3.5 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 clearly summarises pertinent information regarding the system from source to point and nature of use and is Fully Adequate. Section 3.6 explains how a conservative approach was adopted in estimating source water characteristics. Since the scheme is not yet operational, it is quite appropriate to estimate, rather than measure, source water characteristics, and this approach is and is Fully Adequate. This approach is appropriate given that the source is likely to be fairly 'typical' sewage effluent. Sections 3.5 and 3.8, as well as the risk assessment, adequately discuss environmental risks associated with the use of the water. There is no detailed land capability assessment but the nature of this scheme (nature of the water quality and the receiving environment) is considered too low risk to require such an assessment. In the opinion of this auditor, the level of assessment is Fully Adequate for this context but an opportunity for improvement exists to review receiving environment capability in more depth.</p> <p>Appendices C and D of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 show the process flow diagrams and P&IDs and these are Fully Adequate. The diagrams were consistent with what was observed during the site audit. The diagrams go down to the level of the single lot (e.g. Pitt Town Pressure Sewer Masterplan Rev A Drawing S101. Illustrated the sewerage system to the level of the lot). The Observant Monitor Map system shows each property on a map which links to the telemetry system.</p>	<p> Fully Adequate</p> <p>OFIs to further improve Fully Adequate findings:</p> <ul style="list-style-type: none"> Consider undertaking a basic receiving environment capability assessment for the use of recycled water.

Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
The manner in which the health and ecological assessments will be undertaken and any concerns arising from any such assessment (continued...)	<p>Hazard and Risk Assessment/Management</p> <p>5 The identification and documentation of hazards (both Health and Ecological impacts) sources and hazardous events for each component of the sewerage system.</p> <p>6 The methodology for estimating the level of risk for each identified hazard or hazardous event.</p> <p>7 The identification of existing preventive measures from source to disposal for each significant hazard or hazardous event and estimates of the residual risk.</p> <p>8 An evaluation of alternative or additional preventive measures where improvement is required.</p> <p>9 The assessment of preventive measures throughout the sewage system to identify the critical control points.</p> <p>10 The establishment of mechanisms for operational control at critical control points.</p> <p>11 A documented process to periodically review and update the hazard identification and risk assessment to incorporate any changes.</p>	<p>Section 3 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 and Appendix E provide the risk assessment. This is Fully Adequate. Actions for further reducing risks have been summarised and are set in context. Both maximum and residual risks have been assessed to health and environmental endpoints against likelihood and consequence criteria. The above items will be reviewed and updated as part of an annual audit, review and update process (Section 12.1).</p> <p>The system includes a number of best practice preventive measures for which the scheme should be commended. These include pressure sewer design such as PN16 PE welded sewerage assets which mitigate tree root intrusion and wet weather ingress as well as environmental egress. The blockage risks within the sewer are mitigated by a macerating pump at each property connection, and both the macerators and pumps are telemetered. There are pressure monitoring points on line within the sewerage system as well as flushing points to enable detection and response to blockages. There is a 900 L tanks on each lot with a flush out point. Flushing can be to tanker. An aggressive substance would possibly damage the pump seals which would trigger a pump problem alarm and in turn help to mitigate risks from some extreme contaminants. The sewerage catchment is only residential and so the risks as a whole are limited. The plant is built at a level that matches the existing nearby council sewerage plant with critical assets raised 300 mm above that 1/100 year flood level. The flow balance tank on site covers 110,000 L and can take in surge inflows. The pressure network can readily handle any surge. If required, waste can be sent to the nearby council sewage treatment plant on a temporary basis through an existing Access Agreement. An eductor truck could be used to manage the transfer.</p>	<p> Fully Adequate</p>


Requirement to be evaluated	Guidance	Evidence/comments	Assessment Finding
The manner in which the health and ecological assessments will be undertaken and any concerns arising from any such assessment (continued...)	Data Monitoring and Sampling: 12 The process for collecting baseline monitoring data for the site and the receiving environment to confirm the risk assessment. 13 A process for determining the characteristics to be monitored in the sewage system and the receiving environment (as appropriate). 14 The development of a sampling plan for each characteristic that encourages the collection of representative and reliable monitoring data. 15 The procedure for the collection and retention of historical data about influent sewage as well as data from the effluent disposed of from the treatment plants and the receiving environment (over time and following specific events). 16 Documented process for identifying, listing and examining exceedances.	Data sampling and monitoring, as designed, progressing from start up through to long term, is Fully Adequate and is described under the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 Appendix O. Going forward, Permeate Partners have been contracted to provide monthly review and reporting including evaluating the trends of the key verification and process parameters in addition to the annual reporting provided by PTWF.	 Fully Adequate
The manner in which the health and ecological assessments will be undertaken and any concerns arising from any such assessment (continued...)	Communication and Training: 17 The process for consulting with relevant Government Agencies and the community concerning the proposed scheme. 18 The organisation has identified a team of people with appropriate knowledge and expertise on the sewerage system (from source to end use) to undertake the assessment of the system.	Section 3.1 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 summarises the system assessment team. The risk assessment team was Adequate but was not Fully Adequate since specific independent environmental expertise was lacking, either through using suitable consultants and/or government, e.g. OEH, involvement. Section 2.1 provides a comprehensive summary of the project stakeholders and their roles. The summary includes governmental agencies and how they were consulted. The summary is Fully Adequate and compliant with good practice.	 Adequate Actions to upgrade Adequate findings to Fully Adequate: <ul style="list-style-type: none"> Ensure specific, independent environmental expertise in the update of the system and risk assessment.


Attachment 4. Detailed Audit Findings: Network Operator's Licence No. 10_014 11th November 2010

Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
A1 Activities Authorised - non-potable water supply	This Licence authorises the Licence Holder and the persons specified in Table 1.1 to construct, operate and maintain the water industry infrastructure specified in Table 1.2 for the purposes as specified in Table 1.3 within the area specified in Table 1.4, subject to the conditions imposed by or under the Act, the Regulation and this Licence.	See below	See below
1. Authorised persons	<p>A network operator and specified authorised persons may construct, operate and maintain specified infrastructure for specified purposes within specified areas.</p> <p>Permeate Partners Pty Ltd (ACN 130 112 257)</p> <p>[The organisation and the authorised third parties have constructed, operated and/or maintained the water industry infrastructure for the authorised purposes and within the area of operations only].</p>	Permeate Partners was identified as an authorised person for key aspects of operation and maintenance. Other contractors were identified in them main body of the documentation supplied but did not appear to have management roles of a nature that would require them to be nominated as authorised persons.	<p>☑ Fully Adequate</p>
2. Specified water industry infrastructure	Infrastructure for the production, treatment, filtration, storage, conveyance or reticulation of non-potable water	Described in the WQP and IOP and subordinate documents and assessed as part of those more detailed audit reports, above.	<p>☑ Fully Adequate</p>
3. Authorised purposes	<ol style="list-style-type: none"> 1. Irrigation 2. Toilet flushing 3. Car washing 4. Wash down of hard surfaces 5. Supply of cold water to washing machine <p>The infrastructure is not used for an unauthorised purpose.</p>	<p>Described in Section 1.1 and Section 3.5 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12. The descriptions in the plan match the licence. The descriptions are not identical to those in the licence which may lead to confusion in future and could be amended as an opportunity for improvement.</p> <p>The field inspection revealed signage stating "NOT TO BE USE FOR FIRE FIGHTING PURPOSES" on the accessible recycled water hydrant plugs. Recycled water hydrant on the locked site is intended to be used for hosing down of hard surfaces. There is a separate potable water fire hydrant connection on the site. Recycled water hydrants were lilac and potable ones were yellow.</p>	<p>☑ Fully Adequate</p> <p>OFIs to further improve Fully Adequate findings:</p> <ul style="list-style-type: none"> • Literally match the descriptions of the <i>intended use</i> and <i>authorised purposes</i> between the management plan and licence, respectively.
4. Specified area of operations	<p>The area bordered by Old Stock Route Road, Railway Road, Hawkesbury Valley Way, Macquarie Street and the Hawkesbury River in Pitt Town, Hawkesbury, NSW.</p> <p>[The water industry infrastructure constructed, operated and/or maintained by the organisation or an authorised third party does not extend outside the area of operations].</p>	The area was visited, located on a map and described in the supplied documents and matched the licence specifications.	<p>☑ Fully Adequate</p>

Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
A2 Activities Authorised - sewerage services	This Licence authorises the Licence Holder and the persons specified in Table 2.1 to construct, operate and maintain the water industry infrastructure specified in Table 2.2 for the purposes as specified in Table 2.3 within the area specified in Table 2.4, subject to the conditions imposed by or under the Act, the Regulation and this Licence.	See below	See below
1. Authorised persons	<p>A network operator and specified authorised persons may construct, operate and maintain specified infrastructure for specified purposes within specified areas.</p> <p>Permeate Partners Pty Ltd (ACN 130 112 257)</p> <p>[The organisation and the authorised third parties have constructed, operated and/or maintained the water industry infrastructure for the authorised purposes and within the area of operations only].</p>	Permeate Partners was identified as an authorised person for key aspects of operation and maintenance. Other contractors were identified in them main body of the documentation supplied but did not appear to have management roles of a nature that would require them to be nominated as authorised persons.	☑ Fully Adequate
2. Specified water industry infrastructure	Infrastructure for the treatment, storage, conveyance or reticulation of sewage, including any outfall pipe or other work that stores or conveys water leaving the infrastructure	Described in the WQP and IOP and subordinate documents and assessed as part of those more detailed audit reports, above.	☑ Fully Adequate
3. Authorised purposes	<p>Treat, store, conveyor reticulate sewage</p> <p>The infrastructure is not used for an unauthorised purpose.</p>	Described in Section Section 3 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12. The descriptions in the plan match the licence.	☑ Fully Adequate
5. Specified area of operations	<p>The area bordered by Old Stock Route 'Road, Railway Road, Hawkesbury Valley Way, MacQuarie Street and the Hawkesbury River in Pitt Town, Hawkesbury, NSW.</p> <p>[The water industry infrastructure constructed, operated and/or maintained by the organisation or an authorised third party does not extend outside the area of operations].</p>	The area was visited, located on a map and described in the supplied documents and matched the licence specifications.	☑ Fully Adequate
A3 Environmental requirements	<p>A 3.1 Before commencing construction of the water industry infrastructure [A1 or A2] under this licence, the Licence Holder must:</p> <p>(a) prepare and provide IPART with a construction environmental management plan (CEMP). The CEMP must outline the proposed actions and mitigation measures to manage the environmental risks for undertaking construction of the water industry infrastructure.</p> <p>(b) provide IPART with a report, prepared by an approved auditor, in such manner and form as IPART may direct as to the adequacy of the CEMP.</p>	A Review of Environmental Factors was completed March 2010 by DBL Property and a CEMP was developed based on matters identified by IPART and in the original application from the Licence Holder (Section F). The organisation complied with the supplied CEMP and has been independently audited against that CEMP with a compliant finding provided.	☑ Fully Adequate

Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
	A3.2 The Licence Holder must implement all actions and mitigation measures in accordance with the 'Response to the DECCW submission to IPART regarding the Pitt Town Water Factory' prepared by Parsons Brinkerhoff Australia Pty Ltd (2010).	Paul Rossington of Parsons Brinkerhoff prepared the response to OEH and he will be signing off that all actions are complete. At the time of writing work is continuing, e.g. landscaping. This action will need to be assessed as part of the next audit.	<p>☑ Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> Review this as part of the operational audit.
B1. Ongoing capacity to operate. WIC Act 10.4 (a) & 13.2 (a)	<p>The Licence Holder must have the technical, financial and organisational capacity to carry out the activities authorised by this Licence. If the Licence Holder ceases to have this capacity, it must report this to IPART immediately.</p> <p>[The organisation can demonstrate the level of technical and organisational resourcing and the capacity of those resources have not diminished since the licence was awarded.</p> <p>The organisation has developed and implemented appropriate resource plans which identify personnel requirements for safe operation of the infrastructure. Personnel requirements would include skill sets and appropriate levels of staffing.</p> <p>The organisation undertakes financial audits of the licensed activities at a frequency appropriate for the organisation's exposure to financial risk.</p> <p>The organisation has a procedure to identify if there is insufficient capacity to carry out the licensed activity and the procedure includes notification of IPART.</p> <p>The organisation has a procedure to ensure IPART is informed immediately if the capacity is not retained].</p>	<p>At the time of the audit, in the opinion of the auditors, and in the opinion of IPART (<i>Application for a Network Operator's Licence and a Retail Supplier's Licence from Pitt Town Water Factory Pty Ltd IPART's report to the Minister Water — Ministerial report September 2010</i>) the Licence Holder satisfactorily met these criteria</p> <p>IPART considered that the Licence Holder satisfactorily met these criteria subject to the naming of Permeate Partners as an authorised third party (which has occurred) and adoption of the CEMP (which has occurred, as noted above).</p>	<p>☑ Fully Adequate</p>


Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
B2 Obtaining appropriate insurance	<p>B2.1 Before commencing to operate water industry infrastructure under this Licence, the Licence Holder must:</p> <ul style="list-style-type: none"> (a) obtain appropriate insurance sufficient for the size and nature of the activities authorised under this Licence, (b) demonstrate that the insurance obtained is appropriate by providing a report to IPART from an Insurance Expert certifying that in the Insurance Expert's opinion the type and level of insurance obtained by the Licence Holder is appropriate for the size and nature of the activities authorised under this Licence, and (c) provide a copy of each certificate of currency of insurance obtained to IPART. <p>B2.2 The report from the Insurance Expert must:</p> <ul style="list-style-type: none"> (a) identify the key risks of undertaking the activities authorised under this Licence, (b) set out the types and levels of insurance obtained by the Licence Holder in the relation to the activities being undertaken, (c) provide reasons as to why the types and levels of insurance are appropriate for the size and nature of the activities being undertaken, and (d) if any risks arising from undertaking the activities remain uninsured, provide reasons as to why. 	<p>In the opinion of IPART (<i>Application for a Network Operator's Licence and a Retail Supplier's Licence from Pitt Town Water Factory Pty Ltd IPART's report to the Minister Water — Ministerial report September 2010</i>) the Licence Holder satisfactorily met these criteria. IPART reviewed these insurances and provided advise that they were adequate (email from IPART to the auditor, dated 8th December 2011).</p>	<p> Fully Adequate</p>

Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
B3 Maintaining appropriate insurance	<p>B3.1 The Licence Holder must maintain appropriate insurance sufficient for the size and nature of the activities authorised under this Licence. [The licensee has obtained/maintained appropriate insurance.]</p> <p>B3.2 From time to time when requested in writing by IPART, the Licence Holder must provide a report to IPART, in the manner, form and time specified by IPART, from an Insurance Expert certifying that in the Insurance Expert's opinion the type and level of insurance obtained by the Licence Holder is appropriate for the size and nature of the activities authorised under this Licence. [The licensee provided a report to IPART from an Insurance Expert certifying the level of insurance is appropriate].</p> <p>B3.3 Whenever there is a change in the type, level or period of insurance held by the Licence Holder in relation to the activities authorised under this Licence, the Licence Holder must provide a copy of the certificate of currency to IPART within 10 days of the change being made. [The organisation has evidence to demonstrate it provided such a certificate when required.]</p> <p>[The organisation has provided a report from an independent insurance broker that holds an Australian financial services licence (AFSL) under Part 7.6 of the Corporations Act 2001 (Cth), and the report includes providing the ABN and AFSL number. the letter or report should state:</p> <ul style="list-style-type: none"> that the insurance obtained is appropriate for the size and nature of the activities authorised under the licence, attach a copy of each certificate of currency of insurance in relation to the licensed entity & licensed activities identify the key risks of undertaking the activities authorised under the licence set out the types and levels of insurance obtained provides reasons as to why the types and levels of insurance are appropriate for the size and nature of the activities being undertaken, and if any risks arising from undertaking the activities remain uninsured, provide reasons as to why. <p>The auditor is to check with IPART whether IPART has received a report that meets the requirements of the licence obligation].</p>	<p>In the opinion of IPART (<i>Application for a Network Operator's Licence and a Retail Supplier's Licence from Pitt Town Water Factory Pty Ltd IPART's report to the Minister Water — Ministerial report September 2010</i>) the Licence Holder satisfactorily met these criteria. IPART reviewed these insurances and provided advise that they were adequate (email from IPART to the auditor, dated 8th December 2011).</p>	<p> Fully Adequate</p>

Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
B4 Complying with NSW Health requirements	The Licence Holder must carry out the activities authorised by this Licence in compliance with any requirements of NSW Health that IPART has agreed to and are notified from time to time to the Licence Holder by IPART in writing.	<p>The Licence Holder has held discussions with NSW Health and come to agreement through an Operating Protocol Supply of Recycled Water dated 25/11/2011 between the Licence Holder and NSW Health (Nepean Blue Mountains & Western Sydney, Local Health Districts, Public Health Unit).</p> <p>The Licence Holder has replaced the UV disinfection system with an alternative unit to the satisfaction of NSW Health (email from NSW Health to the auditor dated 3rd February 2012).</p>	☑ Fully Adequate
B5 Reporting in accordance with the reporting manual	The Licence Holder must prepare and submit reports in accordance with the applicable Reporting Manual issued by IPART and available from IPART's website www.ipart.nsw.gov.au .	The reporting process in place is as required by IPART's Reporting Manual.	☑ Fully Adequate
B6 Reporting information in relation to the register of licences	<p>Whenever any of the following information changes, the Licence Holder must provide the updated information to IPART within 14 days of the change:</p> <ul style="list-style-type: none"> (a) each source from which the water handled by the infrastructure is derived, (b) the identity of each licensed retail supplier or public water utility that has access to the infrastructure services provided by the infrastructure for the purpose of supplying water to its customers, (c) a description of any other water infrastructure to which the infrastructure is connected. <p>[In the case of any of these changes, the organisation has provided the relevant information to IPART within 14 days of the change].</p>	Not yet assessable but no inadequacies identified in this audit. This should be reviewed under future audits.	☑ Fully Adequate
B7 Monitoring	<p>B7.1 Any monitoring required to be undertaken by the Licence Holder for the purposes of this Licence or any Plans required under the Regulation must be undertaken in accordance with the requirements set out below.</p> <p>B7.2 The following records must be kept of any samples collected:</p> <ul style="list-style-type: none"> (a) The date(s) on which the sample was taken, (b) The time(s) at which the sample was collected, (c) The point or location at which the sample was taken, and (d) The name of the person who collected the sample. <p>B7.3 A laboratory accredited for the specified tests by an independent body acceptable to NSW Health, such as the National Association of Testing Authorities (NATA) or equivalent, shall carry out all analyses of samples.</p>	To the extent that this could be assessed, monitoring plans and accreditation requirements were adequate. However, monitoring records will need to be gathered in future following scheme start up and this was not assessed under this audit. NATA accreditation is required for water quality testing (as noted under the WQP component of this audit).	☑ Fully Adequate






Clause	Requirements [and guidance]		Evidence/comments	Assessment Finding
B8 Provision of copy of plans	B8.1	Whenever the Licence Holder makes a significant change to its Plans, the Licence Holder must provide a copy of the amended Plan to IPART at the same time it provides a copy to the approved auditor engaged to provide a report as to the adequacy of the changed Plan as required under the Regulation.	Towards the end of the audit period, plans were updated and provided to the auditors but were not simultaneously provided to IPART. However, plans were supplied to IPART by the time the audit report was finalised.	<p>☑ Adequate</p> <p>Actions to upgrade Adequate findings to Fully Adequate:</p> <ul style="list-style-type: none"> Ensure that in future updated plans are supplied to IPART at the same time as to the auditors.





Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
B9 delineating responsibilities – interconnections	<p>B9.1 Where a water industry code of conduct under clause 25 of the Regulation has not been established by order published in the Gazette and the water industry infrastructure specified in Schedule A, clause A1, Table 1.2 and clause A2, Table 2.2 of this Licence is connected to any other water industry infrastructure, the Licence Holder must establish a code of conduct in relation to the respective responsibilities of the Licence Holder and each licensed network operator, licensed retail supplier and/or public water utility that is responsible for the other water industry infrastructure.</p> <p>B9.2 The arrangements are to be agreed in writing between the Licence Holder and the other licensed network operators, licensed retail suppliers and/or public water utilities prior to commencing commercial operation of the water industry infrastructure specified in Schedule A, clause A1, Table 1.2 and clause A2, Table 2.2 of the Licence.</p> <p>B9.3 The arrangements must address the following matters:</p> <ul style="list-style-type: none"> (a) responsibility for the repair, replacement or maintenance of any pipes, pumps, valves, storages or other infrastructure connecting the water industry infrastructure specified in Schedule A, clause A1, Table 1.2 and clause A2, Table 2.2 of this Licence to any other water industry infrastructure, (b) responsibility for water quality, (c) liability in the event of the unavailability of water, (d) liability in the event of infrastructure failure, (e) responsibility for handling customer complaints. <p>[The organisation has identified whether a code of conduct needs to be established.</p> <p>Where relevant, the arrangements have been established, documented and various responsibilities undertaken by the relevant parties.</p> <p>The arrangements address the relevant matters.</p> <p>In the absence of the Water Industry Code of Conduct, the licensee must have relationships established with the relevant parties to deal with issues such as customer complaints. This relationship should be confirmed in a written document such as a Memorandum of Understanding or written agreement. In the case of handling customer complaints, the arrangements need to be consistent with the notifiable events identified in an incident and emergency response plan agreed to with NSW Health.]</p>	There is no connection between this and others' water industry infrastructure.	No Requirement

Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
B10 Notification of changes to Authorised Person	If an Authorised Person ceases, proposes to cease or receives notification to cease providing any of the services relating to the activities authorised by this Licence, the Licence Holder must provide IPART with written notice as soon as practicable and in any event no later than 28 days prior to the date of cessation of the services. Such written notice must include details of how the services previously undertaken by the Authorised Person will continue to be undertaken.	Not yet assessable but no inadequacies identified in this audit. This should be reviewed under future audits.	 Fully Adequate

Attachment 5. Detailed Audit Findings: Paraphrased aspects of the Water Industry Competition (General) Regulation 2008

Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
General requirements			
WIC Act section 14 (3)	A network operator must pay the annual licence fee determined by the Minister.	IPART has confirmed to the auditors that these fees have been paid (email from IPART to the auditor, 30 th May 2012 – fees are paid from 30 th September 2011).	☑ Fully Adequate
WIC Reg Sched 1 cl. 1 (1)	A network operator must provide the Minister or IPART with information as directed by the Minister or IPART in relation to licensee's activities under licence and must provide it in the time specified in the direction.	Not yet assessable but no inadequacies identified in this audit. This should be reviewed under future audits.	☑ Fully Adequate
WIC Reg Sched 1 cl. 5	A network operator must comply with any water industry code of conduct, marketing code of conduct and transfer code of conduct.	The marketing code of conduct and the transfer code of conduct are currently only draft – so compliance is not yet required. The Water Industry code of conduct was written in as licence condition B9, delineating responsibilities and interconnections, which was considered No Requirement.	☑ Fully Adequate
WIC Reg Sched 1 cl 2.1	The licensee must not bring any new water or sewage infrastructure into commercial operation without the written approval of the Minister. [The organisation can demonstrate that all new infrastructure commenced commercial operation after receiving written approval of the Minister].	Not yet assessable but no inadequacies identified in this audit. This should be reviewed under future audits.	☑ Fully Adequate
WIC Reg Sched 1 cl 2.2 (b)	The infrastructure is capable of operating safely. [The organisation can demonstrate that the infrastructure can operate without causing harm to public health and the environment and complies with the requirements of other relevant legislation such as the Occupational Health and Safety Act].	This was assessed as part of the IOP audit. During the site audit a number of minor gaps were identified but these were subsequently rectified. The site has three Safety showers, a HAZCHEM register and PTWF has notified WorkCover of chemical storage (although there are no Dangerous Goods). PTWR has a compliance certificate for BCA.	☑ Fully Adequate

Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl 2.2 (b)	<p>The infrastructure is capable of operating in accordance with its infrastructure operating plan and its water quality plan or sewage management plan, as the case requires.</p> <p>[The organisation can demonstrate that the plans are being implemented, for example, the procedures referenced in the plans are being used by the operators and the operators are trained in the procedures.</p> <p>The organisation can show that the practices adopted on site are covered by the plans and the on-site practices are not contradictory to the documented procedures].</p>	This was assessed as part of the IOP, WQP and SMP audits, above.	 Fully Adequate
Health requirements			
WIC Act section 18	A network operator must comply with any direction of the Minister to take specified action to reduce or eliminate a risk to public health or public safety arising from certain activities.	Not yet assessable but no inadequacies identified in this audit. This should be reviewed under future audits.	 Fully Adequate
WIC Reg Sched 1 cl. 1(2)	A network operator must immediately notify certain persons of any incident in the conduct of its activities that threatens, or could threaten, water quality, public health or safety.	Not yet assessable but no inadequacies identified in this audit. This should be reviewed under future audits.	 Fully Adequate
Netw. Op. Licence cl. B4	<p>The licensee must comply with any requirements of NSW Health which IPART has notified the licensee of in writing.</p> <p>[The organisation can show they have developed a relationship with NSW Health. This can be in the form of an MOU or communications protocol.</p> <p>The organisation has a register to record NSW Health/IPART requirements if they come in, and there is evidence of compliance with the requirements.</p> <p>NSW Health, with the agreement of IPART, has required that notifiable events and response protocols (in a document such as an incident and emergency response plan) are agreed with NSW Health before a scheme commences commercial operation]</p>	<p>Under Section 7.3 of the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12, NSW Health and IPART are noted as organisations to be notified in the event of notifiable events.</p> <p>The Licence Holder has involved NSW Health in review of its risk assessment and has held discussions with NSW Health and come to agreement through an Operating Protocol Supply of Recycled Water dated 25/11/2011 between the Licence Holder and NSW Health (Nepean Blue Mountains & Western Sydney, Local Health Districts, Public Health Unit). This document includes discussion of notifiable events.</p> <p>The Licence Holder has replaced the UV disinfection system with an alternative unit to the satisfaction of NSW Health (email from NSW Health to the auditor dated 3rd February 2012).</p>	 Fully Adequate
Environmental requirements			
WIC Reg Sched 1 cl. 4	<p>In relation to the protection of the environment, there has been compliance with the requirements of:</p> <p>(a) the Environmental Planning and Assessment Act 1979 and any environmental planning instruments under that Act, and</p> <p>(b) the Protection of the Environment Operations Act 1997 and any regulations under that Act.</p>	These requirements were considered under the audit of the SMP.	 Fully Adequate

Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
Infrastructure Operating Plan			
WIC Reg Sched 1 cl. 3(a), (b)	<p>The water or sewerage infrastructure is properly designed and constructed, operated in a safe and reliable manner and maintained in a proper condition, having regard to:</p> <p>(a) the purposes for which it is licensed, and</p> <p>(b) the licence conditions.</p>	These requirements were considered under the audit of the IOP.	 Fully Adequate
WIC Reg Sched 1 cl. 3(c)	<p>The water or sewerage infrastructure is properly designed and constructed, operated in a safe and reliable manner and maintained in a proper condition, having regard to any publicly available standards or codes relating to its design, construction, operation and maintenance.</p> <p>[The organisation has established a procedure for identifying and keeping up to date with any publicly available standards and codes. These may include documents produced by Standards Australia, Water Services Association Australia, regulatory agencies such as the EPA and Health, a relevant public utility, product manufacturers and suppliers.</p> <p>The organisation has established procedures to consider the requirements of all identified standards and codes and to determine if the requirements are relevant for the safe and reliable design, construction and operation of the specific water industry infrastructure.</p> <p>The organisation has established procedures to comply with the standards and codes which are deemed relevant to the specific water industry infrastructure].</p>	These requirements were considered under the audit of the IOP.	 Fully Adequate
WIC Reg Sched 1 cl. 6(2) (a) and WIC Reg Sched 1 cl. 13(2) (a)	<p>The infrastructure operating plan is fully implemented and kept under regular review and all of the licensee's activities are carried out in accordance with that plan.</p> <p>[The relevant staff members are aware of the requirements of the plan and have evidence of implementation, such as up to date checklists and registers for maintenance, training, inductions, monitoring, incidents and emergencies.</p> <p>The organisation has a procedure for reviewing the plan on a regular basis].</p>	These requirements were considered under the audit of the IOP.	 Fully Adequate
WIC Reg Sched 1 cl. 6(2) (b) and WIC Reg Sched 1 cl. 13(2) (b)	<p>If the Minister has directed, amendments to the licensee's infrastructure operating plan, such amendments were completed in accordance with the Minister's direction.</p>	Not yet assessable but no inadequacies identified in this audit. This should be reviewed under future audits.	 Fully Adequate

Clause	Requirements [and guidance]	Evidence/comments	Assessment Finding
WIC Reg Sched 1 cl. 6(3) And WIC Reg Sched 1 cl. 13(3) And Netw. Op. Licence cl. B8	If any significant change is made to its infrastructure operating plan (or the Minister or IPART demands it), the licensee provides the Minister or IPART with a report, prepared by an approved auditor regarding the adequacy of the plan and the condition of its infrastructure.	Not yet assessable but no inadequacies identified in this audit. This should be reviewed under future audits.	☑ Fully Adequate
WIC Reg Sched 1 cl. 8	The water meters connected to a licensee's water main comply with the requirements of the Plumbing and Drainage Code of Practice. The licensee has ensured the water meter is properly maintained and periodically tested, and the water meter is read at least every 4 months, and written notice of each meter reading is sent to the relevant licensed retail supplier. [The organisation has a procedure to check all water meters (both customer's and the licensee's water meters) comply with the requirements and have ongoing maintenance and meter readings].	The Licence Holder is using the same water meters as Sydney Water use, which is the "Elster V100" unit. These comply with the requirements.	☑ Fully Adequate
WIC Reg Sched 1 cl. 11 And WIC Reg Sched 1 cl. 15	Customer's installations are not connected to the licensee's water main or sewer main unless the installation complies with the Plumbing and Drainage Code of Practice. [The organisation has a procedure for obtaining a plumbing certificate of compliance from Office of Fair Trade through customers regarding compliance of their internal plumbing].	Extensive documentation was provided to demonstrate compliance with the plumbing requirements, both Licence Holder and local council inspections and reports (noted at many points within the Pitt Town Water Factory Company Recycled Water System Management Plan Revision D dated 08/03/12 and in particular at Appendix U).	☑ Fully Adequate
Water Quality Plan			
WIC Reg Sched 1 cl. 7(4)(a)	The water quality plan is fully implemented and kept under regular review and the licensee's activities are carried out in accordance with that plan.	This was audited under the WQP audit.	☑ Fully Adequate
WIC Reg Sched 1 cl. 7(4)(b)	If the Minister so directs, amendments to the licensee's water quality plan are made in accordance with the Minister's direction.	Not yet assessable but no inadequacies identified in this audit. This should be reviewed under future audits.	☑ Fully Adequate
WIC Reg Sched 1 cl. 7(5) and Netw. Op. Licence cl. B8	If any significant change is made to its water quality plan (or the Minister or IPART demands it), the licensee provides the Minister or IPART with a report, prepared by an approved auditor regarding the adequacy of the plan	Not yet assessable but no inadequacies identified in this audit. This should be reviewed under future audits.	☑ Fully Adequate
WIC Reg Sched 1 cl. 10	The licensee under a licence for water infrastructure to supply non-potable water for a particular purpose must ensure that the water supplied is fit for that purpose.	This was verified under Element 9 of the WQP.	☑ Fully Adequate