



Discovery Point Water

Operational Audit

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Independent Pricing and Regulatory Tribunal

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Independent Pricing and Regulatory Tribunal

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1. Executive Summary

1.1 Auditor Declaration

This report presents the findings of an Operational Audit of Discovery Point Water Pty Ltd's compliance with the requirements of its Network Operator's Licence (Licence No: 13_025) and the relevant provisions of the *Water Industry Competition (General) Regulation 2008* as they relate to the drinking water, sewerage and recycled water schemes at Discovery Point.

The auditor confirms that:

- the auditor was provided with sufficient evidence on which to base the conclusions reached during the audit;
- the audit findings accurately reflect the professional opinion of the auditor;
- the auditor has conducted the audit, determined the audit findings and prepared this report in accordance with the requirements of the *WIC Act Audit Guidelines*¹ and the provisions of the Audit Deed; and
- the audit findings have not been unduly influenced by the Licensee and/or any of its associates and express the auditor's opinion as to whether the Licensee has met the Licence conditions and regulatory requirements as specified in the scope.

1.2 Major Findings

The Licensee, Discovery Point Water Pty Ltd, was found to be operating and maintaining the audited drinking water, sewerage and recycled water schemes in full compliance with the assessed audit criteria. No non-compliances were identified and the infrastructure was found to be operating safely.

1.3 Recommendations

No recommendations have been made as a result of this audit.

Eight (8) opportunities for improvement, which the Licensee may wish to consider, have been identified in the body of the report.

¹ IPART, *Audit Guideline for Greenfield Schemes; Water Industry Competition Act 2006 (NSW)*, July 2013.

2. Introduction

2.1 Objectives

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

The objective of the audit was to assess compliance of the Licensee, Discovery Point Water Pty Ltd (Discovery Point Water), in meeting the requirements of the relevant legislation (the *Water Industry Competition Act 2006* and *Water Industry Competition (General) Regulation 2008*) and its Network Operator's Licence (Licence No: 13_025) for the drinking water, sewerage and recycled water schemes currently in operation at Discovery Point.

It is noted that the audit was undertaken in conjunction with an Operational Audit of the Central Park Water scheme.²

2.2 Licensee's Infrastructure, Systems and Procedures

The infrastructure, systems and procedures subject to audit are those related to the Discovery Point Water drinking water, sewerage and recycled water schemes (the Schemes) (refer <http://discoverypointwater.com.au>). The infrastructure includes a water recycling plant that treats raw sewage using extensive filtration and purification processes including membrane bioreactor, ultra violet, reverse osmosis and chlorination processes to produce recycled (non-potable) water of a quality suitable for the authorised uses.

Discovery Point Water Pty Ltd (ACN 142 392 541) is the Licensee, holding Network Operator's Licence No: 13_025. As Licensee, Discovery Point Water is responsible for the ongoing operation and maintenance of parts of the drinking water network, sewerage network, the treatment plant and the recycled water network in accordance with its Licence Plans including:³

- Scheme Management Plan – Flow, *Discovery Point Scheme Management Plan (Scheme MP) (Revision 6)*, 18 May 2017;

which must be read in conjunction with:

- Infrastructure Operating Plan – Flow, *Infrastructure Operating Plan IOP (Revision 8)*, 21 December 2016;
- Drinking Water Quality Plan – Flow, *Drinking Water Quality Plan (DWQP) (Revision 5)*, 22 November 2016;
- Recycled Water Quality Plan – Flow, *Recycled Water Quality Plan (RWQP) (Revision 6)*, 21 October 2016; and
- Sewage Management Plan – Flow, *Sewage Management Plan (Sewage MP) (Revision 4)*, 18 May 2017; and
- other relevant supporting documentation.

² Both Discovery Point Water and Central Park Water are fully owned by Flow Systems Pty Ltd.

³ Latest versions of the Licence Plans are listed; versions current during the audit period are referenced later in this report.

2.3 Audit Method

2.3.1 Audit Scope

The audit comprised an Operational Audit conducted pursuant to the *WIC Act Audit Guidelines*.⁴ The specific scope of the audit was as defined in IPART's letter to Flow (reference D17/3747) dated 19 April 2017. The nominated scope addresses selected requirements of:

- the *Water Industry Competition (General) Regulation 2008*; and
- Network Operator's Licence No: 13_025.

2.3.2 Audit Standard

The audit has been undertaken in accordance with the principles/guidance presented in:

- ISO 19011:2011 *Guidelines for auditing management systems*; and
- IPART, *Audit Guideline for Greenfield Schemes; Water Industry Competition Act 2006 (NSW)*, July 2013 (WIC Act Audit Guidelines).

2.3.3 Audit Steps

The audit has been undertaken generally in accordance with the procedure outlined in the *WIC Act Audit Guidelines*.

Following approval of an *Audit Proposal* by IPART, an *Audit Agenda* and *Information Request* were sent to both the Licensee and IPART one week prior to the audit fieldwork being undertaken. Audit fieldwork comprising a site inspection of the infrastructure and a desktop audit of relevant documentation/records and was undertaken on 13/14 June 2017. Some additional evidence was requested and subsequently provided.

A draft audit report was prepared and submitted to the Licensee for review, before being finalised and issued to both the Licensee and IPART.

The audit process involved seeking objective evidence that the Licensee had complied with the obligations identified for audit by IPART. Evidence was obtained through interview, review of relevant documentation and records, and site inspection.

2.3.4 Audit Team

The audit was conducted by Jim Sly and Dr Dan Deere, both of whom hold Lead Auditor accreditation in respect of Licence and regulatory compliance on IPART's Technical Services and Water Licensing Panel. The two auditors collectively addressed the various components of the audit.

Quality assurance review of the audit reports was undertaken by each auditor reviewing the other auditor's work.

Discovery Point Water was represented by Laura Dixon and Andrew Horton. IPART representatives Shweta Shrestha and Jayden Bregu⁵ attended as observers during the audit fieldwork.

⁴ IPART, *Audit Guideline for Greenfield Schemes; Water Industry Competition Act 2006 (NSW)*, July 2013.

⁵ Jayden Bregu attended on 13 June 2017 only.

2.3.5 Audit Grades

Audit grades have been awarded in accordance with guidance presented in the *WIC Act Audit Guidelines*. The compliance grades applicable for the purposes of this audit were as identified in **Table 2.1**.

Table 2.1 Audit Compliance Grades

Compliance Grade	Description
Compliant	Sufficient evidence has been provided in the audit on which to make a judgment on all requirements, and all requirements have been met.
Non-compliant Insignificant	There is a deficiency in compliance, however, it does not adversely impact on the ability of the Licensee to achieve defined objectives or assure controlled processes, products or outcomes.
Non-compliant Significant	There is a deficiency in compliance which adversely impact on the ability of the Licensee to achieve defined objectives or assure controlled processes, products or outcomes.
No Requirement	There was no requirement to comply with the Licence condition during the audit period.

2.4 Regulatory Regime

The Discovery Point Water schemes operate in accordance with the provisions of a Network Operator's Licence (Licence No: 13_025) issued under the *Water Industry Competition Act 2006* (NSW). Other relevant regulatory instruments and standards/guidelines include:

- *Water Industry Competition (General) Regulation 2008* (NSW);
- IPART, *Audit Guideline for Greenfield Schemes; Water Industry Competition Act 2006* (NSW), July 2013;
- *Australian Drinking Water Guidelines* (2011, as amended 2016);
- *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) 2006*;
- *Plumbing Code of Australia*;
- *Plumbing and Drainage Act 2011* (NSW); and
- NSW and national water industry and environmental regulations and codes of practice as applicable.

2.5 Quality Assurance Process

The quality of this audit report was assured through a professional review process. The report has been independently reviewed by a Lead Auditor who holds relevant accreditation on IPART's Technical Services and Water Licensing Panel.

2.6 Audit Findings

Audit findings are summarised in the following **Sections 3 to 8**, and are presented in full detail in **Appendices A to F**.

3. General Obligations of a Network Operator

3.1 Summary of Findings

There were no identified non-compliances in respect of the audited clauses of the *Water Industry Competition (General) Regulation 2008* related to the *General Obligations of a Network Operator*. Detailed assessment in respect of these clauses is presented in **Appendix A**.

3.2 Review of Actions

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

3.3 Opportunities for Improvement

The following opportunities for improvement have been identified in respect of the audited *WIC Regulation* clauses related to the *General Obligations of a Network Operator*.

- **OFI-DPW2017.01:** It is suggested that the Emergency Contact List is reviewed on a more regular basis (at least annually) and the version control (document date) updated accordingly. [*Note: an equivalent opportunity for improvement has been identified in relation to Central Park Water.*]
- **OFI-DPW2017.02:** It is suggested that Discovery Point Water follows up on the detection of elevated Cu in its drinking water supply and take actions, such as flushing or orthophosphate dosing, if concentrations start to routinely exceed 1 mg/L.
- **OFI-DPW2017.03:** Discovery Point Water should ensure that chemical storage bunds are kept clear of obstructions that compromise the storage capacity.

4. Water Supply Infrastructure

4.1 Summary of Findings

There were no identified non-compliances in respect of the audited clauses of the *Water Industry Competition (General) Regulation 2008* related to *Water Supply Infrastructure*. Detailed assessment in respect of these clauses is presented in **Appendix B**.

4.2 Review of Actions

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

4.3 Opportunities for Improvement

The following opportunities for improvement have been identified in respect of the audited *WIC Regulation* clauses related to the *Water Supply Infrastructure*:

- **OFI-DPW2017.04:** It is suggested that Flow (Discovery Point Water) takes action to ensure that information recorded on equipment/instrument servicing stickers is accurate and kept up-to-date.
[Note: an equivalent opportunity for improvement has been identified in relation to Central Park Water.]
- **OFI-DPW2017.05:** It is suggested that Flow (Discovery Point Water) uses its Real Asset Management (RAM) maintenance management system to manage and record all maintenance activities, including those undertaken by external service providers, with maintenance records captured (via links) within the system.
[Note: an equivalent opportunity for improvement has been identified in relation to Central Park Water.]
- **OFI-DPW2017.06:** It is suggested that Discovery Point Water endeavours to improve the chlorine residual within its recycled water to be within the action range and increase the lower limit of the action range to 0.2 mg/L.
- **OFI-DPW2017.07** It is suggested that Discovery Point Water endeavours to engineer a solution to the potable top-up air gap splashing problem without the need for taping of the connection.

5. Non-Potable Water Supply Infrastructure

5.1 Summary of Findings

There were no identified non-compliances in respect of the audited clauses of the *Water Industry Competition (General) Regulation 2008* related to *Non-Potable Water Supply Infrastructure*. Detailed assessment in respect of these clauses is presented in **Appendix C**.

5.2 Review of Actions

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

5.3 Opportunities for Improvement

No opportunities for improvement have been identified in respect of the audited *WIC Regulation* clauses related to the *Non-Potable Water Supply Infrastructure*.

6. Sewerage Infrastructure

6.1 Summary of Findings

There were no identified non-compliances in respect of the audited clauses of the *Water Industry Competition (General) Regulation 2008* related to *Sewerage Infrastructure*. Detailed assessment in respect of these clauses is presented in **Appendix D**.

6.2 Review of Actions

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

6.3 Opportunities for Improvement

No opportunities for improvement have been identified in respect of the audited *WIC Regulation* clauses related to the *Sewerage Infrastructure*.

7. Schedule A to the Network Operator's Licence

7.1 Summary of Findings

There were no identified non-compliances in respect of the audited clauses of *Schedule A to the Network Operator's Licence*. Detailed assessment in respect of these clauses is presented in **Appendix E**.

7.2 Review of Actions

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

7.3 Opportunities for Improvement

No opportunities for improvement have been identified in respect of the audited clauses of *Schedule A to the Network Operator's Licence*.

8. Schedule B to the Network Operator's Licence

8.1 Summary of Findings

There were no identified non-compliances in respect of the audited clauses of *Schedule B to the Network Operator's Licence*. Detailed assessment in respect of these clauses is presented in **Appendix F**.

8.2 Review of Actions

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

8.3 Opportunities for Improvement

The following opportunity for improvement has been identified in respect of the audited clauses of *Schedule B to the Network Operator's Licence*:

- **OFI-DPW2017.08:** It is suggested that the need for Discovery Point Pty Ltd to continue to be listed as an Authorised Person be reviewed (either prior to or as part of the next Licence review).

Appendix A Detailed Audit Findings – General Obligations of a Network Operator

Detailed audit findings in respect of the *General Obligations of a Network Operator* are presented in this Appendix.

Table A.1 General Obligations – WIC Reg Sched 1 cl.1(2)(a), (b), (c), (d) and (e)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.1(2)(a), (b), (c) and (e)	<p>[1(2)(a)] The licensee must immediately notify IPART of any incident in the conduct of its activities that threatens, or could threaten, water quality, public health or safety.</p> <p>[1(2)(b)] The licensee must immediately notify the Minister administering the <i>Public Health Act 2010 (NSW)</i> and the <i>Public Health Regulation 2012 (NSW)</i> of any incident in the conduct of its activities that threatens, or could threaten, water quality, public health or safety.</p> <p>[1(2)(c)] The licensee must immediately notify the Minister administering Part 2 of the <i>Water Industry Competition Act 2006 (NSW)</i> of any incident in the conduct of its activities that threatens, or could threaten, water quality, public health or safety.</p> <p>[1(2)(e)] The licensee must immediately notify any licensed network operator or public water utility whose infrastructure is connected to the licensed network operator's infrastructure of any incident in the conduct of its activities that threatens, or could threaten, water quality, public health or safety.</p>	No Requirement
Risk		Target for Full Compliance
This requirement reflects a high operational risk. It is essential that relevant stakeholders are made aware of incidents that threaten, or could threaten, water quality, public health or safety.		In the event that a notifiable incident has occurred, evidence that the Licensee provided the required notifications.
Evidence sighted		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Discovery Point development on 13 June 2017. ▪ Sample of SCADA data trends for water quality operational parameters. ▪ <i>Discovery Point Monthly Analysis Summary</i> for December 2016. ▪ Discovery Point Water, <i>Network Operator's Report; Annual Compliance Report; August 2015/16</i>, signed 30 August 2016. ▪ Flow, <i>Monitoring and Sampling Plan (MSP) (Revision 6)</i>, 22 November 2016. ▪ Flow, <i>Incident Management Plan (Revision 6)</i>, 14 October 2016. ▪ Flow, <i>Incident Notification Protocol with NSW Health for Supply of Drinking Water and Supply of Recycled Water (Revision 2)</i>, 15 January 2015. ▪ Flow, <i>Emergency Contact List (Reference: FS-WAT-NSW-FM-INC-1231-1)</i>, 19 June 2015. 		
Summary of reasons for grade		
No notifiable incidents occurred during the audit period; accordingly, there was "No Requirement" in respect of these obligations.		

Discussion and notes

The auditors questioned whether there had been any incidents arising from the conduct of the network operator's activities during the audit period that threatened, or could have threatened, water quality, public health or safety and, if so, whether IPART, the Minister administering the *Public Health Act 2010 (NSW)* and the *Public Health Regulation 2012 (NSW)*, the Minister administering Part 2 of the *Water Industry Competition Act 2006 (NSW)* and any connected network operator or public water utility had been notified as required.

Discovery Point Water advised that there had been no such incidents in respect of drinking water quality, recycled water quality or sewage spills during the audit period.

Procedures in relation to the management of incidents and notification requirements remain documented in the *Incident Management Procedure* and *Incident Notification Protocol*. The requirement to notify the NSW Health Public Health Unit, the Metropolitan Water Directorate and IPART, as well as other relevant stakeholders including the Public Water Utility, is clearly documented. Review of the *Emergency Contact List*⁶ for Discovery Point Water revealed that, although not updated since June 2015, the contacts appear to remain reasonably current. Nonetheless, as an opportunity for improvement (**OFI-DPW2017.01**), it is suggested that the *Emergency Contact List* is reviewed on a more regular basis (at least annually) and the version control (document date) be updated accordingly.

Review of a sample of SCADA data trends for selected recycled water operational parameters across the audit period did not reveal any contrary evidence; nor did a review of compiled laboratory test results for drinking or recycled water as presented in a sample *Monthly Analysis Summary*.⁷ Similarly, the *2015/16 Annual Compliance Report*,⁸ which covers part of the audit period, did not identify that there had been any incidents during 2015/16.

By way of example:

- the SCADA trend for the chlorine concentration multiplied by time (CT) showed a minimum value of 120 mg-min/L compared to a lower limit required for disinfection of 20 mg-min/L;
- the SCADA trend for MBR turbidity showed values varying between 0.01 and 0.15 NTU (instantaneous) compared to a maximum value of 0.2 NTU for 60 seconds (alarm setting at 0.18 NTU) required for pathogen exclusion;
- December laboratory test results for drinking water revealed values within the limits for verification parameters identified in the *Monitoring and Sampling Plan*,⁹ with monthly results for conductivity, CaCO₃ hardness, pH, Ca, Mg, Sb, As, Cd, Cu, Pb, Mn, Ni, NO_x-N, Cl⁻, F⁻, SO₄, *E. coli* and total coliforms all being within both safe and aesthetically acceptable limits as per the *Australian Drinking Water Guidelines*. The total Cu concentration measured in drinking water during December 2016 was 0.981 mg/L, which would round to 1.0 mg/L, and as such is technically just at the aesthetic guideline value. Such levels may start to lead to staining of fittings and metallic taste in the supplied water. Cuprosolvency is also potentially indicative of conditions that may leach Pb, Cr, Cd and other plumbing metals. As an opportunity for improvement (**OFI-DPW2017.02**), it is recommended that Discovery Point Water follows up on the detection of elevated Cu in its drinking water supply and take actions, such as flushing or orthophosphate dosing, if concentrations start to routinely exceed 1 mg/L; and
- December laboratory test results for recycled water revealed *E.coli* values of less than one (<1) per 100 ml (i.e. none detected) for each weekly test. Monthly results for other parameters, including total dissolved solids, Ca and Mg, were also within both safe and aesthetically acceptable limits.

⁶ Flow, *Emergency Contact List* (Reference: FS-WAT-NSW-FM-INC-1231-1), 19 June 2015.

⁷ *Discovery Point Monthly Analysis Summary* for December 2016.

⁸ Discovery Point Water, *Network Operator's Report; Annual Compliance Report; August 2015/16*, signed 30 August 2016.

⁹ *Monitoring and Sampling Plan*, table 7.

Recommendations

There are no recommendations in respect of these obligations.

Opportunities for improvement

The following opportunities for improvement have been identified in respect of these obligations:

- **OFI-DPW2017.01:** It is suggested that the *Emergency Contact List* is reviewed on a more regular basis (at least annually) and the version control (document date) updated accordingly.
[Note: an equivalent opportunity for improvement has been identified in relation to Central Park Water.]
 - **OFI-DPW2017.02:** It is suggested that Discovery Point Water follows up on the detection of elevated Cu in its drinking water supply and take actions, such as flushing or orthophosphate dosing, if concentrations start to routinely exceed 1 mg/L.
-

Table A.2 General Obligations – WIC Reg Sched 1 cl.2(1), 2(2)(a) and 2(2)(b)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.2(1), 2(2)(a) and 2(2)(b)	<p>[2(1)] The licensee must not bring any new water or sewerage infrastructure into commercial operation without the written approval of the Minister.</p> <p>[2(2)(a)] The licensee must provide to the Minister a report, prepared by an approved auditor that indicates that the infrastructure complies with the requirements of the Regulation and any licence conditions.</p> <p>[2(2)(b)] The licensee must provide to the Minister a report, prepared by an approved auditor that indicates that the infrastructure is capable of operating safely and in accordance with its infrastructure operating plan and its water quality or sewerage management plan, as the case requires.</p>	<p>Clause 2(1) Compliant</p> <p>Clauses 2(2)(a) and 2(2)(b) No Requirement</p>
Risk	<p>This requirement reflects a high operational risk. The Minister’s written approval is only provided when the Licensee has demonstrated that the infrastructure complies and can be operated in accordance with the relevant requirements. Accordingly, the absence of the Minister’s written approval may mean that the infrastructure has not been so assessed.</p>	<p>Target for Full Compliance</p> <p>Evidence that the written approval of the Minister was obtained prior to bringing new water or sewerage infrastructure into service.</p>
Evidence sighted		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Discovery Point development on 13 June 2017. ▪ Flow, <i>Discovery Point Scheme Management Plan (Scheme MP) (Revision 6)</i>, 18 May 2017.¹⁰ ▪ New South Wales Government, Network Operator’s Licence No: 13_025 (as varied on 7 July 2014). ▪ Minister for Lands and Water, <i>Notice of approval to bring new infrastructure into commercial operation</i>, 2 August 2015. 		
Summary of reasons for grade		
<p>No new infrastructure (drinking water, sewerage or recycled water) had been brought into commercial operation during the audit period; accordingly, Discovery Point Water was assessed as being compliant with the provisions of clause 2(1). Furthermore, as no new infrastructure had been brought into operation, there was “No Requirement” for compliance with the provisions of clauses 2(2)(a) or 2(2)(b) during the audit period.</p>		
Discussion and notes		
<p>Discovery Point Water advised that no new infrastructure (drinking water, sewerage or recycled water) had been brought into commercial operation during the audit period. Although the infrastructure had been extended to service additional buildings (Buildings 8 and 10) in the northern precinct of the development</p>		

¹⁰ Revisions 3 (dated 4 December 2015), 4 (dated 10 February 2016) and 5 (dated 18 February 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

during the audit period, based on the definition in WIC Reg Sched 1 cl.2(3), this was not deemed to constitute “new infrastructure”.

Observations made during inspection of the infrastructure at the Discovery Point development revealed no evidence to the contrary. Furthermore, the infrastructure in service at the time of the audit remained consistent with that identified in the *Network Operator’s Licence*¹¹ and referenced in the *Notice of approval to bring new infrastructure into commercial operation*.¹²

Accordingly, it was evident that Discovery Point Water had not brought any new infrastructure into commercial operation without the approval of the Minister and was therefore compliant with clause 2(1). Furthermore, there was no requirement for any action under the provisions of clause 2(2).

Recommendations

There are no recommendations in respect of these obligations.

Opportunities for improvement

No opportunities for improvement have been identified in respect of these obligations.

¹¹ New South Wales Government, Network Operator’s Licence No: 13_025 (as varied on 7 July 2014), Tables 1.2, 2.2 and 3.2.

¹² Minister for Lands and Water, *Notice of approval to bring new infrastructure into commercial operation*, 2 August 2015.

Table A.3 General Obligations – WIC Reg Sched 1 cl.3(c)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.3(c)	The licensee must ensure that its 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.	Compliant
Risk		Target for Full Compliance
This requirement reflects a high operational risk. Proper design and construction, safe and reliable operation, and maintenance of infrastructure in proper condition is essential to the effective (safe and reliable) delivery of agreed levels of service.		Evidence that the Licensee has procedures in place for ensuring that practices are kept up to date with changes to such standards or codes.
Evidence sighted		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Discovery Point development on 13 June 2017. ▪ Minister for Lands and Water, <i>Notice of approval to bring new infrastructure into commercial operation</i>, 2 August 2015. ▪ Flow/Discovery Point Water, <i>Certificate of Compliance under the Water Industry Competition (General) Regulation 2008 (NSW)</i> in relation to Discovery Point Stage 8-10 “Shore”, dated 23 December 2015. ▪ Flow, <i>Developer Infrastructure Works Inspection, and Certification Procedure for High Rise Developments (Revision 1.0)</i>, 10 September 2015. ▪ Water Infrastructure Group, <i>Discovery Point Water Factory (Recycled Water Plant); Operation and Maintenance Manual (Revision 2)</i>, 15 June 2015. ▪ Water Infrastructure Group, <i>Discovery Point Water Factory; Discovery Point Recycled Water Plant; Functional Description (Revision 2)</i>, 15 June 2015. ▪ Flow, <i>Discovery Point Scheme Management Plan (Scheme MP) (Revision 6)</i>, 18 May 2017.¹³ ▪ Flow, <i>Infrastructure Operating Plan (IOP) (Revision 8)</i>, 21 December 2016.¹⁴ ▪ Flow, <i>Asset Management Plan (AMP) (Revision 2)</i>, 22 November 2016. ▪ Flow, <i>Drinking Water Quality Plan (DWQP) (Revision 5)</i>, 22 November 2016.¹⁵ ▪ Flow, <i>Recycled Water Quality Plan (RWQP) (Revision 6)</i>, 21 October 2016.¹⁶ ▪ Flow Systems, <i>Compliance Management Procedure (Revision 1)</i>, 2 July 2015. 		

¹³ Revisions 3 (dated 4 December 2015), 4 (dated 10 February 2016) and 5 (dated 18 February 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

¹⁴ Revisions 5 (dated 8 September 2015), 6 (dated 25 May 2016) and 7 (dated 21 October 2016) of the *Infrastructure Operating Plan* were also in place during parts of the audit period.

¹⁵ Revision 4 (dated 8 September 2015) of the *Drinking Water Quality Plan* was also in place during parts of the audit period.

¹⁶ Revisions 4 (dated 5 May 2015) and 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* were also in place during parts of the audit period.

Summary of reasons for grade

Discovery Point Water demonstrated that the infrastructure was 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. It also demonstrated that it has procedures in place that require confirmation of the currency of standards and codes at the time of use.

Accordingly, Discovery Point Water was assessed as having demonstrated full compliance with this obligation.

Discussion and notes

The auditors checked for evidence that water (in this case drinking and non-potable water) or sewerage infrastructure was 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. These aspects were assessed as follows:

Design and Construction of Infrastructure:

The majority of infrastructure at Discovery Point has been operational since August 2015, following issue of a *Notice of approval to bring new infrastructure into commercial operation*.¹⁷ Such approval was based on “... a report prepared by an “approved auditor” ...”, which had assessed that the infrastructure had been properly designed and constructed.

As reported in Table A.2, although no “new infrastructure” was constructed during the audit period, the infrastructure had been extended to service additional buildings (Building 8 and 10) in the northern precinct of the development. Discovery Point Water provided a copy of a *Certificate of Compliance*¹⁸ in relation to these works, which had been issued pursuant to the Flow Systems *Developer Infrastructure Works Inspection, and Certification Procedure for High Rise Developments*.¹⁹ As this procedure identifies the relevant standards with which the infrastructure works must comply and the testing regime that is to be implemented, the *Certificate of Compliance* is, for the purposes of this audit, taken as evidence that the extended infrastructure is compliant with the relevant codes and standards.

Operation and Maintenance of Infrastructure:

Operation and maintenance of the recycled water treatment plant and associated infrastructure is undertaken in accordance with the general principles outlined in the *Infrastructure Operating Plan and Asset Management Plan*, and the more detailed requirements set out in the *Discovery Point Water Factory (Recycled Water Plant); Operation and Maintenance Manual*²⁰ and the *Discovery Point Recycled Water Plant; Functional Description*.²¹ The reticulated distribution (drinking water and recycled water) and collection (sewerage) schemes comprise of passive assets which require only minimal ongoing maintenance.

Further guidance in respect of operation and maintenance of the infrastructure is provided in the *Drinking Water Quality Plan*²² and *Recycled Water Quality Plan*.²³

Whilst there is limited specific reference to relevant standards and codes in the abovementioned

¹⁷ Minister for Lands and Water, *Notice of approval to bring new infrastructure into commercial operation*, 2 August 2015.

¹⁸ Flow/Discovery Point Water, *Certificate of Compliance under the Water Industry Competition (General) Regulation 2008 (NSW)* in relation to Discovery Point Stage 8-10 “Shore”, dated 23 December 2015.

¹⁹ Flow, *Developer Infrastructure Works Inspection, and Certification Procedure for High Rise Developments (Revision 1.0)*, 10 September 2015.

²⁰ Water Infrastructure Group, *Discovery Point Water Factory (Recycled Water Plant); Operation and Maintenance Manual (Revision 2)*, 15 June 2015.

²¹ Water Infrastructure Group, *Discovery Point Water Factory; Discovery Point Recycled Water Plant; Functional Description (Revision 2)*, 15 June 2015.

²² *Drinking Water Quality Plan*, section 2.

²³ *Recycled Water Quality Plan*, section 5.

documentation, there are general references to documentation including, but not limited to:

- *Australian Drinking Water Guidelines 6 (2011)*;
- *Australian Guidelines for Water Recycling; Managing Health and Environmental Risks (Phase 1) 2006*;
- Relevant Water Services Association of Australia publications, including:
 - *Water Supply Code of Australia (WSA 03)*; and
 - *Pressure Sewer Code of Australia (WSA 07)*; and
- PAS 55 *Asset Management* (still available as a reference document).

During the audit site inspection, the chemical storage containment bunds were inspected to check that their capacity had not been compromised. A plastic container was found within the bund around the Sodium Hypochlorite storage tank (apparently still in place following recent maintenance activity) (refer Figure A.3.1). Whilst it was not deemed that the size of the container was such that it would compromise adequate storage capacity in the event of a spill (and it would most likely float), it should be removed. An opportunity for improvement (**OFI-DPW2017.03**) has been identified accordingly.

Pipework was clearly labelled to identify the liquid being carried and lilac paint remains clearly visible on the recycled water distribution main in the car park. Clear “Do Not Drink” recycled water signs were evident on taps within the treatment plant. This demonstrates compliance with guidance provided in AS/NZS 3500 *Plumbing and Drainage Code*.

The filling mechanism for the Sodium Hypochlorite storage was inspected. These arrangements, which included tank level display and an interlock between level floats and the power supply, appeared to be in accordance with the relevant standards. It is understood that the plant room floor drains to trade waste, thereby protecting the environment in the unlikely event of a bund failure/overflow.

Further discussion in relation to operation and maintenance of the infrastructure is presented in Table B.1.

On the basis of observations made during the audit site inspection it was apparent that the infrastructure had been/was being operated in a safe and reliable manner and maintained in a proper condition. Furthermore, on the basis of the auditor’s experience, it appeared that such operation and maintenance had been/was being undertaken having regard to relevant publicly available standards and/or codes.

Currency of Standards and Codes:

Discovery Point Water referenced the Flow Systems *Compliance Management Procedure*²⁴ as evidence that it has a procedure for ensuring that it remains up to date with relevant publicly available standards and codes. This document outlines the requirement to confirm the currency of all guidance used, including (for example) checking SAI Global website to confirm currency of standards and codes.

Flow has advised that it is currently preparing a business case with the intent of subscribing to the SAI Global Standards Online Service to ensure that it has ready access to current standards and codes.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

The following opportunity for improvement has been identified in respect of this obligation:

- **OFI-DPW2017.03:** Discovery Point Water should ensure that chemical storage bunds are kept clear of obstructions that compromise the storage capacity.

²⁴ Flow Systems, *Compliance Management Procedure* (Revision 1), 2 July 2015.



Figure A.3.1 Plastic container located within chemical storage bund.

Appendix B Detailed Audit Findings – Water Supply Infrastructure

Detailed audit findings in respect of the obligations related to *Water Supply Infrastructure* are presented in this Appendix.

Table B.1 Water Supply Infrastructure – WIC Reg Sched 1 cl.6(2)(a)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.6(2)(a)	The licensee must ensure that the infrastructure operating plan is fully implemented and kept under regular review and, in particular, that all of its activities are carried out in accordance with that plan.	Compliant

Risk

This requirement reflects a high operational risk. Implementation of the *Infrastructure Operating Plan* ensures the effective (safe and reliable) delivery of agreed levels of service.

Target for Full Compliance

Evidence that the *Infrastructure Operating Plan* is fully implemented and the Licensee’s activities are carried out in accordance with that *Plan*; evidence that the *Plan* is kept under regular review.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Discovery Point development on 13 June 2017.
- Flow, *Discovery Point Scheme Management Plan (Scheme MP) (Revision 6)*, 18 May 2017.²⁵
- Flow, *Infrastructure Operating Plan (IOP) (Revision 8)*, 21 December 2016.²⁶
- Flow, *Asset Management Plan (AMP) (Revision 2)*, 22 November 2016.²⁷
- Water Infrastructure Group, *Discovery Point Water Factory (Recycled Water Plant); Operation and Maintenance Manual (Revision 2)*, 15 June 2015.
- Water Infrastructure Group, *Discovery Point Water Factory; Discovery Point Recycled Water Plant; Functional Description (Revision 2)*, 15 June 2015.
- Flow, *Drinking Water Quality Plan (DWQP) (Revision 5)*, 22 November 2016.²⁸
- Flow, *Recycled Water Quality Plan (RWQP) (Revision 6)*, 21 October 2016.²⁹
- Various maintenance records as referenced.

Summary of reasons for grade

Discovery Point Water demonstrated that it is fully implementing, and that its activities are being carried out in accordance with principles documented in, the *Infrastructure Operating Plan*. This was evident from the effective operation of the infrastructure and the implementation of maintenance practices.

Discovery Point Water also demonstrated that the *Infrastructure Operating Plan* is kept under regular review, and that it has arrangements in place to ensure that it continues to do so.

Accordingly, Discovery Point Water was assessed to have demonstrated full compliance with this obligation.

²⁵ Revisions 3 (dated 4 December 2015), 4 (dated 10 February 2016) and 5 (dated 18 February 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

²⁶ Revisions 5 (dated 8 September 2015), 6 (dated 25 May 2016) and 7 (dated 21 October 2016) of the *Infrastructure Operating Plan* were also in place during parts of the audit period.

²⁷ Revision 1 (dated 8 November 2015) of the *Asset Management Plan* was also in place during part of the audit period.

²⁸ Revision 4 (dated 8 September 2015) of the *Drinking Water Quality Plan* was also in place during parts of the audit period.

²⁹ Revisions 4 (dated 5 May 2015) and 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* were also in place during parts of the audit period.

Discussion and notes

[*Note: for the purposes of this audit, this discussion relates to both water supply (WTC Reg Sched 1 cl.6(2)(a)) and sewerage (WTC Reg Sched 1 cl.13(2)(a)) infrastructure. The discussion is not repeated at Table D.1.*]

The auditors checked for evidence that the *Infrastructure Operating Plan* was fully implemented and kept under regular review and that all of the Network Operator's activities are carried out in accordance with that Plan.

It is noted that the *Infrastructure Operating Plan* must be read in conjunction with the *Scheme Management Plan*. Four (4) versions of the *Infrastructure Operating Plan* and three (3) versions of the *Scheme Management Plan* were in place during the audit period, as follows:

- *Infrastructure Operating Plan* – Revision 5 (dated 8 September 2015), Revision 6 (dated 25 May 2016), Revision 7 (dated 21 October 2016) and Revision 8 (dated 21 December 2016); and
- *Scheme Management Plan* – Revision 3 (dated 4 December 2015), Revision 4 (dated 10 February 2016) and Revision 5 (dated 18 February 2016).

Review of these *Plans* revealed that there had been minimal change to the content presented therein. Revisions have captured minor edits and corrections only, some of which have been made in response to previous audit findings.

Design and Construction:

As reported in Table A.2 and Table A.3, during the audit period construction activity was limited to extension of the existing infrastructure to service additional buildings (Building 8 and 10) in the northern precinct of the development. As also reported in Table A.2, the infrastructure extensions were deemed to be compliant with the relevant codes and standards (design criteria) as required by the *Infrastructure Operating Plan*.³⁰

Furthermore, design and construction of the infrastructure extensions had been undertaken by the developer, under the supervision of Flow/Discovery Point Water.³¹

It is therefore apparent that design and construction has been undertaken in accordance with the arrangements set out in the *Infrastructure Operating Plan*.

Operation and Maintenance:

Operation and maintenance of the recycled water treatment plant and associated infrastructure is undertaken in accordance with the general principles outlined in the *Infrastructure Operating Plan* and *Asset Management Plan*, and the more detailed requirements set out in the *Discovery Point Water Factory (Recycled Water Plant); Operation and Maintenance Manual*³² and the *Discovery Point Recycled Water Plant; Functional Description*.³³ The reticulated distribution (drinking water and recycled water) and collection (sewerage) schemes comprise of passive assets which require only minimal ongoing maintenance.

Further guidance in respect of operation and maintenance of the infrastructure is provided in the *Drinking Water Quality Plan*³⁴ and *Recycled Water Quality Plan*.³⁵

Inspection of the infrastructure (principally at the recycled water treatment plant) led to the assessment that it is being safely operated and well maintained. Observations made during the site inspection included:

³⁰ *Infrastructure Operating Plan*, section 2.3.

³¹ *Infrastructure Operating Plan*, sections 2.4, 4.4.1, 4.4.2.3 and 4.4.4.3.

³² Water Infrastructure Group, *Discovery Point Water Factory (Recycled Water Plant); Operation and Maintenance Manual (Revision 2)*, 15 June 2015.

³³ Water Infrastructure Group, *Discovery Point Water Factory; Discovery Point Recycled Water Plant; Functional Description (Revision 2)*, 15 June 2015.

³⁴ *Drinking Water Quality Plan*, section 2.

³⁵ *Recycled Water Quality Plan*, section 5.

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- Safety shower/eye wash installations were appropriately located; operation of one of the eye washers confirmed that it operates effectively.
 - No odour was observed within the plant room, which is located in the building basement; this indicated that effective air flow and odour management measures are in place.
 - Service stickers on Membrane Air Blowers 1 & 2 and Process Air Blowers 1 & 2 (placed by the servicing contractor, Fracks) indicated that the next service is due on 1 November 2017; this was taken to indicate that the previous annual service/inspections had been completed.
 - For all critical limit monitoring instruments (e.g. free chlorine and turbidity) service contractor Premier Calibrations had placed stickers as evidence of the most recent (May 2017), and next planned (August 2017) quarterly instrument check, service and calibration. However, for non-critical instruments (e.g. dissolved oxygen), some of the stickers indicated a check was due May 2017 but those stickers were still in place at the time of the audit (conducted in mid-June 2017). This issue was also observed at Central Park.

A subsequent review of maintenance certificates covering work undertaken by Premier Calibrations revealed that the scheduled services had been completed; this indicated that there had been a failure by the service contractor to update the stickers. As an opportunity for improvement (**OFI-DPW2017.04**), it is suggested that Flow (Discovery Point Water) takes action to ensure that information recorded on equipment/instrument servicing stickers is accurate and kept up-to-date.

- Service stickers on hand held instruments, used for operational checks of fixed instrument calibration, indicated that they had been serviced in accordance with requirements. For example, a Hach DR 900 Multiparameter Portable Colorimeter was last serviced on 23 February 2017 and is next due for service in February 2018 (refer Figure B.1.1).
- As observed during the 2016 Operational Audit of Discovery Point Water,³⁶ the air gap on the potable water top-up at the entry to the recycled water storage tank remains wrapped with gaffer tape to prevent splashing that occurs due the pipework configuration at this point (refer Figure B.1.2). This issue, which remains of concern to the auditors, is discussed in more detail in Table B.2.

A number of maintenance records were sighted, including (for example):

- Chlorine analyser AE4671 (Endress+Houser) – was serviced by Premier Calibrations on 25 August 2016. The record indicates that the chamber was cleaned with acid; the instrument was charged with electrolyte and recalibrated.
- Turbidity meter AE4574 (Hach 1720E) – was serviced by Premier Calibrations on 6 December 2016. The record indicates that the instrument was cleaned and calibrated; it noted the need to clean the chamber to remove iron and cited the standard against which the instrument was checked.
- Cranes and associated equipment – all equipment at Discovery Point, including (for example) the 230kg electric crane, 2 tonne 1 metre sling and 5 tonne GIS electric crane, was inspected by Bullivants Electronic Asset Management on 1 July 2016.

It was noted that a site log book is used to document site inspections of the plant and associated infrastructure, including manually taken instrument readings (a sample of records was sighted). It was noted that the site is visited at least weekly; SCADA and CCTV enables remote monitoring of the treatment plant at any time.

On the basis of evidence sighted and observations made during the site inspections, it is apparent that the infrastructure is being operated and maintained in accordance with the *Infrastructure Operating Plan*.

Asset Management System:

Flow/Discovery Point Water has recently implemented a new asset management/computerised

³⁶ Water Futures/Cobbitty Consulting, *Discovery Point Water; Operational Audit; Audit Report (Version 3)*, 24 February 2016, table C.2.

maintenance management system (CMMS) called Real Asset Management (RAM). Demonstration of the new system revealed that information captured included (for example) asset details and records of maintenance activity. Maintenance schedules, typically based on manufacturer's recommendations, are programmed and the system is used to generate work orders.

Records for Process Blower No 1 (BL3051) at Central Park were sighted as an example of the detail captured (i.e. to demonstrate, in part, the functionality of the system).

Whilst it is acknowledged that the new system is still being implemented, it is noted that maintenance management is limited to activities undertaken by in-house staff. Servicing/maintenance undertaken by external service providers (e.g. instrument calibration) is still separately programmed and maintenance records separately filed. It is suggested that RAM should be used to manage and record all maintenance activities, with maintenance records captured (via links) within the system; an opportunity for improvement (**OFI-DPW2017.05**) has been identified accordingly.

Capability and Training:

Evidence of the skills and capability of the personnel engaged in operation and maintenance of the infrastructure, together with a sample of the training implemented by Flow/Discovery Point Water during the audit period, is discussed in detail in Table F.1.

Regular Review of Infrastructure Operating Plan:

As noted above, several versions of both the *Infrastructure Operating Plan* and the scheme specific *Scheme Management Plan* were in place during the audit period, and the *Scheme Management Plan* has subsequently been revised again (Revision 6 dated 18 May 2017). Whilst there was minimal change in each case, this demonstrates that the *Infrastructure Operating Plan/Scheme Management Plan* have been kept under regular review.

This is consistent with Flow's *Document Control Procedure*,³⁷ which indicates that Plans are to be reviewed at intervals of: "1 years or as required by change, internal audit, incident etc." This requirement is further noted in the *Discovery Point Scheme Management Plan* (section 2.1.3) and all management plans (including the *Infrastructure Operating Plan, Asset Management Plan, Sewage Management Plan, Drinking Water Quality Plan, Recycled Water Quality Plan, Incident Management Plan* and *Monitoring and Sampling Plan*) (in each case section 1.1.3).

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

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

- **OFI-DPW2017.04:** It is suggested that Flow (Discovery Point Water) takes action to ensure that information recorded on equipment/instrument servicing stickers is accurate and kept up-to-date. *[Note: an equivalent opportunity for improvement has been identified in relation to Central Park Water.]*
- **OFI-DPW2017.05:** It is suggested that Flow (Discovery Point Water) uses its Real Asset Management (RAM) maintenance management system to manage and record all maintenance activities, including those undertaken by external service providers, with maintenance records captured (via links) within the system. *[Note: an equivalent opportunity for improvement has been identified in relation to Central Park Water.]*

³⁷ Flow Systems, *Document Control Procedure (Revision 3)*, 3 February 2016, table 3.



Figure B.1.2 Hach DR 900 Multiparameter Portable Colorimeter showing service sticker.



Figure B.1.2 Air gap on the potable water top-up at the entry to the recycled water storage tank remains taped.

Table B.2 Water Supply Infrastructure – WIC Reg Sched 1 cl.7(4)(a)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(4)(a)	The licensee must ensure that its water quality plan is fully implemented and kept under regular review and, in particular, that all of its activities are carried out in accordance with that plan.	Compliant

Risk

This requirement reflects a high operational risk. Implementation of the *Water Quality Plan* ensures that the water supplied complies with the specified quality requirement.

Target for Full Compliance

Evidence that the *Water Quality Plan* is fully implemented and the Licensee’s activities are carried out in accordance with that *Plan*; evidence that the *Plan* is kept under regular review.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Discovery Point development on 13 June 2017.
- Flow, *Discovery Point Scheme Management Plan (Scheme MP) (Revision 6)*, 18 May 2017.³⁸
- Flow, *Drinking Water Quality Plan (DWQP) (Revision 5)*, 22 November 2016.³⁹
- Flow, *Recycled Water Quality Plan (RWQP) (Revision 6)*, 21 October 2016.⁴⁰
- Flow, *Monitoring and Sampling Plan (MSP) (Revision 6)*, 22 November 2016.
- Flow Systems, *Discovery Point – Control Points*, 22 May 2015.
- *Discovery Point Monthly Analysis Summary* for December 2016.
- Flow Systems, *Document Control Procedure (Revision 3)*, 3 February 2016.

Summary of reasons for grade

Discovery Point Water demonstrated that it is fully implementing, and is carrying out its water quality management activities in accordance with principles documented in, the *Drinking Water Quality Plan* and *Recycled Water Quality Plan* as applicable. This was evident from the effective monitoring and testing processes that are being implemented.

Discovery Point Water also demonstrated that the *Water Quality Plans* are kept under regular review, and that it has arrangements in place to ensure that it continues to do so.

Accordingly, Discovery Point Water was assessed to have demonstrated compliance with this obligation.

Discussion and notes

The auditors checked for evidence that the *Drinking Water Quality Plan* and *Recycled Water Quality Plan* were fully implemented and kept under regular review and that all of the Network Operator’s activities are carried out in accordance with those Plans.

³⁸ Revisions 3 (dated 4 December 2015), 4 (dated 10 February 2016) and 5 (dated 18 February 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

³⁹ Revision 4 (dated 8 September 2015) of the *Drinking Water Quality Plan* was also in place during parts of the audit period.

⁴⁰ Revisions 4 (dated 5 May 2015) and 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* were also in place during parts of the audit period.

It is noted that the *Water Quality Plans* must be read in conjunction with the *Scheme Management Plan*. Two (2) versions of the *Drinking Water Quality Plan*, and three (3) versions of both the *Recycled Water Quality Plan* and *Scheme Management Plan* were in place during the audit period, as follows:

- *Drinking Water Quality Plan* – Revision 4 (dated 8 September 2015) and Revision 5 (dated 22 November 2016);
- *Recycled Water Quality Plan* – Revision 4 (dated 5 May 2015), Revision 5 (dated 25 May 2016) and Revision 6 (dated 21 October 2016); and
- *Scheme Management Plan* – Revision 3 (dated 4 December 2015), Revision 4 (dated 10 February 2016) and Revision 5 (dated 18 February 2016).

Review of these *Plans* revealed that there had been minimal change to the content presented therein. Revisions have captured minor edits and corrections only, some of which have been made in response to previous audit findings.

Operational Monitoring:

Discovery Point Water undertakes operational monitoring of water quality in accordance with the *Monitoring and Sampling Plan*, which outlines the requirements in relation to both drinking water⁴¹ and recycled water.⁴²

Operational monitoring of drinking water quality comprises testing of grab samples using hand held instruments; results are recorded in the site log book. Records of drinking water operational monitoring were not sought or sighted during the audit; water is supplied by Sydney Water under the provisions of a *Utility Services Agreement* (refer Table F.4). Significant changes to water quality are not anticipated to arise from the operations and infrastructure (e.g. pipes) for which Discovery Point Water is responsible.

Operational monitoring of recycled water quality comprises continuous on-line monitoring of relevant parameters. Review of a sample of SCADA data trends for selected recycled water operational parameters indicated that water quality remained compliant across the audit period. By way of example:

- the SCADA trend for chlorine CT factor showed a minimum value of 120 mg-min/L compared to a limit of 20 mg-min/L; and
- SCADA trend for MBR turbidity showed values varying between 0.01 and 0.15 NTU (instantaneous) compared to a maximum value of 0.2 NTU for 60 seconds (alarm setting at 0.18 NTU).

Monitoring Systems:

Servicing and calibration of operational monitoring instruments, including hand held instruments, is discussed in Table B.1. In summary, calibration of the instruments was maintained throughout the audit period although there was an issue with service stickers fixed to some instruments.

To confirm that key operational monitoring parameters were being actively monitored as required under the *Recycled Water Quality Plan* and *Monitoring and Sampling Plan*, and to assess data consistency between the monitoring instrument and SCADA system, readings were taken at a sample of monitoring instruments and the corresponding SCADA records subsequently checked. A summary of these checks is as follows:

Parameter	Instrument	Time	Reading	SCADA Consistent?
MBR Permeate Turbidity	AE2573	8:18am	0.015 NTU	✓
UV Transmittance	AE2771	8:36am	67.1%	✓
Final Water Turbidity	AE4575	8:53am	0.107 NTU	✓
Final Water Free Chlorine	AE4576	8:53am	0.03 mg/L	✓
Final Water pH	AE4672	8:53am	7.36 pH units	✓

⁴¹ *Monitoring and Sampling Plan*, section 4.4.

⁴² *Monitoring and Sampling Plan*, section 6.3.

These checks confirmed consistency between the instrument readings and the SCADA display, thereby validating the SCADA system as the primary mechanism for ongoing performance monitoring. They also confirmed that, on the day of the audit, the processes were operating in accordance with the requirements (operating range) set out in the *Recycled Water Quality Plan*.

Readings for final water parameters were consistent with the targets identified in the document *Discovery Point – Control Points*,⁴³ as follows:

- Turbidity – 0.107 NTU compared to target <0.2 NTU;
- Free Chlorine – 0.03 mg/L compared to target 0.5 mg/L (action range <0.1 and >3 mg/L); and
- pH – 7.36 pH Units compared to target 7 to 7.5 pH units.

The low free chlorine reading in the final water (observed between 0.02 and 0.03 mg/L during the audit) was not desirable but was acceptable given that the required chlorine dose (expressed as a CT) for primary disinfection and associated pathogen reduction had been achieved earlier in the process. Nonetheless, biological activity in recycled water can result in odours, slimes and microbial-influenced corrosion in the absence of a chlorine residual. As a result, whilst not of direct health significance, it would be desirable to improve the chlorine residual to be within the action range. Furthermore, the lower limit of the action range would ideally be elevated to above 0.2 mg/L to ensure adequate efficacy. These suggestions have been identified as an opportunity for improvement (**OFI-DPW2017.06**).

Verification Monitoring:

Discovery Point Water undertakes verification monitoring of water quality in accordance with the *Monitoring and Sampling Plan*, which outlines the requirements in relation to both drinking water⁴⁴ and recycled water.⁴⁵ Test results in a sample *Monthly Analysis Summary*⁴⁶ indicate that Discovery Point Water undertakes microbial (*E.coli*) testing of recycled water on a weekly basis and testing of a broader suite of parameters for both drinking water and recycled water on a monthly basis.

Review of the compiled laboratory test results for drinking water and recycled water for December 2016 revealed:

- Monthly test results for drinking water revealed values within the limits for verification parameters identified in the *Monitoring and Sampling Plan*;⁴⁷
- December laboratory test results for drinking water revealed values within the limits for verification parameters identified in the *Monitoring and Sampling Plan*⁴⁸ with monthly results for conductivity, CaCO₃ hardness, pH, Ca, Mg, Sb, As, Cd, Cu, Pb, Mn, Ni, NO_x-N, Cl⁻, F⁻, SO₄, *E. coli* and total coliforms all being within both safe and aesthetically acceptable limits as per the *Australian Drinking Water Guidelines*. The total Cu concentration measured in drinking water during December 2016 was 0.981 mg/L, which would round to 1.0 mg/L, and as such is technically reaching the aesthetic guideline value. This has resulted in the identification of an opportunity for improvement (OFI-DPW2017.02) as discussed in more detail in Table A.1; and
- December laboratory test results for recycled water revealed *E. coli* values of less than one (<1) per 100 ml (i.e. none detected) for each weekly test. Monthly results for other parameters, including total dissolved solids, Ca and Mg were also within both safe and aesthetically acceptable limits.

Sampling and verification testing for Discovery Point is undertaken by Sydney Water, as reported in more detail in Table F.3.

⁴³ Flow Systems, *Discovery Point – Control Points*, 22 May 2015.

⁴⁴ *Monitoring and Sampling Plan*, section 4.3.

⁴⁵ *Monitoring and Sampling Plan*, section 6.2.

⁴⁶ *Discovery Point Monthly Analysis Summary* for December 2016.

⁴⁷ *Monitoring and Sampling Plan*, table 7.

⁴⁸ *Monitoring and Sampling Plan*, table 7.

Backflow Prevention:

As observed in previous audits of the Discovery Point Water schemes, the potable water top up/backup system for the recycled water supply remained protected by testable dual RPZ backflow prevention devices as well as an air gap. These critical barriers were checked during the audit on site.

The assets appeared to be largely compliant based on a visual inspection although no devices were hydraulically tested during the site audit. The only remaining concern, as noted previously, was the presence of plastic wrap and gaffer tape on the air gap to stop splashing which, whilst unlikely to withstand backflow pressures, wasn't strictly an engineered approach to managing the splash problem from the air gap.

At the time of the 2016 Operational Audit,⁴⁹ Discovery Point Water provided correspondence from Sydney Water, which indicated that its primary concern is with site containment, which is addressed by the RPZ devices; approval in respect of the air gap should be sought from NSW Fair Trading.

Given the absolute criticality of avoiding any potential for backflow of recycled water into the potable supply, and being seen to ensure that, it is suggested that Discovery Point Water endeavour to engineer a solution to the splashing problem, as achieved at Central Park, without the need for taping of the connection. This has been identified as an opportunity for improvement (**OFI-DPW2017.07**).

Regular Review of Water Quality Plans:

As noted above, several versions of the *Drinking Water Quality Plan*, the *Recycled Water Quality Plan* and the scheme specific *Scheme Management Plan* were in place during the audit period, and the *Scheme Management Plan* has subsequently been revised again (Revision 6 dated 18 May 2017). Whilst there was minimal change in each case, this demonstrates that the *Infrastructure Operating Plan/Scheme Management Plan* have been kept under regular review, nominally at annual intervals.

As reported in Table B.1 in relation to the *Infrastructure Operating Plan*, this is consistent with Flow's *Document Control Procedure*,⁵⁰ which indicates that Plans are to be reviewed at intervals of: "1 years or as required by change, internal audit, incident etc." This requirement is further noted in the *Discovery Point Scheme Management Plan* (section 2.1.3) and all management plans (including the *Infrastructure Operating Plan*, *Asset Management Plan*, *Sewage Management Plan*, *Drinking Water Quality Plan*, *Recycled Water Quality Plan*, *Incident Management Plan* and *Monitoring and Sampling Plan*) (in each case section 1.1.3).

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

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

- **OFI-DPW2017.06:** It is suggested that Discovery Point Water endeavours to improve the chlorine residual within its recycled water to be within the action range and up the lower limit of the action range to 0.2 mg/L.
- **OFI-DPW2017.07:** It is suggested that Discovery Point Water endeavours to engineer a solution to the potable top-up air gap splashing problem without the need for taping of the connection.

⁴⁹ Water Futures/Cobbitty Consulting, *Discovery Point Water; Operational Audit; Audit Report (Version 3)*, 24 February 2016, table C.2.

⁵⁰ Flow Systems, *Document Control Procedure (Revision 3)*, 3 February 2016, table 3.

Table B.3 Water Supply Infrastructure – WIC Reg Sched 1 cl.8

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.8	<p>[8(1)] Any water meter that is connected to a licensee’s water main must comply with the requirements of the document entitled the <i>Plumbing Code of Australia</i>.</p> <p>[8(2)(a)] While water is being supplied to premises in respect of which a water meter has been installed, the licensee must ensure that the water meter is properly maintained and periodically tested.</p> <p>[8(2)(b)] While water is being supplied to premises in respect of which a water meter has been installed, the licensee must ensure that the water meter is read at intervals of no more than 4 months.</p> <p>[8(2)(c)] While water is being supplied to premises in respect of which a water meter has been installed, the licensee must ensure that written notice of each meter reading is sent to the relevant licensed retail supplier.</p>	Compliant
Risk	<p>This requirement 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.</p>	Target for Full Compliance
<p>Evidence that meters are compliant with the <i>Code</i>. Documented procedures for management of the meter fleet and/or evidence that performance monitoring and maintenance (when required) is undertaken. Evidence that meters are read at the required interval and that readings are passed on to the relevant retail supplier.</p>		
Evidence sighted	<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Discovery Point development on 13 June 2017. ▪ Flow, <i>Discovery Point Scheme Management Plan (Scheme MP) (Revision 6)</i>, 18 May 2017.⁵¹ ▪ Flow, <i>Infrastructure Operating Plan (IOP) (Revision 8)</i>, 21 December 2016.⁵² 	
Summary of reasons for grade	<p>Discovery Point Water has previously demonstrated that water meters connected to its drinking water and recycled water mains comply with the <i>Plumbing Code of Australia</i>, and confirmed that they continue to do so. It has also documented its approach to water meter maintenance, testing and renewal, which is generally consistent with industry practice.</p> <p>Discovery Point Water also demonstrated that meters are read monthly (i.e. more regularly than required under the Regulation) and, given that its parent company, Flow Systems Pty Ltd holds the Retail Supplier Licence in respect of the Discovery Point Water drinking and recycled water schemes, notification of meter reading is not, in practice required.</p>	

⁵¹ Revisions 3 (dated 4 December 2015), 4 (dated 10 February 2016) and 5 (dated 18 February 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

⁵² Revisions 5 (dated 8 September 2015), 6 (dated 25 May 2016) and 7 (dated 21 October 2016) of the *Infrastructure Operating Plan* were also in place during parts of the audit period.

Discussion and notes

Meter Compliance (clause 8(1)):

Although no customer meters were sighted during the audit, Discovery Point Water confirmed that meters connected to its water mains are NMI (National Measurement Institute) rated; they are the same meters as used by Sydney Water. The *Infrastructure Operating Plan* indicates that:⁵³

“All meters meet the Metrological and Technical requirements of NMI R 49-1: Water Meters Intended for the Metering of Cold Potable Water and Hot Water and are Standards Mark certified to AS 3565.1 by SAI Global under Licence No: SMKP20052.”

The auditors have previously inspected the meters and reviewed a *Product Specification*,⁵⁴ and are satisfied with respect to their compliance.

Whilst the specific requirements of the *Plumbing Code of Australia* are difficult to identify, and are typically expressed as “deemed to comply”, the auditor is satisfied that given the water meters are NMI rated they, can be deemed to meet the requirements of the Code.

Maintenance and Testing (clause 8(2)(a)):

Discovery Point Water advised that meters are not maintained on a regular basis, but are tested and, if necessary, replaced in response to a customer enquiry or complaint. This approach, which is documented in the *Infrastructure Operating Plan*,⁵⁵ is consistent with the approach typically adopted by water utility operators; although in many cases meter accuracy is addressed by periodical meter replacement (typically on a ten to fifteen (10-15) year cycle).

Meter Reading (clause 8(2)(b)):

Discovery Point Water advised that meters are read (and customers invoiced) on a monthly basis. Monthly meter reading (and billing), which is more regular than required under the Regulation, is aimed at minimising potential “bill shock”.

Meter reading records dated 6 April 2017 were sighted during the audit. These records showed individual consumption readings by apartment and building, with “common areas” separately identified.

Notification to Retail Supplier (clause 8(2)(c)):

Flow Systems Pty Ltd (Discovery Point Water’s parent company) holds the Retail Suppliers Licence in respect of the Discovery Point Water drinking water and recycled water infrastructure; accordingly notification of meter readings is, in practice, not required as the Network Operator and Retail Supplier are, for purposes of this requirement, the same entity.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

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

⁵³ *Infrastructure Operating Plan*, section 2.5.1.

⁵⁴ Elster, *Product Specification; V100 (PSM-T) Volumetric Cold Potable Water Meters*, undated.

⁵⁵ *Infrastructure Operating Plan*, section 2.5.1.

Appendix C Detailed Audit Findings – Non-Potable Water Supply Infrastructure

Detailed audit findings in respect of the obligations related to *Non-Potable Water Supply Infrastructure* are presented in this Appendix.

Table C.1 Non-Potable Water Supply Infrastructure – WIC Reg Sched 1 cl.10(a)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.10(a)	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.	Compliant

Risk

Target for Full Compliance

This requirement reflects a high operational risk. It is essential from a safety viewpoint that water supplied for a particular purpose is fit for that purpose.

Evidence that the water supplied is fit for purpose.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Discovery Point development on 13 June 2017.
- Flow, *Discovery Point Scheme Management Plan (Scheme MP) (Revision 6)*, 18 May 2017.⁵⁶
- Flow, *Recycled Water Quality Plan (RWQP) (Revision 6)*, 21 October 2016.⁵⁷
- Flow Systems, *Discovery Point – Control Points*, 22 May 2015.

Summary of reasons for grade

Review of operational monitoring data and water quality verification test results indicated that recycled water supplied during the audit period was fit for the nominated purposes. Accordingly, Discovery Point Water was assessed as having demonstrated compliance with this obligation.

Discussion and notes

The purposes for which the non-potable (recycled) water is to be used are identified in the *Scheme Management Plan*⁵⁸ and *Recycled Water Quality Plan*.⁵⁹ These purposes, which include toilet flushing, washing machines, general purposes wash down, carwash use, treatment plant service water and irrigation, are consistent with the “Authorised purposes” nominated in the Network Operator’s Licence.

Water quality targets/control parameters at Critical Control Points (CCPs) and Quality Control Points (QCPs) are documented in the *Discovery Point – Control Points*.⁶⁰ As reported in Table B.2, review of a sample of SCADA data traces, instrument readings taken during the site inspection and verification testing results indicates that recycled water quality compliant with the documented parameter targets.

As also report in Table A.1, there were no reportable incidents in which the specified water quality had been compromised during the audit period.

Accordingly, it was assessed that that recycled water supplied during the audit period was fit for the nominated purposes.

⁵⁶ Revisions 3 (dated 4 December 2015), 4 (dated 10 February 2016) and 5 (dated 18 February 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

⁵⁷ Revisions 4 (dated 5 May 2015) and 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* were also in place during parts of the audit period.

⁵⁸ *Scheme Management Plan*, section 6.1.1.2.

⁵⁹ *Recycled Water Quality Plan*, section 3.1.2.

⁶⁰ Flow Systems, *Discovery Point – Control Points*, 22 May 2015.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

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

Appendix D Detailed Audit Findings – Sewerage Infrastructure

Detailed audit findings in respect of the obligations related to *Sewerage Infrastructure* are presented in this Appendix.

Table D.1 Sewerage Infrastructure – WIC Reg Sched 1 cl.13(2)(a)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.13(2)(a)	The licensee must ensure that the infrastructure operating plan is fully implemented and kept under regular review and, in particular, that all of its activities are carried out in accordance with that plan.	Compliant
Risk	Target for Full Compliance	
This requirement reflects a high operational risk. Implementation of the <i>Infrastructure Operating Plan</i> ensures the effective (safe and reliable) delivery of agreed levels of service.	Evidence that the <i>Infrastructure Operating Plan</i> is fully implemented and the Licensee’s activities are carried out in accordance with that <i>Plan</i> ; evidence that the <i>Plan</i> is kept under regular review.	
Evidence sighted		
<ul style="list-style-type: none"> Refer list of evidence in Table B.1. 		
Summary of reasons for grade		
[As noted in Table B.1 ...]		
Discovery Point Water demonstrated that it is fully implementing, and that its activities are being carried out in accordance with principles documented in, the <i>Infrastructure Operating Plan</i> . This was evident from the effective operation of the infrastructure and the implementation of maintenance practices.		
Discovery Point Water also demonstrated that the <i>Infrastructure Operating Plan</i> is kept under regular review, and that it has arrangements in place to ensure that it continues to do so.		
Accordingly, Discovery Point Water was assessed to have demonstrated full compliance with this obligation.		
Discussion and notes		
For the purposes of this audit, discussion in relation to the <i>Infrastructure Operating Plan</i> applicable to both water supply (WIC Reg Sched 1 cl.6(2)(a)) and sewerage (WIC Reg Sched 1 cl.13(2)(a)) infrastructure is presented in Table B.1.		
Recommendations		
There are no recommendations in respect of this obligation.		
Opportunities for improvement		
For opportunities for improvement identified in respect of this obligation, please refer to Table B.1.		

Table D.2 Sewerage Infrastructure – WIC Reg Sched 1 cl.13(2)(a)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.14(3)(a)	The licensee must ensure that its sewage management plan is fully implemented and kept under regular review and, in particular, that all of its activities are carried out in accordance with that plan.	Compliant

Risk

This represents high operational risk. Implementation of the *Sewage Management Plan* ensures the effective (safe and reliable) operation of the sewerage infrastructure without detrimental effect to the environment.

Target for Full Compliance

Evidence that the *Sewage Management Plan* is fully implemented and the Licensee’s activities are carried out in accordance with that Plan; evidence that the Plan is kept under regular review.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Discovery Point development on 13 June 2017.
- Flow, *Discovery Point Scheme Management Plan (Scheme MP) (Revision 6)*, 18 May 2017.⁶¹
- Flow, *Sewage Management Plan (Sewage MP) (Revision 4)*, 18 May 2017.⁶²
- Sydney Water, *Consent to discharge industrial trade wastewater*, dated 30 May 2017 (for discharge of Reuse - Biomass to Sewer (ZM02) at Central Park).
- Flow Systems, *Document Control Procedure (Revision 3)*, 3 February 2016.

Summary of reasons for grade

Discovery Point Water demonstrated that it is fully implementing, and that its activities are being carried out in accordance with principles documented in, the *Sewage Management Plan*. This was evident from the effective operation of the infrastructure and the implementation of maintenance practices.

Discovery Point Water also demonstrated that the *Sewage Management Plan* is kept under regular review, and that it has arrangements in place to ensure that it continues to do so.

Accordingly, Discovery Point Water was assessed to have demonstrated full compliance with this obligation.

Discussion and notes

The auditors checked for evidence that the *Sewage Management Plan* was fully implemented and kept under regular review and that all of the Network Operator’s activities are carried out in accordance with that Plan.

It is noted that the *Sewage Management Plan* must be read in conjunction with the *Scheme Management Plan*. Two (2) versions of the *Sewage Management Plan* and three (3) versions of the *Scheme Management Plan* were in place during the audit period, as follows:

- *Sewage Management Plan* – Revision 2 (dated 30 January 2015) and Revision 3 (dated 23 February 2016); and

⁶¹ Revisions 3 (dated 4 December 2015), 4 (dated 10 February 2016) and 5 (dated 18 February 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

⁶² Revisions 2 (dated 30 January 2015) and 3 (dated 23 February 2016) of the *Sewage Management Plan* were in place during parts of the audit period.

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- *Scheme Management Plan* – Revision 3 (dated 4 December 2015), Revision 4 (dated 10 February 2016) and Revision 5 (dated 18 February 2016).

Review of these *Plans* revealed that there had been minimal change to the content presented therein.

Odour Management:

Odour at the treatment plant site is managed using an activated carbon based biofilter; filtered air is discharged above the top of the multi-storey building in which the plant is accommodated. During the audit, odour (H₂S) monitoring was checked for the air leaving the biofilter. Analyser AIT3677 was found to be reading 0.0ppm both on the instrument display and on the SCADA system. This provides good evidence of H₂S and odour control.

No odour was observed within the plant room, which is located in the building basement; this further indicated that effective air flow and odour management measures are in place.

Trade Waste:

Screenings, waste activated sludge and reverse osmosis concentrate is discharged to sewer under a load-based *Trade Waste Agreement*⁶³ with Sydney Water. The current consent commenced on 1 January 2016 and will continue for a period of 48 months.

Site Drainage:

Chemical storage containment bunds were inspected to check that their capacity had not been compromised. As reported in Table A.3, a plastic container was found within the bund around the Sodium Hypochlorite storage tank. Although not deemed to compromise storage capacity, an opportunity has been separately identified.

It is understood that the treatment plant room floor drains to trade waste, thereby protecting the environment in the unlikely event of a bund failure/overflow or any other contamination.

Regular Review of Sewage Management Plan:

As noted above, several versions of the *Sewage Management Plan* and the scheme specific *Scheme Management Plan* were in place during the audit period, and the *Scheme Management Plan* has subsequently been revised again (Revision 6 dated 18 May 2017). Whilst there was minimal change in each case, this demonstrates that the *Sewage Management Plan/Scheme Management Plan* have been kept under regular review, nominally at annual intervals.

As reported in Table B.1 and Table B.2 in relation to the *Infrastructure Operating Plan* and *Water Quality Plans*, this is consistent with Flow's *Document Control Procedure*,⁶⁴ which indicates that Plans are to be reviewed at intervals of: "1 years or as required by change, internal audit, incident etc." This requirement is further noted in the *Discovery Point Scheme Management Plan* (section 2.1.3) and all management plans (including the *Infrastructure Operating Plan, Asset Management Plan, Sewage Management Plan, Drinking Water Quality Plan, Recycled Water Quality Plan, Incident Management Plan* and *Monitoring and Sampling Plan*) (in each case section 1.1.3).

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

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

⁶³ Sydney Water, *Consent to discharge industrial trade wastewater*, dated 30 November 2015 (for discharge of Reuse - Biomass to Sewer (ZM02) at Discovery Point).

⁶⁴ Flow Systems, *Document Control Procedure (Revision 3)*, 3 February 2016, table 3.

Appendix E Detailed Audit Findings **– Schedule A to the Network Operator’s Licence**

Detailed audit findings in respect of the obligations under *Schedule A to the Network Operator’s Licence* are presented in this Appendix.

Table E.1 Schedule A to the Network Operator's Licence – Clauses A1, A2 and A3

Clause	Requirement	Compliance Grade
Network Operator's Licence cl.A1, A2 and A3	<p><i>Authorised persons:</i> Only the Licensee and/ or the authorised third parties specified in Tables 1.1, 2.1 and 3.1 have constructed, operated and/ or maintained the water industry infrastructure.</p> <p><i>Water industry infrastructure:</i> The Licensee and the authorised third parties have constructed, operated and/or maintained the water industry infrastructure specified in Tables 1.2, 2.2 and 3.2.</p> <p><i>Authorised purposes:</i> The Licensee and the authorised third parties have constructed, operated and/ or maintained the water industry infrastructure for the authorised purposes specified in Tables 1.3, 2.3 and 3.3.</p> <p><i>Specified area of operations:</i> 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 specified in Tables 1.4, 2.4 and 3.4.</p>	Compliant
Risk	Target for Full Compliance	
This requirement reflects a moderate risk that the appropriate operational controls may not be in place.	Evidence that the Licensee and any authorised third parties have operated and/or maintained the specified infrastructure for the authorised purposes only within the specified area of operations.	
Evidence sighted		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Discovery Point development on 13 June 2017. ▪ New South Wales Government, Network Operator's Licence No: 13_025 (as varied on 7 July 2014). ▪ Flow, <i>Discovery Point Scheme Management Plan (Scheme MP) (Revision 6)</i>, 18 May 2017.⁶⁵ ▪ Flow, <i>Recycled Water Quality Plan (RWQP) (Revision 6)</i>, 21 October 2016.⁶⁶ ▪ Flow, <i>Drinking Water Quality Plan (DWQP) (Revision 5)</i>, 22 November 2016.⁶⁷ ▪ Flow/Discovery Point Water, <i>Certificate of Compliance under the Water Industry Competition (General) Regulation 2008 (NSW)</i> in relation to Discovery Point Stage 8-10 "Shore", dated 23 December 2015. ▪ Flow, <i>Responsibilities and Authorities Matrix (Reference: FS-WAT-AUS-FM-OPS-1316-1)</i>, 8 August 2016. 		

⁶⁵ Revisions 3 (dated 4 December 2015), 4 (dated 10 February 2016) and 5 (dated 18 February 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

⁶⁶ Revisions 4 (dated 5 May 2015) and 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* were also in place during parts of the audit period.

⁶⁷ Revision 4 (dated 8 September 2015) of the *Drinking Water Quality Plan* was also in place during parts of the audit period.

Summary of reasons for grade

On the basis of the documentation reviewed, observations made during site inspections and discussions with Discovery Point Water personnel during the audit, it was assessed that, during the audit period, the Licensee and nominated “Authorised persons” had operated and maintained the “Water industry infrastructure” specified in the Licence for the “Authorised purposes”, and the infrastructure does not extend outside the specified “Area of operations”. Construction of infrastructure during the audit period was limited to extension of the existing networks; an “Authorised person” certified the adequacy of the infrastructure.

Accordingly, it was assessed that Discovery Point Water was compliant with these obligations.

Discussion and notes

Evidence was sought that the Licensee and any authorised persons have constructed and are operating and/or maintaining the infrastructure specified in the Licence for the authorised purposes and that the infrastructure does not extend outside the specified area of operations.

Network Operator’s Licence No: 13_025, as varied and issued to Discovery Point Water Pty Ltd on 7 July 2014, authorises activities associated with the supply of non-potable (recycled) water, the supply of drinking water and the provision of sewerage services. The specific provisions of the Licence are discussed in the following.

Authorised persons:

The Licence specifies the following “Authorised persons”:⁶⁸

- Flow Systems Pty Ltd (ACN 28 136 272 298) in respect of non-potable (recycled) water supply, drinking water supply and the provision of sewerage services;
- Permeate Partners Pty Ltd (ACN 54 130 112 257) in respect of non-potable (recycled) water supply and the provision of sewerage services; and
- Discovery Point Pty Ltd (ACN 12 102 882 342) in respect of drinking water supply.

Accordingly, all construction, operation and maintenance activities must be undertaken by, or under the direct supervision of, Discovery Point Water, Flow Systems, Permeate Partners and/or Discovery Point (developer).

On the basis of explanations provided and observations made during the audit, it is understood that the infrastructure was being operated and maintained either by Discovery Point Water/Flow Systems or under its direct supervision throughout the audit period; Permeate Partners continued to be available, under a period contract, to provide operational monitoring⁶⁹ and advisory services as required. This is consistent with the responsibilities and authorities referenced in the *Scheme Management Plan*⁷⁰ and documented in the *Responsibilities and Authorities Matrix*.⁷¹

Construction of infrastructure during the audit period was limited to extension of the existing networks to service new buildings within the northern precinct. The construction of this infrastructure was assessed by Flow Systems to be compliant with requirements⁷² (i.e. an Authorised Person retained responsibility for the adequacy of the infrastructure). It is also understood that Discovery Point Pty Ltd is identified as an Authorised in view of its role in constructing the drinking water infrastructure within the Discovery Point development.

⁶⁸ *Network Operator’s Licence*, Schedule A (tables 1.1, 2.1 and 3.1).

⁶⁹ Permeate Partners was observed to be remotely accessing the SCADA system during the site inspection.

⁷⁰ *Scheme Management Plan*, section 2.3.

⁷¹ Flow, *Responsibilities and Authorities Matrix* (Reference: FS-WAT-AUS-FM-OPS-1316-1), 8 August 2016.

⁷² Flow/Discovery Point Water, *Certificate of Compliance under the Water Industry Competition (General) Regulation 2008 (NSW)* in relation to Discovery Point Stage 8-10 “Shore”, dated 23 December 2015.

Water industry infrastructure:

The Licence nominates the following as the specified “Water industry infrastructure”:⁷³

- “Infrastructure for the production, filtration, treatment, storage, transport and reticulation of non-potable water”.
- “Infrastructure used for the conveyance or reticulation of drinking water”;
- “Infrastructure for the collection, filtration, treatment, storage, conveyance and disposal of sewage”.

Observations made during the audit and review of the documentation provided confirmed that infrastructure being operated by Discovery Point Water and the Authorised Persons is consistent with the specified water industry infrastructure. As noted above, construction of infrastructure during the audit period was limited to extension of the existing networks to service a new building.

Observations made during the audit and review of the documentation provided confirmed that infrastructure being operated by Veolia is consistent with the specified water industry infrastructure. As noted above, no new infrastructure was constructed during the audit period.

Authorised purposes:

The Licence nominates the following as the “Authorised purposes” for which the specified “Water industry infrastructure” can be used:⁷⁴

- “Toilet flushing, unrestricted irrigation, clothes washing, car washing, general wash-down and water features (landscape architecture)”;
- “Drinking water and other purposes for which drinking water could be used safely”;
- “Sewage collection, transport and treatment; Effluent disposal to sewer and effluent transfer to non-potable water system”.

The *Scheme Management Plan*⁷⁵ and *Recycled Water Quality Plan*⁷⁶ identify purposes for which the recycled water will be used. These identified purposes are consistent (in principle) with the “Authorised purposes” nominated in the Licence.

The *Scheme Management Plan*⁷⁷ and *Drinking Water Quality Plan* outline the arrangements in place to ensure that drinking water meets the required standards⁷⁸ and can therefore be supplied for that purpose.

The *Scheme Management Plan*⁷⁹ indicates that the sewerage infrastructure will be used for the collection and treatment of sewage, consistent with the Licence.

Whilst specific end uses were not inspected as part of this audit,⁸⁰ review of the documentation provided, observations made during the site inspections and discussions with Discovery Point Water personnel provided no indication that the infrastructure has been or will be used for non-authorised purposes.

Area of operations:

The Licence nominates the area of operations, i.e. the area within which the water industry infrastructure may be operated.⁸¹ On the basis of explanations provided and observations made during the audit, it is apparent that the infrastructure being operated and/or maintained by Discovery Point Water lies within the specified area of operations.

⁷³ *Network Operator’s Licence*, Schedule A (tables 1.2, 2.2 and 3.2).

⁷⁴ *Network Operator’s Licence*, Schedule A (tables 1.3, 2.3 and 3.3).

⁷⁵ *Scheme Management Plan*, section 6.1.1.2.

⁷⁶ *Recycled Water Quality Plan*, section 3.1.2.

⁷⁷ *Scheme Management Plan*, section 8.

⁷⁸ As specified by the *Australian Drinking Water Guidelines*.

⁷⁹ *Scheme Management Plan*, section 4.

⁸⁰ Inspection of landscape areas in the vicinity of Buildings 1B, 1C, 2 and 3 did not identify any non-potable water irrigation.

⁸¹ *Network Operator’s Licence*, Schedule A (tables 1.4, 2.4 and 3.4).

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

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

Table E.2 Schedule A to the Network Operator’s Licence – Clause A4.1

Clause	Requirement	Compliance Grade
Network Operator’s Licence cl.A4.1	<p>This Licence authorises the Licensee, and any authorised persons, to maintain and operate the Infrastructure for the authorised purposes and within the area of operations, provided that the Licensee owns, maintains and operates the Infrastructure or, to the extent the Licensee is not the owner of the Infrastructure, the Licensee maintains and operates the Infrastructure with the consent of the owner of the Infrastructure (within the meaning of section 64(1) of the Act).</p> <p>The authority granted by this special condition to the Licensee and the authorised persons is subject to the conditions imposed by or under the Act, the Regulation and this Licence.</p>	Compliant
Risk	<p>This requirement reflects a moderate risk that the appropriate responsibility arrangements may not be in place.</p>	Target for Full Compliance
		<p>Evidence that the Licensee has the consent of the owner of the Infrastructure (as defined in clause A4.2) to operate and maintain the Infrastructure.</p>
Evidence sighted		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Discovery Point development on 13 June 2017. ▪ <i>Recycled Water Plant Deed</i> between Discovery Point Co-Operative Limited, Discovery Point Water Pty Ltd and Flow Systems Pty Ltd, unsigned draft. ▪ <i>Project Delivery Agreement</i> between Discovery Point Pty Ltd and Discovery Point Water Factory Pty Ltd, extracts sighted (all or parts of pages 14, 15, 47, 48 and 111; specifically section 15), dated 30 November 2012 		
Summary of reasons for grade		
<p>Discovery Point Water demonstrated that it had a contractual obligation to the owner of the specified infrastructure (Discovery Point Pty Ltd) to operate and maintain that infrastructure during the audit period. It is therefore inferred that it has the owner’s consent to do so.</p>		
<p>Accordingly, it is assessed that Discovery Point Water has demonstrated compliance with this obligation.</p>		
Discussion and notes		
<p>Clause A4.2 of the Licence indicates that:</p>		
<p><i>“In this clause [clause A4], Infrastructure means the water industry infrastructure from the isolation valve immediately downstream of a tee junction on the Sydney Water main to the flange on the suction side of the pump (all horizontal pipework) excluding the Sydney Water bulk water meter.”</i></p>		
<p>The auditors sought evidence that Discovery Point Water operates and maintains the referenced</p>		

infrastructure with the consent of the owner of that infrastructure.

Discovery Point Water provided a copy of a *Recycled Water Plant Deed*,⁸² which clearly defines the roles and responsibilities of each party. The obligation on the Recycled Water Plant Operator (party holding the Network Operator's Licence under the WICA) in relation to operation and maintenance of the Reticulation Infrastructure is set out in clause 3.1 of the *Deed*.

For the purposes of the *Deed*, Reticulation Infrastructure includes (but is not limited to) Potable Water Reticulation Infrastructure, the extent of which is shown diagrammatically in Schedule 3 of the *Deed*.

The *Recycled Water Plant Deed* was in the process of being signed at the time of this audit,⁸³ and therefore not in place during the audit period. However, a *Project Delivery Agreement*,⁸⁴ which addressed the relevant responsibilities, was in place during that period. Discovery Point Water's obligations under that *Agreement* included operation and maintenance of the "Development Infrastructure" in compliance with applicable Sydney Water standards and guidelines, all applicable legislative requirements, Discovery Point Water's management plans and good industry practice, for the duration of the operating period.

On the basis that it has a contractual obligation to the owner of infrastructure (Discovery Point Pty Ltd during the audit period) to operate and maintain the specified infrastructure, it is inferred that it has the owner's consent to do so.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

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

⁸² *Recycled Water Plant Deed* between Discovery point Co-Operative Limited, Discovery Point Water Pty Ltd and Flow Systems Pty Ltd, unsigned draft.

⁸³ Email correspondence provided by Discovery Point Water demonstrated active progress towards imminent signing.

⁸⁴ *Project Delivery Agreement* between Discovery Point Pty Ltd and Discovery Point Water Factory Pty Ltd, extracts sighted (all or parts of pages 14, 15, 47, 48 and 111; specifically section 15), dated 30 November 2012.

Appendix F Detailed Audit Findings – Schedule B to the Network Operator’s Licence

Detailed audit findings in respect of the obligations under *Schedule B to the Network Operator’s Licence* are presented in this Appendix.

Table F.1 Schedule B to the Network Operator's Licence – Clause B1.1

Clause	Requirement	Compliance Grade
Network Operator's Licence cl.B1.1	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.	Compliant

Risk

This requirement reflects 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.

Target for Full Compliance

Evidence that the Licensee has the technical, financial and organisational capacity to carry out the activities authorised by the Licence. If the Licensee has ceased to have this capacity, evidence that it has reported this to IPART immediately in accordance with the Reporting Manual.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Discovery Point development on 13 June 2017.
- Flow Systems, *Responsibilities and Authorities Matrix (Reference: FS-WAT-AUS-FM-OPS-1316-1)*, 8 August 2016.
- Flow, *Discovery Point Scheme Management Plan (Scheme MP) (Revision 6)*, 18 May 2017.⁸⁵
- Flow, *Infrastructure Operating Plan (IOP) (Revision 8)*, 21 December 2016.⁸⁶
- *Agreement for the Supply of Professional Services; Pitt Town, Central Park, Discovery Point, Huntlee and Cooranbong; Operational Support* (between Flow Systems and Permeate Partners), 23 May 2016.
- RTO Safety Training, Statements of Attainment in relation to confined space training undertaken by Andrew Horton (dated 11 May 2016) and Daniel Spinney (dated 6 July 2016).
- NSW TAFE, *Certificate III in Engineering – Mechanical Trade* awarded to Daniel Spinney, October 2006.
- Flow, *Organisation Chart*, March 2017.
- Flow, *Corporate Risk Register (Reference: FS-ALL-AUS-RG-GOV-1077-1)*, 8 August 2016.
- Flow, *Incident Management Plan (Revision 6)*, 14 October 2016.⁸⁷

Summary of reasons for grade

Discovery Point Water demonstrated that, principally through its parent company Flow Systems (an Authorised Person under the Licence), it maintained the technical and organisational capacity to carry out the activities authorised by the Licence during the audit period (and subsequently), and that there was no requirement to report the contrary to IPART.

Accordingly, it was assessed that Discovery Point Water was “Compliant” with this obligation.

⁸⁵ Revisions 3 (dated 4 December 2015), 4 (dated 10 February 2016) and 5 (dated 18 February 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

⁸⁶ Revisions 5 (dated 8 September 2015), 6 (dated 25 May 2016) and 7 (dated 21 October 2016) of the *Infrastructure Operating Plan* were also in place during parts of the audit period.

⁸⁷ Revisions 4 (dated 4 June 2015) and 5 (dated 25 August 2016) of the *Incident Management Plan* were also in place during parts of the audit period.

Discussion and notes

[It is noted that, consistent with the audit scope defined by IPART, the auditor has not assessed the financial capacity of the Licensee as part of this audit.]

Technical Capacity:

Operation and maintenance activities required to meet the requirements of the Licence are principally the responsibility of Flow Systems' (Discovery Point Water's parent company) Executive Manager Utility Operations, as outlined in the *Responsibilities and Authorities Matrix*.⁸⁸ The *Responsibilities and Authorities Matrix*, which is referenced in the *Scheme Management Plan*,⁸⁹ the *Infrastructure Operating Plan*⁹⁰ and other Business Management System documentation, identifies a range of relevant "Operational" activities, including activities related to the drinking water, recycled water and sewerage systems for which the Executive Manager Utility Operations is responsible. These include (for example) but are not limited to:

- Develop and implement operational procedures, process control and verification of drinking water quality;
- Develop and implement operational procedures, process control and verification of recycled water quality;
- Operate and maintain water, sewage and recycled water reticulation;
- Implement the maintenance management system; and
- Manage incidents and emergencies.

The Executive Manager Utility Operations is supported in this role by the Manager Network Operations, Scheme Operator, other Flow Systems staff and external service providers.

Previous review of curricula vitae for Flow Systems' Executive Manager Utility Operations, Manager Network Operations and Scheme Operator (Andrew Horton, Ralph Wardell and Daniel Spinney) indicates that they are appropriately qualified and experienced for the purposes of operating and maintaining the required infrastructure. This assessment has been further validated through discussions with Andrew Horton and Ralph Wardell during various previous Flow Systems audits. It is noted that, as well as being Discovery Point Water's parent company, Flow Systems is nominated as an "Authorised Persons" under the provisions of Discovery Point Water's Network Operator's Licence.

In addition to its operational staff, Flow Systems has recently acquired additional process engineering capacity, including Mike Dahl, Glen Millott and Lachlan May (on an as-needed), previously of WJP Solutions.

Flow Systems/Discovery Point Water also retains the services of Permeate Partners to provide operational support in respect of its five currently operating schemes. The scope of services provided, which includes the provision of additional support when Flow Systems personnel are on leave, is outlined in the contractual agreement.⁹¹ Previous review of curricula vitae or Permeate Partners personnel confirms that they are appropriately qualified and experienced to provide the necessary support.

Discovery Point Water/Flow advised that undertakes workforce planning (in respect of internal resources) as part of its annual budgeting process. It also advised that it is currently actively seeking to identify additional backup resource in anticipation of additional Flow schemes coming on-line.

Flow Systems also engages several plumbing service providers, including Rab's Plumbing, NOV Mono and Limcora Group, to provide operational and maintenance support across its schemes on an as-required basis. Limcora Group is generally used in relation to the Discovery Point schemes.

⁸⁸ Flow Systems, *Responsibilities and Authorities Matrix* (Reference: FS-WAT-AUS-FM-OPS-1316-1), 8 August 2016.

⁸⁹ *Scheme Management Plan*, section 2.3.

⁹⁰ *Infrastructure Operating Plan*, section 1.5.

⁹¹ *Agreement for the Supply of Professional Services; Pitt Town, Central Park, Discovery Point, Huntlee and Cooranbong; Operational Support* (between Flow Systems and Permeate Partners), 23 May 2016.

Statements of Attainment in relation to confined space training undertaken by Andrew Horton (dated 11 May 2016) and Daniel Spinney (dated 6 July 2016) were provided as evidence of recent relevant training.⁹² A copy of Daniel Spinney's *Certificate III in Engineering – Mechanical Trade (MEM30298)* dated October 2006⁹³ was also provided as evidence of his qualifications.

Organisational Capacity:

Review of Flow Systems' organisation structure⁹⁴ and reference to its website⁹⁵ shows that Discovery Point Water, through its parent company (and nominated Authorised Person), 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 (but not limited to) Marketing and Communications; Project Delivery; Retail Services; and Corporate Support.

Flow Systems, has been gradually increasing its staff contingent and now has some 50 employees in total. This indicates that Flow Systems has been effectively growing its staff contingent over time in response to increased workloads associated with the development and bringing into operation of additional schemes. A total of three (3) recycled water treatment plants and five schemes (two (2) high rise and three (3) land and housing) are now operational, and additional schemes/treatment facilities are under development.

The availability of operational (technical) capacity is discussed above. From a corporate perspective, "Insufficient resourcing (operations)" has been identified as a risk in the Corporate Risk Register;⁹⁶ although initially identified as a "Very High" risk, Flow Systems has assessed that the implementation of controls including the engagement of Permeate Partners and ex-WJP Solutions personnel has mitigated the risk level to "Medium".

Loss of Capacity:

On the basis of observations made during the audit, it is apparent that Flow Systems /Discovery Point 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.

Flow Systems/Discovery Point Water has documented a procedure 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. The *Incident Management Plan* indicates that:⁹⁷

"A monthly audit, risk and compliance committee meeting is facilitated by the Risk and Compliance Manager which the risk owners attend to review and discuss mitigation controls for the high residual risks. If it is identified that these high residual risks could affect Flow's ability to carry out the activities authorised by the licence of a scheme, IPART are notified by the Risk and Compliance Manager in accordance with the requirements of the Network Operators and Retail Suppliers Reporting Manuals."

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

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

⁹² RTO Safety Training, Statements of Attainment in relation to confined space training undertaken by Andrew Horton (dated 11 May 2016) and Daniel Spinney (dated 6 July 2016).

⁹³ NSW TAFE, *Certificate III in Engineering – Mechanical Trade* awarded to Daniel Spinney, October 2006.

⁹⁴ Flow, *Organisation Chart*, March 2017.

⁹⁵ <http://flowsystems.com.au/about/our-team/> accessed on 29 June 2017.

⁹⁶ Flow, *Corporate Risk Register (Reference: FS-ALL-AUS-RG-GOV-1077-1)*, 8 August 2016.

⁹⁷ *Incident Management Plan*, section 2.

Table F.2 Schedule B to the Network Operator's Licence – Clause B6.1

Clause	Requirement	Compliance Grade
Network Operator's Licence cl.B6.1	The Licensee must prepare and submit reports in accordance with the Reporting Manual.	Compliant
Risk	Target for Full Compliance	
Non-compliance with this requirement presents no significant risk to the operational safety of the scheme.	Evidence that the Licensee has prepared and submitted the requisite reports to IPART in accordance with the <i>Reporting Manual</i> .	
Evidence sighted		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Discovery Point development on 13 June 2017. ▪ IPART, <i>Network Operator's Reporting Manual under the Water Industry Competition Act 2006</i>, June 2016. ▪ Email dated 30 August 2016 from Flow Systems to IPART with Annual Compliance Reports for all Flow Systems' schemes attached. ▪ Discovery Point Water, <i>Network Operators Report; Annual Compliance Report 2015/16</i>, signed 30 August 2016. 		
Summary of reasons for grade		
<p>Discovery Point Water provided evidence that it had prepared and submitted reports in accordance with the <i>Reporting Manual</i>; principally its <i>Annual Compliance Report</i>. Audit of a number of obligations in respect of which immediate reporting may potentially be required revealed that there had been no requirement to submit such reports during the audit period.</p> <p>Accordingly, Discovery Point Water is assessed as being "Compliant" with this obligation.</p>		
Discussion and notes		
<p>The auditors sought evidence that the Licensee had prepared and submitted reports in accordance with the <i>Reporting Manual</i>.⁹⁸ The <i>Reporting Manual</i> requires the submission of an <i>Annual Compliance Report</i> comprising of an Annual Compliance Report Certification, a Non-Compliance Schedule (Schedule A) and a report in relation to Performance Indicators (Schedule B); the report is to be submitted to IPART no later than 31 August each year.</p> <p>The auditors sighted a copy of an email to IPART, sent 30 August 2016, with 2015/16 Annual Compliance Reports for all Flow Systems' schemes attached. Review of the <i>Discovery Point Annual Compliance Report</i>⁹⁹ confirmed that it was signed on 30 August 2016 by the Managing Director/Chief Executive and Deputy Managing Director. The report was prepared in accordance with the IPART template and contained the requisite information.</p> <p>The <i>Reporting Manual</i> also requires immediate reporting in the event that such requirement is triggered. Audit of a number of obligations in respect of which reporting may potentially be required has revealed that there was no requirement to report in respect of those obligations during the audit period (refer Tables A.1, F.1, F.5, F.6 and F.7).</p>		

⁹⁸ IPART, *Network Operator's Reporting Manual under the Water Industry Competition Act 2006*, June 2016.

⁹⁹ Discovery Point Water, *Network Operators Report; Annual Compliance Report 2015/16*, signed 30 August 2016.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

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

Table F.3 Schedule B to the Network Operator's Licence – Clauses B8.1, B8.2 and B8.3

Clause	Requirement	Compliance Grade
Network Operator's Licence cl.B8.1, B8.2 and B8.3	<p>[B8.1] The Licensee must undertake any monitoring that is required for the purposes of this Licence, any Plan, the Act or the Regulation in accordance with this clause B8.</p> <p>[B8.2] The Licensee must keep the following records of any samples taken for monitoring purposes specified in the Water Quality Plan:</p> <ul style="list-style-type: none"> (a) the date on which the sample was taken; (b) the time at which the sample was collected; (c) the point or location at which the sample was taken; and (d) the chain of custody of the sample (if applicable). <p>[B8.3] The Licensee must ensure that analyses of all samples taken for the purposes of Verification Monitoring are carried out by a laboratory accredited for the specified tests by an independent body that is acceptable to NSW Health, such as the National Association of Testing Authorities or an equivalent body.</p>	Compliant
Risk	Target for Full Compliance	
<p>This requirement reflects a high operational risk. It is essential that:</p> <ul style="list-style-type: none"> ▪ detailed sample records are maintained to ensure traceability in the event of a non-compliance; and ▪ testing is undertaken by an accredited laboratory to ensure credibility of results. 	<p>Evidence that:</p> <ul style="list-style-type: none"> ▪ the required records have been kept in respect of collected samples; and ▪ sample analysis has been undertaken by NATA accredited laboratory (or equivalent). 	
Evidence sighted.		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Discovery Point development on 13 June 2017. ▪ Flow, <i>Drinking Water Quality Plan (DWQP) (Revision 5)</i>, 22 November 2016.¹⁰⁰ ▪ Flow, <i>Recycled Water Quality Plan (RWQP) (Revision 6)</i>, 21 October 2016.¹⁰¹ ▪ Flow Systems, <i>Monitoring and Sampling Plan (MSP) (Revision 6)</i>, 22 November 2016. ▪ Sydney Water, <i>Analytical Report No: 163743</i> dated 17 December 2016 (for samples taken 6 December 2016). ▪ http://www.nata.com.au/nata/facility_search_results/?match=exact&searchword=sydney%20water 		

¹⁰⁰ Revision 4 (dated 8 September 2015) of the *Drinking Water Quality Plan* was also in place during parts of the audit period.

¹⁰¹ Revisions 4 (dated 5 May 2015) and 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* were also in place during parts of the audit period.

Summary of reasons for grade

Discovery Point Water demonstrated that it was collecting data and retaining records in accordance with the requirements; the records included details of the date, time, location and sampler. The analysis, laboratory and analyst were accredited for the specified tests by the National Association of Testing Authorities (NATA) for the specified tests.

Accordingly, Discovery Point Water was assessed to be compliant with these requirements.

Discussion and notes

Discovery Point Water undertakes verification monitoring of water quality in accordance with the *Monitoring and Sampling Plan*, which outlines the requirements in relation to both drinking water¹⁰² and recycled water.¹⁰³ Test results in a sample *Monthly Summary Spreadsheet*¹⁰⁴ indicate that Discovery Point Water undertakes microbial (*E.coli*) testing of recycled water on a weekly basis and testing of a broader suite of parameters for both drinking water and recycled water on a monthly basis, consistent with the requirements of the *Monitoring and Sampling Plan*.

Sampling and verification testing for Discovery Point is undertaken by Sydney Water Monitoring Services. A sample laboratory report (Report No: 163743) dated 17 December 2016, for which samples had been taken on 6 December 2016 was sighted during the audit. Test procedures were cited and the report signed by a NATA signatory.

Sydney Water Monitoring Services holds Accreditation No: 63 for *Chemical Testing – Public testing service* and Accreditation No: 610 for *Biological testing – public testing service*.¹⁰⁵

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

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

¹⁰² *Monitoring and Sampling Plan*, section 4.3.

¹⁰³ *Monitoring and Sampling Plan*, section 6.2.

¹⁰⁴ *Discovery Point Analysis Summary* for December 2016.

¹⁰⁵ Refer: http://www.nata.com.au/nata/facility_search_results/?match=exact&searchword=sydney%20water

Table F.4 **Schedule B to the Network Operator’s Licence – Clause B10.1, B10.2, B10.3 and B10.5**

Clause	Requirement	Compliance Grade
Network Operator’s Licence cl.B10.1, B10.2, B10.3 and B10.5	<p>[B10.1] If a code of conduct has not been established under Clause 25 of the Regulation, the Licensee must (by a date specified by IPART) establish a code of conduct (Licensee’s Code of Conduct) in accordance with this clause B10.</p> <p>[B10.2] The Licensee’s Code of Conduct must set out the respective responsibilities of (i) the Licensee; and (ii) each licensed network operator, licensed retail supplier and/ or public water utility that supplies water, provides sewerage services or constructs, maintains or operates any water industry infrastructure in the Specified Area of Operations.</p> <p>The Licensee’s Code of Conduct must at a minimum, provide for:</p> <ul style="list-style-type: none"> a) 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 other water industry infrastructure; b) who is responsible for water quality; c) who is liable in the event of the unavailability of water; d) who is liable in the event of failure of the Specified Water Industry Infrastructure; e) the fees and charges payable in respect of the use of the Specified Water Industry Infrastructure; and f) who is responsible for handling customer complaints. <p>[B10.3] 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 the other licensed network operators, licensed retail suppliers and/or public water utilities referred to in clause B10.2.</p> <p>[B10.5] 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>	Compliant

Risk

This requirement reflects a high operational risk. In the absence of a clear definition of responsibilities, there is no guarantee that the licensed services will continue to be delivered in a safe and effective manner.

Target for Full Compliance

Evidence that, in the absence of a gazetted Water Industry Code of Practice, there is an agreement setting out the respective responsibilities of the Licensee and the party(ies) that are responsible for connected infrastructure.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
 - *Utility Services Agreement; Discovery Point* between Sydney Water Corporation and Flow Systems Pty Ltd, dated 16 February 2017.
-

Summary of reasons for grade

In the absence of a Code of Conduct being established under clause 25 of the Regulation, Flow/Discovery Point Water and Sydney Water have put in place a *Utility Services Agreement* which addresses the requirements of clauses B10.1, B10.2 and B10.3 of the Network Operator's Licence. There was no evidence that Discovery Point Water had contravened the terms of the Utility Services Agreement during the audit period (or otherwise).

Accordingly, Discovery Point Water was assessed as being compliant with these obligations.

Discussion and notes

In the absence of a Code of Conduct being established under clause 25 of the Regulation, Flow/Discovery Point Water and Sydney Water have put in place a *Utility Services Agreement*¹⁰⁶ which addresses the requirements of clauses B10.1, B10.2 and B10.3 of the Network Operator's Licence. The current *Agreement* was signed on 16 February 2017.

Review of the Agreement reveals that the requisite matters are addressed as follows:

- Repair, replacement and maintenance of infrastructure – Schedule 2, clause 2.5 *Maintenance of Connection Infrastructure* (in relation to drinking water infrastructure) and Schedule 3, clause 2.5 *Maintenance of Connection Infrastructure* (in relation to sewerage infrastructure)
- Water quality – Schedule 2, clause 2.7 *Responsibility for Drinking Water Quality*;
- Unavailability of water – Schedule 2, clause 2.8 *Unavailability of Drinking Water*;
- Infrastructure failure – Schedule 2, clause 2.10 *Infrastructure Failure* (in relation to drinking water infrastructure) and Schedule 3, clause 2.7 *Infrastructure Failure* (in relation to sewerage infrastructure);
- Fees and charges – Clause 7 *Charges*;
- Customer complaints – Schedule 4, clause 5 *Customer Services*.

Previous versions of the *Utility Services Agreement*, including versions signed on 11 March 2015¹⁰⁷ and 8 December 2015¹⁰⁸ that were sighted during previous audits, typically had three-month terms and required ongoing renewal. That approach remained in place prior to the current (February 2017) version, which now has a ten-year term.

Discovery Point Water advised that it had not contravened the terms of the *Utility Services Agreement* during the audit period. The auditors identified no evidence to the contrary.

¹⁰⁶ *Utility Services Agreement; Discovery Point* between Sydney Water Corporation and Flow Systems Pty Ltd, dated 16 February 2017.

¹⁰⁷ *Utility Services Agreement* between Sydney Water Corporation and Flow Systems Pty Ltd, dated 11 March 2015.

¹⁰⁸ *Utility Services Agreement* between Sydney Water Corporation and Flow Systems Pty Ltd, dated 8 December 2015.

Recommendations

There are no recommendations in respect of these obligations.

Opportunities for improvement

No opportunities for improvement have been identified in respect of these obligations.

Table F.5 Schedule B to the Network Operator's Licence – Clause B11.1

Clause	Requirement	Compliance Grade
Network Operator's Licence cl.B11.1	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.	No Requirement

Risk

Non-compliance with this requirement presents a low risk. Notification to IPART is required so that it can assess whether the water to be supplied is suitable for the proposed new end-use.

Target for Full Compliance

In the event that the Licensee proposes to operate the Specified Water Industry Infrastructure to supply water for a new end-use, evidence that it provided the requisite notification to IPART.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Discovery Point development on 13 June 2017.
- Flow, *Discovery Point Scheme Management Plan (Scheme MP) (Revision 6)*, 18 May 2017.¹⁰⁹
- Flow, *Drinking Water Quality Plan (DWQP) (Revision 5)*, 22 November 2016.¹¹⁰
- Flow, *Recycled Water Quality Plan (RWQP) (Revision 6)*, 21 October 2016.¹¹¹

Summary of reasons for grade

Discovery Point Water did not, during the audit period or subsequently, commence distribution of water for an end-use that is not set out in the most recent *Drinking Water Quality Plan* or *Recycled Water Quality Plan*, as applicable. Accordingly, there was “No Requirement” for compliance with this obligation during the audit period.

Discussion and notes

Discovery Point Water advised that it had not commenced (or proposed to commence) operation of the Specified Water Industry Infrastructure to supply water for an end-use which is not set out in its *Drinking Water Quality Plan* or its *Recycled Water Quality Plan* most recently supplied to IPART during the audit period or subsequently. No evidence to the contrary was identified during the audit.

As indicated in the *Scheme Management Plan*¹¹² and *Drinking Water Quality Plan*¹¹³ drinking water complies with the *Australian Drinking Water Guidelines*¹¹⁴ and is suitable for drinking (potable use) purposes.

The *Scheme Management Plan*¹¹⁵ and *Recycled Water Quality Plan*¹¹⁶ identify purposes for which the recycled water will be used. These include toilet flushing, washing machines, general purposes wash down,

¹⁰⁹ Revisions 3 (dated 4 December 2015), 4 (dated 10 February 2016) and 5 (dated 18 February 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

¹¹⁰ Revision 4 (dated 8 September 2015) of the *Drinking Water Quality Plan* was also in place during parts of the audit period.

¹¹¹ Revisions 4 (dated 5 May 2015) and 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* were also in place during parts of the audit period.

¹¹² *Scheme Management Plan*, section 8.

¹¹³ *Drinking Water Quality Plan*, section 2.1.

¹¹⁴ *Australian Drinking Water Guidelines 6 (2011)*.

¹¹⁵ *Scheme Management Plan*, section 6.1.1.2.

carwash use, treatment plant service water and irrigation. Whilst not all of these end uses were observed during the audit, there was no evidence of any other uses.

On the basis of Discovery Point Water's advice and the absence of any evidence to the contrary, it was assessed that there was no requirement for compliance with this obligation.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

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

¹¹⁶ *Recycled Water Quality Plan*, section 3.1.2.

Table F.6 Schedule B to the Network Operator's Licence – Clause B12.1

Clause	Requirement	Compliance Grade
Network Operator's Licence cl.B12.1	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 Licensee must provide IPART with written notice as soon as practicable but no later than 28 days before the date of cessation of the services. The written notice must include details of how the services previously undertaken by the Authorised Person will continue to be undertaken.	No Requirement
Risk	This requirement reflects a high operational risk. It is essential that, in the event that an Authorised Person ceases to provide services, alternative arrangements are in place for the provision of such services. Notification to IPART forms part of a mechanism of ensuring that service provision continues and that the licensed activities are fully and effectively implemented.	Target for Full Compliance Evidence that, in the event of an Authorised Person ceasing, proposing to cease or receiving notice to cease providing services related to activities authorised by the Licence, the Licensee has provided written notice to IPART within 28 days of the change occurring.
Evidence sighted		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Discovery Point development on 13 June 2017. ▪ New South Wales Government, Network Operator's Licence No: 13_025 (as varied on 7 July 2014). 		
Summary of reasons for grade		
None of the Authorised Persons ceased, proposed to cease, or received notification to cease providing services relating to the activities authorised by the Licence during the audit period. Accordingly, there was "No Requirement" for compliance with this obligation.		
Discussion and notes		
As reported in Table E.1, the Licence specifies the following "Authorised Persons": ¹¹⁷		
<ul style="list-style-type: none"> ▪ Flow Systems Pty Ltd (ACN 28 136 272 298) in respect of non-potable (recycled) water supply, drinking water supply and the provision of sewerage services; ▪ Permeate Partners Pty Ltd (ACN 54 130 112 257) in respect of non-potable (recycled) water supply and the provision of sewerage services; and ▪ Discovery Point Pty Ltd (ACN 12 102 882 342) in respect of drinking water supply. 		
Discovery Point Water confirmed that Flow Systems and Permeate Partners had continued in the role of Authorised Persons under the Licence throughout the audit period. This was supported by observations made and evidence sighted during the audit.		
Flow Systems is the parent company of Discovery Point Water and the primary source of service provision (personnel and equipment) for operation and maintenance of the infrastructure at Discovery Point. Flow Systems continued to provide services throughout the audit period (and		

¹¹⁷ *Network Operator's Licence*, Schedule A (tables 1.1, 2.1 and 3.1).

subsequently) and, given the company arrangements, there is no reason to believe that this may change.

Permeate Partners is available, under the provisions of a period contract, to provide professional/operational support services as required. Permeate Partners was observed to be remotely accessing the SCADA system during the site inspection.

Nomination of Discovery Point Pty Ltd as an Authorised Person in respect of drinking water supply appears to be related to construction and/or ownership of the water supply connection infrastructure (refer also to clause A4 of the Licence). This understanding is supported by reference to Discovery Point Water's *Licence Variation Application*,¹¹⁸ which indicated that Discovery Point Pty Ltd (owned by the Developer) would construct the drinking water infrastructure within the Discovery Point development, to the connection points with the Sydney Water water supply network. As some parts of the development are still under construction and are yet to have services connected, it

On this basis, it was apparent that none of the Authorised Persons ceased, proposed to cease, or received notification to cease providing services relating to the activities authorised by the Licence during the audit period. However, as an opportunity for improvement (**OFI-DPW2017.08**), it is suggested that the need for Discovery Point Pty Ltd to continue to be listed as an Authorised Persons be reviewed (either prior to or as part of the next Licence review).

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

The following opportunity for improvement has been identified in respect of this obligation:

- **OFI-DPW2017.08:** It is suggested that the need for Discovery Point Pty Ltd to continue to be listed as an Authorised Person be reviewed (either prior to or as part of the next Licence review).

¹¹⁸ Discovery Point Water, *Application for variation to Network Operator's Licence No. 13_125 to include Drinking Water*, March 2014, page 15.

Table F.7 Schedule B to the Network Operator’s Licence – Clause B13

Clause	Requirement	Compliance Grade
Network Operator’s Licence cl.B13	<p>[B13.1] This clause B13 applies each time the Licensee has brought any of the Specified Water Industry Infrastructure into commercial operation.</p> <p>[B13.2] The Licensee must:</p> <ol style="list-style-type: none"> notify IPART in accordance with the Reporting Manual that it has brought the relevant Specified Water Industry Infrastructure into commercial operation; and provide such notification within 10 days after it has brought the relevant Specified Water Industry Infrastructure into commercial operation. 	No Requirement
Risk		Target for Full Compliance
<p>This presents a relatively low operational risk. Whilst it is essential that the Licensee has approval to bring new infrastructure into commercial operation before doing so, there is a lessor risk associated with failing the notify IPART that it has brought that infrastructure into operation.</p>		<p>Evidence that the Licensee has notified IPART in writing within 10 days of bringing any Specified Water Industry Infrastructure into operation.</p>
Evidence sighted		
	<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Discovery Point development on 13 June 2017. ▪ IPART, <i>Network Operator’s Reporting Manual under the Water Industry Competition Act 2006</i>, June 2016. 	
Summary of reasons for grade		
<p>Discovery Point Water did not bring any additional Specified Water Industry Infrastructure into commercial operation during the audit period. Accordingly, there was “No Requirement” for compliance with this obligation.</p>		
Discussion and notes		
<p>As previously noted in Table A.2, the Licensee did not bring any Specified Water Industry Infrastructure into commercial operation during the audit period. Although the infrastructure was extended to service additional buildings (Building 8 and 10) in the northern precinct of the development during the audit period, this did not constitute “new infrastructure” for which approval is required prior to being brought into commercial operation and notification to IPART is required in accordance with the <i>Reporting Manual</i>.¹¹⁹</p> <p>Accordingly, there was no requirement for the Licensee to notify IPART that any additional Specified Water Industry Infrastructure into commercial operation.</p>		
Recommendations		
<p>There are no recommendations in respect of this obligation.</p>		

¹¹⁹ IPART, *Network Operator’s Reporting Manual under the Water Industry Competition Act 2006*, June 2016, section 2.6.8.

Opportunities for improvement

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