

Explanatory table

This table provides an explanation of the information Hunter Water has determined should not be disclosed in connection with this contract.

Contract Clause (and general description)	Reason under Government Information (Public Access) Act 2009	Explanation of the reasons under the Government Information (Public Access Act) 2009
Contents Page – reference to Section 10.4	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <ul style="list-style-type: none"> (a) disclosure of the figure would provide visibility of the Contractor's financial information and liability, project risks and cost structure; (b) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor; (c) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water; (d) disclosure may reveal the cost structure and profit margins of the Contractor as well as provide insight into the Contractor's financial arrangements.
Clause 2.1 – Long Cycle Preventative Maintenance definition - dollar amount	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <ul style="list-style-type: none"> (a) disclosure of the figure would provide visibility of the Contractor's financial information and liability, project risks and cost structure; (b) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor; (c) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water;

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		(d) disclosure may reveal the cost structure and profit margins of the Contractor as well as provide insight into the Contractor's financial arrangements.
Clause 2.6.8, 7.4.3, 7.4.5, 7.5.2, 7.5.4, 9.5.4 – dollar amounts	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <ul style="list-style-type: none"> (a) disclosure of the figure would provide visibility of the Contractor's financial information and liability, project risks and cost structure; (b) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor; (c) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water; (d) disclosure may reveal the cost structure and profit margins of the Contractor as well as provide insight into the Contractor's financial arrangements.
Clause 10.4.1, 10.4.4	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <ul style="list-style-type: none"> (a) disclosure of the figure would provide visibility of the Contractor's financial information and liability, project risks and cost structure; (b) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor; (c) disclosure would provide visibility on the amount and apportionment of risk and

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		<p>consequences assumed by the Contractor and Hunter Water;</p> <p>(d) disclosure may reveal the cost structure and profit margins of the Contractor as well as provide insight into the Contractor's financial arrangements.</p>
<p>Clauses 24.3.4, 30.3.4, 31.5.1, 34.5.4(a)&(a)(ii), 35.3(1), 35.6(2) – dollar amounts</p>	<p>Commercial-in-confidence provisions</p>	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <p>(a) disclosure of the figure would provide visibility of the Contractor's financial information and liability, project risks and cost structure;</p> <p>(b) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor;</p> <p>(c) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water;</p> <p>(d) disclosure may reveal the cost structure and profit margins of the Contractor as well as provide insight into the Contractor's financial arrangements.</p>
<p>Clause 35.7 – provision for negotiated item</p>	<p>Commercial-in-confidence provisions</p>	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <p>(a) disclosure of figures would provide visibility of the Contractor's financial information and liability, project risks and cost structure;</p> <p>(b) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor;</p>

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		(c) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water.
Clause 37 – dollar amounts	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <ul style="list-style-type: none"> (a) disclosure of the figure would provide visibility of the Contractor's financial information and liability, project risks and cost structure; (b) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor; (c) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water.
Clause 40 – negotiated item	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <ul style="list-style-type: none"> (a) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor; (b) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water.
Clauses 43.2 & 43.4 – contract termination	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p>

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		<p>(a) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor;</p> <p>(b) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water.</p>
Clauses 52.1.5, 52.2.6 –contact details	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal and individual's personal information whose identity is apparent or can reasonably be ascertained from the information.
Schedule 1, Tables 1A.1& 1B.1 – location and facility boundaries of water treatment facilities and location of wastewater treatment facilities	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal location of critical public assets that may be targeted for terrorist or other detrimental activities.
Schedule 2 – site maps of water and wastewater treatment facilities	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal location of critical public assets that may be targeted for terrorist or other detrimental activities.
<p>Schedule 3, Table 3A.1 – variation price margins</p> <p>Schedule 3A.16 – price adjustment of fees in accordance with risk sharing criteria, example of dollar amounts included.</p> <p>Schedule 3, Table 3B.1 – dollar amounts for Transition Plan deliverables</p>	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <p>(a) disclosure of the figure would provide visibility of the Contractor's financial information and liability, project risks and cost structure;</p> <p>(b) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or</p>

Contract Clause (and general description)	Reason under Government Information (Public Access) Act 2009	Explanation of the reasons under the Government Information (Public Access Act) 2009
<p>Schedule 3, Table 3D.1 – dollar amounts for management fees</p> <p>Schedule 3, Tables 3E.1 through to 3E.32 – dollar amounts for water and wastewater treatment facility fixed fees; and Service Provider estimates.</p> <p>Schedule 3, Tables 3F.1 through to 3F.30 – dollar amounts for water treatment facility variable fees</p> <p>Schedule 3, Table 3K.1 and subsequent tables – Percentage of portion of fees; examples of dollar amounts for rates</p>		<p>potential contractors and will prejudice the business, commercial and financial interests of the Contractor;</p> <p>(c) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water;</p> <p>(d) disclosure may reveal the cost structure and profit margins of the Contractor as well as provide insight into the Contractor's financial arrangements.</p>
Schedule 4 – Key Personnel	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal and individual's personal information whose identity is apparent or can reasonably be ascertained from the information.
Schedule 5 – dollar amounts	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <p>(c) disclosure of the figure would provide visibility of the Contractor's financial information and liability, project risks and cost structure;</p> <p>(d) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor;</p> <p>(e) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water;</p> <p>(f) disclosure may reveal the cost structure and profit margins of the Contractor as well as provide insight into the Contractor's financial arrangements.</p>

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Schedule 6 – Framework	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <ul style="list-style-type: none"> (a) disclosure of the figure would provide visibility of the Contractor's financial information and liability, project risks and cost structure; (b) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor; (c) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water; (d) disclosure may reveal the cost structure and profit margins of the Contractor as well as provide insight into the Contractor's financial arrangements.
Schedule 10, Part C – list of WorkCover Dangerous Goods Notification acknowledgements	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal location of critical public assets that may be targeted for terrorist or other detrimental activities.
Schedule 15 – draft Transition Plan	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <ul style="list-style-type: none"> (a) the redacted information relates to the Contractor's intellectual property and significant investment was made in the development and refinement of that intellectual property; (b) disclosure of the Contractor's intellectual property may prejudice the Contractor's business, commercial and financial interests and any commercial advantages that the

Contract Clause (and general description)	Reason under Government Information (Public Access) Act 2009	Explanation of the reasons under the Government Information (Public Access Act) 2009
		<p>Contractor may have in connection with its intellectual property; and</p> <p>(c) the Contractor should retain the benefit of being able to use its intellectual property in connection with the operation of its business and to retain a commercial advantage in connection with its intellectual property.</p>
Annexures – Contents page – reference to Annexure B	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal location of critical public assets that may be targeted for terrorist or other detrimental activities.
Annexures – PN001 – contact details	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal and individual's personal information whose identity is apparent or can reasonably be ascertained from the information.
Annexures – PN103 - Nelson Bay WTP access procedures	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal location of critical public assets that may be targeted for terrorist or other detrimental activities.
Annexures – PN106 – details of properties with access agreements	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal location of critical public assets that may be targeted for terrorist or other detrimental activities.
Annexures – PN201 – clause (a), (c) and (e) - internal Hunter Water email address	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal an email address that could be targeted for SPAM.

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Annexures – PN201 – References – url address for Hunter Water intranet page	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal a server address that could be targeted by computer network hackers.
Annexures – PN203 – internal Hunter Water email address	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal an email address that could be targeted for SPAM.
Annexures – PN310 – site maps of treatment facilities	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal location of critical public assets that may be targeted for terrorist or other detrimental activities.
Annexures – PN311 – SCADA reference - equipment numbers	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal a server address that could be targeted by computer network hackers.
Annexures – PN311 – process flow diagrams for treatment plants	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal location of critical public assets that may be targeted for terrorist or other detrimental activities.

Contract Clause (and general description)	Reason under Government Information (Public Access) Act 2009	Explanation of the reasons under the Government Information (Public Access Act) 2009
Annexures – PN707 – dollar amounts	Commercial-in-confidence provisions	<p>Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because:</p> <ul style="list-style-type: none"> (a) disclosure of the figure would provide visibility of the Contractor's financial information and liability, project risks and cost structure; (b) disclosing this information would place Hunter Water and the Contractor at a disadvantage in negotiations with other contractors or potential contractors and will prejudice the business, commercial and financial interests of the Contractor; (c) disclosure would provide visibility on the amount and apportionment of risk and consequences assumed by the Contractor and Hunter Water; (d) disclosure may reveal the cost structure and profit margins of the Contractor as well as provide insight into the Contractor's financial arrangements.
Annexures – Annexure B	Information that is of such a nature that its inclusion in a record would result in there being an overriding public interest against disclosure of the record.	Hunter Water weighed the competing public interest considerations and determined there was an overriding public interest against disclosure of this information because disclosure would reveal location of critical public assets that may be targeted for terrorist or other detrimental activities.



HUNTER WATER CORPORATION

CS0341

Treatment Operations Contract



Formal Instrument

AGREEMENT made 7 July 2014

BETWEEN

HUNTER WATER CORPORATION (ABN 46 228 513 446) of 36 Honeysuckle Drive, Newcastle NSW 2300 (Hunter Water)

AND

VEOLIA WATER AUSTRALIA PTY LTD (ACN 061 161 279) of Level 4, 65 Pirrama Road, Pyrmont NSW 2009 (Service Provider)

IT IS AGREED that the following annexed documents:

1. Hunter Water Corporation CS0341 Treatment Operations Contract (Execution Version);
2. Hunter Water Corporation CS0341 Treatment Operations Contract - Schedules (Execution Version) being
 - a) Schedule 1 - Facilities;
 - b) Schedule 2 - Site Maps;
 - c) Schedule 3 - Pricing;
 - d) Schedule 4 - Key Personnel;
 - e) Schedule 5 - Abnormal Operating Events;
 - f) Schedule 6 - Performance Management Framework;
 - g) Schedule 7 - Practice Notes;
 - h) Schedule 8 - Data Collection;
 - i) Schedule 9 - Laboratory Sampling and Analysis;
 - j) Schedule 10 - Approvals;
 - k) Schedule 11 - Existing Contracts;
 - l) Schedule 12 - Forms;
 - m) Schedule 13 - Management Plans and Management Systems;
 - n) Schedule 14 - Deed of Novation; and

o) Schedule 15 - Draft Transition Plan;

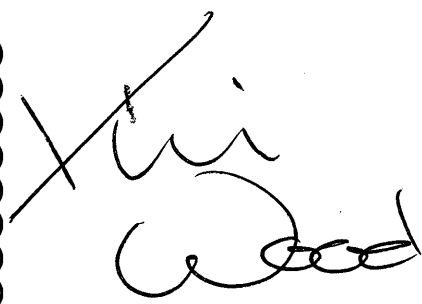
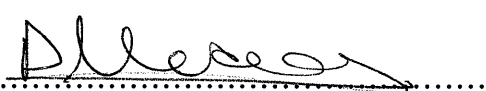
3. Hunter Water Corporation CS0341 Treatment Operations Contract - Annexures (Execution Version) being:

- a) Annexure A - Practice Notes; and
- b) Annexure B - Dangerous Goods Notifications,

SHALL together comprise the contract between the parties.

Executed by Hunter Water Corporation
 ABN 46 228 513 446 by its attorney under a
 Power of Attorney dated 24 November
 2011 Registered Book 4624 No. 483 and the
 Attorney declares that the Attorney has not
 received notice of the revocation of such Power
 of Attorney in the presence of:

)
)
)
)
)
)
)
)
)
)

Signature of Witness

Executed by Veolia Water Australia Pty
 Ltd ACN 061 161 279 in accordance with
 section 127 of the Corporations Act:



Signature of Director



Signature of Director/Secretary

DOUGLAS THOMAS DEAN

Name of Director

REGINALD WILLIAM WALLIN
SECRETARY

Name of Director/Secretary



HUNTER WATER CORPORATION

CS0341

Treatment Operations Contract



EXECUTION VERSION

CONTENTS

PART A - INTRODUCTION AND INTERPRETATION 1

1. INTRODUCTION 1

2. INTERPRETATION 1

 2.1 Definitions 1

 2.2 Interpretation 22

 2.3 Endorsement 24

 2.4 Business Days 25

 2.5 Multiple parties 25

 2.6 Ambiguity and order of precedence 25

 2.7 No responsibility 26

 2.8 Non-reliance 27

PART B - SERVICES 28

3. OVERVIEW 28

 3.1 Services generally 28

 3.2 Exclusions 28

 3.3 Ownership and dealing with Waste 29

 3.4 Interpretation 30

4. SAFETY PRIORITY 30

5. WATER TREATMENT OPERATIONS 30

 5.1 Objectives 30

 5.2 Performance standards 31

 5.3 General water treatment operations 32

 5.4 Waste disposal 32

 5.5 Interface with Hunter Water operations 33

 5.6 PAC Dosing 34


 5.7 Sampling 34

 5.8 Operational Records and data collection 34

 5.9 Water quality incidents 35

 5.10 EP Licence 35

6.	WASTEWATER TREATMENT OPERATIONS	35
6.1	Objectives	35
6.2	Performance standards	36
6.3	General wastewater treatment operations	37
6.4	Biosolids reuse and disposal	37
6.5	Recycled Water	38
6.6	Waste disposal	39
6.7	Interface with Hunter Water operations	39
6.8	Tanker Management	40
6.9	Sampling	40
6.10	Operational Records and data collection	40
6.11	EP Licence	41
7.	OPERATIONAL MAINTENANCE	41
7.1	Objectives	41
7.2	Performance standards	41
7.3	Preventive Maintenance	42
7.4	Breakdown Maintenance	44
7.5	Corrective Maintenance	45
8.	FACILITY MANAGEMENT AND NON-OPERATIONAL MAINTENANCE	45
8.1	Objectives	45
8.2	Performance Standards	46
8.3	Building, Grounds and Fence Maintenance	46
8.4	Regulatory Inspection, Testing and Maintenance	46
8.5	Visitor Management	46
9.	ASSET MANAGEMENT AND CAPITAL WORKS PLANNING	47
9.1	Objectives	47
9.2	Performance Standards	47
9.3	Maintenance Planning	47
9.4	Asset Management and Capital Works Planning	48
9.5	Capital Works Proposals	49
9.6	Long Cycle Preventative Maintenance	50
10.	MINOR CAPITAL WORKS DELIVERY	51
10.1	Objectives	51
10.2	Performance Standards	51
10.3	Allocation of Minor Capital Works	51




11.	MANAGEMENT AND TECHNICAL SUPPORT SERVICES	52
11.1	Objectives	52
11.2	Performance Standards	52
11.3	Workforce Management and Support	53
11.4	Management Systems	53
11.5	Standard Operating Procedures and Plant Manuals	56
11.6	Meetings, ELG, CMG and Collaborative Work Teams	57
11.7	Reports	57
	PART C - COLLABORATIVE MANAGEMENT	59
12.	PRINCIPLES OF COLLABORATIVE MANAGEMENT	59
13.	EXECUTIVE LEADERSHIP GROUP	60
13.1	ELG Formation	60
13.2	ELG Membership	60
13.3	ELG Meetings	60
13.4	ELG Functions	62
14.	COLLABORATIVE MANAGEMENT GROUP	63
14.1	CMG Formation	63
14.2	CMG Membership	63
14.3	CMG Meetings	64
14.4	CMG Functions	65
14.5	Collaborative Work Teams	66
15.	PRACTICE NOTES	66
	PART D - CONDITIONS	69
16.	APPOINTMENT AND TRANSITION	69
16.1	Appointment	69
16.2	Draft Transition Plan and Transition Services	69
16.3	Transition Plan Deliverables	69
16.4	Services Commencement Date	70
16.5	Sunset Date	71
16.6	Extension of Sunset Date and Target Services Commencement Date	72
17.	FACILITIES	72
17.1	Facility Boundary	72

17.2	Facility Licence	73
17.3	Access and cooperation	74
17.4	Designated Construction Site	76
17.5	Utility Services	76
17.6	Facilities condition	76
17.7	Computer and Telephone Network	77
18.	WORKING ASSETS AND STOCK	78
18.1	Inventory	78
18.2	Spare Parts Management	79
18.3	Ownership	79
18.4	Replacement	80
18.5	Vehicles	80
18.6	Risk	80
18.7	Acknowledgment	81
19.	TERM	81
19.1	Initial Term	81
19.2	Extended Term	82
20.	SERVICE PROVIDER PERSONNEL	82
20.1	Key Personnel	82
20.2	Unavailability of Key Personnel	82
20.3	Removal of Personnel	83
20.4	Uniforms	83
21.	TRANSFER OF BUSINESS	83
21.1	Acknowledgement	83
21.2	Options for Existing Employees	83
21.3	Transferring Employees	84
21.4	Obligations on termination of this Agreement or expiry of the Term	87
21.5	Redundancy of Transferring Employees	88
22.	PERFORMANCE OF THE SERVICES	89
23.	ABNORMAL OPERATING EVENTS	90
23.1	Acknowledgement	90
23.2	Mitigation	90
23.3	Relief	91

24.	REGULATORY COMPLIANCE	91
	24.1 Hunter Water's Obligations	91
	24.2 Service Provider's Role	92
	24.3 Changes to Regulatory Conditions	92
25.	ENDORSEMENT OF MANAGEMENT PLANS, MANAGEMENT SYSTEMS AND OTHER DOCUMENTS	94
	25.1 Submission, Compliance and Revision	94
	25.2 Endorsement	95
	25.3 Delegated Approval Authority	95
26.	SAFETY	96
	26.1 General Safety Responsibility	96
	26.2 Risk Management	96
	26.3 Hunter Water Site Safety Rules	97
	26.4 Site Attendance Register	97
	26.5 Health and Safety Committee	97
	26.6 Information, Training, Instruction and Supervision	97
	26.7 Hunter Water Inductions and Training	98
	26.8 Review by Hunter Water	98
27.	APPROVALS	98
	27.1 Service Provider	98
	27.2 Hunter Water	99
	27.3 Cooperation	99
28.	SUBCONTRACTING, NOVATION, EXISTING CONTRACTS AND WARRANTIES	99
	28.1 Procurement Plan	99
	28.2 Compliance with Procurement Plan	100
	28.3 Engaged Persons	100
	28.4 Novation	100
	28.5 Register	101
	28.6 Hunter Water Existing Contractors	101
	28.7 Benefit of warranties	103
29.	PRICING	104
	29.1 Pricing structure	104
	29.2 Open book pricing	105
	29.3 Pricing for Contract Years 1 through 4	106
	29.4 Pricing for Contract Year 5 and subsequent Contract Years	106

29.5	Flow Meters	106
30.	PERFORMANCE MANAGEMENT	107
30.1	Acknowledgement	107
30.2	Performance Monitoring	108
30.3	Service Standard Adjustment	108
31.	PAYMENT	110
31.1	Payment claims	110
31.2	Conditions Precedent	111
31.3	Auditing	112
31.4	Right of set-off	113
31.5	Latent Conditions	113
31.6	Subcontractors and Payment Withholding Requests	113
31.7	Documents under Security of Payment Act	114
31.8	Other moneys due	114
32.	GST	115
32.1	Definitions	115
32.2	Interpretation	115
32.3	Payment of GST	115
32.4	Reimbursements	115
32.5	Indemnities and Claims	115
33.	VALUE ENHANCEMENTS	116
34.	VARIATIONS, SERVICES DIRECTIONS AND NOTICES	116
34.1	Variation Proposal	116
34.2	Variation Response	117
34.3	Variation Instruction	118
34.4	Services Direction	118
34.5	Change in Law	119
34.6	Notices	120
34.7	Possible Variations	120
34.8	Requirements for a Variation and pricing of a Variation	121
34.9	Service Provider Proposed Variations	121
34.10	Urgent Work Variations	122
35.	SECURITY	123
35.1	Security	123
35.2	Form of Security	123
35.3	Amount of Security	123

- 35.4 Recourse to Security 124
- 35.5 Replacement Security 124
- 35.6 Release of Security and Second Security 124
-  125
- 36. PROPERTY COVER TO BE MAINTAINED BY HUNTER WATER 126**
- 37. INSURANCE TO BE MAINTAINED BY SERVICE PROVIDER 126**
 - 37.1 Obligation to maintain insurances 126
 - 37.2 Public and Products Liability Insurance 126
 - 37.3 Professional Indemnity Insurance 127
 - 37.4 Workers' Compensation Insurance 127
 - 37.5 Motor Vehicle Insurance 127
- 38. MANAGEMENT OF INSURANCES 127**
 - 38.1 Management 127
 - 38.2 No cancellation or avoidance 128
- 39. RISK 128**
 - 39.1 Care of people, property and the environment 128
 - 39.2 Obligation to make good 129
- 40. LIABILITY AND INDEMNITY 129**
 - 40.1 Indemnity 129
 - 40.2 Breach of Environmental Licences or Regulations 130
 - 40.3 Proportionate Liability 130
 - 40.4 Limitation of Liability 130
- 41. EMERGENCIES AND STEP IN 131**
 - 41.1 Emergency management 131
 - 41.2 Disaster response 132
 - 41.3 Step-in 133
 - 41.4 Costs during an Emergency 133
- 42. DEFAULT 134**
 - 42.1 Default notice 134
 - 42.2 Failure to remedy 134
 - 42.3 Material Default 134
 - 42.4 Failure to Show Cause 135

43.	TERMINATION BY HUNTER WATER	135
43.1	Termination for cause	135
	████████████████████	135
43.3	Payment on termination for cause	135
	████████████████████	136
43.5	Effect of termination	136
44.	CONSEQUENCES OF TERMINATION	136
44.1	Handback	136
44.2	Hunter Water’s rights on termination	137
44.3	Acknowledgment of amounts payable	138
45.	HANDBACK	138
45.1	Handback Plan	138
45.2	Expiry of Term	139
45.3	Termination	139
45.4	Payment	140
46.	INSPECTION AND REPORTING	140
46.1	Records	140
46.2	Inspection and audit	140
46.3	Reporting	141
47.	CONFIDENTIALITY	141
47.1	Service Provider's obligations	141
47.2	Exceptions	141
47.3	Service Provider to procure compliance	142
47.4	Hunter Water’s obligations	142
47.5	Publicity and Media	143
47.6	Privacy	143
48.	INTELLECTUAL PROPERTY	144
48.1	Warranty and indemnity	144
48.2	Services IP	144
48.3	Background IP	144
48.4	Ownership of Documents	145
48.5	Moral Rights	145
49.	PERSONAL PROPERTY SECURITIES ACT	145
49.1	Definitions	145

49.2	Service Provider obligations	145
49.3	Specific obligations	146
50.	ASSIGNMENT AND CHANGE IN CONTROL	147
50.1	Assignment by Service Provider	147
50.2	Change in Control	147
51.	CONFLICT OF INTEREST	147
52.	NOTICES	148
52.1	Service Provider's Representative	148
52.2	Hunter Water's Representative	149
52.3	Method of giving notices	150
53.	DISPUTE RESOLUTION	150
54.	GENERAL	152
54.1	Giving effect to this Agreement	152
54.2	Law and jurisdiction	152
54.3	Waiver of Rights	153
54.4	Operation of this Agreement	153
54.5	Operation of indemnities	153
54.6	Relationship of the parties	154
54.7	Amendment	154
54.8	Amounts due	154
54.9	Counterparts	154
54.10	Survival	155
54.11	Attorneys	155

PART A - INTRODUCTION AND INTERPRETATION

1. INTRODUCTION

- 1 This Agreement defines the responsibilities of Hunter Water and the Service Provider in relation to operation and maintenance of Hunter Water's water treatment facilities and wastewater treatment facilities.
- 2 Hunter Water and the Service Provider agree to accept their respective responsibilities under the Agreement.
- 3 Without limiting the respective parties' responsibilities:
 - (a) the Service Provider has agreed to perform the Services in accordance with this Agreement; and
 - (b) in consideration of the Service Provider performing the Services, Hunter Water has agreed to pay to the Service Provider the Fees in accordance with this Agreement.

2. INTERPRETATION

2.1 Definitions

The following definitions apply in this Agreement, except where the context otherwise requires:

Abnormal Operating Event means an event identified in Schedule 5.

Accrued Personal Leave has the meaning given in clause 21.3(6).

Act of Terrorism means an act, including but not limited to the use of force or violence and/or the threat thereof, of any person or group(s) of persons, whether acting alone or on behalf of or in connection with any organisation(s) or government(s) committed for political, religious, ideological or similar purposes including the intention to influence any government and/or put the public, or any section of the public in fear.

Actual Costs has the meaning given in clause A7 of Part A of Schedule 3.

Additional Costs has the meaning given in clause A8 of Part A of Schedule 3.

Adjudication Application has the meaning given in clause 31.6(2)(a).

Agreement means this document, including the Schedules to this document, Annexures to this document and any other document or materials incorporated by reference into this document from time to time.

Agreement Date means the date on which this Agreement is executed by all parties.

Annexure means an annexure to this Agreement.

Approval means any approval, authorisation, certificate, consent, exemption, filing, licence (including the Operating Licence and any EP Licence), notarisation, permit, requirement or waiver, however described, and any renewal or any variation to any of them required by:

- (a) any Law arising out of or in any way connected with the Services; or
- (b) any Authority having jurisdiction in connection with the performance of the Services.

Approved Financial Institution has the meaning given in clause 35.2(2).

Australian Drinking Water Guidelines means the Australian Drinking Water Guidelines 2011 prepared and published by the Australian Government National Health and Medical Research Council, as at the Agreement Date.

Australian Guidelines for Water Recycling means the guidelines called the Australian Guidelines for Water Recycling developed by the Environment Protection and Heritage Council, the Natural Resource Management Ministerial Council and the National Health and Medical Research Council, as may be revised or amended from time to time.

Authorised Person has the meaning given in clause 41.3(1)(a).

Authority means any:

- (a) government;
- (b) government department;
- (c) local government council;
- (d) public, local, governmental or statutory authority;
- (e) utility or telecommunications provider; or
- (f) other person or entity under a Law,

which has jurisdiction, a right to impose a requirement or whose consent is required in relation to or in connection with the Services.

Background IP means the Intellectual Property of a party developed:

- (a) prior to the Agreement Date; or
- (b) independently of this Agreement.

Biosolids Management Plan means the plan submitted by the Service Provider under clause 6.4(3).

Breakdown Maintenance means the work described in clause 7.4.

Building Code means the National Construction Code published by the Australian Building Codes Board, as in force in New South Wales from time to time.

Business Day means, unless the parties agree otherwise, any day that is not a Saturday, Sunday or public holiday in New South Wales.

Capital Works means:

- (a) the acquisition, development or construction of a new asset; or
- (b) work being:
 - (i) the whole or substantial replacement of an existing asset;
 - (ii) an improvement to the functionality (other than by using a modern day equivalent part) of an existing asset; or
 - (iii) the repair, as part of a staged replacement process, of an existing asset;which:
 - (iv) will provide an economic benefit to Hunter Water for more than one year;
 - (v) is an entire entity in itself, capable of being separately identified;
 - (vi) is functionally complete in itself; and
 - (vii) varies the performance of another unit; or
 - (viii) performs a definable, identifiable function by itself,

and includes those examples of capital works detailed in Practice Note PN703.

Cause of Delay means any: :

- (a) act, default or omission of
 - (i) Hunter Water or its consultants or agents;
 - (ii) Hunter Water's other contractors (not being employed by the Service Provider);or
- (b) Abnormal Operating Event.

CHAIR means Construction Hazard Assessment Implication Review in accordance with the WorkCover NSW CHAIR Safety in Design Tool 2001.

Change in Control means, in respect of an entity:

- (a) a person who does not already Control the entity acquires Control of it; or
- (b) a person who Controls the entity ceases to Control it,

however, there will be no Change in Control where a change in the legal and beneficial ownership of the Service Provider (or any entities comprising the Service Provider) arises as a consequence of a trade in the securities of a corporation listed on a stock exchange.

Change in Law means:

- (a) the enactment, adoption, promulgation, modification or repeal, after the Agreement Date, of any Law, except to the extent that the enactment, adoption, promulgation, modification or repeal arose out of or was a consequence of the negligent act or negligent omission of the Service Provider or of the Service Provider being in breach of this Agreement; or
- (b) the imposition of any material condition on the issue or renewal of any Approval after the Agreement Date, except to the extent that the imposition arose out of or was a consequence of the negligent act or negligent omission of the Service Provider or of the Service Provider being in breach of this Agreement;

but does not include any change in or relating to:

- (c) the terms of any employment agreement (including an enterprise bargaining agreement) or any overhead cost of managing industrial relations;
- (d) income tax, capital gains tax and taxes applicable to the ordinary costs of conducting business;
- (e) the *State Authorities Superannuation Act 1987* (NSW) (including the insertion of the name of the Service Provider in Schedule 1 of that Act); or
- (f) any Law in any jurisdiction outside Australia.

Civil Liability Act means the *Civil Liability Act 2002* (NSW).

Claim means any claim, notice, demand, debt, account, lien, liability, action, proceedings or suit under, arising out of, or in any way in connection with:

- (a) this Agreement;
- (b) the Services; or
- (c) either party's conduct under this Agreement before this Agreement came into force,

whether at law (including breach of contract) or in equity (including restitution), by statute, in tort (including negligence) or for restitution.

CMG or Collaborative Management Group means the Collaborative Management Group, as described in clause 14.

Collaborative Work Team has the meaning given in clause 14.5.

Confidential Information has the meaning given in clause 47.1.

Conflict of Interest has the meaning given in clause 51(1).

Consequential Loss means any economic loss, loss of profit or anticipated profit, loss of revenue, loss of use and business interruption, loss or denial of commercial opportunity (whether direct or indirect) or any other special, indirect, remote, abnormal or unforeseeable or consequential loss or damage.

Construction Site means a Facility or part of a Facility designated as such by Hunter Water in accordance with clause 17.4.

Contract Year means, in the case of the first Contract Year, the period from the Services Commencement Date to 30 June 2015 inclusive, and in all other cases, each subsequent 12 month period ending on 30 June, for the duration of the Term.

Control means, in respect of an entity:

- (a) having the capacity to control or influence, directly or indirectly, the composition of the board of the entity, or decision making in relation to the financial and operating policies of the entity;
- (b) being in a position to cast, or control, directly or indirectly, the casting of, more than 20% of the maximum number of votes that may be cast at a general meeting of the entity; or
- (c) having a relevant interest (as defined in section 608 of the Corporations Act) in more than 20% of the securities (as defined in section 9 of the Corporations Act) of the entity.

Copyright Act means the *Copyright Act 1968* (Cth).

Corporations Act means the *Corporations Act 2001* (Cth).

Corrective Action Plan has the meaning given in clause 46.2(4).

Corrective Maintenance means the work described in clause 7.5.

CPI means the Consumer Price Index (All Groups) Sydney, New South Wales published by the Australian Bureau of Statistics.

CPI Index Number means an index number published under the CPI.

CPI Rate means the percentage achieved by dividing the CPI Index Number for the quarter ending immediately prior to the relevant CPI Review Date by the CPI Index Number for the quarter ending immediately prior to the immediately preceding CPI Review Date or, if none, then preceding the Agreement Date.

CPI Review Date means the date specified in clause 35.3(2)(a) or clause 35.3(2)(b), as applicable.

Criteria for Notification by Hunter Water to NSW Health means the document identified as such by Hunter Water and provided to the Service Provider by Hunter Water from time to time, as updated and reissued by Hunter Water from time to time.

Cure Period has the meaning given in clause 42.1(2) and includes any extension granted by Hunter Water under clause 42.1(4).

Cure Plan means a plan submitted by the Service Provider under clause 42.1(3)(a) during a Cure Period with respect to a default or breach by the Service Provider and which details:

- (a) why an extension of the Cure Period is required;
- (b) the time required to cure the default or breach;
- (c) a work plan setting out each task to be undertaken and the time for each task to be completed;
- (d) any temporary measures to be taken; and
- (e) the method for integrating the cure with the continuing provision of the Services.

Customer Contract means the terms, which can be viewed on Hunter Water's website, under which Hunter Water provides water supply, sewerage, recycled water supply, trade wastewater and stormwater drainage services to Hunter Water's customers.

Deed of Novation means the form of deed at Schedule 14.

Defect includes an omission and a failure to comply with the requirements of this Agreement.

Discrepancy has the meaning given in clause 2.6(3).

Dispute has the meaning given in clause 53(3).

Draft Transition Plan is the document at Schedule 15.

Drinking Water Quality Management System means the Management System described in clause 11.4(4).

DWQMS has the meaning given in clause 11.4(4)(a).

ELG or Executive Leadership Group means the Executive Leadership Group, as further described in clause 13.

ELG Chairperson has the meaning given in clause 13.2(3).

Ellipse means Hunter Water's enterprise asset management system or such replacement system adopted by Hunter Water during the Term.

Emergency means a circumstance where there is a serious immediate or serious potential threat to:

- (a) public interest, health or safety;
- (b) the structural integrity of a Facility or of the associated water distribution or wastewater collection systems;
- (c) the environment;
- (d) the continuity of the Services;
- (e) the Service Provider's ability to discharge its functions and satisfy its obligations under Law; or
- (f) Hunter Water's ability to discharge its functions and satisfy its obligations under Law.

Emergency Plan has the meaning given in clause 41.1(1).

"Endorse" or **"Endorsement"** has the meaning given in clause 2.3.

Engaged Person means:

- (a) in respect of Hunter Water, a director, officer, employee, agent or contractor (other than the Service Provider) of Hunter Water; and
- (b) in respect of the Service Provider, any individual engaged, contracted, directed, managed or supervised by the Service Provider to perform any works, services or activities forming part of the Services and includes a director, officer, employee, agent, invitee, contractor, Subcontractor or Supplier of the Service Provider and any other person for whom the Service Provider is vicariously liable.

Environmental Management System means the Management System described in clause 11.4(2).

EOT means an extension to the Sunset Date or the Target Services Commencement Date, as applicable.

EPA means the New South Wales Environment Protection Authority or any successor.

EP Licence means an Environment Protection Licence issued under Chapter 3 of the POEO Act which includes covering Hunter Water's WTP, WWTW and water reuse schemes and includes those licences detailed in Part A of Schedule 10.

Estimated Additional Costs has the meaning given in clause A11 of Part A of Schedule 3.

Excepted Risks means:

- (a) ionising radiation or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel; or
- (b) riot, civil commotion, malicious damage, sabotage, war (whether declared or not) or revolution; or
- (c) Act of Terrorism; or
- (d) any wrongful act or omission of Hunter Water or a Hunter Water Engaged Person; or
- (e) any other risk from which the Service Provider is specifically and expressly excepted under the Agreement,

but only to the extent that the event, circumstance or risk is not within the control of:

- (f) the party seeking to rely upon the event, circumstance or risk (**Reliant Party**); or
- (g) a related body corporate of the Reliant Party,

and is not reasonably able to be avoided, remedied or abated by the Reliant Party or the related body corporate of the Reliant Party by the exercise of reasonable diligence or effort or the incurring of reasonable costs.

Existing Contractors has the meaning given in clause 28.6(1).

Existing Contracts means a contract referred to in clause 28.6(1) and in accordance with terms of this Agreement includes any extension of such a contract.

Existing Employee means:

- (a) an employee of Hunter Water classified under the Hunter Water Corporation Employees' Enterprise (2012) Agreement as a:
 - (i) Wastewater Treatment Employee Trainee;
 - (ii) Wastewater Treatment Employee Level 1; or
 - (iii) Wastewater Treatment Employee Level 2; or
- (b) if HWA is not the Service Provider, an employee of HWA classified under the Hunter Water Australia Pty Limited General Employees' (2013) Agreement as a:
 - (i) Water Treatment Operator Trainee;
 - (ii) Water Treatment Operator Level 1;
 - (iii) Water Treatment Operator Level 2;

- (iv) Water Treatment Operator Level 3;
- (v) Wastewater Treatment Operator Level A;
- (vi) Wastewater Treatment Operator Level 1; or
- (vii) Wastewater Treatment Operator Level 2.

Facility means a WTF or WWTF identified in Schedule 1 and all associated (whether above or below ground or water) infrastructure, plant and equipment located within the Facility Boundary and including the land upon which the WTF or WWTF identified in Schedule 1 and all associated (whether above or below ground or water) infrastructure, plant and equipment is located and "Facilities" means all of them.

Facility Boundary has the meaning given in clause 17.1.

Facility Cooperative Use Plan means the plan prepared by the Service Provider under clause 17.3(1).

Facility Data has the meaning given in Schedule 8.

Facility Fixed Fee means the fixed fee component of the Fees for each Facility as further described in clause E1 of Part E of Schedule 3.

Facility Variable Fee means the variable fee component of the Fees for each Facility as further described in clause F1 of Part F of Schedule 3.

Fair Work Act means the *Fair Work Act 2009* (Cth).

Fees means the amounts (including any applicable margin and risk component) payable to or to be reimbursed to the Service Provider in accordance with clause 29.1 and Schedule 3 for the Service Provider's performance of the Services, as adjusted from time to time in accordance with this Agreement.

First Extended Term means one year.

Flow Meter means a flow meter identified in clause 29.5(1).

Force Majeure means:

- (a) fire, lightning strike, explosion, flood, earthquake, landslide or other natural disaster;
- (b) ionising radiation or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel; or
- (c) riot, civil commotion, malicious damage, sabotage, war (whether declared or not), Act of Terrorism or revolution;

- (d) strikes at a national level or industrial disputes by labour not employed by the Service Provider or an Engaged Person and which affect an essential portion of the Services,

but only to the extent that the event or circumstance:

- (e) is not within the reasonable control of the party seeking to rely upon the event or circumstances or a related body corporate of the party seeking to rely upon the event or circumstances;
- (f) is not reasonably able to be avoided, remedied or abated by the party seeking to rely upon the event or circumstances by the exercise of reasonable diligence or effort; and
- (g) results in the party seeking to rely upon the event or circumstances being unable to observe or perform an obligation or being disrupted or materially hindered in its ability to observe or perform under this Agreement.

GIPA Act means the Government Information (Public Access) Act 2009 (NSW).

Good Practice means practices, procedures, means, methods, actions and techniques:

- (a) which are adopted in the exercise of reasonable judgment to manage, operate and maintain water treatment assets and wastewater treatment assets, lawfully, safely, reliably and efficiently having regard to the type and capacity of each and the environment in which operations and discharges occur;
- (b) which are defined as good practice by the Water Services Association of Australia; and
- (c) followed when services are performed:
 - (i) in a sound and workmanlike manner;
 - (ii) with due skill, care and diligence;
 - (iii) with due expedition and without unnecessary or unreasonable delay;
 - (iv) in a manner which allows for the services (being similar to or the same as the Services) to be efficiently performed;
 - (v) in a manner to satisfy the time, cost, quality, and performance requirements of agreement to which the services relate;
 - (vi) so that they are fit for the purpose intended for those services; and
 - (vii) without Defect or deficiency or in a manner resulting in any Defects or deficiencies.

GST Act means the A New Tax System (Goods and Services Tax) Act 1999 (Cth).

Handback Plan means the plan prepared by the Service Provider in accordance with clause 45.1.

HAZOP means Hazard and Operability Study in accordance with the NSW Department of Planning HIPAP No.8 - HAZOP Guidelines.

Hunter Water or HWC means Hunter Water Corporation (ABN 46 228 513 446).

Hunter Water Australia Pty Ltd or HWA means Hunter Water Australia Pty Limited (ACN 080 869 905).

Hunter Water's Representative means the person referred to as such in clause 52.2.

Hunter Water Redundancy Accrual has the meaning given in clause 21.5(2).

HWC Network has the meaning given in clause 17.7(1).

Included Margin has the meaning given in clause A13 of Part A of Schedule 3.

Initial Expiry Date means 7:00 am on 01 July 2022.

Insolvency Event means in respect of a person (as person is defined in clause 2.2(3)(d)):

- (a) an order being made, or the person passing a resolution, for its winding up;
- (b) an application being made to a court for an order for its winding up, unless the application is withdrawn or dismissed within five Business Days;
- (c) an administrator being appointed to the person;
- (d) the person resolving to appoint a controller or analogous person to it or any of its property;
- (e) an application being made to a court for an order to appoint a controller, provisional liquidator, trustee for creditors or in bankruptcy or analogous person to it or any of its property, unless the application is withdrawn or dismissed within five Business Days;
- (f) an appointment of the kind referred to in paragraph (e) being made (whether or not following a resolution or application);
- (g) the holder of a security interest (including a Security Interest) taking possession of any of the person's property;
- (h) the person being taken under section 459F(1) of the Corporations Act to have failed to comply with a statutory demand;
- (i) the person:

- (i) suspending payment of its debts, ceasing (or threatening to cease) to carry on all or a material part of its business, stating that it is unable to pay its debts or being or becoming otherwise insolvent; or
- (ii) being taken by applicable law to be (or if a court would be entitled or required to presume that it is) unable to pay its debts or otherwise insolvent;
- (j) the process of any court or Authority being invoked against the person or any of its property to enforce any judgment or order for the payment of money or the recovery of any property, unless the person is able, within five Business Days, to satisfy the other parties to this Agreement that there is no substantial basis for the judgment or order in respect of which the process was invoked;
- (k) the person taking any step that could result in it becoming an insolvent under administration (as defined in section 9 of the Corporations Act);
- (l) the person taking any step toward entering into a compromise or arrangement with, or assignment for the benefit of, any of its members or creditors; or
- (m) anything analogous to or of a similar effect to anything described above under the law of any relevant jurisdiction.

Intellectual Property means all present and future rights conferred by statute, common law or equity in or in relation to copyright, trademarks, designs, patents, circuit layouts, plant varieties, business and domain names, inventions, protected rights and other results of intellectual activity in the industrial, commercial, scientific, literary or artistic fields whether or not registrable, registered or patentable.

Intended Purpose means the intended purpose of the Services:

- (a) required by this Agreement (including performance, design, functional, management, governance, oversight and service level requirements) or those purposes necessarily inferred from this Agreement; and
- (b) includes any purpose of the Services which, having regard to the nature of the Services and what is stated in this Agreement, could be reasonably inferred by a person experienced and competent in the performance of such services or the performance of operations and maintenance for water treatment plants and wastewater treatment plants and associated infrastructure assets.

Intrinsic Capacity Limit means, in regard to a particular regulatory standard, performance requirement or combination of requirements under this Agreement, the maximum or best (as the context requires) sustainable:

- (a) production capacity,
- (b) hydraulic throughput capacity,

- (c) process performance, or
 - (d) by-products management capacity,
- of a Facility with its current physical and digital asset development and configuration, determined on the assumption that the Service Provider is:
- (i) meeting all of its obligations under this Agreement that relate to the above measures;
 - (ii) competently and comprehensively maintaining all plant and equipment (including critical spares);
 - (iii) promptly completing all Breakdown Maintenance and Corrective Maintenance so as to maintain full functional capacity;
 - (iv) competently and comprehensively maintaining, and can bring back on-line, standby, redundant and reserve equipment, infrastructure, systems and processes; and
 - (v) applying best practice process operations management (including process chemistry, process biology, unit process configuration management and equipment configuration management) including varying the process operations to respond to changing inputs and changing production requirements.

IPART means the Independent Pricing and Regulatory Tribunal of New South Wales.

IPART Act means the *Independent Pricing and Regulatory Tribunal Act 1992 (NSW)*.

Key Personnel means the Service Provider's key personnel referred to in clause 20.1.

KPIs means the Key Performance Indicators detailed in the column headed "KPI" in the tables at Schedule 6 and **KPI** means any one of them.

Latent Defect means a Defect in a Facility which, during normal operations, exists below water level or is buried and cannot be routinely accessed for inspection or observation without incurring unreasonable risk to the process continuity or performance of the Facility and which leads to or requires Breakdown Maintenance or Corrective Maintenance by the Service Provider.

Law includes:

- (a) Commonwealth of Australia and state or territory of Australia legislation including regulations, by laws or other subordinate legislation;
- (b) principles of common law and equity;
- (c) requirements of Authorities and Approvals;

- (d) guidelines, policies and codes of the Commonwealth of Australia, state and territories and local governments and Authorities with which the Service Provider is legally required to comply; .

Long Cycle Preventive Maintenance means:

- (a) digester cleaning;
- (b) removal of sludge and sediment from oxidation, maturation and effluent storage ponds at WWTFs;
- (c) cleaning of Dungog WTF clear water tank number 2 and Grahamstown WTF clear water tank
- (d) road regrading or resealing;
- (e) removal of sludge from sludge lagoons (used only as back-up systems) at WWTFs with continuous sludge dewatering facilities (Belmont, Cessnock, Edgeworth, Kurri Kurri, Morpeth, Raymond Terrace & Toronto WWTFs); or
- (f) removal of sludge from sludge lagoons at Paxton WWTF, Branxton WWTF and Lemon Tree Passage WTF,

where the Additional Cost for the relevant event is greater than [REDACTED]

For the avoidance of doubt, removal of sludge from sludge lagoons at a WWTF or a WTF that is not listed above is not Long Cycle Preventive Maintenance.

Major Capital Works means any Capital Works other than Minor Capital Works.

Management Fee means the fixed management fee for the Services as further described in clause D1 of Part D of Schedule 3.

Management System means any system detailed in clause 11.4.

Management Plan means a plan:

- (a) prepared by the Service Provider and attached to this Agreement; or
- (b) to be prepared or updated by the Service Provider as required by this Agreement,

detailing the procedures, resources and other factors to be applied to ensure performance of the Services in compliance with the Agreement and including any updates or amendments to such plan made in accordance with this Agreement.

Margin means a percentage set out in table 3A.1 of Part A of Schedule 3.

Margin Amount means the amount determined by applying the relevant Margin for the relevant cost component, as applicable, to the relevant costs or prices used to price the work under a Variation (where such costs or prices may include reasonable costs or prices, Additional Costs or Estimated Additional Costs, as applicable).

Material Default means that the Service Provider:

- (a) fails to comply with any Workplace Health and Safety Laws;
- (b) without reasonable cause suspends the carrying out of the Services, in whole or to a material extent;
- (c) is in Wilful Default;
- (d) has reached or exceeded the Show Cause Level identified in Schedule 6;
- (e) is in material breach of a requirement or term of clause 22;
- (f) is in breach of clause 25.1(2), clause 35.1, clause 37.1, clause 38 or clause 47.1; or
- (g) commits any other default that is expressly stated in this Agreement to be a Material Default.

Minor Capital Works means Capital Works which fit in with Hunter Water's Capital Works program and are suitable, at the absolute and sole discretion of Hunter Water, for delivery by the Service Provider and which the Service Provider is notified or approved to undertake by Hunter Water in accordance with clause 10 and includes any works undertaken by the Service Provider in accordance with clause 7.4(4) or clause 7.5(3).

Moral Right has the meaning given to that term in the *Copyright Act 1968* (Cth) and includes, whether inside or outside of Australia, rights known as "droit moral".

New Contract has the meaning given in clause 28.6(6).

NSW Health means the New South Wales government organisation that administers the *Public Health Act 2010* (NSW).

NSW Health Memorandum of Understanding means the document between NSW Health and Hunter Water as detailed in Part B of Schedule 10.

Open Book Accounts has the meaning given in clause 29.2(1).

Operating Licence means the licence granted to Hunter Water under the Hunter Water Act 1992 (NSW) setting out Hunter Water's operating responsibilities and performance standards.

PAC has the meaning given in clause 5.6(1).

Payment Claim means a payment claim the subject of a Payment Withholding Request.

Payment Withholding Request has the meaning given to that term in the SOP Act.

Performance Management Framework means the system of KPIs in Schedule 6 by which some aspects of the Service Provider's performance of this Agreement's

requirements will be measured and Service Standard Adjustments may be determined.

Plant Manuals means the documents identified as such by Hunter Water and provided to the Service Provider by Hunter Water in accordance with this Agreement or otherwise as provided to the Service Provider by Hunter Water from time to time, including any amendment or supplement Endorsed in accordance with clause 25.2.

Plant Spreadsheets mean the documents identified as such by Hunter Water and provided to the Service Provider by Hunter Water in accordance with Schedule 8 or otherwise as provided to the Service Provider by Hunter Water from time to time, including any amendment or supplement Endorsed in accordance with clause 25.2.

PLC means programmable logic controller.

PM Review has the meaning given in clause 7.3(3).

POEO Act means the *Protection of the Environment Operations Act 1997* (NSW)

PPS Act means the *Personal Property Securities Act 2009* (Cth).

PPS Register means the Personal Property Securities Register established under section 147 of the PPS Act.

Practice Notes or PN means:

- (a) the documents listed in Schedule 7 and any amendment of those documents in accordance with clause 15; and
- (b) such other documents developed or amended in accordance with clause 15.

Preserved Personal Leave has the meaning given in clause 21.3(6).

Preserved Personal Leave Payment has the meaning given in clause 21.3(6).

Preventive Maintenance has the meaning given in clause 7.3(2) and includes any updating of the preventive maintenance requirements under this Agreement in accordance with clause 7.3.

Price Path Provisions or PPP has the meaning in clause 9.4(3).

Principal Contractor has the meaning given to that term in regulation 293 of the WHS Regulation.

Procurement Plan means the plan prepared by the Service Provider under clause 28.1.

Quality Management System means the Management System described in clause 11.4(3).

RABQSA means RABQSA International.

Retained Money has the meaning given in clause 31.6(1).

SAS Employees has the meaning given in clause 21.3(11).

SCADA means Hunter Water's supervisory control and data acquisition system.

SCD Inventory has the meaning given in clause 18.1(1).

Schedule means a schedule to this Agreement.

Second Extended Term means one year.

Second Security has the meaning given in clause 35.6(2).

Security means the security to be provided by the Service Provider in accordance with clause 35.1.

Security Interest has the meaning given to that term in the PPS Act.

SED Inventory has the meaning given in clause 18.1(2).

Service Provider means Veolia Water Australia Pty Ltd ACN 061 161 279.

Service Provider's Representative means the person referred to as such in clause 52.1(1).

Service Provider Redundancy Accrual has the meaning given in clause 21.5(3).

Services means:

- (a) during the Transition Period, the Transition Services and anything else that the Service Provider is to do under this Agreement with respect to the Transition Services; and
- (b) on and from the Services Commencement Date:
 - (i) the whole of the tasks, activities, works and services to be provided or performed by the Service Provider under part B of this Agreement, and
 - (ii) anything else that the Service Provider is to do under this Agreement excluding the Transition Services,

and includes any other services or work (incidental or otherwise) necessary to achieve any objectives and performance standards stated in this Agreement and such other services or work as may be agreed in writing between the parties from time to time.

Services Commencement Date means the date notified by Hunter Water in the Services Commencement Notice.

Services Commencement Notice has the meaning given in clause 16.4(2).

Services Direction means a notice issued by Hunter Water pursuant to clause 34.4 and containing a statement to the effect that it is a Services Direction issued pursuant to clause 34.4.

Services End Date means:

- (a) the Initial Expiry Date, or, if the Term is extended under clause 19.2, the latest date to which the Services End Date is extended; or
- (b) any earlier date on which this Agreement terminates for any reason.

Services IP means the Intellectual Property in all works (including copyright works, inventions, discoveries, improvements to existing processes and novel designs, including any developments or improvements to methods, processes or techniques, whether or not registrable as designs or patents throughout the world) developed by, or otherwise provided to Hunter Water by, the Service Provider or a Service Provider Engaged Person in the performance of, or directly arising out of, the performance of the Services, but excludes Background IP.

Service Standard Adjustment or **SSA** means an adjustment of the Fees payable under this Agreement as such adjustment is calculated in accordance with the Performance Management Framework in accordance with Schedule 6.

Show Cause Notice has the meaning given in clause 42.3.

Site Map means a map in Schedule 2.

SOP Act means the *Building and Construction Industry Security of Payment Act 1999* (NSW).

Spare Parts Strategy has the meaning in clause 18.2.

Standard Operating Procedure means the documents identified to be such by Hunter Water and provided to the Service Provider by Hunter Water from time to time, including any amended, new, replaced or deleted Standard Operating Procedure Endorsed in accordance with clause 25.2.

Stock means:

- (a) materials and spare parts held in stock for the operation, maintenance and repairs of a Facility; and
- (b) fuel, chemicals and other consumables,,

to be used by the Service Provider for the purposes of performing the Services including those:

- (c) owned or leased by Hunter Water and provided by Hunter Water to the Service Provider at the Services Commencement Date; or
- (d) purchased by Hunter Water under clause 18.3(3).

Subcontract means an agreement or arrangement, whether legally enforceable or not, between the Service Provider and a third party, under which the third party is engaged, whether as subcontractor, agent or otherwise, to provide any part of the Services.

Subcontractor means a person with whom the Service Provider enters into a Subcontract.

Subcontractor Statement means the form available from the “Forms and Publications” section of the NSW WorkCover website (www.workcover.nsw.gov.au) and relates to payment of employees, subcontractors, suppliers, consultants, workers compensation insurance premiums and payroll tax payments which meet the requirements of the Industrial Relations Act 1996 (NSW), the Pay-roll Tax Act 1971 (NSW), the Workers Compensation Act 1987 (NSW) and all other relevant legislation.

Successor Employer means a party to whom a Transferring Employee's employment is transferred following the termination of this Agreement (which may include Hunter Water).

Sunset Date means 1 February 2015 but if this date is extended in accordance with clause 16.5(5) or any EOT is granted by Hunter Water or allowed in any Dispute resolution procedure, it means the date resulting therefrom.

Supplier means a person with whom the Service Provider enters into a Supply Contract.

Supply Contract means an agreement or arrangement, whether legally enforceable or not, between the Service Provider and a third party, under which the third party supplies Working Assets or Stock of any kind to the Service Provider in relation to the Services.

Supporting Statement has the meaning given to that term in the SOP Act.

Tankering Waste Policy means Hunter Water's policy titled “Tankering Waste Policy” which can be obtained from Hunter Water's website.

Target Services Commencement Date means 1 October 2014 but if any EOT is granted by Hunter Water or allowed in any Dispute resolution procedure, it means the date resulting therefrom.

Term has the meaning given in clause 19.1.

Transferring Employee means an Existing Employee who has accepted an offer of employment made by the Service Provider in accordance with clause 21.2(2).

Transferring Employee Entitlement Payment has the meaning given in clause 21.3(4).

Transferring Instrument means any transferring instrument applicable to Transferring Employees under the Fair Work Act including the Hunter Water Corporation Employees' Enterprise (2012) Agreement and the Hunter Water Australia Pty Ltd General Employees' (2013) Agreement.

Transferring Work has the meaning given to that term in the Fair Work Act.

Transition Period means the period from the Agreement Date to the Services Commencement Date.

Transition Plan means the finalised Management Plan prepared by the Service Provider (based on the Draft Transition Plan) which has been:

- (a) Endorsed in accordance with this Agreement; or
- (b) otherwise finalised by Hunter Water in accordance with this Agreement,

and which sets out all activities required to be completed by the Service Provider during the Transition Period so that fully compliant Services can be reliably provided by the Service Provider from the Services Commencement Date.

Transition Plan Deliverables means the items described as such in clause B2 of Part B of Schedule 3, which are to be delivered or completed by the Service Provider during the Transition Period.

Transition Services means such services necessary for the Service Provider to complete the Transition Plan in accordance with this Agreement and implement the Transition Plan by delivery and/or completion of the Transition Plan Deliverables.

Urgent Work means work:

- (a) the subject of clause 7.4(3) or clause 7.5(2); and
- (b) that is required:
 - (i) in an Emergency; or
 - (ii) to avoid breaching an EP Licence condition or the POEO Act and which must be commenced within 24 hours to avoid breaching the EP Licence condition or the POEO Act.

Urgent Work Variation means a Variation which is required for Urgent Work.

Utility Services means any service servicing a Facility including electricity, gas, telephone, water, drainage, sewerage, electronic communications and fire fighting provided by an Authority, Hunter Water or any person authorised by Hunter Water (and all equipment, machinery, cabling, wiring, conduits, pipes and pits associated with or used in the provision of such services) and any services installed by the Service Provider.

Value Enhancement means a measure or initiative described in clause 33(1).

Variation means any single alteration to, addition to or deletion from:

- (a) the scope of the Services; or
- (b) the performance requirements for the Services,

and may include the addition or removal of a Facility from the Services, Long Cycle Preventive Maintenance and the undertaking of Minor Capital Works.

Variation Instruction means a notice issued by Hunter Water pursuant to clause 34.3 and containing a statement to the effect that it is a Variation Instruction issued pursuant to clause 34.3.

Variation Price means the amount including any relevant Margin Amount (which amount may be nil or a negative amount) for the Service Provider implementing a Variation, with such amount being determined in accordance with clause 34.

Variation Proposal means a notice issued by Hunter Water pursuant to clause 34.1 and containing a statement to the effect that it is a Variation Proposal issued pursuant to clause 34.1.

Variation Response means the response issued by the Service Provider pursuant to clause 34.2 in response to a Variation Proposal or under clause 34.7.

Waste includes any:

- (a) biosolids and WTP residuals;
- (b) grit and screenings;
- (c) general solid waste; or
- (d) any other form of waste,

from a Facility and includes by products or any processing of these materials.

Waste Existing Contracts has the meaning given in clause 3.3(2).

Waste Facility has the meaning given in POEO Act.

Waste Management Plan means the plan submitted by the Service Provider under clause 5.4(3).

Waste New Contract has the meaning given in clause 3.3(3).

WHS Act means the *Work Health and Safety Act 2011* (NSW).

WHS Management System means the Management System described in clause 11.4(1).

WHS Regulation means the *Work Health and Safety Regulation 2011* (NSW).

Wilful Default means an intentional or reckless act or omission by a party or its Engaged Persons (whether those Engaged Persons are acting within or outside the scope of their employment or authority) in relation to the Services, which causes or has the potential to cause harm to the other party, the public or the environment and is committed without regard to, or being reckless as to whether, the act or omission has harmful and avoidable consequences, but does not include errors of judgement, mistake, act or omission made in good faith.

Working Assets means unfixed plant and equipment (including laboratory equipment) to be used by the Service Provider for the purposes of performing the Services including those:

- (a) owned or leased by Hunter Water and provided by Hunter Water to the Service Provider at the Services Commencement Date; or
- (b) purchased by Hunter Water under clause 18.3(3).

Workplace Health and Safety Laws means the WHS Act and the WHS Regulation and all related regulations and codes of practice and any other Laws relevant to workplace health and safety.

WTF or Water Treatment Facility means those facilities (including any WTP) to be operated and maintained by the Service Provider as identified in Schedule 1 Part A.

WTP means water treatment plant.

WWTF or Wastewater Treatment Facility means those facilities (including any WWTW) to be operated and maintained by the Service Provider as identified in Schedule 1 Part B.

WWTW means wastewater treatment works.

2.2 Interpretation

- 1 The following rules apply when interpreting this Agreement, except where the context makes it clear that a rule is not intended to apply.
- 2 Headings and the table of contents are for convenience only, and do not affect interpretation or form part of this Agreement.
- 3 A reference to:
 - (a) legislation (including subordinate legislation) is to that legislation as amended, re-enacted or replaced, and includes any subordinate legislation issued under it;
 - (b) a document or agreement, or a provision of a document or agreement, is to that document, agreement or provision as amended, supplemented, replaced or novated;

- (c) a party to this Agreement or to any other document or agreement includes a permitted substitute or a permitted assign or permitted novatee of that party;
 - (d) a person includes a natural person, a corporation, a statutory corporation, a partnership, the Crown, any type of entity or body of persons, whether or not it is incorporated or has a separate legal identity, and any executor, administrator, permitted assignee or successor in law of the person; and
 - (e) any thing (including a right, obligation or concept) includes each part of it.
- 4 A singular word includes the plural, and vice versa.
 - 5 A word which suggests one gender includes the other genders.
 - 6 If a word is defined, another part of speech has a corresponding meaning.
 - 7 If an example is given of any thing (including a right, obligation or concept), such as by saying it includes something else, the example does not limit the scope of that thing.
 - 8 The word "notice" includes a demand, consent, approval, request, instruction, direction, decision, consent or other communication.
 - 9 The word "agreement" includes an undertaking or other binding arrangement or understanding, whether or not in writing.
 - 10 The words "subsidiary", "holding company" and "related body corporate" have the same meanings as in the Corporations Act.
 - 11 Unless otherwise indicated, all financial amounts stated in this Agreement are exclusive of GST.
 - 12 A reference to a breach of warranty includes that warranty not being complete, true or accurate.
 - 13 A requirement to do anything includes a requirement to cause that thing to be done and a requirement not to do anything includes a requirement to prevent that thing being done.
 - 14 "including" and "includes" are not words of limitation.
 - 15 The words at any time mean at any time and from time to time.
 - 16 A reference to a time is to that time in New South Wales.

- 17 In calculating any period of time commencing from a particular day, the period commences on the following day and the following day counts as part of that period.
- 18 In determining whether there is an Emergency for the purposes of this Agreement, the reasonable opinion of Hunter Water is sufficient evidence unless manifestly wrong.
- 19 A word that is derived from a defined word has a corresponding meaning.
- 20 Monetary amounts are expressed in Australian dollars.
- 21 A reference to a thing includes each part of that thing.
- 22 Neither this Agreement nor any part of it will be interpreted against the interest of a party on the basis that the party or its lawyers were responsible for drafting it.
- 23 Despite any other provision of this Agreement, the Service Provider acknowledges and agrees that:
 - (a) nothing in this Agreement will in any way restrict or otherwise affect the unfettered absolute and sole discretion of Hunter Water to exercise any statutory functions or powers or act in its capacity as an Authority; and
 - (b) anything Hunter Water does, fails to do, or purports to do, pursuant to statutory functions or powers or in its capacity as an Authority, will be deemed not to be an act, default or omission of Hunter Water under this Agreement,provided that if Hunter Water does, fails to do, or purports to do something in its capacity as an Authority and, but for clause 2.2(23)(a) and clause 2.2(23)(b), the Service Provider would otherwise under this Agreement have a bona fide entitlement to claim money or time or relief under this Agreement then the Service Provider shall be entitled to claim such money or time or relief and such claim shall be determined in accordance with this Agreement.
- 24 None of the provisions, conditions, covenants and agreements of this Agreement nor any provision of a document by Hunter Water or Endorsement by Hunter Water of any document submitted by the Service Provider under this Agreement in any way reduces or affects the powers of Hunter Water or any employee or agent of Hunter Water under any Law.

2.3 Endorsement

Where the words "Endorse" or "Endorsement" are used in this Agreement in relation to documents, the documents are taken to be accepted by Hunter Water, the CMG or the ELG (as applicable) only for monitoring, reviewing and auditing the performance of the Service Provider's obligations under this Agreement, and:

- (a) Hunter Water, the CMG or the ELG has no liability if Endorsement of a document results in a breach by the Service Provider of its obligations under this Agreement; and
- (b) the Endorsement of documents:
 - (i) shall not constitute the verification or acceptance by Hunter Water, the CMG or the ELG (as applicable) of the adequacy of any information provided by the Service Provider, the adequacy of which remains the sole responsibility of the Service Provider; and
 - (ii) does not in any way affect or reduce the obligations of the Service Provider under this Agreement and the Service Provider is fully responsible for complying with its obligations under this Agreement.

2.4 Business Days

If the day on or by which a person must do something under this Agreement is not a Business Day:

- (a) if the act involves a payment that is due on demand, the person must do it on or by the next Business Day; and
- (b) in any other case, the person must do it on or by the previous Business Day.

2.5 Multiple parties

If a party to this Agreement is made up of more than one person, or a term is used in this Agreement to refer to more than one party:

- (a) an obligation of those persons is joint and several;
- (b) a right of those persons is held by each of them jointly and severally; and
- (c) any other reference to that party or term is a reference to each of those persons separately, so that (for example) a representation, warranty or undertaking is given by each of them separately.

2.6 Ambiguity and order of precedence

- 1 The documents forming this Agreement are to be taken as mutually explanatory of one another.
- 2 Clauses 1 to 54 of this Agreement take precedence over the Schedules to this Agreement and the Schedules to this Agreement take precedence over any other referenced document or requirements.
- 3 If any party discovers an error, omission, inconsistency, ambiguity, discrepancy or illogicality in or between any document prepared for the purpose of carrying out the Services or any other document forming part of

this Agreement (**Discrepancy**) that party must promptly notify the other party of the Discrepancy.

- 4 Hunter Water shall in its absolute and sole discretion decide how any Discrepancy is to be interpreted and notify the Service Provider as to the interpretation and construction to be followed.
- 5 Unless Hunter Water determines otherwise the Service Provider shall not be entitled to claim any Additional Costs arising out of or as a consequence of Hunter Water giving the Service Provider a notice with respect to a Discrepancy.
- 6 Subject to clause 2.6(8), if Hunter Water in its absolute and sole discretion decides that the Discrepancy is to be interpreted other than consistent with the interpretation with the highest precedence set out in clause 2.6(2) Hunter Water shall issue a Variation Proposal with respect to the Discrepancy.
- 7 No Variation will exist if Hunter Water decides that the Discrepancy is to be interpreted consistent with the interpretation with the highest precedence set out in clause 2.6(2).
- 8 Neither Hunter Water nor the Service Provider shall be entitled to adjustment of the Fees or a Variation where the interpretation decided by Hunter Water under clause 2.6(4) results in an increase or reduction in Additional Costs of less than ██████████ per Facility per each interpretation except if:
 - (a) the increase or reduction in Additional Costs arising out of the interpretation occurs across multiple Facilities or is recurring; and
 - (b) the total aggregate Additional Costs incurred arising out of the interpretation exceeds ██████████ for the period up to the Initial Expiry Date.

2.7 No responsibility

Without limiting clause 2.8:

- (a) Hunter Water does not warrant, guarantee or make any representation about the accuracy or adequacy of any information, data or document made available to the Service Provider by Hunter Water or anyone on behalf of Hunter Water before or after the Agreement Date and which:
 - (i) does not form part of this Agreement; or
 - (ii) Hunter Water or anyone on behalf of Hunter Water identifies is for information purposes only; and
- (b) to the extent permitted by law, Hunter Water will not be liable upon any Claim by the Service Provider arising out of, or in any way connected with, such information, data and documents.

For the avoidance of doubt Hunter Water:

- (a) does not warrant, guarantee or make any representation about the accuracy or adequacy of any information, data or document made available to the Service Provider by Hunter Water or anyone on behalf of Hunter Water through Ellipse or SCADA to the extent that the information, data or document was used solely for the purposes of tendering for the Services prior to the Agreement Date, as such information, data or document was for information purposes only; and
- (b) does warrant:
 - (i) the Existing Contracts;
 - (ii) the information provided by Hunter Water in accordance with clause 21.2(1); and
 - (iii) on and from the Agreement Date, the accuracy and adequacy of any information, data or document made available to the Service Provider by Hunter Water or anyone on behalf of Hunter Water through Ellipse or SCADA (except to the extent that any inaccuracy or inadequacy arises out of or is a consequence of an act, omission or default of the Service Provider) and such information, data or document is deemed to form part of this Agreement.

2.8 Non-reliance

The Service Provider:

- (a) warrants that it did not in any way rely upon:
 - (i) any information, data, representation, statement or document (not forming part of this Agreement) made available to the Service Provider by Hunter Water or anyone on behalf of Hunter Water;
 - (ii) any information, data, representation, statement or document made available to the Service Provider by Hunter Water or anyone on behalf of Hunter Water and which is identified as for information purposes only; or
 - (iii) the accuracy or adequacy of any such information, data, representation, statement or document referred to in clause 2.8(a)(i) or clause 2.8(a)(ii),for the purposes of entering into this Agreement; and
- (b) warrants that it enters into this Agreement based on its own investigations, interpretations, deductions, information and determinations.

END OF PART A

PART B - SERVICES

3. OVERVIEW

3.1 Services generally

- 1 The Services required by Hunter Water on and from the Services Commencement Date and to be performed by the Service Provider comprise:
 - (a) the primary services which directly give rise to the need for this Agreement being:
 - (i) operation of the Facilities; and
 - (ii) operational maintenance of the Facilities.
 - (b) incidental services which are closely related to the primary services being:
 - (i) facilities management and non-operational maintenance;
 - (ii) providing input with respect to asset management and Capital Works planning decisions in relation to the Facilities;
 - (iii) delivering Minor Capital Works at the Facilities; and
 - (iv) providing management and technical support in relation to the operation and maintenance of the Facilities.
- 2 Without limiting any other provision of this Agreement, the Services are to be performed by the Service Provider to achieve their respective stated objectives and performance standards.

3.2 Exclusions

The Services exclude the following:

- (a) modification of PLC, telemetry and SCADA software and firmware (the Service Provider may request changes through the CMG);
- (b) maintenance of high voltage equipment;
- (c) maintenance of network communications (comprising 3G, ADSL and radio) between Hunter Water's facilities, including all communications hardware at the Facilities;
- (d) delivery of Major Capital Works;
- (e) security patrols and initial response to security alarms at a Facility;
- (f) underwater inspection and maintenance of WWTW outfalls;
- (g) monitoring of SCADA alarms during afterhours periods described in Practice Note PN402;

- (h) holding, negotiation and liaison in relation to EP Licences;
- (i) water demand management policies including imposition of water restrictions;
- (j) trade waste policy and administration of permits for the discharge of wastewater by tanker;
- (k) recycled water policy, marketing and customer service;
- (l) direct customer contact including operation of a customer call centre;
- (m) customer service standards and policies;
- (n) laboratory sampling and analysis as identified in Schedule 9 to be the responsibility of Hunter Water;
- (o) media, community and stakeholder consultation;
- (p) coordination of IPART licence audits and pricing submissions (other than where this Agreement requires the Service Provider to collaborate with or provide assistance to Hunter Water in accordance with the provisions of this Agreement); and
- (q) such other exclusions indicated in the individual Facility descriptions in Schedule 1.

3.3 Ownership and dealing with Waste

- 1 To the extent allowed by law, Hunter Water owns:
 - (a) the raw water entering each Facility and all treated water leaving each Facility; and
 - (b) the raw water and the raw wastewater entering each Facility and the recycled water and the wastewater leaving each Facility.
- 2 On and from the Services Commencement Date, the Service Provider, acting as Hunter Water's agent in accordance with clause 28.6, will take over the management of the Existing Contracts Hunter Water has for the collection, transportation, disposal, storage, processing and reuse of Waste (**Waste Existing Contracts**). Under the Waste Existing Contracts Hunter Water maintains ownership of the Waste until it is deposited on land or reused.
- 3 At the expiry of a Waste Existing Contract, the Service Provider in accordance with its obligations under clause 28.6 will enter into a New Contract for, as applicable, the collection, transportation, disposal, storage, processing and/or reuse of Waste that had been the subject of the expired Waste Existing Contract (**Waste New Contract**) and from the commencement date of a Waste New Contract the Service Provider accepts ownership and responsibility for all Waste the subject of the relevant Waste New Contract.

3.4 Interpretation

For simplicity, in the rest of this Part B, other than with respect to those responsibilities identified in this Part B to be the responsibility of Hunter Water, all responsibilities, obligations, requirements or directions in this Part B (including responsibilities obligations or requirements expressed as a direction in the imperative form) are the responsibility of the Service Provider.

4. SAFETY PRIORITY

- 1 It is the goal of both Hunter Water and the Service Provider that all workers and visitors at the Facilities are not exposed to risks to health and safety.
- 2 To do this the Service Provider will at a minimum:
 - (a) comply with Work Health and Safety Laws in all areas of operation, maintenance, design and construction;
 - (b) implement measurable objectives and targets to ensure continual improvement in WHS performance;
 - (c) ensure a proactive risk management approach is ensured in developing and implementing strategies to ensure, as far as is reasonably practicable, the health and safety of workers;
 - (d) provide the training, information, instruction, supervision, equipment and facilities necessary for workers to carry out their work in a safe manner;
 - (e) provide the resources necessary to successfully develop and implement effective policies and procedures;
 - (f) consult with workers and other duty holders in relation to WHS issues and provide opportunities for consultation in accordance with Work Health and Safety Laws; and
 - (g) give due priority to the rehabilitation of injured workers so that injured workers can return to suitable work as soon as possible after an injury.

5. WATER TREATMENT OPERATIONS

5.1 Objectives

The following are the water treatment operations objectives (which are to be read in conjunction with clauses 5.3 to 5.10):

- (a) always meet distribution system demand for potable water;
- (b) supply water which always meets specified quality standards;
- (c) protect the public health at all times;
- (d) ensure, as far as is reasonably practicable, the health and safety of all workers and visitors at the WTFs;

- (e) comply with all applicable Laws including EP Licences;
- (f) protect the environment;
- (g) maintain a complete history of Facility operations and performance to assist with long term planning, event reviews and reporting; and
- (h) minimise the negative consequences and maximise the opportunities to Hunter Water and the Service Provider when either needs to shutdown or make changes to flow regimes.

5.2 Performance standards

The following are the water treatment operations performance standards (which are to be read in conjunction with clauses 5.3 to 5.10):

- (a) all water supplied must comply with the critical limit requirements and target limit requirements in Practice Note PN111;
- (b) no events occur requiring notification of NSW Health pursuant to Practice Note PN201;
- (c) each Facility operates so that demand for water is always met at least to the Intrinsic Capacity Limit for that Facility;
- (d) all SCADA alarms are responded to within the limits set in Practice Note PN505;
- (e) all specified samples are collected, taken and delivered and available for analysis within the timeframes required by this Agreement or by Hunter Water;
- (f) all Facility Data is recorded and accessible on-line by Hunter Water within 3 Business Days of the Service Provider receiving such data;
- (g) except for a minor change necessary for the undertaking of routine maintenance or pre-approved Minor Capital Works, no change is made to raw or treated water flow regimes by the Service Provider without consulting with Hunter Water as early as the circumstances reasonably permit and obtaining the prior approval of Hunter Water to this occurring in accordance with Practice Note PN301;
- (h) if an event occurs requiring notification of NSW Health, notification, investigation and reporting is undertaken in accordance with Practice Note PN201 and all practicable actions are taken to minimise the impact and duration of the event; and
- (i) all WTF plant operators must be competent to perform their duties and be provided with any training and support necessary to maintain competency.

5.3 General water treatment operations

- 1 Control the operation of the WTFs, taking all actions and providing all things necessary to satisfy the objectives in clause 5.1 and performance standards in clause 5.2.
- 2 In clause 5.3(1):
 - (a) subject to the provisions of this Agreement, “taking all actions” shall not be taken to mean that the Service Provider must fund Capital Works to the Facilities but does include undertaking investigations, planning, testing, obtaining advice, etc to achieve optimal performance of the Facilities.
 - (b) “providing all things” includes the procurement of stock, chemicals and other consumables.
- 3 Hunter Water will establish electricity supply agreements with the cost of electricity consumption and all electricity charges to be met by the Service Provider as detailed in Part F of Schedule 3.
- 4 Comply with current Standard Operating Procedures, the Drinking Water Quality Management System and all applicable Practice Notes.
- 5 Monitor and act on SCADA alarms during normal working hours as stated in Practice Note PN402. Hunter Water’s control centre will monitor SCADA alarms at all other times and contact the Service Provider of any alarms requiring urgent action. The Service Provider is to then act on such alarms requiring urgent action.

5.4 Waste disposal

- 1 Dispose of Waste from each WTF:
 - (a) in a manner which ensures that environmental and public health risks are managed appropriately;
 - (b) if applicable, in accordance with the POEO Act;
 - (c) if applicable, at a Waste Facility lawfully authorised to dispose of the Waste; and
 - (d) in accordance with the Endorsed Waste Management Plan referred to in clause 5.4(3).
- 2 Do not dispose of Waste at any Facility or on any other lands owned by Hunter Water unless expressly approved otherwise in advance by Hunter Water in its absolute and sole discretion.
- 3 At least 15 Business Days before the Target Services Commencement Date, submit a Waste Management Plan to the CMG for Endorsement in accordance with clause 25.2. The Waste Management Plan shall document:

- (a) Laws relevant to the transport and disposal of all anticipated classes of Waste;
- (b) procedures for the classification of Waste;
- (c) procedures to control odours, spillage and dust during the transportation and disposal;
- (d) for each proposed Waste Facility an approved notice under section 143(3A) of the POEO Act certifying that the Waste Facility is a place that can lawfully be used as a Waste Facility for the Waste;
- (e) disposal sites for each class of Waste, with any required Approvals or consents, or procedures to identify suitable disposal sites and obtain any required approvals or consents; and
- (f) the records to be kept for each load of Waste transported from a Facility including:
 - (i) time and date of departure from the Facility;
 - (ii) volume or weight of each load transported;
 - (iii) classification of Waste;
 - (iv) transport company; and
 - (v) reuse/disposal locations.

5.5 Interface with Hunter Water operations

- 1 Hunter Water is responsible for the supply of raw water to and receipt of treated water from the Facility Boundary detailed in Schedule 1 for each WTF.
- 2 The flow rates of raw water to and treated water from each WTF are, under normal conditions, to be set or automatically controlled to maintain levels in distribution system reservoirs.
- 3 If for maintenance or operational imperatives, Hunter Water or the Service Provider wishes to shutdown a WTF or vary the flow rate for a WTF contrary to normal conditions, Hunter Water and the Service Provider shall give each other as much advance notice as practicable given the particular circumstances. The Service Provider is to comply with Practice Note PN301 in giving its notice. Hunter Water in its absolute and sole discretion will decide whether a shutdown of a WTF or a variance of the flow rate for a WTF contrary to normal conditions is to occur.
- 4 Whenever practicable, Hunter Water and the Service Provider shall coordinate their respective activities to make maximum use of the opportunities presented by a shutdown or change of flow regimes.

5.6 PAC Dosing

- 1 Dosing with powdered activated carbon (PAC) may be required if taste and odour compounds become elevated in the surface water storages.
- 2 A permanent plant, the Schroder PAC Dosing Facility is available to treat raw water from Grahamstown Dam. A temporary PAC dosing plant will need to be established if water from Chichester Dam to Dungog WTP is to be treated. If a PAC dosing plant is established or operated this event will be considered an Abnormal Operating Event for the purposes of clause 23.
- 3 Hunter Water will monitor taste and odour compounds in the surface water storages and related customer complaints and alert the Service Provider as early as possible if it appears that PAC dosing might be required. The CMG shall determine if any preparatory work should be undertaken to prepare Schroder PAC Dosing Facility for operation or to establish temporary dosing for Dungog WTP.
- 4 Operate permanent or temporary PAC dosing facilities when indicated by Hunter Water to achieve removal of odour and taste compounds and avoid customer complaints.

5.7 Sampling

Collect, on a regular basis or at such times as are required by Hunter Water, samples identified in Schedule 9 as being for sampling or delivery by the Service Provider. Hunter Water shall procure laboratory analysis of the samples and make the results available to the Service Provider.

5.8 Operational Records and data collection

- 1 Routinely collect and record Facility Data at each WTF in accordance with Schedule 8. Undertake any required on-site analysis by competent trained personnel.
- 2 The Service Provider may adopt a record system and data format to suit its own purposes for the purpose of collecting and recording data in accordance with Schedule 8.
- 3 Provide Hunter Water with on demand remote access to all Facility Data recorded during the Term. Facility Data must be suitable for convenient import or saving to Microsoft Excel 2007, or such other software to be notified by Hunter Water from time to time, by Hunter Water with clear field and record headings.
- 4 Provide to Hunter Water, an electronic copy of all Facility Data recorded during the Term within 5 Business Days after the Services End Date and within

5 Business Days of having been requested to do so at any other time during the Term.

5.9 Water quality incidents

- 1 Under the NSW Health Memorandum of Understanding, Hunter Water must notify NSW Health of any event described in the Criteria for Notification by Hunter Water to NSW Health.
- 2 Immediately alert Hunter Water in accordance with Practice Note PN201 of the occurrence or potential occurrence of an event described in the Criteria for Notification by Hunter Water to NSW Health. Early notification may allow Hunter Water to mitigate any public health risk by its operation of the water distribution system. Early notification will also maximise the effect of any public health alerts NSW Health may choose to issue.
- 3 Take all measures necessary to minimise the impact and duration of an event described in clause 5.9(2).
- 4 Undertake investigations and submit reports in accordance with Practice Note PN201.

5.10 EP Licence

- 1 Comply with all conditions of the EP Licences to ensure that Hunter Water is not in breach of any EP Licence conditions.
- 2 Take all measures necessary to minimise the impact and duration of any non-compliance with an EP Licence condition relating to a WTF.
- 3 Notify Hunter Water of any failure to comply with an EP Licence and undertake investigations, all in accordance with Practice Note PN202.

6. WASTEWATER TREATMENT OPERATIONS

6.1 Objectives

The following are the wastewater treatment operations objectives (which are to be read in conjunction with clauses 6.3 to 6.11):

- (a) protect the public health at all times;
- (b) ensure, as far as is reasonably practicable, the health and safety of workers and visitors at the WWTFs;
- (c) comply with all applicable Laws including EP Licences;
- (d) protect the environment;
- (e) minimise the transmission of odours;
- (f) maximise the beneficial reuse of biosolids;

- (g) maintain a complete history of Facility operations and performance to assist with long term planning, event reviews and reporting; and
- (h) minimise the negative consequences and maximise the opportunities to Hunter Water and the Service Provider when either needs to shutdown or make changes to flow regimes.

6.2 Performance standards

The following are the wastewater treatment operations performance standards (which are to be read in conjunction with clauses 6.3 to 6.11):

- (a) no non-conformance occurs with respect to any EP Licence condition applicable to the WWTFs or with respect to the site specific conditions in PN112;
- (b) any complaints received relating to the operation of the Facilities are at a level acceptable to Hunter Water;
- (c) each Facility operates so that wastewater is continuously accepted and treated to full compliance up to at least the Intrinsic Capacity Limit for that Facility;
- (d) SCADA alarms are responded to within the limits set in Practice Note PN505;
- (e) all specified samples are collected, taken and delivered and available for analysis within the timeframes required by this Agreement or by Hunter Water;
- (f) all Facility Data is recorded and accessible on-line by Hunter Water within 3 Business Days of the Service Provider receiving such data;
- (g) no change is made to raw sewage or effluent flow regimes by the Service Provider without consulting Hunter Water as early as the circumstances reasonably permit and obtaining the prior approval of Hunter Water to this occurring. If applicable, the Service Provider is to comply with Practice Note PN303 in giving its notice;
- (h) samples are taken from all waste tankers and selected samples sent for analysis in accordance with Practice Note PN307;
- (i) details of all waste tankers are provided to Hunter Water in accordance with Practice Note PN307;
- (j) all recycled water supplied complies with the requirements of Practice Note PN110 (including not being in breach of any target level or amount specified in Practice Note PN110) and recycled water customers are advised of all interruptions to supply in accordance with Practice Note PN203;
- (k) no biosolids are stored at the Facility contrary to Practice Note PN304;
- (l) if a non-conformance occurs with respect to an EP Licence, notification, investigation and reporting is undertaken in accordance with Practice

Note PN202 and all practicable actions are taken to minimise the impact and duration of the event; and

- (m) all WWTF plant operators must be competent to perform their duties and be provided with any training and support necessary to maintain competency.

6.3 General wastewater treatment operations

- 1 Control the operation of the WWTFs, taking all actions and providing all things necessary to satisfy the objectives in clause 6.1 and performance standards in clause 6.2.
- 2 In paragraph 1:
 - (a) subject to the provisions of this Agreement, “taking all actions” shall not be taken to mean that the Service Provider must make capital improvements to the Facilities but does include undertaking investigations, planning, testing, obtaining advice, etc to achieve optimal performance of the Facilities; and
 - (b) “providing all things” includes the procurement of chemicals and other consumables.
- 3 Hunter Water will establish electricity supply agreements with the cost of electricity consumption and all electricity charges to be met by the Service Provider as detailed in Part F of Schedule 3.
- 4 Comply with current Standard Operating Procedures and all applicable Practice Notes.
- 5 Monitor and act on SCADA alarms during the normal working hours as stated in Practice Note PN402. Hunter Water’s control centre will monitor and act on SCADA alarms outside normal working hours. The Service Provider is to then act on such alarms requiring urgent action.

6.4 Biosolids reuse and disposal

- 1 Dispose of biosolids from each WWTF:
 - (a) in a manner which ensures that environmental and public health risks are managed appropriately;
 - (b) in accordance with the POEO Act;
 - (c) at a Waste Facility or other place lawfully authorised to receive the Biosolids;
 - (d) in accordance with NSW EPA, Environmental Guidelines: Use and Disposal of Biosolids Products; and
 - (e) in accordance with the Endorsed Biosolids Management Plan referred to in clause 6.4(3).

- 2 Do not dispose of biosolids at any Facility or on any other lands owned by Hunter Water unless expressly approved otherwise in advance by Hunter Water.
- 3 At least 25 Business Days before the Target Services Commencement Date, submit a Biosolids Management Plan to the CMG for Endorsement in accordance with clause 25.2. The Biosolids Management Plan shall document:
 - (a) Laws relevant to the transport and disposal of biosolids;
 - (b) procedures for the classification of the biosolids;
 - (c) procedures to control odours and spillage during the transportation and disposal;
 - (d) disposal sites with any required Approvals or consents, or procedures to identify suitable disposal sites and obtain any required approvals or consents;
 - (e) for each proposed Waste Facility and approved notice under section 143(3A) of the POEO Act certifying that the Waste Facility is a place that can lawfully be used as a Waste Facility for the Waste; and
 - (f) the records to be kept for each load of biosolids transported from a Facility include:
 - (i) time and date of departure from the Facility;
 - (ii) volume or weight of each load transported;
 - (iii) classification of the biosolids;
 - (iv) transport company; and
 - (v) reuse/disposal locations.
- 4 Any storage of biosolids at the WWTW must be in accordance with Practice Note PN304.

6.5 Recycled Water

- 1 Operation of the recycled water treatment processes must satisfy the Australian Guidelines for Water Recycling and comply with all relevant Standard Operating Procedures.
- 2 All recycled water supplied to Hunter Water customers must comply with the requirements of Practice Note PN110 (including not being in breach of any target level or amount specified in Practice Note PN110). Review all effluent analysis results, online monitoring systems and ongoing equipment performance to determine whether effluent meets the required standards and is fit for purpose. Cease supply of recycled water immediately if it is determined that the recycled water quality may not meet the requirements of Practice Note PN110 and give notice in accordance with Practice Note PN203.

- 3 Every day that recycled water is being supplied from a pond, including where treatment follows the extraction from the pond, inspect the pond for evidence of the presence of algae. If the presence of blue green algae is suspected, collect a sample and send it for analysis by the laboratory nominated from time to time by Hunter Water. Cease supply of recycled water immediately if the presence of blue green algae is confirmed and give notice in accordance with Practice Note PN203.
- 4 Promptly address any causes for actual or potential non-conforming recycled water quality which are with the control of the Service Provider, such as process control or equipment failures.
- 5 Recommence the supply of recycled water as soon as recycled water can be supplied to the required standards.

6.6 Waste disposal

Dispose of waste from each WWTF, including grit and screenings:

- (a) in a manner which ensures that environmental and public health risks are managed appropriately;
 - (b) in accordance with the POEO Act; and
 - (c) in accordance with the Endorsed Waste Management Plan referred to in clause 5.4(3).
- 2 Do not dispose of waste at any Facility or on any other lands owned by Hunter Water unless expressly approved otherwise in advance by Hunter Water.

6.7 Interface with Hunter Water operations

- 1 Hunter Water is responsible for the sewerage system delivering raw sewage and receiving effluent to and from the Facility Boundary detailed in Schedule 1 for each WWTF.
- 2 The raw sewage flows to each WWTF are, under normal conditions, a combination of uncontrolled gravitational flows and automatically controlled pumped flows.
- 3 If, for maintenance or operational imperatives, Hunter Water or the Service Provider wishes to shutdown a WWTF or vary the influent, effluent or recycled water flow rate of a WWTF contrary to normal conditions for maintenance or operational imperatives, Hunter Water and the Service Provider shall give each other as much advance notice as practicable given the particular circumstances. If applicable, the Service Provider is to comply with Practice Note PN302 and Practice Note PN303 in giving its notice. Hunter Water in its absolute and sole discretion will decide whether a shutdown of a WWTF or a variance of the flow rate for a WWTF contrary to normal conditions is to occur.

- 4 Whenever practicable, Hunter Water and the Service Provider shall coordinate their respective activities to make maximum use of the opportunities presented by a shutdown or change of flow regimes.
- 5 Restrictions to the hydraulic capacity of a WWTF (such as a blockage of screens at inlet works or unavailability of pumps within some WWTFs) can have major implications for Hunter Water's upstream sewerage system, especially in wet weather. The Service Provider must ensure that all WWTFs are operated and maintained to at least their Intrinsic Capacity Limit.

6.8 Tanker Management

- 1 Hunter Water accepts tankered liquid waste from tanker operators at particular WWTF subject to conditions contained in individual agreements and Hunter Water's Tankering Waste Policy.
- 2 Manage the discharge of liquid waste in accordance with Practice Note PN307 and monitor treatment processes for adverse impacts.
- 3 Review Table 1.4.2 of Hunter Water's Tankering Waste Policy and recommend to the CMG, for Endorsement in accordance with clause 25.2, any changes necessary in response to any observed or anticipated process impacts.
- 4 Approval of any Endorsed recommendations to alter Hunter Water's policy shall be at Hunter Water's discretion.

6.9 Sampling

Collect, on a regular basis or at such times as are required by Hunter Water, samples identified in Schedule 9 as being for sampling or delivery by the Service Provider. Hunter Water shall procure laboratory analysis of the samples and make results available to the Service Provider.

6.10 Operational Records and data collection

- 1 Routinely collect and record Facility Data at each WWTF in accordance with Schedule 8. Undertake any required on-site analysis by competent trained personnel.
- 2 The Service Provider may adopt a record system and data format to suit its own purposes for the purposes of collecting and recording data in accordance with Schedule 8.
- 3 Provide Hunter Water with on demand remote access to all Facility Data recorded during the Term. Facility Data must be suitable for convenient import or saving to Microsoft Excel 2007, or such other software to be notified by Hunter Water from time to time, by Hunter Water with clear field and record headings.

- 4 Provide to Hunter Water, an electronic copy of all Facility Data recorded during the Term within 5 Business Days after the Services End Date and within 5 Business Days of having been requested to do so at any other time during the Term.

6.11 EP Licence

- 1 Comply with all conditions of the EP Licences relevant to the performance of the Services to ensure that Hunter Water is not in breach of any EP Licence conditions.
- 2 Take all measures necessary to minimise the impact and duration of any non-compliance with an EP Licence condition relating to a WWTF.
- 3 Notify Hunter Water of any failure to comply with an EP Licence and undertake investigations, all in accordance with Practice Note PN202.

7. OPERATIONAL MAINTENANCE

7.1 Objectives

The following are the operational maintenance objectives (which are to be read in conjunction with clauses 7.3 to 7.5):

- (a) optimise Facility reliability, life and maintenance cost;
- (b) comply with all applicable Laws including EP Licences;
- (c) avoid non-compliances with EP Licences;
- (d) all water supplied must comply with the critical limit requirements and target limit requirements in Practice Note PN111;
- (e) eliminate, minimise or mitigate risks to the environment and public health associated with each asset breakdown;
- (f) maintain a complete maintenance history of the Facilities to assist with maintenance and Capital Works planning; and
- (g) monitor and plan for Long Cycle Preventive Maintenance.

7.2 Performance standards

The following are the operational maintenance performance standards (which are to be read in conjunction with clauses 7.3 to 7.5):

- (a) all Preventive Maintenance jobs are completed on schedule in accordance with the Hunter Water programs of Preventive Maintenance;
- (b) all maintenance job data is entered into Ellipse within 5 Business Days of the occurrence of the task, activity or outcome (including commencement and completion details);

- (c) Breakdown Maintenance is responded to and completed within the times stated in Practice Note PN505;
- (d) Corrective Maintenance is performed before asset performance is adversely impacted; and
- (e) all asset modification data is captured and submitted to Hunter Water as described in Practice Note PN506.

7.3 Preventive Maintenance

- 1 As at the Services Commencement Date programs of preventive maintenance jobs, including routine maintenance and inspection are recorded on Ellipse. Each preventive maintenance job is stored with task descriptions. Hunter Water does not warrant the accuracy of the programs of preventive maintenance. The Service Provider's mere compliance with the programs of preventive maintenance does not mean that the Service Provider will have complied with this Agreement's requirements or the Service Provider's obligations under this Agreement. The Service Provider remains at all times liable to comply with all of the Service Provider's obligations under this Agreement.
- 2 From the Services Commencement Date, the Preventive Maintenance to be performed by the Service Provider comprises all the preventive maintenance that a reasonably competent maintainer of water treatment facilities and wastewater treatment facilities would be required to undertake to satisfy the requirements of this Agreement including the applicable activities in:
 - (a) the forward programs of preventive maintenance jobs, including routine maintenance and inspection, as recorded on Ellipse or the Ellipse equipment/asset register for each Facility as may be updated in accordance with clause 7.3(5); and
 - (b) the program of preventive maintenance jobs, including routine maintenance and inspection, as previously performed by HWA to the extent that information on these are available to the Service Provider.
- 3 Within 12 months after the Services Commencement Date the Service Provider must undertake and complete a review of Hunter Water's preventive maintenance program (**PM Review**), including:
 - (a) a review of the routine preventive maintenance and inspection programs in Ellipse, including a comparison to the Service Provider's expectations of the preventive maintenance that a reasonably competent maintainer of water treatment facilities and wastewater treatment facilities would be required to undertake to satisfy the performance standards of this Agreement; and
 - (b) the Ellipse equipment/asset register for each Facility in comparison to the actual equipment/assets, including spares requiring maintenance,

present at each Facility, identifying redundant or missing equipment/assets and apparent shortcomings in historical data capture.

- 4 On completion of the PM Review, the Service Provider must submit a detailed report for Endorsement in accordance with clause 25.2, detailing any recommendations for amendments to the existing data or any additional data required to fully populate the routine preventive maintenance and inspection programs in Ellipse or the Ellipse equipment/asset register for each Facility such that the routine preventive maintenance and inspection programs in Ellipse and the Ellipse equipment/asset register for each Facility will provide and hold the necessary information and schedules to manage the Preventive Maintenance performance requirements of this Agreement. The PM Review may be submitted in stages, to a schedule agreed by the CMG.
- 5 Once the report required to be provided by the Service Provider under clause 7.3(4) has been Endorsed, Hunter Water will use the Endorsed report to implement a progressive update of the routine preventive maintenance and inspection programs in Ellipse and the Ellipse equipment/asset register for each Facility.
- 6 For the avoidance of doubt:
 - (a) any progressive update of the routine preventive maintenance and inspection programs in Ellipse or the Ellipse equipment/asset register for each Facility in accordance with this clause 7.3 will be deemed to only represent the minimum requirements of this Agreement and the Service Provider's mere compliance with such program or register does not mean that the Service Provider will have complied with this Agreement's requirements or the Service Provider's obligations under this Agreement; and
 - (b) the Service Provider will have no entitlement to a Variation, time or any monies arising out of or as a consequence of Hunter Water implementing any progressive update of the routine preventive maintenance and inspection programs in Ellipse or the Ellipse equipment/asset register for each Facility in accordance with this clause 7.3.
- 7 The Service Provider must undertake all Preventive Maintenance at each Facility including undertaking Hunter Water's programs of preventive maintenance jobs as entered in Ellipse in accordance with the task descriptions and if, specified, within the time required for the job, or otherwise within a reasonable time taking into account the type of job.
- 8 The Service Provider must:
 - (a) record details of each Preventive Maintenance task, activity or outcome directly into Ellipse within 5 Business Days of the occurrence of the task, activity or outcome (including commencement and completion details); and

(b) submit all asset modification data within one month of the completion of the activity.

9 The Service Provider must ensure that plant status, performance and control information at every Facility is, whenever reasonably practicable, continuously available to Hunter Water's SCADA system.

7.4 Breakdown Maintenance

1 Promptly address any failure of an asset at a Facility to perform its intended function including failure to operate automatically or be ready to provide backup in the event of failure of another asset.

2 Return Facilities to required minimum system functionality to allow continued performance of the Services as soon as practicable.

3 Obtain approval to proceed (including approval of the Variation Price) from Hunter Water in accordance with Practice Note PN703 and PN706 and in accordance with clause 34 if a Breakdown Maintenance repair is expected to comprise Capital Works and the Additional Cost will be more than [REDACTED]

4 Undertake any Breakdown Maintenance repair for which clause 7.4(3) applies, on notification from Hunter Water under clause 34 of its approval for the repair and in accordance with any requirements specified by Hunter Water and in accordance with Practice Note PN703 and PN706.

5 For the avoidance of doubt and despite any other provision of this Agreement (including clause 3.2), where a Breakdown Maintenance repair:

(a) is Capital Works and the Additional Cost of the Breakdown Maintenance repair will be less than or equal to [REDACTED] or

(b) is not Capital Works,

then the Service Provider is responsible for undertaking such Breakdown Maintenance repair and the cost of undertaking such Breakdown Maintenance repair.

6 The Service Provider must:

(a) record details of each Breakdown Maintenance task, activity or outcome directly in Ellipse within 5 Business Days of the occurrence of the task, activity or outcome (including commencement and completion details); and

(b) submit all asset modification data within one month of the completion of the activity.

7 The Service Provider must ensure that status, performance and control information at every Facility is, whenever reasonably practicable, continuously available to Hunter Water's SCADA system.

7.5 Corrective Maintenance

- 1 If the Service Provider considers that maintenance is required as a result of the observed condition of an asset, the Service Provider must log a Corrective Maintenance activity or task on Ellipse.
- 2 Obtain approval to proceed (including approval of the Variation Price) from Hunter Water in accordance with Practice Note PN703 and PN706 and in accordance with clause 34 if the Corrective Maintenance work is expected to comprise Capital Works and the Additional Cost will be more than [REDACTED]
- 3 Undertake any Corrective Maintenance work for which clause 7.5(2) applies, on notification from Hunter Water under clause 34 of its approval for the Corrective Maintenance work and in accordance with any requirements specified by Hunter Water and in accordance with Practice Note PN703 and PN706.
- 4 For the avoidance of doubt and despite any other provision of this Agreement (including clause 3.2), where the Corrective Maintenance work:
 - (a) is Capital Works and the Additional Cost of the Corrective Maintenance work will be less than or equal to [REDACTED] or
 - (b) is not Capital Works,then the Service Provider is responsible for undertaking such Corrective Maintenance work and the cost of undertaking such Corrective Maintenance work.
- 5 Subject to clause 7.5(2), undertake all Corrective Maintenance.
- 6 The Service Provider must:
 - (a) record details of each Corrective Maintenance task, activity or outcome directly in the Ellipse system within 5 Business Days of the occurrence of the task, activity or outcome (including commencement and completion details); and
 - (b) submit all asset modification data within one month of the completion of the activity.

8. FACILITY MANAGEMENT AND NON-OPERATIONAL MAINTENANCE

8.1 Objectives

The following are the Facility management and non-operational maintenance objectives (which are to be read in conjunction with clauses 8.3 to 8.5):

- (a) maintain fitness for the Intended Purpose, serviceability and working life;

- (b) demonstrate a level of care which gives the community confidence that Facilities are being operated and maintained appropriately;
- (c) eliminate or control the consequences of hazards to the Facilities, users and the community such as vandalism, fire, vermin, storm, odours;
- (d) comply with all Laws; and
- (e) support Hunter Water in promoting understanding of the treatment activities to schools, universities, interest groups and the general public.

8.2 Performance Standards

The following are the Facility management and non-operational maintenance performance standards (which are to be read in conjunction with clauses 8.3 to 8.5):

- (a) the standard of care of the Facilities does not contribute to any:
 - (i) negative impact on operating performance;
 - (ii) complaints received relating to the operation of a Facility that are at a level unacceptable to Hunter Water;
 - (iii) loss of asset value not commensurate with reasonable wear and tear; or
 - (iv) accelerated wear and tear or deterioration of the fabric of an asset due to the external condition of the asset fabric;
- (b) all Laws are satisfied; and
- (c) the stated purpose of any tour is appropriately satisfied.

8.3 Building, Grounds and Fence Maintenance

- 1 Undertake routine maintenance and repair of buildings, grounds and fencing at the Facilities including repair of any damage caused by vandalism or weather conditions.
- 2 Record details directly in Ellipse.

8.4 Regulatory Inspection, Testing and Maintenance

- 1 Undertake inspections, testing, maintenance and any other activities required by any Law with respect to each Facility.
- 2 Record details directly in Ellipse.

8.5 Visitor Management

- 1 Provide safety inductions to all persons attending a Facility, commensurate with the visitor's purpose for visiting and work health and safety risk. Provide

direct supervision of visitors if necessary to ensure, as far as is reasonably practicable, their health and safety.

- 2 Maintain a visitors' register identifying all persons visiting a Facility, their purpose for entering the Facility and the date and times in and out.
- 3 Provide guided tours in accordance with Practice Note PN603.

9. ASSET MANAGEMENT AND CAPITAL WORKS PLANNING

9.1 Objectives

The following are the asset management and Capital Works planning objectives (which are to be read in conjunction with clauses 9.3 to 9.6):

- (a) optimise operations and maintenance activities to:
 - (i) improve cost effectiveness;
 - (ii) maintain asset life; and
 - (iii) maintain or improve operational compliance;
- (b) identify and address deficiencies in asset condition, capacity or reliability in a timely, appropriate and effective manner;
- (c) maximise the capacity and performance of existing assets;
- (d) provide expert advice to Hunter Water on treatment plant operations and maintenance for consideration by Hunter Water in asset management decisions, including Capital Works decisions;
- (e) facilitate the delivery of new assets by Hunter Water (which may include a new Facility or Facilities) that are ready for efficient and effective operation and maintenance; and
- (f) ensure, so far as is reasonably practicable, the safe performance of the Services.

9.2 Performance Standards

The following are the asset management and Capital Works planning performance standards (which are to be read in conjunction with clauses 9.3 to 9.6):

- (a) a comprehensive maintenance review report is submitted within 12 months after the Service Commencement Date in accordance with clause 7.3; and
- (b) effective operational input is provided to Hunter Water for all proposed and actual Capital Works and maintenance planning for the Facilities.

9.3 Maintenance Planning

- 1 Not used.

- 2 The Service Provider throughout the Term is to provide advice to Hunter Water, as requested, on strategies and actions to improve maintenance outcomes with regard to critical asset reliability, cost effectiveness and asset life and capacity. The Service Provider may submit proposals to modify maintenance programs or strategies for the consideration of the CMG at any time.
- 3 CMG will assess any recommendations made by the Service Provider under this clause 9.3 in accordance with clause 33.

9.4 Asset Management and Capital Works Planning

- 1 Hunter Water maintains a forward Capital Works portfolio of all authorised, proposed and expected future Capital Works projects and programs for up to twenty years.
- 2 A portfolio of proposed Capital Works projects is submitted for IPART approval ahead of each price path determination. The current proposed Capital Works portfolio is based on a four year portfolio but the length of future portfolios may vary depending on the requirements of IPART. Some reprioritisation of Capital Works projects within this portfolio is possible after IPART approval but Hunter Water is committed to not exceeding the approved total budget for the price path.
- 3 Each year Hunter Water approves a sub-set of the Capital Works price path portfolio for the financial year. This annual portfolio budget includes allowances (called **Price Path Provisions** or **PPP**) for essential minor unspecified Capital Work, such as replacement of failed/unrepairable equipment.
- 4 Actively participate in Hunter Water's asset management and Capital Works planning and delivery processes for work associated with the Facilities by:
 - (a) promptly alerting Hunter Water to any observed deficiencies in asset condition, capacity or reliability which may need to be addressed by Capital Works;
 - (b) providing advice from an operational perspective relating to risk reviews, strategy studies and capacity reviews being undertaken by Hunter Water and attend any associated workshops;
 - (c) providing estimates of operating cost impacts of Capital Works when requested by Hunter Water and within the time allowed in each Capital Works project program, for inclusion in Hunter Water's business cases and budgets;
 - (d) reviewing and commenting from an operational perspective and within the time allowed in each Capital Works project program, on options

studies, business cases, concept designs and detail designs prepared by Hunter Water;

- (e) participating in value management, CHAIR and HAZOPS workshops;
- (f) advising on how Capital Works involving upgrade of an existing Facility can be delivered with minimal adverse impact on operations during construction, commissioning and handover; and
- (g) participate in the development and implementation of asset management plans, benchmarking, standards, maintenance strategies and reliability strategies.

9.5 Capital Works Proposals

- 1 Not used.
- 2 If the Service Provider identifies an opportunity for improved outcomes through Capital Works there are three ways that a Capital Works project can be initiated which is not explicitly listed in the annual budget referred to in clause 9.4(3).

Funded by Hunter Water under an existing Board approved Price Path Provision (PPP)

- 3 Each year PPP budgets are established to cover Minor Capital Work which may be delivered:
 - (a) on a planned prioritised schedule; or
 - (b) on an urgent basis, if Hunter Water so decides, to address asset failures.
- 4 Each year, Hunter Water will advise the Service Provider of the PPP budget allowance which may be available for minor renewals and process improvements in the next financial year. This may be of the order of ■■■■■ but will vary depending on prioritisations. By 30 August each year, present a list to Hunter Water of proposed works, for the following financial year, each supported by a project development plan detailing why the work is needed, what options are available to address the need, the preferred option and why it is preferred. Hunter Water will provide a template for the project development plan.
- 5 If at any time the Service Provider considers that, under the terms of this Agreement, Hunter Water should provide funding towards the replacement of equipment, submit a project development plan using the template provided by Hunter Water.

Funded by Hunter Water as a new project

- 6 It is possible, though preferably avoided, to allow for new projects within an approved annual budget by reprioritising other projects. This is only done if

the need is urgent and the short term benefits to Hunter Water are greater than those of the projects being deferred. This action is most likely for projects to address safety or regulatory hazards that cannot be otherwise addressed.

- 7 Providing for a new project in a future IPART price path is considered each four years when compiling the IPART pricing submission. Inclusion of projects is subject to prioritisation of the entire portfolio and on Hunter Water's ability to fund the work.
- 8 Consult with Hunter Water as early as practicable to establish an agreed approach to developing a business case and any willingness to fully or partially fund investigations. Business cases must be in an approved format. Approval to fund investigations or to proceed with the Capital Works funded by Hunter Water shall be at the discretion of Hunter Water.

Funded by the Service Provider

- 9 Hunter Water is willing to consider proposals if the Service Provider is willing to fund Capital Works on the Facilities to reduce the Service Provider's operating costs or performance risks.
- 10 Submit any such proposal to the CMG clearly detailing any benefits or costs to Hunter Water such as changed risk profiles, administrative costs, regulatory obligations and obligations beyond the Term.
- 11 CMG will assess any proposals as enhancements to Agreement outcomes in accordance with clause 33.

9.6 Long Cycle Preventative Maintenance

- 1 Hunter Water is relying on the Service Provider's specialised knowledge, skill and experience regarding any Long Cycle Preventative Maintenance requirements with respect to the performance of the Services.
- 2 Subject to clause 9.6(3), the Service Provider is to plan, manage and perform any Long Cycle Preventative Maintenance with respect to the relevant part of the Services.
- 3 In order for the Service Provider to be able to perform Long Cycle Preventative Maintenance with respect to any part of the Services such Long Cycle Preventative Maintenance must first have been priced and approved by Hunter Water in accordance with the process for Variations in clause 34.

10. MINOR CAPITAL WORKS DELIVERY

10.1 Objectives

The Minor Capital Works delivery objective is to complete the required work efficiently and with minimal disruption to operation of the Facilities.

10.2 Performance Standards

The Service Provider is to undertake any Minor Capital Works, if so directed by Hunter Water.

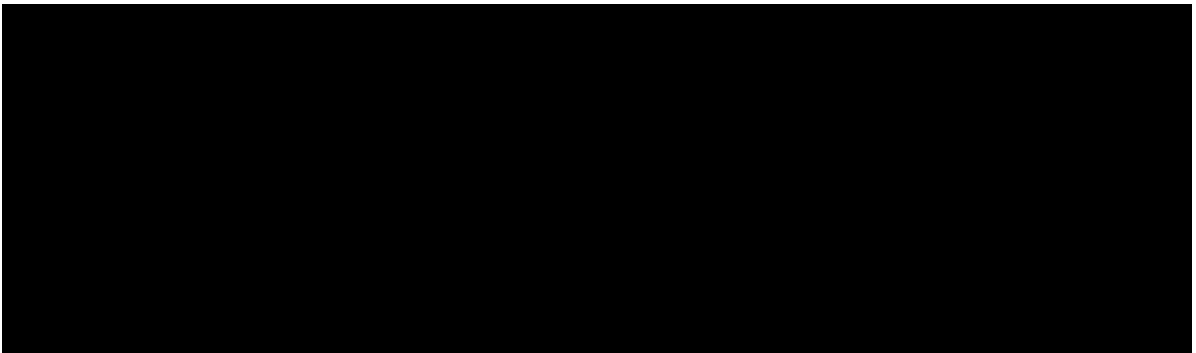
All Minor Capital Works are to be delivered in accordance with Practice Note PN703 and PN706 and for a Variation Price approved or determined by Hunter Water in accordance with clause 34 and to the standards and programs approved by the CMG and in accordance with any requirements of Hunter Water's notification to undertake the work.

10.3 Allocation of Minor Capital Works

- 1 Obtain approval to proceed (including approval of the Variation Price) from Hunter Water in accordance with clause 34 for any Minor Capital Works.
- 2 Undertake Minor Capital Works on notification from Hunter Water under clause 34 of its approval to the Minor Capital Works and in accordance with any requirements specified by Hunter Water.
- 3 For each project, unless a project development plan has previously been prepared and accepted, prepare a project development plan (minor business case) using the template provided by Hunter Water.
- 4 Each month, at a time stipulated by Hunter Water from time to time, report on progress and forecast monthly expenditures for each Minor Capital Works project issued.
- 5 At the completion of each project provide all asset modification data as described in PN506.



- 2 If the parties have not produced an agreed Risk Document within 20 Business Days of the Service Provider being notified that the relevant Minor Capital Works proposal is not approved by Hunter Water, then either party may issue a Notice of Dispute (in accordance with clause 53).
- 3 Subject to clause 10.4(4), if Hunter Water does not approve a Minor Capital Works proposal, Hunter Water and the Service Provider agree that the Service Provider will not be relieved from its obligations to perform the Services to meet the requirements of this Agreement.



11. MANAGEMENT AND TECHNICAL SUPPORT SERVICES

11.1 Objectives

The following are the management and technical support services objectives (which are to be read in conjunction with clauses 11.3 to 11.7):

- (a) ensure proper operation and maintenance of the Facilities under all operating conditions by trained and supported personnel;
- (b) ensure that essential skills are available and put to use;
- (c) ensure that key elements of the Services are systematically and acceptably planned and consistently implemented;
- (d) maximise the capacity and performance of existing assets;
- (e) comply with regulatory reporting requirements; and
- (f) provide informed operational and maintenance input to Hunter Water.

11.2 Performance Standards

The following are the management and technical support services performance standards (which are to be read in conjunction with clauses 11.3 to 11.7):

- (a) no non-compliances occur as a consequence of insufficient numbers, training or support of operators and maintenance workers;
- (b) all specified Management Systems are developed, certified, implemented and maintained at all times after the Services Commencement Date;
- (c) non-conformances with the Management Plans and Management Systems are promptly, appropriately and effectively addressed;
- (d) appropriate representation at all required meetings with commitment to active participation of attendees; and
- (e) all reports are submitted in accordance with the relevant Practice Note.

11.3 Workforce Management and Support

Provide supervision and support of plant operators and maintenance workers to achieve and maintain appropriate competency levels and performance.

11.4 Management Systems

1 WHS Management System

- (a) Establish and implement a WHS Management System certified to AS/NZS ISO 4801 Occupational Health and Safety Management Systems, by the date stated in the Transition Plan. Maintain certification of the system until the Services End Date.
- (b) Substantial development of the WHS Management System and Endorsement in accordance with clause 25.2 of such substantial development is a Transition Plan Deliverable. Substantial development shall comprise the development and implementation of sufficient measures to ensure, as far as is reasonable practicable, the health and safety of workers including at least:
 - (i) identification of all hazards on each site and the controls to be put in place to eliminate or manage the risks;
 - (ii) safe work method statements for all hazardous activities;
 - (iii) emergency procedures;
 - (iv) names, positions and health and safety responsibilities of all persons at the workplace having such responsibilities;
 - (v) how persons conducting a business or undertaking at the workplace will consult, cooperate and coordinate activities between each other;
 - (vi) how safe work method statements will be collected, assessed, monitored and reviewed;

- (vii) how subcontractors will be managed and monitored, how their compliance with the WHS Management System will be ensured and how non-compliances will be handled;
 - (viii) how work health and safety incidents will be managed, investigated and reported;
 - (ix) site-specific health and safety rules and how they are to be communicated to all persons at the workplace;
 - (x) if hazardous chemicals are to be used at the workplace, a hazardous chemicals register, safety data sheets and hazardous chemicals storage arrangements;
 - (xi) measures to be taken to ensure workplace security and public safety; and
 - (xii) arrangements for ensuring workers have appropriate licences, instruction, supervision, information and training to undertake the work.
- (c) Provide evidence of continuous improvement of all management systems including copies of all audit reports.

2 Environmental Management System

- (a) Establish and implement an Environmental Management System certified to AS/NZS ISO 14001 Environmental Management Systems, by the date stated in the Transition Plan. Maintain certification of the system until the Services End Date.
- (b) Substantial development of the Environmental Management System and Endorsement in accordance with clause 25.2 of such substantial development is a Transition Plan Deliverable. Substantial development shall comprise the development and implementation of sufficient measures to ensure protection of the environment including at least:
 - (i) identification of all environmental hazards on each Facility and the controls to be put in place to eliminate or manage risks;
 - (ii) Standard Operating Procedures for all environmentally hazardous activities;
 - (iii) emergency procedures;
 - (iv) names, positions and environmental responsibilities of all persons at the workplace having such responsibilities;
 - (v) how environmental incidents will be managed, investigated and reported; and
 - (vi) arrangements for ensuring workers have the necessary training to protect the environment.

- (c) Provide evidence of continuous improvement of all management systems including copies of all audit reports.

3 Quality Management System

- (a) Establish and implement a Quality Management System certified to AS/NZS ISO 9001 Quality Management Systems, by the date stated in the Transition Plan. Maintain certification of the system until the Services End Date.
- (b) Substantial development of the Quality Management System and Endorsement in accordance with clause 25.2 of such substantial development is a Transition Plan Deliverable. Substantial development shall comprise the development and implementation of sufficient measures to ensure operation and maintenance of the Facilities in accordance with this Agreement including:
 - (i) Standard Operating Procedures including emergency procedures and procedures for the ordering and verification of chemicals;
 - (ii) data and record keeping procedures and systems; and
 - (iii) arrangements for ensuring workers have the necessary qualifications and training to perform their duties.
- (c) Provide evidence of continuous improvement of all management systems including copies of all audit reports.

4 Drinking Water Quality Management System

- (a) No later than 12 months after the Services Commencement Date, establish and implement a Drinking Water Quality Management System assessed by an independent RABQSA Drinking Water Quality Management System (DWQMS) Scheme qualified auditor as being fully compliant with the requirements of the Australian Drinking Water Quality Guidelines' Framework for Management of Drinking Water Quality. Maintain certification of the system until the Services End Date.
- (b) The Drinking Water Quality Management System must reflect the scope of the Services and comply with the requirements of Practice Note PN111.
- (c) Initial certification and annual audits must be by an independent RABQSA accredited DWQMS Scheme auditor approved by Hunter Water. Submit copies of the initial assessment audit and, within two months after the end of each financial year, the annual compliance audits.
- (d) Comply with Hunter Water's existing Drinking Water Quality Management System until the Service Provider's Drinking Water Quality Management System has been certified and implemented.

- (e) As and when required, participate in risk assessments of Hunter Water's supply system to assist in coordination of a whole system approach from catchment to tap.
- (f) Provide evidence of continuous improvement of all management systems including copies of all audit reports.

11.5 Standard Operating Procedures and Plant Manuals

- 1 Hunter Water shall, not later than 40 Business Days before the Target Services Commencement Date, provide to the Service Provider electronic copies of the Plant Manuals and Standard Operating Procedures for each Facility. The Plant Manuals and Standard Operating Procedures provided by Hunter Water are not warranted to be current, complete or accurate at the time they are provided to the Service Provider. For the avoidance of doubt, the Plant Manuals and Standard Operating Procedures provided by Hunter Water cannot be relied on by the Service Provider and do not form part of this Agreement.
- 2 The Service Provider is to develop all Standard Operating Procedures to ensure that the Service Provider complies with this Agreement's requirements and the Service Provider's obligations under this Agreement.
- 3 The Standard Operating Procedures provided by Hunter Water prior to the Target Services Commencement Date represent a preliminary guide of the basic operating procedures for each relevant Facility as at the Target Services Commencement Date. The Service Provider, subject to clause 11.5(5), may during the Term develop a new Standard Operating Procedure.
- 4 A Standard Operating Procedure will apply to the Service Provider's performance of the Services until such time, in response to a submission by the Service Provider in accordance with clause 25.2, an amendment, replacement or deletion of the relevant Standard Operating Procedure or the development of a new Standard Operating Procedure is Endorsed in accordance with clause 25.2.
- 5 The Service Provider may make a submission for Endorsement in accordance with clause 25.2 of an amendment, replacement or deletion of a Standard Operating Procedure or development of a new Standard Operating Procedure. Any submission must comment on any consequences of any Endorsement of the amendment, replacement or deletion to the Standard Operating Procedure or the newly developed Standard Operating Procedure with regard to safety, environmental or regulatory risk.
- 6 The Service Provider must comply with the Standard Operating Procedures unless to do so would cause or represent a breach of another requirement of this Agreement. For the avoidance of doubt, the Service Provider's compliance with a Standard Operating Procedure does not mean that the Service Provider will have complied with this Agreement's requirements or

the Service Provider's obligations under this Agreement. The Service Provider still remains liable to comply with all of the Service Provider's obligations under this Agreement.

- 7 The Service Provider is responsible for maintaining the Plant Manuals and identifying Discrepancies in the Plant Manuals and making minor corrections to and updating the Plant Manuals as new work is undertaken. If a Discrepancy, minor correction or update is due to major upgrade work undertaken by Hunter Water, the Service Provider may request, and Hunter Water will provide, relevant information and data to identify the Discrepancy, or to correct or update the Plant Manuals. All corrections or amendments to the Plant Manuals must be submitted for Endorsement in accordance with clause 25.2.
- 8 The Service Provider must establish an information system that will allow the Service Provider's operators to remotely access all Standard Operating Procedures and the information about each Facility contained in the Plant Manuals.
- 9 Subject to clause 46.1(4), the Service Provider may at its discretion alter the arrangement and method of presentation of the Plant Manuals and Standard Operating Procedures to suit its system and corporate requirements.
- 10 Provide Hunter Water at any time with access to the same Plant Manuals and Standard Operating Procedures that are accessed by the Service Provider's operators and maintenance personnel.
- 11 Provide electronic copies of all new or amended, replaced or deleted Plant Manuals and Standard Operating Procedures to Hunter Water upon request by Hunter Water.

11.6 Meetings, ELG, CMG and Collaborative Work Teams

- 1 Attend and participate in the following in accordance with the relevant Practice Notes:
 - (a) Water Quality Committee Meetings - Practice Note PN803;
 - (b) Recycled Water Quality Meetings - Practice Note PN802;
 - (c) Treatment Planning Meetings - Practice Note PN801; and
 - (d) Operating Licence Audit - Practice Note PN823.
- 2 Ensure that the relevant people from the Service Provider are appointed to, attend and participate in the ELG, CMG and the Collaborative Work Teams.

11.7 Reports

Provide input to, or whole drafts of, the following reports in accordance with the indicated Practice Notes below or as otherwise required by Hunter Water:

- 1 Monthly Contract Report - Practice Note PN804;
- 2 IPART Pricing Submissions - Practice Note PN805;
- 3 Customer Complaint Investigations and Reporting - Practice Note PN806;
- 4 Audit Recommendation Status Report - Practice Note PN808;
- 5 Australian Bureau of Statistics Data - Practice Note PN809;
- 6 Annual Information Report (AIR) - Practice Note PN810;
- 7 Compliance and Performance Report (website) - Practice Note PN811;
- 8 Contractor WHS Report - Practice Note PN812;
- 9 Drinking Water and Recycled Water Exception Report - Practice Note PN813;
- 10 EPA Pollution Monitoring Monthly Summary Report (HWC website) - Practice Note PN815;
- 11 EPL Annual Returns - Practice Note PN816;
- 12 Fluoride Monitoring - Practice Note PN817;
- 13 Monthly Compliance and Performance (Drinking Water) - Practice Note PN818;
- 14 Monthly Performance and Issues at WWTW (Recycled Water) - Practice Note PN819;
- 15 Monthly Performance Report - Practice Note PN820;
- 16 National Performance Report - Practice Note PN821; and
- 17 National Pollutant Inventory - Practice Note PN822.

If notified by Hunter Water, copies of any input, drafts or reports provided by the Service Provider in accordance with the above Practice Notices are to also be provided to Hunter Water.

END OF PART B

PART C - COLLABORATIVE MANAGEMENT

12. PRINCIPLES OF COLLABORATIVE MANAGEMENT

- 1 Subject to the provisions of this Agreement, Hunter Water and the Service Provider have agreed to adopt a collaborative management model for certain aspects relating to the Services. The collaborative management model will be implemented through an Executive Leadership Group and a Collaborative Management Group as set out in this Agreement.
- 2 The purpose of the collaborative management approach is to facilitate effective communications and decision making, particularly with respect to taking advantage of opportunities for mutual benefit, coordinating any plans or actions which affect both parties, any proposed actions which require the other party's approval or cooperation, resolution of disagreements and consideration of corrective action plans.
- 3 The ELG and CMG may recommend that Hunter Water issue a Variation Proposal but may not make any decision that constitutes a Variation. No decision of the ELG or the CMG shall entitle Hunter Water or the Service Provider to adjustment of the Fees under clause 34.3 or clause 34.4.
- 4 The Service Provider must as soon as reasonably practicable inform Hunter Water of any fact, matter or thing of which it becomes aware which is likely or has the potential to affect the timing, cost or quality of the performance of the Services. The parties must then investigate how to avoid or minimise any adverse effect on the Services.
- 5 The provisions of clause 12, clause 13 and clause 14 do not change the rights and responsibilities of either party under this Agreement.
- 6 For the avoidance of doubt:
 - (a) the utilisation of the collaborative management model under this Agreement does not diminish the Service Provider's obligation to perform the Services in accordance with this Agreement; and
 - (b) the utilisation of the collaborative management model under this Agreement and Hunter Water's involvement in the ELG, the CMG and any Collaborative Work Team does not:
 - (i) relieve the Service Provider from the performance of all of the Services and any of its obligations under this Agreement; or
 - (ii) relieve the Service Provider from responsibility for managing all of the risks of performing the Services.

13. EXECUTIVE LEADERSHIP GROUP

13.1 ELG Formation

- 1 The parties shall establish an Executive Leadership Group (ELG), responsible for strategic oversight of the Services, within 10 Business Days after the Agreement Date.
- 2 The ELG must remain constituted until the end of the Term.

13.2 ELG Membership

- 1 ELG Members will be senior executives from Hunter Water and senior executives from the Service Provider.
- 2 As at the Agreement Date, the members of the ELG are as named in Schedule 4. Each of Hunter Water and the Service Provider shall nominate two persons from each party who shall be the members of the ELG.
- 3 One of the Hunter Water ELG members, as determined by Hunter Water, will be the chairperson of the ELG (**ELG Chairperson**). The ELG Chairperson will be responsible for organising the meetings of the ELG. If the ELG Chairperson is not able to be present at an ELG meeting then one of the Hunter Water ELG members, as determined by Hunter Water, will be deemed to be the ELG Chairperson for that relevant ELG meeting.
- 4 Subject to clause 13.3(6) and clause 13.3(7), with the exception of the people identified in clause 13.2(2), a person may be appointed to the ELG only with the approval of Hunter Water and the Service Provider, acting on the recommendation of the ELG.
- 5 If a representative of Hunter Water or a representative of the Service Provider is unable, for any reasonable reason, to act for any extended period as an ELG member or ceases to be an ELG member through death, Hunter Water or the Service Provider (as applicable) must use its best endeavours to ensure, subject to clause 13.2(4), that the resulting vacancy is promptly filled.

13.3 ELG Meetings

- 1 Subject to clause 13.3(7), the ELG must meet:
 - (a) at least every two months during the first Contract Year;
 - (b) at least on a quarterly basis during each Contract Year other than the first Contract Year; and
 - (c) otherwise within a reasonable time of any of its members requesting that an ELG meeting be held.

- 2 The ELG Chairperson must, at the beginning of each ELG Meeting, appoint one of the ELG members to take minutes of the relevant ELG meeting. The ELG member so appointed must, within three Business Days after the ELG meeting, provide a copy of the relevant ELG meeting minutes to the ELG members who were present at the relevant ELG meeting. The relevant ELG members must notify the member who took the ELG meeting minutes as soon as practicable of their acceptance of or disagreement with the ELG meeting minutes. If the minutes are accepted by all ELG members present at the ELG meeting, those minutes will be deemed to be the official record of the relevant ELG meeting. If the minutes are disputed by any ELG member then the ELG Chairperson shall decide what are the accepted minutes of the relevant ELG meeting and those minutes will be deemed to be the official record of the relevant ELG meeting. A copy of the accepted ELG meeting minutes are to then be provided to all ELG members and the CMG.
- 3 Subject to clause 13.3(7), a member of the ELG will be treated as present at an ELG meeting if:
 - (a) the ELG member is physically present at the ELG meeting; or
 - (b) the ELG member:
 - (i) is part of the meeting by way of telephone or other instantaneous means of conferring (such as video-conferencing); and
 - (ii) he or she is able to hear the entire meeting and be heard by all other ELG members attending the ELG meeting.
- 4 Subject to clause 13.3(7), a quorum for a meeting of the ELG is at least one representative of Hunter Water and at least one representative of the Service Provider. If for any reason a member of the ELG is unable to attend an ELG meeting the ELG member may, with the agreement of the other party, nominate an alternative person to act on the ELG member's behalf at that ELG meeting. Equally, if an ELG Member is not able to attend a meeting that ELG Member may provide written comments to the ELG Chairperson on any issues to be discussed at the ELG meeting. Such comments are able to be taken into account in the ELG meeting provided that the comments will not be held to be binding and the ELG Member who provided the comments (but did not attend the ELG meeting) will not be deemed to be present at the ELG meeting by virtue of the comments.
- 5 Subject to clause 13.3(6), all decisions of the ELG must be the unanimous decision of all the ELG members present at the ELG meeting provided a quorum is present.
- 6 Subject to clause 13.3(7), if a unanimous decision of all the ELG members present at an ELG meeting is not able to be reached by the members within 5 Business Days after the ELG was first asked to decide on an issue or such longer period which the ELG unanimously agrees upon, then the ELG

Chairperson in its absolute and sole discretion must make the decision (which may include a decision to defer a decision until a later ELG meeting or within a further period of time) within 2 Business Days of the expiry of the initial period within which the ELG was to make its decision and this will be deemed to be the decision of the ELG.

- 7 If, in the event of:
 - (a) an Emergency; or
 - (b) a quorum for a meeting of the ELG not being able to be met,and, in the opinion of the ELG Chairperson acting reasonably, a decision of the ELG is urgently required then the ELG Chairperson may make the decision (which may include a decision to defer a decision until a later ELG meeting or within a further period of time) and this will be deemed to be the decision of the ELG.
- 8 If a party does not agree with a decision of the ELG then that party may refer the issue for resolution under clause 53.
- 9 The exercise of discretion by the ELG Chairperson under clause 13.3(6) or clause 13.3(7) should, in no way, be construed as Hunter Water exercising control, management and/or authority over a matter that would otherwise be the responsibility of the Service Provider under this Agreement and in no way:
 - (a) diminishes the Service Provider's obligations to perform the Services in accordance with Agreement;
 - (b) relieves the Service Provider from the performance of all of the Services and any of its obligations under this Agreement; or
 - (c) relieves the Service Provider from responsibility for managing all of the risks of performing the Services, including, but not limited to, work health and safety risks.

13.4 ELG Functions

The ELG's functions include:

- (a) providing oversight of the strategic issues affecting the long term performance of the Services;
- (b) providing leadership to ensure that the Service Provider delivers against the Service Provider's performance objectives;
- (c) ensuring there is a continuing dialogue between the parties focussing on identifying and improving the value to each other of continued collaboration, and on performance monitoring and improvement;
- (d) ensuring that there is a clear understanding of each party's expectations of the other party's commitment to achieving the outcomes expected under this Agreement;

- (e) ensuring that each party understands what it needs to do under this Agreement and within its own corporate organisation to remove restrictions or inhibitions and develop and promote improvements to their own business systems to achieve key outcomes;
- (f) where required, being involved in Dispute resolution in accordance with clause 53; and
- (g) performing any other functions contemplated by this Agreement to be performed by the ELG or agreed between the parties.

14. COLLABORATIVE MANAGEMENT GROUP

14.1 CMG Formation

- 1 The parties will establish a Collaborative Management Group (CMG) for governance of the Services within 30 Business Days after the Agreement Date.
- 2 The CMG must remain constituted until the end of the Term.

14.2 CMG Membership

- 1 CMG Members will be representatives from Hunter Water and representatives from the Service Provider, and must include at least each party's line manager with direct responsibility for the Services.
- 2 As at the Agreement Date, the members of the CMG are as named in Schedule 4. Each of Hunter Water and the Service Provider shall nominate 2 persons from each party who shall be the members of the CMG.
- 3 One of the Hunter Water CMG members, as determined by Hunter Water, will be the chairperson of the CMG (CMG Chairperson). The CMG Chairperson will be responsible for organising the meetings of the CMG. If the CMG Chairperson is not able to be present at a CMG meeting then one of the Hunter Water CMG members, as determined by Hunter Water, will be deemed to be the CMG Chairperson for that relevant CMG meeting.
- 4 Subject to clause 14.3(7), with the exception of the people identified in clause 14.2(2), a person may be appointed to the CMG only with the approval of the ELG.
- 5 If a representative of Hunter Water or a representative of the Service Provider is unable, for any reasonable reason, to act for any extended period as a CMG member or ceases to be a CMG member through death, Hunter Water or the Service Provider (as applicable) must use its best endeavours to ensure, subject to clause 14.2(4), that the resulting vacancy is promptly filled.

14.3 CMG Meetings

- 1 Subject to clause 14.3(7), the CMG must meet:
 - (a) at least on a monthly basis during each Contract Year;
 - (b) if there is an Emergency, as promptly as is reasonable in the circumstances; and
 - (c) otherwise within a reasonable time of any of its members requesting that a CMG meeting be held.

- 2 The CMG Chairperson must, at the beginning of each CMG meeting, appoint one of the CMG members to take minutes of the relevant CMG meeting. The CMG member so appointed must within three Business Days after the CMG meeting, provide a copy of the relevant CMG meeting minutes to the CMG members who were present at the relevant CMG meeting. The relevant CMG members must notify the member who took the CMG meeting minutes as soon as practicable of their acceptance or disagreement with the CMG meeting minutes. If the minutes are accepted by all CMG members present at the CMG meeting, those minutes will be deemed to be the official record of the relevant CMG meeting). If the minutes are disputed by any CMG member then the CMG Chairperson shall decide what are the accepted minutes of the relevant CMG meeting and those minutes will be deemed to be the official record of the relevant CMG meeting. A copy of the accepted CMG meeting minutes are to then be provided to all CMG members and the ELG.

- 3 Subject to clause 14.3(7), a member of the CMG will be treated as present at a CMG meeting if:
 - (a) the CMG member is physically present at the CMG meeting; or
 - (b) the CMG member:
 - (i) is part of the meeting by way of telephone or other instantaneous means of conferring (such as video-conferencing); and
 - (ii) if he or she is able to hear the entire meeting and be heard by all other CMG members attending the CMG meeting.

- 4 Subject to clause 14.3(7), a quorum for a meeting of the CMG is at least two representatives of Hunter Water and at least two representative of the Service Provider. If for any reason a member of the CMG is unable to attend a CMG meeting the CMG member may, with the agreement of the other party, nominate an alternative person to act on the CMG member's behalf at that CMG meeting. Equally, if a CMG Member is not able to attend a meeting that CMG Member may provide written comments to the CMG Chairperson on any issues to be discussed at the CMG meeting. Such comments are able to be taken into account in the CMG meeting provided that the comments will not be held to be binding and the CMG Member who provided the comments (but

did not attend the CMG meeting) will not be deemed to be present at the CMG meeting by virtue of the comments.

- 5 Subject to clause 14.3(6), all decisions of the CMG must be the unanimous decision of all the CMG members present at the CMG meeting provided a quorum is present.
- 6 Subject to clause 14.3(7), if a unanimous decision of all the CMG members present at an CMG meeting is not able to be reached by the members within 5 Business Days after the CMG was first asked to decide on an issue or such longer period which the CMG unanimously agrees upon, then the CMG Chairperson in its absolute and sole discretion must make the decision (which may include a decision to defer a decision until a later CMG meeting or within a further period of time) within 2 Business Days of the expiry of the initial period within which the CMG was to make its decision and this will be deemed to be the decision of the CMG.
- 7 If, in the event of:
 - (a) an Emergency; or
 - (b) a quorum for a meeting of the CMG not being able to be met,

and, in the opinion of the CMG Chairperson acting reasonably, a decision of the CMG is urgently required then the CMG Chairperson may make the decision (which may include a decision to defer a decision until a later CMG meeting or within a further period of time) and this will be deemed to be the decision of the CMG.

- 8 If a party does not agree with a decision of the CMG either party may refer the issue to the ELG for resolution under clause 53.
- 9 The exercise of discretion by the CMG Chairperson under clause 14.3(6) or 14.3(7) should, in no way, be construed as Hunter Water exercising control, management and/or authority over a matter that would otherwise be the responsibility of the Service Provider under this Agreement and in no way:
 - (a) diminishes the Service Provider's obligations to perform the Services in accordance with Agreement;
 - (b) relieves the Service Provider from the performance of all of the Services and any of its obligations under this Agreement; or
 - (c) relieves the Service Provider from responsibility for managing all of the risks of performing the Services, including, but not limited to, work health and safety risks.

14.4 CMG Functions

The CMG's functions include:

- (a) developing protocols and procedures to effectively and efficiently guide the day-to-day interactions between the parties;
- (b) appointing, managing and coordinating any Collaborative Work Teams;
- (c) reviewing and monitoring the Service Provider's compliance with this Agreement, any outstanding audit actions and outstanding incident investigation actions;
- (d) reviewing Hunter Water's compliance with this Agreement and any outstanding actions;
- (e) reviewing, monitoring and analysing the Service Provider's performance against the KPIs;
- (f) establishing and pursuing collaboration and cooperation under this Agreement;
- (g) assessing and pursuing proposed or potential Value Enhancement initiatives;
- (h) where required, being involved in Dispute resolution in accordance with clause 53; and
- (i) performing any other functions contemplated by this Agreement to be performed by the CMG or agreed between the parties.

14.5 Collaborative Work Teams

- 1 The CMG may, from time to time, appoint teams comprising representatives of both parties to address a specific matter relating to the Services or elements of the Services which require close collaboration of the parties (**Collaborative Work Teams**). For example, reviewing designs for future Capital Works, preparing elements of an IPART submission or refining maintenance strategies may require the appointment of a Collaborative Work Team.
- 2 The CMG will scope the work of each Collaborative Work Team, its objectives, leadership and reporting procedures.
- 3 The scope of work of any Collaborative Work Team shall not constitute a Variation Instruction or Services Direction under clause 34, but may reflect work to be undertaken as a result of a Variation Instruction or a Services Direction.

15. PRACTICE NOTES

- 1 Practice Notes shall be used by Hunter Water, the CMG and the ELG to assist the administration of this Agreement and assist the Service Provider in performing the Services, by recording:

- (a) any protocols or procedures developed by Hunter Water prior to this Agreement Date relating to the operation and maintenance of the Facilities;
 - (b) the application of a particular provision of this Agreement to a particular situation as agreed by the parties or as otherwise determined by the CMG or the ELG;
 - (c) any protocols or procedures developed by the CMG or the ELG during the Term to effectively and efficiently guide the day-to-day interactions between the parties; and
 - (d) any clarifications or amendments of a particular provision of this Agreement given by Hunter Water by issue of a Variation Instruction or Services Direction.
- 2 The:
 - (a) existing Practice Notes developed by Hunter Water prior to the Agreement Date and listed in Schedule 7 (as may be amended under this clause 15); and
 - (b) such other new Practice Notes developed in accordance with this clause 15 (or as may be amended under this clause 15),apply to this Agreement.
- 3 Subject to clause 15(8), to the extent required by this Agreement or as otherwise notified by Hunter Water, the Service Provider is to comply with a Practice Note. Unless the context otherwise requires, all responsibilities, obligations, requirements or directions in a Practice Note (including responsibilities expressed as a direction in the imperative form) are the responsibility of the Service Provider.
- 4 On a request at any time being made by either Hunter Water or the Service Provider, the CMG will determine if a new Practice Note should be prepared or if an amendment should be made to an existing Practice Note.
- 5 As part of the CMG determination required under clause 15(4), the CMG will also determine whether Hunter Water or the Service Provider will be responsible for preparation of a new Practice Note or an amended Practice Note and the general principles to be reflected by the new or amended Practice Note. The CMG will then notify the relevant party to either do nothing further or to prepare the new Practice Note or amended Practice Note, as applicable.
- 6 The party responsible for drafting the new Practice Note or amended Practice Note shall, within 15 Business Days of the party being notified to do so by the CMG (or such other time as notified by the CMG), prepare a draft Practice Note that reflects the general principles as determined by the CMG and submit it for Endorsement in accordance with clause 25.2.

- 7 A new Practice Note or an amended Practice Note will come into effect on the date the relevant Practice Note is Endorsed under clause 25.2.
- 8 A Practice Note or a notice by the CMG under this clause 15 shall not of itself constitute a Variation Instruction or a Services Direction under clause 34 or a Variation, but may be used to record the changes or interpretation to apply as a result of a Variation Instruction or a Services Direction or any other notice given by Hunter Water.

END OF PART C

PART D - CONDITIONS

16. APPOINTMENT AND TRANSITION

16.1 Appointment

The provisions of this Agreement and the appointment of the Service Provider are effective from the Agreement Date.

16.2 Draft Transition Plan and Transition Services

- 1 The Draft Transition Plan is at Schedule 15. The parties acknowledge that the Draft Transition Plan is not yet finalised and is to be updated by the Service Provider to meet with the requirements of Hunter Water's Contract CS0341 Treatment Operations Request for Tender document, Part 7 Tender Contents, Tender Schedule 9 - Readiness, Part 3 and this Agreement and is to then be submitted for Endorsement, and Endorsed, in accordance with clause 25.2. The parties agree that:
 - (a) the Draft Transition Plan is not binding on the parties until it has been Endorsed as the Transition Plan;
 - (b) nothing in the Draft Transition Plan which is a qualification to this Agreement or is contrary to this Agreement will be binding on Hunter Water; and
 - (c) nothing in the Draft Transition Plan will relieve the Service Provider from any of its obligations under this Agreement.
- 2 From the Agreement Date, the Service Provider must perform the Transition Services to ensure that the Service Provider is capable of providing the Services (other than the Transition Services) in full compliance with this Agreement on and from the Services Commencement Date.
- 3 The Service Provider must complete all Transition Services before the Target Services Commencement Date. For the avoidance of doubt if there is a Discrepancy between the terms of this Agreement and the terms of the Transition Plan, the terms of this Agreement shall take precedence.
- 4 To assist with the Service Provider performing the Transition Services, Hunter Water will, to the extent reasonably necessary, cooperate with the Service Provider.

16.3 Transition Plan Deliverables

- 1 The Service Provider must give Hunter Water 10 Business Days' notice of the date that the Service Provider anticipates that completion of a Transition Plan

Deliverable will be achieved. For the avoidance of doubt, if a Transition Plan Deliverable is required to be Endorsed in accordance with clause 25.2, then completion of such Transition Plan Deliverable can only be achieved if such Endorsement has occurred.

- 2 If the Service Provider is of the opinion that completion of a Transition Plan Deliverable has been achieved, the Service Provider must notify Hunter Water. Within 10 Business Days after receiving the Service Provider's notice Hunter Water will provide the Service Provider with a notice detailing that either completion of the Transition Plan Deliverable has occurred or reasons why the Transition Plan Deliverable has not been completed.
- 3 If Hunter Water is of the opinion that completion of a Transition Plan Deliverable has been achieved, Hunter Water may give a notice to this effect to the Service Provider even though no notice has been given by the Service Provider.
- 4 Subject to clause 16.5, the Service Provider will be entitled to a relevant progress payment (as detailed in Table 3B.1 of Part B of Schedule 3) on completion, as determined by Hunter Water in its absolute and sole discretion and, if applicable, Endorsement in accordance with clause 25.2, of each relevant Transition Plan Deliverable.

16.4 Services Commencement Date

- 1 The Service Provider must give Hunter Water at least 10 Business Days' notice of the date on which the Service Provider anticipates that it will complete all of the Transition Services and be capable and ready to commence performing all of the Services (other than the Transition Services).
- 2 When the Service Provider bona fide considers that it has completed all of the Transition Services and is capable and ready to commence performing all of the Services (other than the Transition Services), the Service Provider shall give written notice to Hunter Water to that effect requesting that Hunter Water issue a notice to the Service Provider confirming that the Service Provider can commence performing all of the Services (other than the Transition Services) (**Services Commencement Notice**).
- 3 The written notice referred to in clause 16.4(2) must document and provide evidence that all Transition Services (including all actions under the Transition Plan and this Agreement that must be completed before the Target Services Commencement Date) are completed and the Service Provider is capable and ready to commence performing all of the Services (other than the Transition Services).
- 4 Within 10 Business Days of receiving the notice referred to in clause 16.4(2) Hunter Water shall give the Service Provider either a Services Commencement Notice stating the Services Commencement Date, which shall not be earlier

than the date on which the Services Commencement Notice is given or reasons for not doing so.

- 5 If in accordance with clause 16.4(4) Hunter Water does not give a Services Commencement Notice, then the Service Provider must continue performing the Transition Services until such time as the Service Provider anticipates that it will complete all of the Transition Services and be capable and ready to commence performing all of the Services (other than the Transition Services), in which case clause 16.4(1), clause 16.4(2), clause 16.4(3) and clause 16.4(4) shall re-apply.
- 6 For the avoidance of doubt, all Transition Services including all Transition Plan Deliverables must be completed before Hunter Water is obliged to issue a Services Commencement Notice.

16.5 Sunset Date

- 1 The Service Provider's entitlement to payment during the Transition Period is conditional upon the Services Commencement Date occurring before the Sunset Date.
- 2 Subject to clause 16.5(5), if:
 - (a) the Services Commencement Date is not before the Sunset Date; or
 - (b) the notice referred to in clause 16.4(2), including the required evidence and documents, has not been given before the Sunset Date,

Hunter Water may in its absolute and sole discretion and at any time after the Sunset Date terminate this Agreement by written notice to the Service Provider with effect from the date specified in the notice, in which case the provisions of clause 16.5(3) and clause 44 will apply.

- 3 The Service Provider agrees that if this Agreement is terminated under clause 16.5(2):
 - (a) the Service Provider will have no further entitlement to payment for any Transition Plan Deliverables;
 - (b) the Service Provider must repay to Hunter Water any payment already made by Hunter Water in respect of Transition Plan Deliverables, provided that the Service Provider will not be required to repay any payments made if and to the extent that the failure to commence the Services by the Sunset Date was directly caused by the Wilful Default of Hunter Water or its Engaged Persons; and
 - (c) the Service Provider will not be entitled to any payment in respect of this Agreement or the Services (including the Transition Services) or in respect of or as a consequence of the termination of this Agreement.

- 4 Any repayments to be made by the Service Provider to Hunter Water under clause 16.5(3) will be due and payable to Hunter Water as a debt within 20 Business Days of the date of the termination notice given by Hunter Water under clause 16.5(2).
- 5 If Hunter Water does not issue a termination notice to the Service Provider in accordance with clause 16.5(2) within 10 Business Days after the Sunset Date, the Sunset Date will be deemed to be extended by 25 Business Days.

16.6 Extension of Sunset Date and Target Services Commencement Date

- 1 If the Service Provider is or will be delayed in completing all of the Transition Services and being capable and ready to commence performing all of the Services (other than the Transition Services), the Service Provider must promptly notify Hunter Water, giving details.
- 2 If the Service Provider:
 - (a) is or will be delayed in completing all of the Transition Services and being capable and ready to commence performing all of the Services (other than the Transition Services) by the Target Services Commencement Date and/or the Sunset Date by a Cause of Delay; and
 - (b) gives Hunter Water, within 5 Business Days of when the Service Provider became aware or should reasonably have become aware of the Cause of Delay occurring, a detailed claim for an EOT,

the Service Provider will, subject to this clause 16.6, be entitled to a reasonable EOT as notified by Hunter Water. For the avoidance of doubt, the Service Provider will only be entitled to an EOT if a Cause of Delay occurs and it is demonstrated that it affects or will affect the critical path of the Transition Services.

- 3 Within 10 Business Days after receiving a claim for an EOT, Hunter Water will give to the Service Provider an assessment of the EOT (if any). In determining an EOT, Hunter Water must have regard to whether the Service Provider has taken all reasonable steps to preclude the occurrence of the Cause of Delay and to minimise the consequences of the delay.
- 4 If the Service Provider has not claimed an EOT, Hunter Water may at its sole and absolute discretion, for the benefit of Hunter Water, at any time direct an EOT.

17. FACILITIES

17.1 Facility Boundary

The boundary of each Facility for the performance of the Services is described in Schedule 1 with reference to the Site Maps in Schedule 2 (Facility Boundary).

17.2 Facility Licence

- 1 Subject to the provisions of this Agreement, Hunter Water grants to the Service Provider, in respect of each Facility, a non-exclusive licence, for the duration of the Term, for the Service Provider and its Engaged Persons to enter, remain upon and use the Facility for the purposes of, and to the extent necessary for, the provision of the Services in accordance with this Agreement.
- 2 The Service Provider must at all times conduct the use permitted by clause 17.2(1) in accordance with all Laws, all Approvals, the requirements of Hunter Water and any Authority and in accordance with the requirements of this Agreement.
- 3 Subject to the provisions of this Agreement, in respect of each Facility, the Service Provider has responsibility for, and management and control of, that Facility from the Services Commencement Date throughout the Term, except to the extent, and during any period, that the Facility is designated as a Construction Site under clause 17.4.
- 4 The Service Provider must ensure that only persons authorised under this Agreement to access a Facility gain access to a Facility. If the Service Provider becomes aware of any unauthorised person on a Facility, then the Service Provider must immediately have the unauthorised person removed.
- 5 Nothing in this Agreement:
 - (a) amounts to or is to be construed as, and the Service Provider may not claim that, this Agreement is a lease, a contract of tenancy or an agreement to lease or the grant of any estate or interest in or to a Facility or any part of them; or
 - (b) creates or vests in the Service Provider any estate, interest or right of a proprietary nature in or to any Facility.
- 6 The Service Provider acknowledges and agrees that:
 - (a) the rights conferred on the Service Provider by this Agreement rest in contract only and are personal to the Service Provider and may not be assigned or sub-licensed or in any other way dealt with by the Service Provider other than as provided for in clause 50;
 - (b) legal possession and ownership of a Facility remains in Hunter Water at all times;
 - (c) this Agreement does not confer on the Service Provider any right of exclusive possession of any part of a Facility;
 - (d) subject to the provisions of this Agreement, Hunter Water may at any time exercise any rights it holds with respect to a Facility and the

Service Provider must not restrict Hunter Water's exercise of its rights in any way; and

- (e) in the construction and interpretation of this Agreement, clause 17.2(5) and clause 17.2(6) are paramount and the other provisions of this Agreement must be construed and interpreted so as not to be inconsistent with these clauses and in the event and to the extent that any other provision or provisions cannot be construed and interpreted so as to avoid any inconsistency with this clause 17.2(6)(e), the other provision or provisions will, to the extent of the inconsistency, be void and of no effect but otherwise will remain in full force and effect.
- 7 The Service Provider must not transfer or purport to transfer any Facility, or grant or create, purport to grant or create or permit the creation of any right of way, easement, licence, charge, encumbrance or other security interest (including any Security Interest) in or over any Facility, any Working Assets or any Stock.
 - 8 The design of any signage to be affixed to any Facility must first be approved by Hunter Water (which approval may be given or withheld, including on terms, at Hunter Water's absolute and sole discretion). The Service Provider must submit the design to Hunter Water at least five Business Days prior to being issued for manufacture.
 - 9 Branding on any signage associated with a Facility must give prominence to Hunter Water as the Facility owner over the Service Provider.

17.3 Access and cooperation

- 1 The Service Provider must develop a Facility Cooperative Use Plan detailing the protocols and procedures to apply to any entry to a Facility by Hunter Water's Engaged Persons or other authorised persons, or any other party who needs access to a Facility. The Facility Cooperative Use Plan must take into account the requirements of Practice Note PN106. The plan must be submitted for Endorsement in accordance with clause 25.2.
- 2 The Service Provider acknowledges that Hunter Water, and its Engaged Persons, may enter any Facility at any time and for any purpose, provided such entry is in accordance with and subject to the safety and security arrangements of the Facility Cooperative Use Plan. Hunter Water's specific access requirements in relation to materials storage and building access are described at PN310.
- 3 Hunter Water may conduct tours or site visits of a Facility as Hunter Water sees fit, subject to Practice Note PN603 and the reasonable operational requirements of the Service Provider and provided all such tours or site visits are conducted in accordance with and subject to the safety and security arrangements of the Facility Cooperative Use Plan.

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- 4 The Service Provider must provide access to third parties in accordance with and subject to the safety and security arrangements of the Facility Cooperative Use Plan.
 - 5 Unless a Facility or part of a Facility has been designated as a Construction Site under clause 17.4, the Service Provider will remain responsible for coordination, safety and security of any Facility or part of a Facility to which Hunter Water, Hunter Water's Engaged Persons or any third parties are provided access.
 - 6 Hunter Water is investigating the introduction of an automated access control system with the intention of assisting with safety management at a range of Facilities. The system would provide the ability to identify personnel at a Facility and confirm that they have been inducted to the Facility and to determine if a Facility is manned or not. The Service Provider must assist Hunter Water in developing the operational requirements for this system as it relates to the operation of the Facilities and cooperate with Hunter Water in the introduction and use of the system.
 - 7 The amenities building at the Burwood Beach WWTP has been set up to provide an alternative operational centre for Hunter Water to use during any emergency event which makes the usual Hunter Water operational centre sites unavailable. The facilities at the amenity building are to be available to Hunter Water to use as an emergency operation centre at all times. The Service Provider must at all times provide access and full use for Hunter Water to the theatre, the store, the kitchen and the projection room at the north west of the building, the mens and women's bathroom to the south west of the building and the office space between the foyer and the laboratory on the north east side of the building.

The Service Provider will have full access to the office, control room, amenities and lunch room on the southern side of the building and laboratory on the eastern end of the building.

The foyer and hallways are to remain open at all times to allow access to all areas.

The Service Provider is to be responsible for the cleaning of all of the building.
 - 8 Hunter Water and its Engaged Persons may at any time enter a Facility to:
 - (a) clear blockages in the wastewater network outside of the Facility and remove debris outside of the Facility that would otherwise be transported to the inlet works of a WWTF; or
 - (b) perform any works outside of the Facility in connection with clearing blockages or removal of debris outside of the Facility.

In undertaking such work Hunter Water may dispose of any waste material in the waste bins at a Facility used for collection of waste from the inlet works of a WWTF.

17.4 Designated Construction Site

- 1 Where construction work is to be carried out on a Facility or part of a Facility by Hunter Water or a Hunter Water Engaged Person, Hunter Water may designate the Facility or part of the Facility as a Construction Site for such period of time as Hunter Water determines at its reasonable discretion in consultation with the Service Provider.
- 2 If the whole or part of a Facility is designated as a Construction Site, then, for the period of designation, Hunter Water or its nominated Engaged Person will have management and control of the designated Construction Site. The Service Provider's responsibility for management and control of a designated Construction Site will be suspended for that period, or limited by being subject to Hunter Water's or its Engaged Person's control of access and safety.

17.5 Utility Services

Hunter Water is not liable to the Service Provider for any cost, expense, loss, damage or other liability suffered or incurred by the Service Provider because of any malfunction or unavailability of any Utility Services to a Facility except to the extent of any breach of this Agreement by Hunter Water or any negligent act or negligent omission of Hunter Water.

17.6 Facilities condition

- 1 Each Facility is licensed to the Service Provider in "as is, where is" condition with all faults and Defects, as at the Agreement Date. The known limitations of any Facility are listed in Practice Note PN309. Hunter Water will not be liable for any Claim by the Service Provider arising out of, or in any way connected with, such limitations.
- 2 Hunter Water bears all risk in relation to the adequacy and suitability of a Facility to enable the Service Provider to perform the Services to the extent of the Intrinsic Capacity Limit of the Facility except where the adequacy or suitability of a Facility is affected by the condition of the Facility due to the act, omission, negligence or default of the Service Provider.
- 3 Subject to clause 17.6(1), if:
 - (a) the Intrinsic Capacity Limit of a Facility does not allow the Service Provider to comply with a requirement of this Agreement; and
 - (b) the Service Provider by way of a written submission proves to Hunter Water to Hunter Water's absolute and sole satisfaction, that the

Intrinsic Capacity Limit of a Facility does not allow the Service Provider to comply with a requirement of this Agreement,

then the Service Provider will be relieved from:

- (c) the Service Provider's performance relative to the relevant KPI; and
- (d) any relevant Service Standard Adjustment,

applicable to the requirement that was not complied with by the Service Provider.

- 4 Hunter Water gives no representation or warranty (either present or future), and the Service Provider acknowledges it has made its own enquiries, takes all risk and, other than as detailed in clause 31.5, will bear all costs, in relation to:
 - (a) the condition of the Facility and the Utility Services; and
 - (b) the use to which the Facility and the Utility Services may be put.
- 5 The Service Provider enters into this Agreement with full knowledge of and subject to any prohibitions or restrictions on the use of the Facility and the Utility Services as at the Agreement Date under any law or Laws.
- 6 The Service Provider:
 - (a) uses the Facility and the Utility Services at the risk of the Service Provider and the Service Provider's Engaged Persons or any person Claiming by, through or under the Service Provider;
 - (b) acknowledges that Hunter Water is not obliged to upgrade or augment any Utility Services; and
 - (c) must make all connections to the Utility Services which it requires from time to time.
- 7 Hunter Water will not be responsible for any theft of the Service Provider's or the Service Provider's Engaged Persons' (or any person Claiming by, through or under the Service Provider) property while such property is in or on a Facility, however such theft occurs.

17.7 Computer and Telephone Network

- 1 Hunter Water has telecommunications infrastructure in place providing a Hunter Water corporate computer network and telephone service to each Facility (**HWC Network**).
- 2 The Service Provider may use the HWC Network for all bona fide communications required to perform the Services at no charge to the Service Provider. If Hunter Water so requires the Service Provider must pay Hunter Water on demand for any costs, fees, charges or expenses suffered or incurred by Hunter Water in connection with the Service Provider using the HWC Network

for communications or purposes that are not required for the Service Provider to perform the Services.

- 3 Subject to clause 17.7(4), Hunter Water will maintain the HWC Network and will arrange for any reasonable repairs to be carried out on the HWC Network by Hunter Water's telecommunications providers.
- 4 Hunter Water at no time gives any representation or warranty as to the capacity, quality or continuity of the HWC Network.

18. WORKING ASSETS AND STOCK

18.1 Inventory

- 1 The Service Provider must document the inventory of Working Assets and Stock for each Facility as at the Services Commencement Date (**SCD Inventory**). Within 10 Business Days of the Services Commencement Date the Service Provider must submit the SCD Inventory to Hunter Water. Hunter Water is to signify its agreement, or otherwise, to the SCD Inventory within 10 Business Days of Hunter Water's receipt of the SCD Inventory.
- 2 The Service Provider must document the inventory of all Working Assets and Stock for each Facility as at the Services End Date (**SED Inventory**). Within 10 Business Days of the Services End Date the Service Provider must:
 - (a) submit the SED Inventory; and
 - (b) advise Hunter Water of any net difference in inventory between the SCD Inventory and the SED Inventory.
- 3 Hunter Water is to signify its agreement, or otherwise, to the SED Inventory within 10 Business Days of Hunter Water's receipt of the SED Inventory.
- 4 Where:
 - (a) the SED Inventory is less than the SCD Inventory, the Service Provider must within 30 Business Days of the Services End Date pay Hunter Water for that difference; and
 - (b) the SED Inventory is more than the SCD Inventory Hunter Water will, to the extent Hunter Water has not already paid for the purchase of the relevant Working Assets and Stock under this Agreement, within 30 Business Days of the Services End Date pay the Service Provider for that difference.
- 5 The Working Assets and Stock to be paid for by the Service Provider or Hunter Water, as applicable, under clause 18.1(4) is to be paid for this purpose using the last purchase price paid for the relevant Working Asset or Stock prior to the Service Provider preparing the SED Inventory.

18.2 Spare Parts Management

- 1 Except for spare parts which form part of the Working Assets and Stock at the Services Commencement Date, the provision of spare parts for use in performing the Services is the responsibility of the Service Provider.
- 2 Within 3 months after the Services Commencement Date, the Service Provider must submit a Spare Parts Strategy for Endorsement in accordance with clause 25.2.
- 3 The Spare Parts Strategy shall document the basis for determining the need to hold spare parts in stock, taking into account criticality of the item and time available to source from a supplier instead of from stock, and a register of the items to be held in stock.

18.3 Ownership

- 1 All Working Assets and Stock at the Facilities at the Services Commencement Date are and will remain the property of Hunter Water. On and from the Services Commencement Date the Service Provider may have possession of and use the Working Assets and Stock for the purposes of, and to the extent necessary for, the provision of the Services in accordance with this Agreement.
- 2 The Service Provider must:
 - (a) take reasonable care of all Working Assets and Stock;
 - (b) ensure that all Working Assets and Stock are accurately documented, maintained, repaired, inspected, serviced, tested, secured and kept safe in accordance with all applicable Laws;
 - (c) not, by its act or omission, vitiate, in whole or part, any manufacturer's or other warranty attaching to any of the Working Assets or the Stock; and
 - (d) not, without Hunter Water's prior written consent, sell or transfer or purport to sell or transfer any of the Working Assets or Stock, or grant or create, purport to grant or create or permit the creation of any charge, encumbrance or other security interest (including a Security Interest) in or over any of the Working Assets or Stock.
- 3 Unless otherwise agreed between the parties, if the Service Provider purchases Working Assets or Stock as part of the Services and the purchase price for those Working Assets or Stock is treated as or becomes part of the Fees paid by Hunter Water, property and title in those Working Assets or Stock will pass to Hunter Water immediately on payment by Hunter Water of the invoice that includes the full purchase price of the relevant Working Assets or Stock.

- 4 To the extent possible, and to secure the Service Provider's obligations under clause 44.1(b)(i) and clause 45 and the rights of Hunter Water under clause 18.3(5), the Service Provider grants to Hunter Water a charge over any Working Assets and Stock which are in the possession of the Service Provider at any time during the Term.
- 5 For the avoidance of doubt and despite any other provision of this Agreement, on expiry or earlier termination of this Agreement, Hunter Water may retake possession of any Working Asset or Stock then in the possession or control of the Service Provider.

18.4 Replacement

- 1 The Service Provider must replace all Stock as it is consumed and any Working Asset which becomes unfit for purpose.
- 2 The Stock levels and the condition of each Working Asset identified in the Endorsed Spare Parts Strategy are to be maintained at all times by the Service Provider.
- 3 No:
 - (a) Variation, time, Additional Costs or other monies will be able to be claimed by the Service Provider; or
 - (b) Actual Costs, Additional Costs or other monies will be payable by Hunter Water to the Service Provider,arising out of or as a consequence of the Service Provider having to comply with its obligations under clause 18.4(1) or clause 18.4(2).

18.5 Vehicles

- 1 No motor vehicles of Hunter Water are to transfer to the Service Provider as Working Assets. All motor vehicles required for the Services must be provided by the Service Provider and ownership of motor vehicles shall not transfer to Hunter Water.
- 2 The design of any signage to be affixed to any of the Service Provider motor vehicles used for the Services must be first approved by Hunter Water (which approval may be given or withheld, including on terms, at Hunter Water's absolute and sole discretion). The Service Provider must submit the design to Hunter Water at least five Business Days prior to being issued for manufacture.

18.6 Risk

- 1 Where the Service Provider brings its own plant, equipment or materials to a Facility for the purpose of the Services, the Service Provider must ensure that

such plant, equipment and materials is properly insured at all times and must include that plant, equipment and materials in the inventory for that Facility.

- 2 Despite the passing of ownership in Working Assets or Stock under clause 18.3(3), the risk in and responsibility for care of the Working Assets or Stock remains with the Service Provider until the Services End Date in accordance with clause 39.1.

18.7 Acknowledgment

- 1 Each Working Asset and all Stock provided to the Service Provider by Hunter Water is provided in "as is, where is" condition with all faults and Defects, as at the Agreement Date or the date that the Service Provider is provided with the relevant Working Asset or Stock by Hunter Water.
- 2 Hunter Water gives no representation or warranty (either present or future), and the Service Provider acknowledges it has made its own enquiries, takes all risk and will bear all costs, in relation to:
 - (a) the adequacy, soundness, suitability and condition of any Working Asset or Stock; and
 - (b) the use to which any Working Asset or Stock may be put.
- 3 The Service Provider enters into this Agreement with full knowledge of and subject to any prohibitions or restrictions on the use of any Working Asset or Stock as at the Agreement Date or the date that the Service Provider is provided with the relevant Working Asset or Stock by Hunter Water under any law or Laws.
- 4 The Service Provider:
 - (a) uses any Working Asset or Stock at the risk of the Service Provider and the Service Provider's Engaged Persons or any person Claiming by, through or under the Service Provider; and
 - (b) acknowledges that Hunter Water is not obliged to upgrade or augment any Working Asset or Stock.

19. TERM

19.1 Initial Term

The Term of this Agreement begins at 7:00 am on the Agreement Date and, unless it is terminated earlier under any other provision of this Agreement or extended under clause 19.2, will expire on the Initial Expiry Date.

19.2 Extended Term

- 1 Hunter Water may, at its discretion, elect to extend the Term once for the First Extended Term by giving written notice to the Service Provider no later than one year prior to the Services End Date current immediately prior to issue of the notice and this Agreement will be extended on the same terms and conditions with the exception of this clause 19.2(1).
- 2 Hunter Water may, at its discretion, elect to extend the Term once for the Second Extended Term by giving written notice to the Service Provider no later than one year prior to the Services End Date current immediately prior to issue of the notice and this Agreement will be extended on the same terms and conditions with the exception of this clause 19.2(2).

20. SERVICE PROVIDER PERSONNEL

20.1 Key Personnel

- 1 The Key Personnel as at the Agreement Date are identified in Schedule 4. The Service Provider must ensure that any obligations under this Agreement which are designated to be undertaken by the Key Personnel are undertaken by the Key Personnel.
- 2 The Service Provider acknowledges that continuity of personnel is an essential factor in the successful delivery of the Services. To the extent that it is within the control of the Service Provider, the Service Provider must ensure that the Key Personnel remain available for the Services and are not reassigned to other projects.
- 3 The timely arrival of the Key Personnel is a Transition Plan Deliverable. KPI 14 (Schedule 6, Part D section D3) relates to arrival and continued availability of the Key Personnel.

20.2 Unavailability of Key Personnel

- 1 Where Key Personnel are unavailable for reasons beyond the control of the Service Provider, the Service Provider must notify Hunter Water immediately and, if so requested by Hunter Water, provide replacement personnel with comparable experience and knowledge acceptable to Hunter Water at no additional cost and at the earliest opportunity.
- 2 If Key Personnel are unavailable for any reason other than illness, death or reasonable leave during the first two Contract Years, the Service Provider will not be entitled to relief from its KPI obligations in relation to Key Personnel.

20.3 Removal of Personnel

Hunter Water may, at its absolute discretion, require the immediate removal from the Services of any person who fails properly to observe the provisions of this Agreement. Any such person must not be employed to carry out further services in relation to the Services without the permission of Hunter Water. Subject to clause 21.3(7), this clause 20.3 does not apply to Transferring Employees within the four year period referred to in clause 21.3(7).

20.4 Uniforms

The design of any branding to be affixed to uniforms of the Service Provider must be first approved by Hunter Water (which approval may be given or withheld, including on terms, at Hunter Water's absolute and sole discretion). The Service Provider must submit the design to Hunter Water at least five Business Days prior to being issued for manufacture.

21. TRANSFER OF BUSINESS

21.1 Acknowledgement

The parties acknowledge that the provision of Services which would constitute Transferring Work will be treated as giving rise to a transfer of business to the Service Provider from Hunter Water and HWA for the purposes of the Fair Work Act.

21.2 Options for Existing Employees

- 1 Within 15 Business Days after the Agreement Date Hunter Water will provide the Service Provider with:
 - (a) the name, classification level, length of service, leave accruals and type of employment of all Existing Employees;
 - (b) the classification definitions for all Existing Employees who are covered by the Hunter Water Corporation Employees Enterprise Agreement 2012; and
 - (c) a copy of the relevant available personnel files including any contract of employment for Existing Employees.

Hunter Water does not warrant, guarantee or make any representation about the accuracy or adequacy of any information, data or document made available to the Service Provider by Hunter Water in connection with any sick leave details, absenteeism details or any advice regarding any workers compensation issues pending for any Existing Employee.

- 2 The Service Provider, within 25 Business Days of the Agreement Date, must offer all Existing Employees employment with the Service Provider. Such an offer of employment will be for the Transferring Work and the performance of the Services, at a pay grade and for duties at least equivalent to the Existing

Employee's pay grade and duties under the applicable Transferring Instrument.

- 3 Existing Employees, employed by Hunter Water prior to the Services Commencement Date shall also be offered, as alternatives to employment with the Service Provider, their choice of:
 - (a) a voluntary redundancy package paid by Hunter Water; or
 - (b) redeployment to other work within Hunter Water if it is available.
- 4 If any Hunter Water employee accepts a voluntary redundancy package, irrespective of whether or not it is offered under clause 21.2(3), and such Hunter Water employee is subsequently employed by the Service Provider within three months of termination of employment with Hunter Water, the Service Provider shall pay to Hunter Water an amount equivalent to the cost incurred by Hunter Water in making the redundancy payment to the Hunter Water employee.

21.3 Transferring Employees

- 1 The Service Provider must employ each Transferring Employee with effect from the Services Commencement Date and on the terms set out in the offers of employment made under clause 21.2(2).
- 2 The Service Provider must recognise and honour the prior service and entitlements of Transferring Employees:
 - (a) in respect of annual leave, long service leave, rostered days off, and/or other paid leave, as accrued up to and including the day immediately prior to the Services Commencement Date;
 - (b) in respect of personal leave in accordance with Schedule 3;
 - (c) for the purposes of determining termination notice periods and any redundancy entitlements; and
 - (d) in respect of long service leave, the recognition and honour of prior service and entitlements must be based on the continuity and length of service of each Transferring Employee with Hunter Water or HWA (or their predecessor entities), as applicable, irrespective of the Transferring Employee's continuity and length of service as at their last day of employment with Hunter Water or HWA. Any long service leave entitlements paid and/or accrued during a Transferring Employee's period of employment with the Service Provider will be calculated on the basis of the Transferring Employee's service with Hunter Water or HWA (or their predecessor entities).
- 3 The Service Provider is not obliged to recognise or honour prior service and entitlements of Transferring Employees if those entitlements are paid out to

- the Transferring Employee by Hunter Water or HWA at the time the employment of the Transferring Employee with Hunter Water or HWA ceases.
- 4 Hunter Water shall, within 30 Business Days after the Services Commencement Date, pay to the Service Provider the amount calculated in accordance with clause C2 of Part C of Schedule 3 in respect of each Transferring Employee's accrued entitlements to annual leave and long service leave (**Transferring Employee Entitlement Payment**).
 - 5 Despite any other provision (except clause 21.3(6)), the Service Provider will not be entitled to any payment in respect of any Transferring Employee's entitlements to personal leave:
 - (a) subject to clause 21.3(6), at the time of transfer or at any other time;
or
 - (b) at any time if this Agreement is terminated under clause 43.1(b) on the grounds of an Insolvency Event.
 - 6 The Service Provider may become entitled to payment in respect of a Transferring Employee's entitlements to personal leave from Hunter Water or HWA, as applicable (**Preserved Personal Leave Payment**). A Preserved Personal Leave Payment will arise where an amount of personal leave is taken by a Transferring Employee whilst employed by the Service Provider and that amount exceeds personal leave accrued by the Transferring Employee with the Service Provider after the Services Commencement Date (**Accrued Personal Leave**), but does not exceed the amount of personal leave accrued by that Transferring Employee prior to their last day of employment with Hunter Water or HWA, as applicable (or any remaining balance following adjustment in accordance with this clause 21.3(6)) (**Preserved Personal Leave**) and the Preserved Personal Leave Payment will be calculated in accordance with clause C3 of Part C of Schedule 3. The Service Provider will pay to the Transferring Employee any Preserved Personal Leave in the pay period it is due and will seek reimbursement from Hunter Water (as a Preserved Personal Leave Payment) through a monthly reconciliation process. Hunter Water will reimburse the Service Provider on a monthly basis. Hunter Water will provide the Service Provider with a list of all Preserved Personal Leave as at the Service Commencement Date. The Service Provider is only entitled to be paid a Preserved Personal Leave Payment if the relevant Transferring Employee had accrued entitlements to personal leave from Hunter Water or HWA, as applicable, prior to their last day of employment with Hunter Water or HWA, as applicable, and all such accrued entitlements have not already been paid out by Hunter Water to the Service Provider.
 - 7 Subject to clause 21.3(8), the Service Provider may not during the period of four years following the Services Commencement Date, make redundant or otherwise terminate the employment of any Transferring Employee.

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- 8 The Service Provider:
- (a) will at all times be entitled to terminate the employment of a Transferring Employee for misconduct or poor performance; and
 - (b) will not be in breach of clause 21.3(7) if the Service Provider prior to the expiry of the period of four years following the Services Commencement Date:
 - (i) reaches agreement (without the use of duress or intimidation to reach such agreement) with a Transferring Employee for the Transferring Employee to take a voluntary redundancy; and
 - (ii) the Service Provider obtains the prior approval of Hunter Water for the Transferring Employee to take the voluntary redundancy.
- 9 If HWA is the Service Provider, it may not, during the period of four years following the Services Commencement Date, make redundant or otherwise terminate the employment of its existing Water Treatment Operators or Wastewater Treatment Operators whose duties are to remain with HWA after the Services Commencement Date and form part of the Services except:
- (a) for misconduct or poor performance; or
 - (b) if the Service Provider prior to the expiry of the period of four years following the Services Commencement Date:
 - (i) reaches agreement (without the use of duress or intimidation to reach such agreement) with an existing Water Treatment Operator or an existing Wastewater Treatment Operator for the existing Water Treatment Operator or the existing Wastewater Treatment Operator, as applicable, to take a voluntary redundancy; and
 - (ii) the Service Provider obtains the prior approval of Hunter Water for the existing Water Treatment Operator or the existing Wastewater Treatment Operator, as applicable, to take the voluntary redundancy.
- 10 The parties acknowledge and agree that any change in or relating to the *State Authorities Superannuation Act 1987* (NSW) (including the insertion of the name of the Service Provider in Schedule 1 of that Act) will not be a Change in Law and the Service Provider shall not be entitled to claim any Additional Costs or other monies arising out of or as a consequence of any such change.
- 11 Hunter Water is liable for contributions payable by the employer of Transferred Employees who are contributors under the *State Authorities Superannuation Act 1987* (NSW) (SAS Employees) for:
- (a) all contribution periods; and
 - (b) any part contribution period,
up until the Services Commencement Date.

- 12 The Service Provider is liable for contributions payable by the employer in respect of those SAS Employees who are contributors under the *State Authorities Superannuation Act 1987* (NSW) for:
- (a) all contribution periods; and
 - (b) any part contribution period,
- on and from the Services Commencement Date during the term of this Agreement.
- 13 Notwithstanding clause 21.3(12) but subject to the proviso in this clause 21.3(13), Hunter Water indemnifies the Service Provider against, and must pay the Service Provider on demand, the amount determined as A minus B where:
- (a) A equals the contributions paid by the Service Provider under the *State Authorities Superannuation Act 1987* (NSW) to the SAS Trustee Corporation in accordance with clause 21.3(12) in respect of SAS Employees; and
 - (b) B equals the minimum amount that must be paid in respect of those SAS Employees under the *Superannuation Guarantee (Administration) Act 1992* or *Superannuation Guarantee (Administration) Regulations 1993* (Cth) so as to avoid the imposition of the superannuation guarantee charge,
- except that if a SAS Employee:
- (a) is no longer employed by the Service Provider; or
 - (b) whilst still employed by the Service Provider, is not working solely to provide the Services under this Agreement,
- then Hunter Water has no liability to indemnify the Service Provider for such amount.

21.4 Obligations on termination of this Agreement or expiry of the Term

- 1 On termination of this Agreement or expiry of the Term the Service Provider must, in respect of each Transferring Employee then employed with the Service Provider immediately prior to the termination of this Agreement or expiry of the Term, pay to each Transferring Employee, to the extent permitted under the Fair Work Act, or otherwise to the Successor Employer, all applicable entitlements as set out in Schedule 3.
- 2 Hunter Water will on termination of this Agreement or expiry of the Term procure that in respect of each Transferring Employee whose employment is transferred to a Successor Employer, the Successor Employer:

- (a) recognises that Transferring Employee's accrued entitlements as to annual leave and long service leave;
 - (b) recognises that Transferring Employee's prior service with Hunter Water or HWA and the Service Provider for purposes of calculating any redundancy entitlements; and
 - (c) recognises the continuity of service of the Transferring Employee with Hunter Water or HWA and the Service Provider for the purposes of the Fair Work Act and any other relevant Law.
- 3 For any Transferring Employee, the following provisions apply at termination of this Agreement or expiry of the Term:
 - (a) if the Transferring Employee transfers to a new employer for provision of the Services or part thereof then, regardless of whether or not it is a transfer of employment for the purposes of the Fair Work Act, the Service Provider must provide Hunter Water and the Transferring Employee with all necessary assistance to ensure that the long service leave is transferred with the Transferring Employee on the same conditions as the 'transfer in' provisions indicated in clause 21.3(2)(d).
 - (b) if the Transferring Employee does not transfer to a new employer for provision of the Services, then Transferring Employee will receive only their statutory entitlement.

21.5 Redundancy of Transferring Employees

- 1 The Service Provider will recognise continuity of service with Hunter Water and/or HWA (and any predecessor) of Transferring Employees for the purposes of calculating redundancy entitlements.
- 2 Hunter Water will record the length of service up to and including the day immediately prior to the Services Commencement Date for each Transferring Employee and hold the value of the accrued redundancy entitlements in its accounts (**Hunter Water Redundancy Accrual**).
- 3 The Service Provider will accrue redundancy entitlements for each Transferring Employee from the Services Commencement Date and hold the value of the accrued redundancy entitlements in its accounts (**Service Provider Redundancy Accrual**). During the Term, the Service Provider will report to Hunter Water on the Service Provider Redundancy Accruals for each Transferring Employee on an annual basis.
- 4 If the Service Provider terminates the employment of a Transferring Employee by reason of redundancy, whether during the Term or on the termination or expiry of this Agreement;
 - (a) the Service Provider will be liable for the payment of the accrued redundancy entitlement to the Transferring Employee; and

- (b) Hunter Water will pay to the Service Provider the value of the Hunter Water Redundancy Accrual for that Transferring Employee. The payment will be made within 30 Business Days of the Transferring Employee's employment with the Service Provider ceasing.

- 5 If a Transferring Employee's employment with the Service Provider ceases:
- (a) during the Term - for any reason other than redundancy; or
 - (b) on, as applicable, the termination of this Agreement or the expiry of the Term - in circumstances where the Service Provider is not liable to pay redundancy benefits to the Transferring Employee,

the Service Provider will pay to Hunter Water the value of the Service Provider Redundancy Accrual for the Transferring Employee calculated as at the date the Transferring Employee's employment with the Service Provider ends. The payment will be made within 30 Business Days of the Transferring Employee's employment with the Service Provider ceasing.

22. PERFORMANCE OF THE SERVICES

The Service Provider must ensure, and warrants, that:

- (a) it will keep Hunter Water informed of all matters of which Hunter Water ought reasonably be made aware, including by way of providing Hunter Water with 'early warning' of all such matters and provide such information in relation to the provision of the Services as may reasonably be required by Hunter Water;
- (b) it will perform the Services with the skill, care and diligence that is expected of a competent professional service provider who is suitably qualified and experienced in performing works and services similar to the Services;
- (c) it, and its Engaged Persons, as the case may be, has the accreditation or membership of professional or other bodies in relation to the provision of the Services and that it will maintain such accreditation or membership during the Term;
- (d) it, and its Engaged Persons, as the case may be, are appropriately qualified and have the requisite experience, qualifications, knowledge, skill and expertise to provide the Services;
- (e) it will perform the Services to comply with and satisfy the requirements of this Agreement including all Endorsed Management Plans, Endorsed Management Systems and other Endorsed documents;
- (f) it will perform the Services in accordance with Good Practice;
- (g) in performing the Services, it will satisfy Hunter Water's performance, operational and licence requirements, including complying with Hunter Water's performance, operational and licence obligations under the Operating Licence and any EP Licences;

- (h) in performing the Services it will not damage or destroy any property or assets of Hunter Water or any third party and will not damage or destroy, or unreasonably interfere with or cause any unplanned interruption to the operations of Hunter Water or any third party;
- (i) it accepts all of the risks, the obligation to manage the risks and the consequences of the occurrence of the risks, in the performance of the Services; and
- (j) it will otherwise perform the Services in accordance with this Agreement and all Laws.

23. ABNORMAL OPERATING EVENTS

23.1 Acknowledgement

- 1 Hunter Water and the Service Provider acknowledge that:
 - (a) water treatment and wastewater treatment are essential community services, the cessation or diminution of which may pose a significant health risk to the community or risk to the environment; and
 - (b) natural or artificial events may occur which prevent the Service Provider from meeting specified performance standards or have a material impact on the Service Providers resources and expenses.
- 2 Hunter Water and the Service Provider shall, as early as reasonably practicable, give written notice to each other if either becomes aware of any fact, matter, event or thing that may cause or give rise to an Abnormal Operating Event.
- 3 The impacts on Hunter Water, the Facilities, the Services and the Service Provider are to be mitigated in accordance with clauses 23.2 and 23.3.

23.2 Mitigation

- 1 The Service Provider shall:
 - (a) use its best endeavours (including expending sums of money that are reasonable taking into account the implications of the event) to prevent, reduce, mitigate or remedy the occurrence, or possible occurrence, of and effects or likely effects of an Abnormal Operating Event;
 - (b) continue to perform, in accordance with this Agreement, all Services which are not affected by the Abnormal Operating Event; and
 - (c) as soon as possible after the Abnormal Operating Event ceases to affect Services, resume performance of the affected obligations.

23.3 Relief

- 1 Neither Hunter Water nor the Service Provider is liable to the other for a breach of this Agreement to the extent that:
 - (a) the breach arises directly as a result of an Abnormal Operating Event; and
 - (b) the affected party's rights or obligations are diminished to the extent and for the period that those rights cannot be exercised or obligations cannot be performed as a direct result of the Abnormal Operating Event.
- 2 In response to a written request with supporting information issued as soon as reasonably practicable by the Service Provider, Hunter Water shall determine:
 - (a) whether an event or circumstance that has occurred or may occur is an Abnormal Operating Event;
 - (b) whether an Abnormal Operating Event has had or will have a material impact on:
 - (i) the Actual Costs to the Service Provider of performing the Services; or
 - (ii) the ability of the Service Provider to comply with a requirement of this Agreement; and
 - (c) if there has been or will be a material impact:
 - (i) the value of any Additional Costs to be reimbursed; and
 - (ii) any relief from a Service Standard Adjustment;required as a consequence of, or to accommodate, that impact, and notify the Service Provider of Hunter Water's determination.
- 3 The parties agree that in making its determination under clause 23.3(2)(c) Hunter Water may take into account the extent to which any material impact could reasonably have been avoided, mitigated or reduced if the Service Provider had given early warning in accordance with clause 12(4) or clause 23.1(2).

24. REGULATORY COMPLIANCE

24.1 Hunter Water's Obligations

The Service Provider acknowledges that Hunter Water, as the owner of the Facilities and the associated water distribution and wastewater collection systems, has a number of key obligations:

- (a) as holder of the Operating Licence;
- (b) as holder of the EP Licences associated with the Facilities;

- (c) under Hunter Water's Customer Contract; and
- (d) to make submissions to IPART.

24.2 Service Provider's Role

- 1 The Service Provider must assist Hunter Water by:
 - (a) preparing or assisting in the preparation of submissions required under any Approval or Law in relation to the Facilities; and
 - (b) alerting Hunter Water to the need for any such submission referred to in clause 24.2(1)(a).
- 2 Hunter Water will notify the Service Provider, as soon as reasonably practicable, of any submission to an Authority in relation to the Facilities, of which Hunter Water becomes aware and for which Hunter Water requires the Service Provider's assistance.
- 3 Hunter Water and the Service Provider shall collaborate to prepare any IPART pricing submission due within the Term, including:
 - (a) preparing specific proposals for the scope of the Services; and
 - (b) determining the costs of associated activities such as Long Cycle Preventive Maintenance, allowances for Abnormal Operating Events and allowances or estimates for Minor Capital Works.
- 4 Hunter Water will be under no obligation to agree with the Service Provider the estimates used in Hunter Water's IPART pricing submissions.

24.3 Changes to Regulatory Conditions

- 1 If an Authority, acting with authority to do so, makes or proposes a change to a statutory or regulatory requirement, including:
 - (a) the Operating Licence;
 - (b) an EP Licence in relation to one or any of the Facilities;
 - (c) the Australian Drinking Water Guidelines; and
 - (d) a requirement of NSW Health,then the Service Provider must, as soon as reasonably practicable or such later time agreed by the CMG, submit a detailed document for Endorsement in accordance with clause 25.2, with a copy to Hunter Water, of:
 - (e) whether the actual or proposed changed statutory or regulatory requirement can be met through changes to operational or maintenance practices;

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- (f) the action that the Service Provider proposes to take to enable compliance with the actual or proposed changed statutory or regulatory requirement; and
 - (g) whether or not the Service Provider considers that a Variation is or will be required to allow compliance with the actual or proposed changed statutory or regulatory requirement.
- 2 If the Service Provider's opinion that a Variation is or will be required is Endorsed in accordance with clause 25.2, the Service Provider shall submit the Endorsed document to Hunter Water for Hunter Water's consideration.
- 3 Subject to clause 24.3(4), if Hunter Water, on receipt of the Endorsed document referred to in clause 24.3(2), in its absolute and sole discretion agrees that compliance with the actual or proposed changed statutory or regulatory requirement can only reasonably be achieved with a Variation, Hunter Water shall issue, promptly in response to an actual changed statutory or regulatory requirement or in response to confirmation (to Hunter Water's absolute and sole satisfaction) that a proposed changed statutory or regulatory requirement is to be applied, a Variation Proposal in accordance with clause 34.1.
- 4 If Hunter Water issues a Variation Proposal in accordance with clause 24.3(3), Hunter Water and the Service Provider shall not be entitled to any adjustment of the Fees or a Variation where:
- (a) the increase or reduction in Additional Costs due to an actual or proposed changed statutory or regulatory requirement is less than ██████████ per Facility except if:
 - (i) the increase or reduction in Additional Costs is due to an actual or proposed changed statutory or regulatory requirement that occurs across multiple Facilities or is recurring; and
 - (ii) the total aggregate Additional Costs incurred arising out of the actual or proposed changed statutory or regulatory requirement exceeds ██████████ for the period up to the Initial Expiry Date; or
 - (b) an actual or proposed changed statutory or regulatory requirement is as a result of the Service Provider's negligence or breach of this Agreement.

25. ENDORSEMENT OF MANAGEMENT PLANS, MANAGEMENT SYSTEMS AND OTHER DOCUMENTS**25.1 Submission, Compliance and Revision**

- 1 Listed at Schedule 13 are the Management Plans and Management Systems that Hunter Water requires the Service Provider to prepare and implement as part of performing the Services.
- 2 Within the relevant period specified in Schedule 13 for the relevant Management Plan or Management System the Service Provider must submit for Endorsement in accordance with clause 25.2 the substantial development (with respect to the Management Systems under clause 11.4(1), clause 11.4(2) and clause 11.4(3)) and otherwise the detailed finalised versions of each Management Plan or Management System identified at Schedule 13.
- 3 Any documents, including Management Plans and Management Systems, that are otherwise required by this Agreement to be submitted for Endorsement in accordance with clause 25.2, must be submitted:
 - (a) by the time specified for its submission in this Agreement or any notice given under this Agreement; or
 - (b) subject to clause 25.1(3)(c), if no time is specified, by the Target Services Commencement Date; or
 - (c) if no time is specified and the Endorsement of the document is to or has to occur after the Services Commencement Date, as notified by Hunter Water.
- 4 Subject to clause 33(5), the Service Provider in performing the Services must comply with all Endorsed documents unless a deviation of the Endorsed document is Endorsed in advance in accordance with clause 25.2.
- 5 The Service Provider must update and revise Endorsed documents:
 - (a) annually on the commencement of each Contract Year after the first Contract Year;
 - (b) when required to do so as a result of any change in equipment, system or procedures in performing the Services; and
 - (c) when required to do so by Hunter Water.
- 6 All updates and revisions to the Endorsed documents must comply with this Agreement and must be submitted for Endorsement in accordance with clause 25.2.
- 7 Any finalised version of a Management Plan (except the Transition Plan) which is not a Transition Plan Deliverable must be Endorsed in accordance with clause 25.2 within 15 Business Days of the Services Commencement Date.

- 8 With respect to the Management Systems under clause 11.4(1), clause 11.4(2) and clause 11.4(3) that are only required to be Endorsed as substantially developed prior to the Services Commencement Date, the Service Provider is to ensure that the finalised versions of the Management Systems under clause 11.4(1), clause 11.4(2) and clause 11.4(3) must be Endorsed in accordance with clause 25.2 within 20 Business Days of the Services Commencement Date.

25.2 Endorsement

- 1 Any document which requires Endorsement must be submitted to the CMG in the first instance.
- 2 The CMG will review a document submitted for Endorsement and provide any comments or requirements to the Service Provider. Any such review and comments or requirements of the CMG may include the CMG reviewing, commenting on or providing requirements relating to any actual, estimated or proposed costs associated with or arising out of the document proposed for Endorsement. The Service Provider must consider the CMG's comments and requirements and amend the document to take the CMG's comments and requirements into account. The Service Provider must then resubmit the document to the CMG within the time notified by the CMG.
- 3 Review, comment and amendment of the relevant document will continue in accordance with clause 25.2(2) until the CMG considers that the document is suitable for Endorsement, at which time, except where clause 25.3 applies, the CMG shall submit the document to the ELG.
- 4 The ELG will notify the Service Provider and the CMG of its Endorsement of documents submitted to it, with or without conditions to which the Service Provider must comply.
- 5 Other than where a document has been submitted for Endorsement in accordance with clause 34, the CMG must not require a document to be amended, nor must the ELG apply a condition to a document, which will result in or constitute a Variation. All such amendments or conditions to a document must only result in a document which reflects Good Practice and compliance with this Agreement.
- 6 Despite any other provision in this Agreement, the Transition Plan must be Endorsed within 10 Business Days of the Agreement Date.

25.3 Delegated Approval Authority

- 1 This clause 25.3 applies where:
 - (a) a Value Enhancement proposal is submitted for Endorsement pursuant to clause 33(4) and representatives of both parties who are members of the CMG have authority delegated by their respective employers to agree to a proposal of the value and character submitted; or

- (b) a Variation Response is submitted for Endorsement pursuant to clause 34.2(1) and a representative of Hunter Water on the CMG has authority delegated by Hunter Water to approve a Variation.
- 2 If clause 25.3 applies, a document need not be referred to the ELG under clause 25.2(3), but can be Endorsed by the CMG.

26. SAFETY

26.1 General Safety Responsibility

- 1 The Service Provider is responsible for safety in performing the Services.
- 2 Subject to clause 26.1(5) the Service Provider is responsible for safety at all the Facilities from Services Commencement Date until the Services End Date.
- 3 In respect of each Facility other than a designated Construction Site under clause 17.4, Hunter Water appoints the Service Provider as the Principal Contractor for the purposes of the performance of the Services to the extent that the Services involve or are comprised of construction work, as that term is defined in the WHS Regulation.
- 4 The Service Provider acknowledges and agrees that, for the purposes of performing the Services, it will accept the obligations and responsibilities of the Principal Contractor notwithstanding that the Service Provider may not have sole possession of any Facility.
- 5 If any Facility or part of any Facility is designated as a Construction Site under clause 17.4 then for the duration of that designation, the Service Provider will not be the Principal Contractor for the Construction Site but must, if it enters onto that Construction Site, comply with all applicable Work Health and Safety Laws and with the safety requirements and directions of the person who has management and control of that Construction Site.

26.2 Risk Management

- 1 The Service Provider is to manage all risks to health and safety of any person arising as a consequence of the Services by:
 - (a) identifying all reasonably foreseeable hazards that could give rise to a risk;
 - (b) eliminating the risk so far as is reasonably practicable;
 - (c) if it is not reasonably practicable to eliminate the risk, minimize the risk so far as is reasonably practicable by implementing control measures;
 - (d) maintain the control measures so they remain effective; and

- (e) review, and if necessary revise, control measures so as to maintain, so far as is reasonably practicable, a work environment that is without risks to health and safety.

26.3 Hunter Water Site Safety Rules

- 1 In addition to any site safety rules adopted by the Service Provider, all persons (including the Service Provider) at workplaces on Hunter Water property must, as a minimum, comply with the site safety rules presented in Practice Note PN104.
- 2 The requirements in Practice Note PN104 are not exhaustive and the Service Provider should implement any necessary additional site safety rules following its own risk assessment of the Facilities and the Services.

26.4 Site Attendance Register

The Service Provider must maintain a register at each Facility of all persons attending the Facility including employees, subcontractors and visitors. The Service Provider must ensure that all persons attending the Facility sign in upon arrival and sign out when leaving. The Service Provider must check the register at the end of each day to ensure that all persons have left the Facility and are accounted for.

26.5 Health and Safety Committee

- 1 The Service Provider must establish a health and safety committee in compliance with the WHS Act no later than two months after the Service Commencement Date. The health and safety committee must meet at least every 3 months until the Services End Date.
- 2 The Service Provider must maintain minuted records of each meeting of the health and safety committee formed under clause 26.5 and provide copies to all attendees prior to the next meeting.
- 3 The Service Provider must invite Hunter Water to send a representative to all meetings of the health and safety committee formed under clause 26.5 and all safety related inspections of the Facilities.

26.6 Information, Training, Instruction and Supervision

- 1 The Service Provider must provide relevant information, training, instruction and supervision to protect, as far as is reasonably practicable, all workers and other persons from risks to their health and safety arising from the Services. The information, training and instruction must be readily understandable by the person to whom it is provided and be suitable and adequate having regard to:
 - (a) the nature of work carried out by the person;

- (b) the nature of risks associated with the work at the time of the information, training and instruction; and
 - (c) the control measures implemented.
- 2 The Service Provider's supervisors must be aware of and provide the level of supervision necessary to ensure, as far as is reasonably practicable, the health and safety of workers, including assessing worker's competency to undertake the work.
- 3 The Service Provider must ensure that all workers and visitors to the workplace must be given suitable induction training prior to entering the workplace.

26.7 Hunter Water Inductions and Training

- 1 Prior to performance of any of the Services at any Facility, the Service Provider must nominate key personnel who hold management and safety responsibilities to attend induction(s) provided by Hunter Water. The Service Provider must incorporate relevant information from the induction into training to be provided to all workers.
- 2 The Service Provider must ensure that all workers undertaking work on existing Hunter Water electrical assets, and their supervisors, must attend Hunter Water's electrical induction training prior to commencing the work.

26.8 Review by Hunter Water

Any review or inspection by Hunter Water of any information relating to work health and safety provided by the Service Provider under this Agreement shall not constitute the verification or acceptance by Hunter Water of the adequacy of the information, which remains the sole responsibility of the Service Provider.

27. APPROVALS

27.1 Service Provider

- 1 Prior to the Target Services Commencement Date the Service Provider must obtain all Approvals required to perform the Services, other than those Approvals referred to in clause 27.2.
- 2 The Service Provider must ensure at all times during the Term that:
 - (a) those Approvals that the Service Provider is required to obtain to perform the Services remain in place; and
 - (b) subject to clause 27.2, any new Approval required to perform the Services is obtained by the Service Provider.

- 3 The Service Provider must comply with all conditions of all Approvals which relate to performance of the Services and must not do anything nor fail to do something at a time or in a manner which would prevent Hunter Water from complying with any conditions of an Approval which apply to or are the responsibility of Hunter Water.

27.2 Hunter Water

- 1 Hunter Water currently holds or will obtain and keep in place the Approvals listed in Schedule 10.
- 2 Where requested by the Service Provider, Hunter Water will provide to the Service Provider a copy of all Approvals obtained by Hunter Water in relation to the Facilities and the conditions attaching to those Approvals.

27.3 Cooperation

Hunter Water and the Service Provider will cooperate with each other and each provide such assistance as is reasonably required to enable the other to obtain or retain the applicable Approvals in accordance with this Agreement. Where the Service Provider requires Hunter Water's assistance to vary an Approval for the benefit of the Service Provider then the Service Provider must bear Hunter Water's reasonable costs and expenses of providing such assistance to the Service Provider.

28. SUBCONTRACTING, NOVATION, EXISTING CONTRACTS AND WARRANTIES

28.1 Procurement Plan

- 1 The Service Provider must prepare and submit the Procurement Plan in accordance with clause 25.1.
- 2 The Procurement Plan must, at a minimum, set out:
 - (a) the details to be included in any Subcontract or Supply Contract directly related to the continuity of the Services, including:
 - (i) the term and commencement date;
 - (ii) the terms of payment;
 - (iii) the insurance requirements;
 - (iv) how the passing of property and risk in relation to any materials supplied is to be addressed, which must be consistent with the other provisions of this Agreement;
 - (v) the commencement and duration of warranties;
 - (vi) the quantum of securities (where applicable); and
 - (vii) an acknowledgement that, so as to comply with the requirements of clause 28.4, each Subcontract or Supply Contract, as applicable,

will require each Subcontractor or Supplier, as applicable, to agree to the novation of the Subcontract or Supply Contract, as applicable, to Hunter Water at the end of the Term;

- (b) the probity and ethical principles for procurement.

28.2 Compliance with Procurement Plan

- (a) Subject to clause 28.2(b), the Service Provider may enter into Subcontracts and Supply Contracts, but only to the extent permitted by, and otherwise in accordance with the requirements of, the Procurement Plan.
- (b) Notwithstanding the Endorsed Procurement Plan, Hunter Water may direct the Service Provider to address the performance of any part of the Services by a Subcontractor or a Supplier if Hunter Water is of the opinion that the Subcontractor's or Supplier's performance does not accord with the Service Provider's obligations under this Agreement. If the Subcontractor's or Supplier's performance does not, in Hunter Water's reasonable opinion, accord with the Service Provider's obligations under this Agreement within a reasonable time period after any Hunter Water direction under this clause 28.2(b), Hunter Water may direct the Service Provider to replace the Subcontractor or Supplier.
- (c) Any contractual arrangements with Suppliers and Subcontractors entered into by the Service Provider must not contain clauses which purport to commit Hunter Water to a continuation of that contract except as provided for under clause 28.4.

28.3 Engaged Persons

The Service Provider must ensure that all Subcontractors and Suppliers and the Service Provider's other Engaged Persons comply with the Service Provider's relevant obligations under this Agreement. The Service Provider will not, as a result of any subcontracting or sublicensing arrangement, be relieved from the performance of any obligation under this Agreement and the Service Provider will be liable for all acts and omissions of each of the Service Provider's Engaged Persons as though they were the actions of the Service Provider itself.

28.4 Novation

- 1 Except as otherwise agreed by Hunter Water, the Service Provider, without being entitled to compensation, must:
 - (a) procure the execution of a Deed of Novation from each Subcontractor or Supplier directly related to the continuity of the Services;
 - (b) execute that Deed of Novation; and
 - (c) provide the duly and correctly executed Deed of Novation to Hunter Water,

prior to the relevant Subcontractor or Supplier commencing any part of the Services.

28.5 Register

The Service Provider must establish and maintain and provide to Hunter Water on request, until the Services End Date, an up-to-date register of all Subcontracts and Supply Contracts, including details of the parties, subject matter, term, value, and any limitation on liability.

28.6 Hunter Water Existing Contractors

- 1 Hunter Water has existing contractual arrangements in place with third party contractors (**Existing Contractors**) which will continue to be in effect beyond the Services Commencement Date, for performance of some components of the Services (**Existing Contracts**). The Existing Contracts are listed in Schedule 11. Hunter Water will provide copies of the Existing Contracts to the Service Provider prior to the Target Services Commencement Date. In providing the Services, subject to the terms of this clause 28.6, the Service Provider must obtain the goods or use the services provided by an Existing Contractor.
- 2 Subject to clause 28.6(3), Hunter Water prior to the Target Services Commencement Date will notify the Existing Contractors that, on and from the Services Commencement Date, the Service Provider as Hunter Water's agent, has authority with respect to an Existing Contract to:
 - (a) place orders with an Existing Contractor on behalf of Hunter Water to the extent that the order specifically relates to the Service Provider's performance of the Services;
 - (b) receive and verify any goods received or services provided by or performed by an Existing Contractor;
 - (c) review invoices and confirm to Hunter Water that Hunter Water can make payments to an Existing Contractor under the terms of the relevant Existing Contract; and
 - (d) to perform such other management or administrative functions of Hunter Water under an Existing Contract as Hunter Water may require the Service Provider to perform from time to time on the giving of notice by Hunter Water to this effect. If so notified by Hunter Water, the Service Provider must be responsible for work health and safety management of any Existing Contractor including providing and regulating an Existing Contractor's access to a Facility if required.
- 3 Hunter Water authorises the Service Provider to be Hunter Water's agent to the extent detailed in clause 28.6(2) and the Service Provider must undertake such obligations in accordance with this clause 28.6 and in a manner so as to ensure that the Service Provider can comply with its obligations under this

Agreement. For the avoidance of doubt the extent of the Service Provider's authority as Hunter Water's agent with respect to any functions of Hunter Water under an Existing Contract will not at any time extend to the directing of a variation (unless the Service Provider is notified otherwise under clause 28.6(2) or separately by Hunter Water), terminating an Existing Contract, extending an Existing Contract or invoking any dispute resolution procedures under an Existing Contract.

- 4 In addition to the Service Provider's obligations under clause 28.6(2) and clause 28.6(3), the Service Provider must also manage the performance of any Existing Contractor so:
 - (a) that the Existing Contractor complies with its obligations under and the requirements of its relevant Existing Contract; and
 - (b) the Service Provider complies with its obligations under and the requirements of this Agreement.

- 5 If Hunter Water makes a payment or payments that are due under an Existing Contract the amount or amounts so paid or to be paid by Hunter Water to an Existing Contractor shall be deducted from the Fees due to the Service Provider for the same period that the payment under the Existing Contract applies or any such later period as Hunter Water decides. For the avoidance of doubt if an Existing Contract expires or is terminated earlier, then Hunter Water will be under no obligation to:
 - (a) enter into any new arrangement with a contractor for such contractor to perform any services or provide any goods previously provided under an Existing Contract; or
 - (b) make any payment to a Subcontractor or a Supplier that the Service Provider engages to perform any services or provide any goods previously provided under an Existing Contract.

- 6 On completion of the term of an Existing Contract or any earlier termination of an Existing Contract, the Service Provider must have made its own arrangements for delivery of the relevant goods or services previously supplied under the relevant Existing Contract (**New Contract**). The New Contract must comply with the following requirements:
 - (a) unless otherwise notified by Hunter Water, the standards and specification under the New Contract must be the same as or better than the standards under and specifications for the equivalent completed or expired Existing Contract; and
 - (b) must be drafted such that it ensures that the Service Provider's performance of the Services is maintained at or is better than the level previously required when the relevant component of the Services was performed or provided under the equivalent completed or expired Existing Contract.

The Service Provider must make all payments due to the relevant Subcontractor or Supplier under the New Contract. Hunter Water is not liable to make any payments under a New Contract. For the avoidance of doubt the Service Provider will be entering into any New Contract in its own capacity and not as agent for Hunter Water.

- 7 The Service Provider may, with the prior written consent of the relevant Existing Contractor under a relevant Existing Contract, propose to Hunter Water the cancellation of the relevant Existing Contract or variation of the relevant Existing Contract, provided that the cancellation or variation of the Existing Contract will not result in the Service Provider not being able to perform the Services (including that part of the Services to which the cancelled or varied Existing Contract applied). Approval of such a proposal shall be at Hunter Water's absolute and sole discretion.
- 8 If the Service Provider receives an invoice from an Existing Contractor the Service Provider must within two Business Days of receipt provide that invoice or a copy of, to Hunter Water. The Service Provider indemnifies Hunter Water and its Engaged Persons against, and must pay Hunter Water on demand, all Claims, expenses, losses, damages, costs (including the party's own or the party's solicitor's costs) and charges suffered or incurred in respect of or arising out of or as a consequence of any breach of this clause 28.6(8) by the Service Provider.
- 9 For the avoidance of doubt, Hunter Water may make a payment to an Existing Contractor at any time in Hunter Water's absolute and sole discretion.
- 10 The Service Provider acknowledges and agrees, if an Existing Contract contains any option or options for Hunter Water to extend the term under the relevant Existing Contract beyond the Target Services Commencement Date, that Hunter Water may at any time exercise its right or rights to extend such option or options at Hunter Water's absolute and sole discretion.

28.7 Benefit of warranties

- 1 Without limiting any other provision of this Agreement, the Service Provider must ensure that:
 - (a) any manufacturers' and suppliers' warranties and installation certifications relating to the Services (including with respect to the Stock, the Working Assets and any Minor Capital Works) which are available on reasonable commercial terms,

are:
 - (b) given:
 - (i) if available, severally in favour of the Service Provider and Hunter Water;

- (ii) if not available severally in favour of the Service Provider and Hunter Water, only in favour of Hunter Water; or
- (iii) only in favour of Hunter Water,

and if given:

- (c) severally in favour of the Service Provider and Hunter Water or if given only in favour of Hunter Water, permit the assignment of the rights of Hunter Water by Hunter Water to another person, without the warrantor's or certifier's consent;
- (d) only in favour of the Service Provider permit the assignment:
 - (i) of the rights of the Service Provider by the Service Provider to Hunter Water or to another person, without the warrantor's or certifier's consent; and
 - (ii) of the rights of Hunter Water by Hunter Water to another person, without the Service Provider's, warrantor's or certifier's consent following an assignment to Hunter Water under subclause 28.7(1)(d)(i),

and are:

- (e) given with effect from the date of delivery of the goods or completion of the works, as applicable; and
 - (f) duly executed.
- 2 The warranties and certifications required by subclause 28.7(1) shall be provided to Hunter Water at such times as notified by Hunter Water.
 - 3 The provision of the warranties and certifications required by this subclause 28.7 shall not derogate from any rights which Hunter Water may have against the Service Provider in respect of the subject matter of the warranties and certifications.
 - 4 If requested by Hunter Water, the Service Provider shall, within five Business Days of receipt of Hunter Water's request, assign the rights of the Service Provider under those manufacturers' and suppliers' warranties and installation certifications relating to the Services given only in favour of the Service Provider specified in the request to:
 - (a) Hunter Water; or
 - (b) a person nominated in the request.

29. PRICING

29.1 Pricing structure

The pricing structure for the Services is detailed in Schedule 3 and will comprise:

- (a) with respect to the Transition Services during the Transition Period:
 - (i) payments for the Transition Plan Deliverables, as set out in clause 16.3 and Schedule 3; and
 - (ii) Transferring Employee Entitlement Payments, as set out in Schedule 3;
- (b) Preserved Personal Leave Payments, as set out in Schedule 3;
- (c) on and from the Services Commencement Date, a fixed monthly Management Fee for the Services, as set out in Schedule 3;
- (d) on and from the Services Commencement Date, for each Facility:
 - (i) a monthly Facility Fixed Fee; and
 - (ii) a monthly Facility Variable Fee per unit of flow for each Facility, as set out in Schedule 3;
- (e) on and from the Services Commencement Date, a separate fee structure for each of:
 - (i) Abnormal Operating Events, in accordance with clause 23 and as set out in Schedule 3;
 - (ii) implementing Variations in accordance with clause 34 and as set out in Schedule 3;
- (f) for handback activities:
 - (i) payments for handback activities in accordance with the Handback Plan, as set out in clause 45 and Schedule 3; and
 - (ii) payments for reconciliation of Working Assets and Stock, as set out in clause 18.

For the avoidance of doubt, on and from the Services Commencement Date the Services do not include the Transition Services.

29.2 Open book pricing

- 1 During the Term the Service Provider must keep up to date open book accounts of the Actual Costs (and the Margin applied) of performing the Services (**Open Book Accounts**).
- 2 The structure of the Open Book Accounts must allow the identification of all Actual Costs, Additional Costs, Margin and Margin Amounts at a transaction level, categorised for each Facility, to the satisfaction of Hunter Water. The Service Provider shall submit an accounting structure of the Open Book Accounts to Hunter Water no later than 20 Business Days prior to the Target Services Commencement Date for Hunter Water's approval.
- 3 The Open Book Accounts may be used by Hunter Water for:

- (a) valuing Variations by considering Actual Cost, Additional Costs, Margin and Margin Amounts impacts;
 - (b) estimating forward period costs for IPART submissions;
 - (c) evaluating Value Enhancement proposals; and
 - (d) determining any Additional Costs to be reimbursed or to be paid under this Agreement.
- 4 The Service Provider must ensure that the Open Book Accounts are available to Hunter Water (or persons nominated by Hunter Water) at all reasonable times for examination, audit, inspection, transcription and copying.

29.3 Pricing for Contract Years 1 through 4

The pricing for the Management Fee, each Facility Fixed Fee and each Facility Variable Fee as set out in Schedule 3 at the Agreement Date will not be subject to indexation or amendment (other than where amended in accordance with a Variation in accordance with this Agreement) before the end of Contract Year 4, representing the remainder of the IPART price path period current as at the Agreement Date plus a further 1 year.

29.4 Pricing for Contract Year 5 and subsequent Contract Years

- 1 The pricing for the Management Fee, each Facility Fixed Fee and each Facility Variable Fee as set out in Schedule 3 (as such pricing may have been amended in accordance with this Agreement) will, on the first day of Contract Year 5 and each anniversary of that date thereafter until the Services End Date, be subject to indexation in accordance with Part K of Schedule 3.

29.5 Flow Meters

- 1 The flow meters referenced at Schedule 3 Part F Table 3F.1 and 3F.2 (**Flow Meters**) will be calibrated by Hunter Water at such times as Hunter Water decides in accordance with Good Practice taking into account, where applicable, the requirements of the EP Licence, any Laws and Authority requirements.
- 2 Flow Meter tests to confirm the accuracy of the Flow Meters shall be carried out by Hunter Water in accordance with Good Practice taking into account, where applicable, the requirements of the EP Licence, any Laws and Authority requirements.
- 3 The Service Provider shall be given 3 Business Days prior written notice by Hunter Water of any Flow Meter test to be undertaken by Hunter Water and the Service Provider will be entitled to have a representative present during such testing.

- 4 Hunter Water will provide a written report to the Service Provider detailing the results of any Flow Meter test within 10 Business Days of that test.
- 5 If the Service Provider disputes the accuracy or results of a Flow Meter test then the Service Provider may dispute such test and request Hunter Water to undertake a further Flow Meter test. If the Service Provider makes such a request then Hunter Water will undertake the further Flow Meter test within a reasonable time of the Service Provider's request and clause 29.5(2), clause 29.5(3) and clause 29.5(4) will re-apply.
- 6 If Hunter Water undertakes an additional Flow Meter test in accordance with clause 29.5(5) then the cost of such additional Flow Meter test shall be borne by the Service Provider except where the Flow Meter test identifies an inaccuracy or a result that Hunter Water determines in its absolute and sole discretion has resulted in the Service Provider being underpaid any Fees or other monies under this Agreement, in which case Hunter Water shall bear the cost of the test.
- 7 Where a Flow Meter test identifies an inaccuracy or a result that Hunter Water determines in its absolute and sole discretion has resulted in an underpayment or overpayment of any Fees or other monies under this Agreement then Hunter Water in its absolute and sole discretion shall within a reasonable time effect an adjustment of the Fees or other monies to reflect the impact of the inaccuracy or result. Any adjustment of the Fees or other monies to reflect the impact of the inaccuracy or result will only be back-dated to the date of the last relevant Flow Meter test or the Services Commencement Date, whichever is the later date, unless Hunter Water determines that there is a reason to indicate why the inaccuracy or result occurred in which case Hunter Water may determine in its absolute and sole discretion not to make such adjustment.
- 8 If the Service Provider does not agree with a determination of Hunter Water under this clause 29.5 then the Service Provider may refer the matter for dispute resolution in accordance with clause 53.

30. PERFORMANCE MANAGEMENT

30.1 Acknowledgement

- 1 Hunter Water and the Service Provider acknowledge that the value to Hunter Water from performance of the Services varies depending upon how well the Services are performed.
- 2 In recognition of this Hunter Water has developed the Performance Management Framework and a system of Service Standard Adjustments that may, in accordance with this Agreement, have to be paid by the Service Provider to Hunter Water.

- 3 The Service Provider acknowledges that it has taken the Performance Management Framework and the system of Service Standard Adjustments into account in the Fees in Schedule 3 which were tendered to Hunter Water by the Service Provider and accepted by Hunter Water.
- 4 Subject to clause 30.3, nothing in this clause 30 limits Hunter Water's rights under clause 40, the other provisions of this Agreement or Hunter Water's rights otherwise to claim general damages at law for any Claim, expense, loss, damage, cost, charge or other liability suffered or incurred by Hunter Water in connection with, arising out of or as a consequence of any breach of this Agreement or any negligent act or negligent omission of the Service Provider.

30.2 Performance Monitoring

- 1 By the fifth Business Day of each month the Service Provider must provide to Hunter Water a report for the prior month of the Service Provider's performance against each KPI detailed in Schedule 6.
- 2 On receipt of the report required under clause 30.2(1), Hunter Water will on a basis and within a timeframe as required by Hunter Water monitor and assess the Service Provider's performance of the Services against the KPIs detailed in Schedule 6 and issue to the Service Provider a report for the relevant month detailing the outcomes of Hunter Water's monitoring and assessment of the Service Provider's performance of the Services against the KPIs in Schedule 6 and whether any Service Standard Adjustments are to be paid by the Service Provider. The monitoring and assessment may include Hunter Water assessing information held by Hunter Water or third parties which Hunter Water deems is relevant to monitor and assess the Service Provider's performance of the Services against the KPIs detailed in Schedule 6.

30.3 Service Standard Adjustment

- 1 The Service Provider's entitlement to payment of the Fees each month under clause 31 is subject to the Service Provider being obliged to pay to Hunter Water a monthly Service Standard Adjustment if the Service Provider does not meet the Target for a KPI in accordance with Schedule 6 and the report issued by Hunter Water under clause 30.2(2) requires the Service Provider to pay a Service Standard Adjustment.
- 2 If the report issued by Hunter Water under clause 30.2(2) assesses that the Service Provider is to pay a Service Standard Adjustment then such report must specify in reasonable detail the cause and calculation of the Service Standard Adjustment having regard to the calculations referred to in Schedule 6.
- 3 Payment of any Service Standard Adjustment by the Service Provider to Hunter Water shall occur as a set-off from the next or subsequent monthly payments of the Fees due from Hunter Water to the Service Provider, but if

no further payment is to be made by Hunter Water to the Service Provider under this Agreement, the Service Provider must, within 20 Business Days of any written notice or certificate issued pursuant to clause 30.3(2), pay the amount of the Service Standard Adjustment to Hunter Water.

- 4 Subject to clause 30.3(5), clause 30.3(6) and clause 30.3(7), Hunter Water agrees that the maximum amount of a monthly Service Standard Adjustment payable by the Service Provider to Hunter Water if the standard of the Services delivered by the Service Provider in that month do not meet the standard required as measured against the KPIs in accordance with Schedule 6 shall be no more than [REDACTED] plus GST.
- 5 The payment by the Service Provider of a monthly Service Standard Adjustment to Hunter Water and the monthly cap detailed in clause 30.3(4) do not in any way limit Hunter Water's right to recover general damages at law for any Claim, expense, loss, damage, cost, charge or other liability suffered or incurred by Hunter Water in connection with, arising out of or as a consequence of any breach of this Agreement or any negligent act or negligent omission of the Service Provider.
- 6 If Hunter Water recovers from the Service Provider general damages at law for any Claim, expense, loss, damage, cost, charge or other liability suffered or incurred by Hunter Water in connection with, arising out of or as a consequence of any breach of this Agreement or any negligent act or negligent omission of the Service Provider (**General Damages**) then the Service Provider will be relieved from paying to Hunter Water an amount of the General Damages equivalent to the amount of the Service Standard Adjustment that is directly related to the breach of this Agreement or negligent act or negligent omission of the Service Provider for which the General Damages recoverable by Hunter Water relate.
- 7 The Service Provider acknowledges and agrees that any Service Standard Adjustment paid by the Service Provider to Hunter Water:
 - (a) will be triggered by, and relates to, the number of times that the relevant KPI is not complied with;
 - (b) does not relate in any way to the outcome or consequences of the Service Provider's non-compliance with the underlying requirements of this Agreement; and
 - (c) does not preclude Hunter Water from Claiming for any breach of the quality of the Services provided by the Service Provider.
- 8 If:
 - (a) Hunter Water's right to apply a Service Standard Adjustment is held to be unenforceable for any reason; or

- (b) the monthly cap detailed in clause 30.3(4) does in any way limit Hunter Water's right to recover general damages at law for any Claim, expense, loss, damage, cost, charge or other liability suffered or incurred by Hunter Water in connection with, arising out of or as a consequence of any breach of this Agreement or any negligent act or negligent omission of the Service Provider

then the Service Provider indemnifies Hunter Water for any Claim, expense, loss, damage, cost, charge or other liability suffered or incurred by Hunter Water in connection with, arising out of or as a consequence of any breach of this Agreement or any negligent act or negligent omission of the Service Provider.

31. PAYMENT

31.1 Payment claims

- 1 On the fifth day of each calendar month the Service Provider must submit to Hunter Water a payment claim detailing the amounts to which the Service Provider is expressly entitled under this Agreement.
- 2 The payment claim must:
 - (a) for each amount claimed, identify the Agreement provision entitling the Service Provider to payment of the amount;
 - (b) for each amount claimed, detail the calculations upon which the amount was determined;
 - (c) include a Subcontractor Statement completed no earlier than the date of the payment claim;
 - (d) show the breakdown of costs identifying all capital costs and operational costs with reference to costs recorded on work orders in Ellipse;
 - (e) include any other information and supporting documentation required by this Agreement or by Hunter Water; and
 - (f) if the payment claim relates to a claim for Minor Capital Works, be accompanied by a Supporting Statement that complies with the requirements of the SOP Act and the *Building and Construction Industry Security of Payment Regulation 2008 (NSW)* regarding Supporting Statements.
- 3 Within:
 - (a) for a payment claim that relates to a claim for Minor Capital Works, ten Business Days after receipt of the payment claim; and
 - (b) for all other payment claims, 20 Business Days after receipt of the payment claim,

Hunter Water must issue to the Service Provider a payment schedule that sets out the extent to which Hunter Water agrees that the payment claim is payable, and if it considers that the payment claim is not payable in full, providing the reasons.

- 4 Within two Business Days after receipt of the payment schedule from Hunter Water the Service Provider must provide to Hunter Water a valid tax invoice for the approved amount stated in the payment schedule.
- 5 Subject to clause 31.2, payment of monthly payment claims will be made by Hunter Water:
 - (a) for a payment claim that relates to a claim for Minor Capital Works, within 15 Business Days after receipt by Hunter Water of the payment claim; and
 - (b) for all other payment claims, within 20 Business Days after receipt by Hunter Water of a tax invoice from the Service Provider in accordance with clause 31.1(4).
- 6 On the date for making a payment claim the Service Provider must also provide to Hunter Water a detailed breakdown (including costs) of all Capital Works (including all Capital Works that the Service Provider is required to undertake under this Agreement but is not entitled to claim payment for under this Agreement) undertaken and completed by the Service Provider in the previous month, together with a record (including costs) of all prior Capital Works undertaken and completed up to that date by the Service Provider.

31.2 Conditions Precedent

To the extent permitted by law, without limiting any other rights of Hunter Water under this Agreement or at law, Hunter Water may withhold payment to the Service Provider for any of the Services (including any payment in respect of Transition Plan Deliverables) as follows:

- 1 for a payment that relates to a payment claim for Minor Capital Works:
 - (a) in accordance with the following, as applicable:
 - (i) section 127(5) of the *Industrial Relations Act 1996* (NSW);
 - (ii) clause 18(6) of Schedule 2 of the *Payroll Tax Act 2007* (NSW);
 - (iii) section 175B(7) of the *Workers Compensation Act 1987* (NSW);
 - (iv) clause 31.6; or
 - (b) if Hunter Water terminates the Contract under clause 43.1, in which case Hunter Water may withhold payment until such time that all elements and requirements of clause 43.1 are finalised; and

- 2 for a payment that relates to any other payment claim:
- (a) until the Service Provider has submitted:
 - (i) the Security referred to in clause 35.1;
 - (ii) the guarantee referred to in clause 35.7 (where required under the terms of clause 35.7);
 - (iii) the certificates of currency of insurance in accordance with clause 38.1;
 - (iv) in respect of each monthly payment claim, the Subcontractor Statement in accordance with clause 31.1(2); and
 - (v) in respect of each monthly payment claim, the valid tax invoice in accordance with clause 31.1(4);
 - (b) if Hunter Water terminates the Contract under clause 43.1, in which case Hunter Water may withhold payment until such time that all elements and requirements of clause 43.1 are finalised;
 - (c) if the Service Provider fails:
 - (i) to comply with the requirements of clause 25.1(7);
 - (ii) to comply with the requirements of clause 25.1(8);
 - (iii) to comply with the requirements of clause 30.2(1);
 - (iv) to comply with the requirements of clause 35.5;
 - (v) to comply with the requirements of clause 38.1; or
 - (vi) within the time required, to comply with an obligation to provide something to Hunter Water or the CMG or do something as required by this Agreement; and
 - (d) in accordance with the following, as applicable:
 - (i) section 127(5) of the *Industrial Relations Act 1996 (NSW)*;
 - (ii) clause 18(6) of Schedule 2 of the *Payroll Tax Act 2007 (NSW)*;
 - (iii) section 175B(7) of the *Workers Compensation Act 1987 (NSW)*; or
 - (iv) clause 31.6.

31.3 Auditing

Hunter Water (or a person nominated by Hunter Water) has the right at any time to audit the financial or any other records, data or documents of the Service Provider for any part of the Services which involves a reimbursement of costs incurred or a payment determined by reference to costs incurred (including third party costs). The Service Provider must comply with any request made by Hunter Water under this clause 31.3 including by providing to Hunter Water (or a person nominated by Hunter Water), within the time required, all documentation and information requested by Hunter Water (or a person nominated by Hunter Water).

31.4 Right of set-off

Without limiting Hunter Water's rights under any other part of this Agreement or at law, Hunter Water may deduct from any moneys due to the Service Provider, any sum which:

- (a) is agreed to be payable;
- (b) is determined by Hunter Water to have become payable; or
- (c) determined pursuant to clause 53 to have become payable,

by the Service Provider to Hunter Water whether or not Hunter Water's right to payment arises pursuant to an indemnity or by way of damages, debt, restitution or otherwise. Nothing in this clause 31.4 will affect the right of Hunter Water to recover from the Service Provider the whole of such moneys or any balance that remains owing by other means.

31.5 Latent Conditions

- 1 If the Service Provider proves to Hunter Water, to Hunter Water's absolute and sole satisfaction, that the Service Provider incurred Additional Costs greater than ██████ due to a Latent Defect, the Service Provider shall be entitled to payment for the Additional Costs incurred by the Service Provider in relation to the Latent Defect to the extent that the Additional Costs are not due to the failure of the Service Provider to carry out the Preventive Maintenance requirements of this Agreement or any other breach of this Agreement by the Service Provider or the negligence of the Service Provider.
- 2 The Service Provider must provide to Hunter Water within the time required by Hunter Water all documentation and other information relating to the claimed Latent Defect that Hunter Water requires.

31.6 Subcontractors and Payment Withholding Requests

- 1 If a Subcontractor, a Supplier or other person serves a Payment Withholding Request on Hunter Water in accordance with the SOP Act, Hunter Water shall be entitled to withhold from money due and payable to the Service Provider under this Agreement an amount equivalent to the whole or any part of the Payment Claim (**Retained Money**).
- 2 Hunter Water shall be entitled to withhold any Retained Money until the first of the following occurs:
 - (a) the adjudication application for the Payment Claim (**Adjudication Application**) is withdrawn;
 - (b) the Service Provider pays to the Subcontractor, the Supplier or other person the amount claimed to be due under the Payment Claim;

- (c) the Subcontractor, the Supplier or other person serves a notice of claim on Hunter Water for the purposes of section 6 of the *Contractors Debts Act 1997* (NSW) in respect of the Payment Claim; or
 - (d) a period of 20 Business Days elapses after a copy of the adjudicator's determination of the Adjudication Application is served on Hunter Water by the Subcontractor, the Supplier or other person.
- 3 If Hunter Water, in making a payment to the Service Provider under this Agreement, fails to comply with a Payment Withholding Request served on Hunter Water by a Subcontractor, a Supplier or another person, such that under the SOP Act Hunter Water becomes jointly and severally liable with the Service Provider in respect of the whole or any part of a debt owed by the Service Provider to the Subcontractor, the Supplier or the other person, the debt so incurred will be moneys due from the Service Provider to Hunter Water. The moneys shall be due from the Service Provider to Hunter Water irrespective of whether the amount for which Hunter Water is liable to the Subcontractor, the Supplier or other person is greater than the amount which the Service Provider is ultimately required to pay the Subcontractor, the Supplier or the other person.

31.7 Documents under Security of Payment Act

The Service Provider must:

- 1 on the day of issue or receipt, give Hunter Water a copy of any document that the Service Provider:
 - (a) issues to Hunter Water; or
 - (b) receives from or issues to any adjudicator or court,under or in connection with the SOP Act which is related to the Services, whether being performed by the Service Provider, a Subcontractor or a Supplier; and
- 2 ensure in any Subcontract or Supply Contract that the Subcontractor or Supplier is obliged to serve a copy of the adjudication determination to which the Payment Withholding Request relates on Hunter Water within 5 Business Days after the adjudication determination is served on the Subcontractor or the Supplier.

31.8 Other moneys due

Hunter Water may elect that moneys due from the Service Provider to Hunter Water otherwise than in connection with the subject matter of this Agreement also be due to Hunter Water under this Agreement.

32. GST

32.1 Definitions

Words in this Agreement have the same meaning as in GST Act unless the context makes it clear that a different meaning is intended.

32.2 Interpretation

If a party is a member of a GST group, references to GST which the party must pay and to input tax credits to which the party is entitled include GST which the representative member of the GST group must pay and input tax credits to which the representative member is entitled.

32.3 Payment of GST

- 1 A recipient of a taxable supply under or in connection with this Agreement must pay to the supplier, in addition to the consideration for the taxable supply, an amount equal to any GST paid or payable by the supplier in respect of the taxable supply; and
- 2 the recipient must make that payment to the supplier as and when the consideration or part of it is provided, except that the recipient need not pay unless the recipient has first received a tax invoice (or an adjustment note) for that taxable supply.

32.4 Reimbursements

Where a supplier incurs a cost or expense for which it may be reimbursed by, indemnified against, claim against or set-off against another party under this Agreement, the amount to be paid or credited is the cost or expense (reduced by the input tax credit that the supplier is entitled to claim in respect of that cost or expense) plus the amount in respect of GST payable by the recipient under clause 32.3.

32.5 Indemnities and Claims

- 1 If a payment under an indemnity gives rise to a liability to pay GST, the payer must pay, and indemnify the payee against, the amount of that GST.
- 2 A party may recover payment under an indemnity before it makes the payment in respect of which the indemnity is given.
- 3 If a party has a Claim whose amount depends on actual or estimated revenue or which is for a loss of revenue, revenue must be calculated without including any amount received or receivable as reimbursement for GST (whether that amount is separate or included as part of a larger amount).

33. VALUE ENHANCEMENTS

- 1 During the Term the parties will work together, including through the CMG and Collaborative Work Teams, to identify new measures or initiatives to enhance this Agreement's outcomes.
- 2 Hunter Water and the Service Provider recognise that if a change is to be made by agreement, the benefits received by each party must be greater than their respective costs and that the costs must be affordable at the time. Benefits and costs include non-financial properties such as:
 - (a) level of health and safety risk;
 - (b) level of regulatory compliance risk;
 - (c) asset reliability; and
 - (d) asset value or economic life.
- 3 Suggestions to enhance Agreement outcomes may be raised by either party through the CMG. In the first instance, suggestions may be outlined in discussions at the CMG to determine the willingness of the parties to pursue the suggestion and agree the detail required in a complete proposal, including whether adoption of the proposal would require a Variation Proposal.
- 4 Either party may submit a documented proposal, with a copy to the other party, for Endorsement in accordance with clause 25.2. In considering any formal proposal to enhance Agreement outcomes, the CMG and the ELG shall ensure that all of the benefits and costs to both parties are documented with their allocation.
- 5 Any Endorsed proposal shall be submitted to Hunter Water and the Service Provider for their consideration. A proposal will come into effect when it is agreed in writing between the parties.
- 6 Both parties shall implement any actions required of them by a proposal which is agreed under clause 33(5).

34. VARIATIONS, SERVICES DIRECTIONS AND NOTICES**34.1 Variation Proposal**

- 1 Hunter Water may, at any time during the Term, issue a Variation Proposal by giving written notice to the Service Provider (with a copy to the CMG) notifying the Service Provider that Hunter Water proposes a Variation to the Services.
- 2 A notice given by Hunter Water is only a Variation Proposal if it is issued by Hunter Water and contains a statement to the effect that "This notice is a Variation Proposal issued pursuant to clause 34.1".

- 3 The Variation Proposal must specify the time, which must be reasonable having regard to the circumstances, within which the Service Provider is required to respond to the Variation Proposal.

34.2 Variation Response

- 1 As soon as practicable after receipt of a Variation Proposal, and in any event within the time specified in the Variation Proposal, the Service Provider must submit a draft Variation Response, with a copy to Hunter Water, for Endorsement in accordance with clause 25.2. The Variation Response must set out:
 - (a) the actions or steps that the Service Provider proposes to implement the proposed Variation;
 - (b) the Service Provider's assessment of the proposed Variation Price (based on Estimated Additional Costs plus any relevant Margin Amount or Margin Amounts) to implement the proposed Variation including details of the basis of pricing used in those assessments, and any requisite adjustment or adjustments to the Fees;
 - (c) any time, performance or quality consequences of the proposed Variation, including any required adjustment to the Performance Management Framework;
 - (d) any changes that the Service Provider considers will be required to be made to this Agreement as a result of the proposed Variation;
 - (e) any other information requested by Hunter Water in the Variation Proposal; and
 - (f) any additional matters relevant to the impact of the proposed Variation.
- 2 If the Service Provider considers that the proposed Variation is likely to prejudice the ability of the Service Provider to perform the Services in accordance with this Agreement, the Service Provider may in its Variation Response:
 - (a) object to the proposed Variation;
 - (b) advise the CMG of its reasons for objecting, explaining in detail each of the risks and likely consequences of implementing the proposed Variation (including the obligations under this Agreement which the Service Provider considers it will be prejudiced in meeting); and
 - (c) advise the CMG of the course of action which the Service Provider recommends in the circumstances.
- 3 The Service Provider shall submit the Endorsed Variation Response to Hunter Water within 2 Business Days of the Service Provider receiving an Endorsed Variation Response from the CMG or ELG, as applicable, and Hunter Water may choose to issue:

- (a) a Variation Instruction;
- (b) a Services Direction; or
- (c) a written notice withdrawing the Variation Proposal.

34.3 Variation Instruction

- 1 If Hunter Water agrees with an Endorsed Variation Response (including the Endorsed Variation Price) it may issue a Variation Instruction by written notice in response to an Endorsed Variation Response and the Service Provider must implement the Variation.
- 2 The Variation Instruction must detail as set out in the Endorsed Variation Response:
 - (a) the scope of the Variation;
 - (b) any adjustment to the Fees, if any, based on the approved Endorsed Variation Price;
 - (c) any changes (if any) to the Performance Management Framework; or
 - (d) any changes (if any) to this Agreement.
- 3 A notice is only a Variation Instruction if it is issued by Hunter Water and contains a statement to the effect that "This notice is a Variation Instruction issued pursuant to clause 34.3".
- 4 The CMG may, if the circumstances reasonably require, either:
 - (a) create a Practice Note to record the current status of any part of this Agreement (including any Schedules) amended as a result of a Variation Instruction; or
 - (b) recommend that Hunter Water issue amended documents reflecting the amended Agreement or Schedules.

34.4 Services Direction

- 1 If Hunter Water does not agree with an Endorsed Variation Response (including the Endorsed Variation Price) it may issue a Services Direction by written notice in response to an Endorsed Variation Response and the Service Provider must implement the Variation.
- 2 The Services Direction must detail:
 - (a) the scope of the Variation;
 - (b) any adjustment to the Fees (if any), with the approved Variation Price to be determined by Hunter Water in its absolute and sole discretion;
 - (c) the basis of Hunter Water's determination of the approved Variation Price;

- (d) any changes (if any) to the Performance Management Framework; and
 - (e) any changes (if any) to this Agreement.
- 3 A notice is only a Services Direction if it is issued by Hunter Water and contains a statement to the effect that "This notice is a Services Direction issued pursuant to clause 34.4".
- 4 If the Service Provider has raised an objection to the Variation under clause 34.2(2), Hunter Water must state in the Services Direction how it has taken that objection into account in considering and making changes to the Performance Management Framework and this Agreement.
- 5 The CMG may, if the circumstances reasonably require, either:
- (a) create a Practice Note to record the current status of any part of this Agreement (including any Schedules) amended as a result of a Services Direction; or
 - (b) recommend that Hunter Water issue amended documents reflecting the amended Agreement or Schedules.

34.5 Change in Law

- 1 If a Change in Law occurs the Service Provider must, as soon as reasonably practicable, submit for Endorsement in accordance with clause 25.2, with a copy to Hunter Water, a document detailing:
- (a) the improvements or action that the Service Provider proposes to take to enable compliance with the Change in Law; and
 - (b) whether or not the Service Provider considers that a Variation is required to allow compliance with the Change in Law.
- 2 If the Service Provider's opinion that a Variation is required is Endorsed under clause 25.2, the Service Provider shall submit the Endorsed document to Hunter Water for its consideration.
- 3 Subject to clause 34.5(4), if Hunter Water in its absolute and sole discretion, on receipt of the Endorsed document referred to in clause 34.5(2), agrees that the Service Provider's compliance with a Change in Law can only reasonably be achieved with a Variation, Hunter Water shall issue a Variation Proposal in accordance with clause 34.1.
- 4 If Hunter Water issues a Variation Proposal in accordance with clause 34.5(3), Hunter Water and the Service Provider shall not be entitled to adjustment of the Fees or a Variation where:
- (a) the increase or reduction in Additional Costs due to a Change in Law is less than ████████ per Facility except if:

- (i) the increase or reduction in Additional Costs is due to a Change of Law that occurs across multiple Facilities or is recurring; and
 - (ii) the total aggregate Additional Costs incurred arising out of the Change of Law exceeds ████████ for the period up to the Initial Expiry Date; or
- (b) the Change in Law is as a result of the Service Provider's negligence or breach of this Agreement.

34.6 Notices

- 1 The Service Provider must comply with any notice given by Hunter Water provided that the Service Provider's compliance with the notice does not cause the Service Provider to be in breach of this Agreement or any Law.

34.7 Possible Variations

- 1 Subject to clause 34.7(4), if a notice by Hunter Water (other than a Variation notified under clause 34.1, clause 34.3 or clause 34.4) in the opinion of the Service Provider constitutes or involves a Variation, the Service Provider must before commencing work on the subject matter of the notice give written notice to Hunter Water that the Service Provider considers the notice constitutes or involves a Variation.
- 2 Within 10 Business Days of the Service Provider giving the notice required by subclause 34.7(1) (being the confirmatory written notice required by subclause 34.7(4) where the Service Provider has given an oral notice), the Service Provider may submit a Variation Response to Hunter Water in accordance with clause 34.2 and clause 34.2 shall apply to that Variation Response submitted.
- 3 Notwithstanding any other provision of this Agreement, if the Service Provider:
 - (a) commences work on the subject matter of a notice by Hunter Water referred to in clause 34.7(1) before giving the notice to Hunter Water required by clause 34.7(1); or
 - (b) fails to submit a Variation Response in accordance with clause 34.7(2),the Service Provider shall not be entitled to a Variation, an adjustment to the Fees or any additional monies arising out of or in connection with a notice by Hunter Water referred to in clause 34.7(1).
- 4 Subject to clause 34.10 and clause 41, in the case of an Emergency the Service Provider is not required to give written notice that the Service Provider considers a Hunter Water notice constitutes or involves a Variation, provided that the Service Provider first gives Hunter Water an oral notice before commencing work on the subject matter of the Hunter Water notice.

Any oral notice given by the Service Provider under this clause 34.7(4) must be confirmed in writing to Hunter Water's Representative by the Business Day following the date of such oral notice.

34.8 Requirements for a Variation and pricing of a Variation

- 1 A Variation can only be instructed by Hunter Water or arise under this Agreement in accordance with the requirements of this clause 34.
- 2 For the avoidance of doubt, no notice given by the ELG, the CMG or a Collaborative Work Team may constitute a Variation Proposal, a Services Direction, or any other form of notice of a Variation.
- 3 For the avoidance of doubt, no notice given by Hunter Water will constitute a Variation Proposal, a Variation Instruction, a Services Direction, or any other form of notice of a Variation unless the notice given by Hunter Water complies with the notice requirements of this clause 34 as they relate to a Variation Proposal, a Variation Instruction or a Services Direction.
- 4 A Variation will be priced in accordance with clause 29 unless otherwise specified in this clause 34.
- 5 Where a Variation involves the deletion of any part of the Services (including removal of a Facility or part of a Facility), Hunter Water may engage a third party to perform the deleted work or Hunter Water may perform the deleted work.

34.9 Service Provider Proposed Variations

- 1 The Service Provider may at any time propose a Variation under clause 7.4(3), clause 7.5(2), clause 9.6(3) or clause 10.3(3) and Hunter Water will review or consider the proposed Variation under clause 7.4(3), clause 7.5(2) clause 9.6(3) or clause 10.3(3) and give or withhold its approval within a reasonable time in the circumstances. The Service Provider must comply with the requirements of Practice Note PN 703 if proposing a Variation under this clause 34.9(1). If the Service Provider carries out the repair or work without the prior approval of Hunter Water the Service Provider shall not be entitled to any extra payment or extra time.
- 2 The Service Provider may at any other time propose a Variation to Hunter Water but Hunter Water is not at any time obliged to review or consider the proposed Variation.
- 3 If the Service Provider proposes a Variation under clause 34.9(1) or clause 34.9(2) then the Service Provider's proposal must include all details that would be required by a Variation Response under clause 34.2, as if the Service Provider was responding to a Variation Proposal given under clause 34.1, and clause 34.4 shall also apply with respect to the Service Provider's proposal as

if such proposal was deemed to be an Endorsed Variation Response with which Hunter Water did not agree.

- 4 If the Service Provider requests Hunter Water to give a notice directing a Variation for the convenience of the Service Provider, Hunter Water may do so in its absolute and sole discretion. Any notice directing a Variation for the convenience of the Service Provider given by Hunter may be conditional and unless the notice provides otherwise the Service Provider shall not be entitled to any extra payment or extra time.

34.10 Urgent Work Variations

- 1 If an Urgent Work Variation is required to be implemented by the Service Provider then the Service Provider must submit a request to Hunter Water by email stating:
 - (a) the scope of the work for the Urgent Work Variation;
 - (b) the reason the Urgent Work Variation is considered urgent;
 - (c) a preliminary estimate of the Estimated Additional Cost for the work comprising the Urgent Work Variation; and
 - (d) the time by which Hunter Water is required to respond to the Service Provider.
- 2 If Hunter Water, in response to the request for an Urgent Work Variation issues an instruction to the Service Provider to proceed then the Service Provider must immediately proceed with the Urgent Work Variation. For the purposes of this clause 34.10(2), Hunter Water may issue the instruction orally. The approved Variation Price for the Urgent Work Variation will be based on the open book Additional Costs plus Margin Amount for the work and calculated in accordance with clause 34.10(4) except that the maximum Variation Price will be no more than 50% above the estimate provided in the request submitted by email under clause 34.10(1).
- 3 To claim reimbursement of any Additional Costs and Margin Amount with respect to an Urgent Work Variation the Service Provider must provide a written request with supporting documentation to Hunter Water detailing the work or services undertaken with respect to the Urgent Work Variation and the Service Provider's assessment of the Additional Costs (including details of the basis of pricing used in that assessment) and Margin Amount for the Service Provider undertaking the Urgent Work Variation.
- 4 Hunter Water shall determine the extent of the work or services undertaken by the Service Provider and the value of the Additional Costs and Margin Amount for the Urgent Work Variation that the Service Provider is entitled to be reimbursed and notify the Service Provider of Hunter Water's determination.

- 5 If the Service Provider becomes aware of any circumstances that may or will cause the Variation Price for the Urgent Work Variation to exceed the estimate provided in the request submitted by email under clause 34.10(1) then the Service Provider must immediately notify Hunter Water. The Service Provider must comply with any direction of Hunter Water in relation to such notification given by the Service Provider.

35. SECURITY

35.1 Security

- 1 Within 20 Business Days after the Agreement Date the Service Provider must provide Security for the performance of the Services in the form described in clause 35.2 and in the amount set out in clause 35.3.
- 2 The costs (including all stamp duty or other taxes) incidental to the issue and maintenance of the Security must be borne by the Service Provider.

35.2 Form of Security

- 1 The Security shall be in the form of an unconditional undertaking from an Approved Financial Institution.
- 2 Subject to clause 35.3, Approved Financial Institution includes:
 - (a) a bank within the meaning of the *Banking Act 1959* (Cth) or a bank constituted by a law of a State or of the Commonwealth or of a Territory of Australia;
 - (b) a building society or credit union authorised by the Australian Prudential Regulation Authority as a Deposit-Taking Institution; or
 - (c) an insurance company which is authorised under the Insurance Act 1973 and subject to supervision by the Australian Prudential Regulation Authority.
- 3 The form of the Security must be in a form approved by Hunter Water (including being unconditional and having an expiry date not less than 5 years after the date of the Security) in its absolute and sole discretion and be from an Approved Financial Institution approved by Hunter Water in its absolute and sole discretion.

35.3 Amount of Security

- 1 The Security provided under clause 35.1 must be in the amount of [REDACTED]
- 2 The amount of Security required by Hunter Water will be indexed at the CPI Rate then applicable at the applicable CPI Review Date, and the Security provided under clause 35.1 must be increased at:

- (a) the first day of Contract Year 5; and
- (b) if the Term is extended, the first day of Contract Year 9.

Where the Security is to be increased, the Service Provider must provide an additional Security in accordance with this clause 35 to the required amount. For the avoidance of doubt the amount of the Security may never be less than the amount specified in clause 35.3(1).

35.4 Recourse to Security

- 1 Hunter Water may immediately have recourse to the Security:
 - (a) to pay any costs, expenses or damages incurred or reasonably anticipated to be incurred as a consequence of any breach by the Service Provider of this Agreement;
 - (b) where the Service Provider owes money to Hunter Water under this Agreement which has not been paid by the due date for payment; or
 - (c) Hunter Water has a bona fide claim that the Service Provider:
 - (i) is in default under this Agreement; or
 - (ii) has suffered an Insolvency Event.
- 2 Hunter Water is not required to give any notice to the Service Provider of Hunter Water's intention to have recourse to the Security or to convert the Security into money.

35.5 Replacement Security

- 1 If Hunter Water has recourse to the Security under clause 35.4 or if the Security at any time ceases to comply with clause 35.2, the Service Provider must immediately replace the Security with a Security to the requisite security amount specified in clause 35.3 and which complies with clause 35.2.
- 2 The Service Provider must deliver to Hunter Water replacement Security at least 10 Business Days before expiration of any then current Security.
- 3 If the Service Provider fails to provide replacement Security in accordance with clause 35.5(1) or 35.5(2), Hunter Water may at any time draw down on the current Security in full, place the proceeds in an interest bearing account in the name of Hunter Water and apply the proceeds (and any interest earned on such proceeds) to satisfy any Claim of Hunter Water.

35.6 Release of Security and Second Security

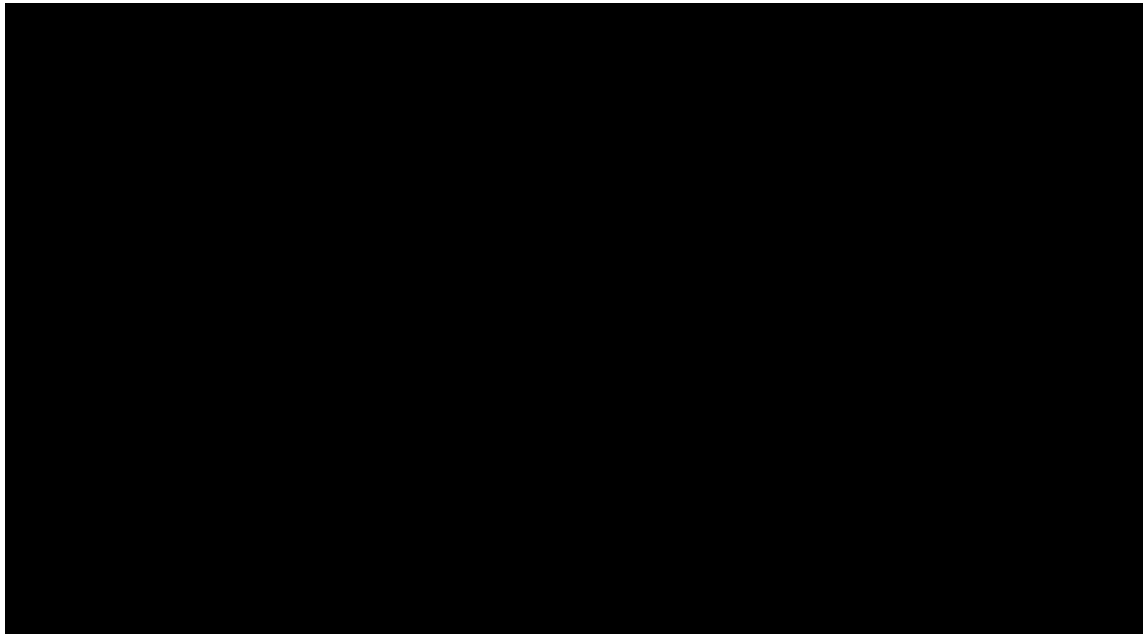
- 1 Subject to clause 35.6(2), within 20 Business Days after the Services End Date and provided that Hunter Water:

- (a) does not have a bona fide claim that the Service Provider is in default under this Agreement or a bona fide claim that the Service Provider has suffered an Insolvency Event; and
- (b) has received the Second Security required to be provided by the Service Provider in accordance with clause 35.6(2),

Hunter Water will release the Security to the Service Provider, to the extent that the Security has not been called on in accordance with this Agreement.

- 2 No less than 20 Business Days prior to the Services End Date the Service Provider must provide Hunter Water with an unconditional undertaking in the amount of [REDACTED] in a form approved by Hunter Water (including being unconditional and having an expiry date not less than 1 year after the date of the unconditional bank guarantee) in its absolute and sole discretion and be from an Approved Financial Institution approved by Hunter Water in its absolute and sole discretion (**Second Security**). For the avoidance of doubt, clause 35.4 and 35.5 shall also apply to the Second Security, so that Hunter Water has the same rights under those clauses with respect to the Second Security as Hunter Water has with respect to the Security.
- 3 The costs (including all stamp duty or other taxes) incidental to the issue and maintenance of the Second Security must be borne by the Service Provider.
- 4 Within 10 Business Days of the date being 6 months after the Services End Date and provided that Hunter Water does not have a bona fide claim that the Service Provider is in default under this Agreement Hunter Water will release the Second Security to the Service Provider, to the extent that the Second Security has not been called on in accordance with this Agreement.

35.7



36. PROPERTY COVER TO BE MAINTAINED BY HUNTER WATER

Hunter Water has, and shall maintain for the Term, property indemnity cover for the Facilities.

37. INSURANCE TO BE MAINTAINED BY SERVICE PROVIDER**37.1 Obligation to maintain insurances**

From the Agreement Date until the expiry of the Term unless otherwise stated, the Service Provider must effect and maintain the insurances referred to in this clause 37 and all other insurance required by the relevant Laws to be effected by the Service Provider.

37.2 Public and Products Liability Insurance

The Service Provider must from the Agreement Date until the Services End Date, maintain broadform public and products liability insurance:

- (a) written on an occurrence basis for not less than [REDACTED] for any one occurrence and in the annual aggregate;
- (b) which covers liability (including to Hunter Water) in respect of:
 - (i) loss of, or damage to or loss of use of, any real or personal property; and
 - (ii) personal injury to, disease or illness or death of, any person;arising out of or in connection with the performance of the Services or any products supplied or installed, altered, serviced or distributed by the Service Provider in the performance of the Services;
- (c) which contains:
 - (i) a clause to the effect that a breach of a policy condition or requirement by one party does not affect the rights and ability of other insured parties to claim under the policy;
 - (ii) a provision under which the insurer waives all or any rights of recovery which may be exercised against the named insured by way of subrogation; and
 - (iii) a cross-liability provision;
- (d) which covers the Service Provider for its liabilities under this Agreement and which covers the Service Provider and its Engaged Persons for its or their liabilities to third parties;
- (e) which extends to indemnify Hunter Water as "Principal" for Hunter Water's liability arising out of any act, error or omission of the Service Provider and its Engaged Persons in the performance of the Services; and

- (f) the Service Provider must ensure that all Subcontractors maintain appropriate levels of public and products liability insurance.

37.3 Professional Indemnity Insurance

The Service Provider must from the Agreement Date until the Services End Date, and for a runoff period of seven years following the Services End Date, maintain professional indemnity insurance or errors and omissions insurance:

- (a) which covers liability of the Service Provider arising from a breach of duty owed in a professional capacity, by any act or omission of the Service Provider or its Engaged Persons;
- (b) extending to include cover for unintentional breaches of trade practices related legislation and intellectual property rights;
- (c) with a limit of indemnity of not less than [REDACTED] any one claim and not less than [REDACTED] in the annual aggregate; and
- (d) which has a definition of profession or business wide enough to include all services of a type which can be insured by such a policy to be provided by the Service Provider in the performance of the Services.

37.4 Workers' Compensation Insurance

The Service Provider must from the Agreement Date until the Services End Date maintain workers' compensation insurance in accordance with the relevant Laws in respect of any person deemed to be an employee of the Service Provider.

37.5 Motor Vehicle Insurance

The Service Provider must, from the Agreement Date until the Services End Date, maintain and must ensure that all Subcontractors maintain:

- (a) compulsory motor vehicle third party insurance (bodily injury) in accordance with the relevant Laws; and
- (b) motor vehicle third party property insurance for any motor vehicle or registered plant to be used by the Service Provider in the performance of the Services, for not less than [REDACTED] per occurrence.

38. MANAGEMENT OF INSURANCES

38.1 Management

- 1 In relation to the insurances to be maintained by the Service Provider under clause 37 the Service Provider must:
 - (a) within 20 Business Days after the Agreement Date, deposit with Hunter Water copies of the certificates of currency which detail the period and cover effected;

- (b) pay each premium on or before the due date or under agreed terms with the relevant insurance brokers and, when asked by Hunter Water, produce proof of payment;
 - (c) immediately rectify anything which might prejudice any insurance and reinstate the insurance if it lapses;
 - (d) notify Hunter Water immediately when an event occurs in relation to the Services which could prejudice a policy of insurance; and
 - (e) notify Hunter Water immediately if any policy of insurance is or is proposed to be cancelled, amended, not renewed or renewed on terms different to those in force at the Agreement Date or previously advised to Hunter Water, or of any proposed change in insurer.
- 2 The Service Provider must, subject to confidentiality obligations to insurers, within ten Business Days of the occurrence of a relevant incident in relation to the Services, give written notice to Hunter Water of each insurance claim and of the circumstances surrounding the incident giving rise to the insurance claim.

38.2 No cancellation or avoidance

Hunter Water and the Service Provider must not do anything, and must ensure that their Engaged Persons do not do or omit to do anything, that would entitle the insurer under any of the insurances effected in compliance with clause 36 or clause 37 to cancel or avoid the policy of insurance, or reduce the amount payable on a claim under the policy.

39. RISK

39.1 Care of people, property and the environment

From the Agreement Date until the Services End Date, the Service Provider is responsible for:

- (a) the performance of the Services;
- (b) the care of any works, activities or services forming, or being performed as, part of the Services;
- (c) the care of any real or personal property owned by, or in the care, custody or control of the Service Provider or any of the Service Provider's Engaged Persons used in, or for the purposes of, the performance of the Services including the Facilities, the Working Assets and the Stock;
- (d) preventing injury to, illness, sickness, disease or death of, any person arising out of or in connection with any act or omission of the Service Provider or any of the Service Provider's Engaged Persons in the performance of the Services;

- (e) preventing loss or damage to any real or personal property or the environment arising out of or in connection with any act or omission of the Service Provider or any of the Service Provider's Engaged Persons in the performance of the Services; and
- (f) repairing or making good any loss or damage to any real or personal property or the environment (including an obligation to reinstate or rehabilitate) arising out of or in connection with any act or omission of the Service Provider or any of the Service Provider's Engaged Persons in the performance of the Services.

39.2 Obligation to make good

The Service Provider's obligations under clause 39.1(f) will be at its own cost except to the extent caused by any of the Excepted Risks.

40. LIABILITY AND INDEMNITY

40.1 Indemnity

- 1 The Service Provider indemnifies Hunter Water and its Engaged Persons against, and must pay Hunter Water and its Engaged Persons on demand, all Claims, expenses, losses, damages, costs (including the party's own or the party's solicitor's costs) and charges suffered or incurred in respect of or arising out of or as a consequence of:
 - (a) any:
 - (i) loss of, or damage to, or loss of use of, any real or personal property or the environment; or
 - (ii) personal injury, disease or illness (including mental illness) to, or death of, any person;
 - (iii) fines, penalties or similar sanctions;arising out of or as a consequence of any act or omission by the Service Provider or the Service Provider's Engaged Persons in the performance of the Services or any breach of this Agreement by the Service Provider;
 - (b) any infringement or alleged infringement of any Intellectual Property right in respect of the performance of the Services or anything used or supplied by the Service Provider in connection with the Services;
 - (c) Wilful Default of the Service Provider;
 - (d) fraudulent or criminal conduct by the Service Provider and/or the Service Provider's Engaged Persons;
 - (e) abandonment of the performance of the Services or repudiation of this Agreement;

(f) liability which cannot be limited at Law or arises out of or in connection with a breach of a statutory duty by the Service Provider or any of the Service Provider's Engaged Persons.

2 The Service Provider's liability under clause 40.1(1) is reduced to the extent that the liability or loss is caused or contributed to by any wrongful or negligent act or omission of Hunter Water or Hunter Water's Engaged Persons.

40.2 Breach of Environmental Licences or Regulations

1 The Service Provider indemnifies Hunter Water and its Engaged Persons against, and must pay Hunter Water and its Engaged Persons on demand, all Claims, expenses, losses, damages, costs (including the party's own or the party's solicitor's costs) and charges suffered or incurred in respect of or arising out of or as a consequence of any breach of environmental licences or regulations arising out of the any act or omission by the Service Provider or the Service Provider's Engaged Persons in the performance of the Services.

2 The Service Provider's liability under clause 40.2(1) is reduced to the extent that the breach of environmental licences or regulations is caused or contributed to by Hunter Water or Hunter Water's Engaged Persons or caused by a third party beyond the control, exercised to its fullest extent, of the Service Provider.

40.3 Proportionate Liability

To the extent permitted by law, the operation of Part 4 of the Civil Liability Act, and any equivalent Law, is excluded in relation to all rights, obligations and liabilities in connection with the Service Provider and this Agreement, whether such rights, obligations or liabilities are sought to be enforced as a breach of contract or a claim in tort or otherwise.

40.4 Limitation of Liability

1 The Service Provider's total aggregate liability to Hunter Water in any Contract Year, whether arising out of or in connection with this Agreement or under any written or unwritten law, is limited to all of the Fees for the Contract Year in which the event giving rise to the liability occurs, but nothing in this clause 40.4 will affect or reduce the Service Provider's liability to Hunter Water arising out of, in connection with or as a consequence of any Exempt Liability.

2 Except arising out of or in connection with any Exempt Liability and subject to clause 40.4(3), a party shall not be liable to the other party for any Consequential Loss arising out of or in connection with this Agreement or the Services.

- 3 Despite any other provision of this Agreement, the Service Provider is liable to Hunter Water for any cost, expense, loss, damage or other liability (including any Consequential Loss) in circumstances where Hunter Water is liable whether in tort, under contract or otherwise to a third party for any cost, expense, loss, damage or other liability (including any Consequential Loss) that third party suffers or incurs arising out of, in connection with or as a consequence of the Service Provider performing or not performing the Services.
- 4 Nothing in this clause affects any insurance policy required by this Agreement.
- 5 In this clause 40.4:
- “Exempt Liability” means any one or more of the following:
- (a) liability of the Service Provider, to the extent the Service Provider:
 - (i) is entitled to be indemnified for such liability under a policy of insurance effected or required to be effected pursuant to the requirements of this Agreement; or
 - (ii) would have been entitled to be indemnified for such liability but for the Service Provider’s failure to:
 - (A) effect and maintain insurance required to be effected pursuant to the requirements of this Agreement; or
 - (B) comply with the terms and conditions of any policy of insurance effected pursuant to the requirements of this Agreement; or
 - (C) comply with its obligations under this Agreement in respect of the relevant policy of insurance;
 - (b) liability which by law the Service Provider cannot contract out of;
 - (c) liability for infringement of any Intellectual Property (including the Services IP and Background IP) or Moral Rights referred to in clause 48;
 - (d) liability for breaching any confidentiality obligations under this Agreement;
 - (e) liability for death of or injury to persons caused or contributed to by the Service Provider or one or any of its Engaged Persons; or
 - (f) liability arising out of or in connection with any Wilful Default.

41. EMERGENCIES AND STEP IN

41.1 Emergency management

- 1 The Service Provider must prepare a plan to document the resources, procedures, training and necessary information to be applied by the Service

Provider to ensure compliance with this clause 41 (Emergency Plan). The preparation of the Emergency Plan and its Endorsement in accordance with clause 25.2 is a Transition Plan Deliverable.

- 2 The Service Provider must provide suitable resource levels to ensure a timely response is made to an Emergency or any other events which impact, or which have the potential to impact, adversely on the Services, the environment or public health and safety.
- 3 If at any time the Service Provider becomes aware of an Emergency, or likely occurrence of an Emergency, the Service Provider shall:
 - (a) immediately use all reasonable endeavours to resolve the Emergency or to address the imminent risk and take all reasonably practicable steps to prevent or avoid the effects of an Emergency;
 - (b) immediately implement the Emergency Plan; and
 - (c) as soon as reasonably practicable inform Hunter Water of the nature of the Emergency and the steps the Service Provider has taken, or proposes to take.
- 4 If Hunter Water is informed orally by the Service Provider of an event identified in clause 41.1(3), the Service Provider must confirm these details in writing to Hunter Water's Representative by the Business day following the date of such oral notice.
- 5 Hunter Water and the Service Provider must cooperate with each other during an Emergency including that the Service Provider must ensure compliance by the Service Provider's Engaged Persons with all reasonable directions given by Hunter Water or its Authorised Persons.

41.2 Disaster response

The Service Provider must use all reasonable endeavours to:

- (a) comply with any disaster or Emergency related agreement, arrangement, protocol or understanding, to which Hunter Water is a party or which Hunter Water notifies to the Service Provider from time to time (and which the Service Provider is reasonably able to comply with) in respect of the performance of the Services;
- (b) participate in disaster and Emergency planning exercises and training as notified and reasonably required by Hunter Water in respect of the performance of the Services; and
- (c) ensure that at all times an adequate number of personnel are appropriately trained and involved in disaster and Emergency matters, including Emergency and disaster response planning and management in respect of the performance of the Services.

41.3 Step-in

- 1 If at any time Hunter Water at its discretion determines that an Emergency exists and Hunter Water is of the opinion that the circumstances do not permit timely mobilisation of the Service Provider:
 - (a) Hunter Water, its Engaged Person or any other person authorised by Hunter Water (**Authorised Person**) may:
 - (i) at any time;
 - (ii) without giving notice; and
 - (iii) unaccompanied by the Service Provider;enter any Facility for the purposes of remedying the Emergency; and
 - (b) at its discretion, step in and perform all or some of the Services or have Authorised Persons perform all or some of the Services.
- 2 Nothing in this clause 41.3 obliges Hunter Water to exercise the powers given under this clause 41.3 or to remedy an Emergency.
- 3 If at any time during the Term Hunter Water exercises the powers given under clause 41.3(1), the obligations of the Service Provider to perform the Services in accordance with this Agreement are suspended solely to the extent that the Service Provider's ability to perform those obligations is adversely affected by Hunter Water's exercise of the powers under clause 41.3(1).
- 4 When the Emergency has been remedied, or such earlier time agreed by Hunter Water and the Service Provider, the Service Provider shall retake responsibility for control of the Facility and performance of the Services.
- 5 Nothing in this clause 41.3 prevents Hunter Water or the Service Provider from exercising any rights and remedies available to it in respect of any breach or Wilful Default which occurs
 - (a) prior to the exercise of Hunter Water's powers under clause 41.3(1); or
 - (b) while the powers under clause 41.3(1) are being exercised, to the extent that the Service Provider's obligations are not suspended.

41.4 Costs during an Emergency

The costs and expenses, other than as provided for under clause 34.10, of and incidental to the operation and maintenance of the Facilities by the Service Provider, including provision of the Services, during any period in which an Emergency affects the Services are deemed to be included in the Management Fee, the Facility Fixed Fee and the Facility Variable Fee except to the extent that:

- (a) the Emergency was caused or contributed to by Hunter Water; or

- (b) the Emergency is an Abnormal Operating Event and the Service Provider is entitled to relief under clause 23.3.

42. DEFAULT

42.1 Default notice

- 1 If at any time the Service Provider commits a default or breach of this Agreement which is not a Material Default, Hunter Water may give the Service Provider a written notice identifying the default or breach.
- 2 The Service Provider will have a cure period of 10 Business Days or any longer period specified in Hunter Water's default notice (**Cure Period**), in which to remedy the default or breach.
- 3 If the Service Provider requires an extension to the Cure Period the Service Provider must as soon as possible, but no later than 5 Business Days prior to the expiry of the current Cure Period, submit to Hunter Water for Hunter Water's consideration:
 - (a) a Cure Plan requesting an extension to the Cure Period; and
 - (b) evidence that the Service Provider has diligently pursued remediation of, and is continuing diligently to remedy, the default or breach, but that the default or breach cannot with reasonable diligence be remedied within the current Cure Period.
- 4 If Hunter Water, in its absolute and sole discretion, grants an extension to the Cure Period, the Service Provider must comply with the Cure Plan and remedy the default or breach within the extended Cure Period. Hunter Water is under no obligation to grant an extension to the Cure Period.

42.2 Failure to remedy

Failure by the Service Provider to remedy a default or breach notified by Hunter Water under clause 42.1(1) within the applicable Cure Period will constitute a Material Default.

42.3 Material Default

If at any time the Service Provider commits a Material Default, Hunter Water may give the Service Provider a written notice identifying the Material Default and requiring the Service Provider to show cause in writing within 10 Business Days of the notice or such other period as specified in the notice why this Agreement should not be terminated (**Show Cause Notice**).

42.4 Failure to Show Cause

If by the time specified in the Show Cause Notice the Service Provider fails to show cause to Hunter Water's absolute and sole satisfaction why this Agreement should not be terminated, Hunter Water may exercise its rights under clause 43.1.

43. TERMINATION BY HUNTER WATER

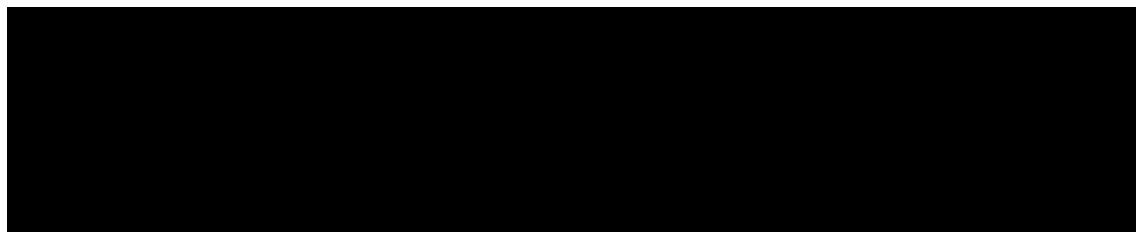
43.1 Termination for cause

If at any time the Service Provider:

- (a) receives a Show Cause Notice and fails to show cause in accordance with clause 42.4;
- (b) suffers an Insolvency Event unless the Insolvency Event takes place as part of a solvent reconstruction, amalgamation, merger or consolidation of the Service Provider that has been prior approved by Hunter Water (acting in its absolute and sole discretion); or
- (c) purports to assign, novate or transfer any of its rights or obligations under this Agreement in breach of clause 50, including the occurrence of a Change in Control of the Service Provider without the prior written consent of Hunter Water (which may be given or withheld in Hunter Water's absolute and sole discretion),

Hunter Water may at its absolute and sole discretion terminate this Agreement by written notice to the Service Provider with effect from the date of the notice or a later date specified in the notice, in which case the provisions of clauses 43.3(1) and 44 will apply.

43.2

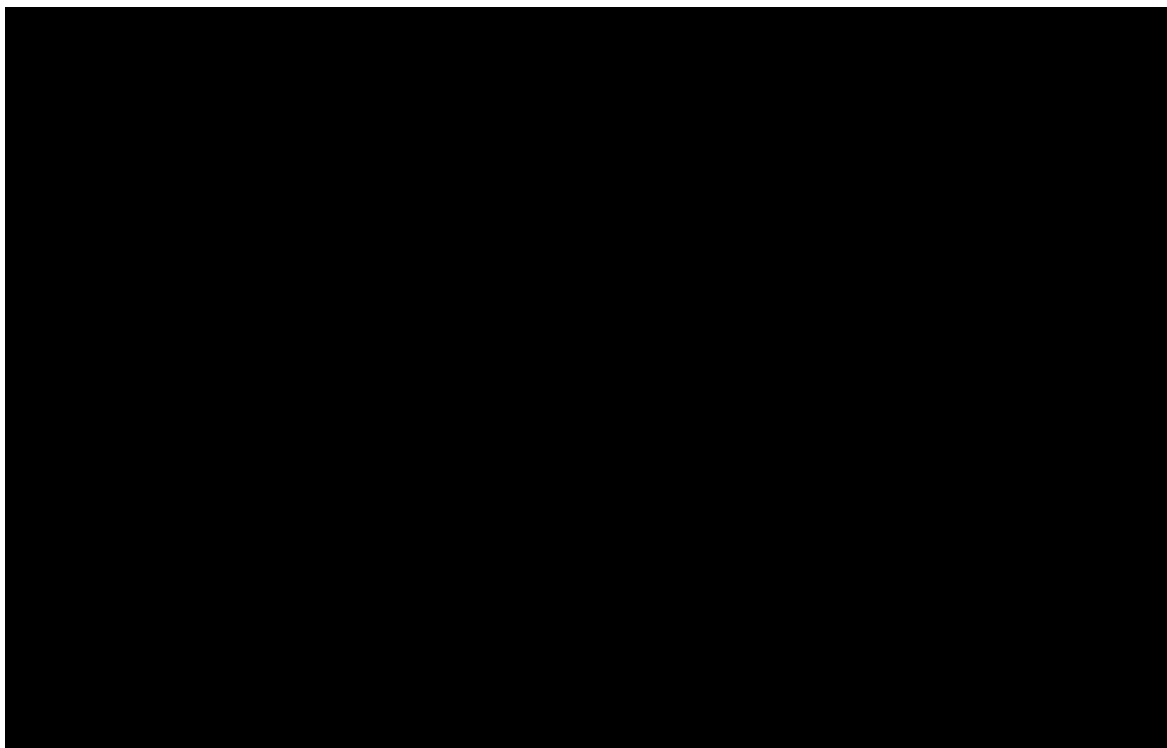


43.3 Payment on termination for cause

- 1 Subject to clause 44.3, where this Agreement is terminated under clause 43.1 the Service Provider will be entitled to be paid or reimbursed:
 - (a) all Fees incurred as at the date of termination less any applicable Service Standard Adjustment; and
 - (b) any payment due from Hunter Water to the Service Provider under clause 18.1(4)(b);
 - (c) less:

- (i) costs incurred or loss or damage suffered by Hunter Water as a result of the Service Provider's default or as a result of any action taken by Hunter Water under this clause 43, including the cost of finding a replacement Services provider, provided that Hunter Water takes all reasonable steps to mitigate such costs, loss or damage; and
 - (ii) any payment due from the Service Provider to Hunter Water under clause 18.1(4)(a).
- 2 Where the result of the calculation under clause 43.3(1):
- (a) is a positive sum, that sum will be due and payable to the Service Provider in accordance with clause 31; or
 - (b) the result is a negative sum, that sum will be due and payable to Hunter Water as an amount due.

43.4

**43.5 Effect of termination**

Termination of this Agreement by Hunter Water will not release the Service Provider from liability in respect of any breach of, or non-performance of, any obligation pursuant to this Agreement.

44. CONSEQUENCES OF TERMINATION**44.1 Handback**

Following receipt or issue of a notice of termination under clause 43, the Service Provider must:

-
- (a) implement those aspects of the Handback Plan relevant to an early termination;
 - (b) comply with any notices of Hunter Water to bring about an immediate or prompt (as the case may be) winding down and cessation of the Services, including:
 - (i) the protection and return of property (including any Working Asset or Stock) in the possession or control of the Service Provider which Hunter Water owns or in which Hunter Water has, or may acquire, an interest;
 - (ii) termination, assignment, transfer or novation to Hunter Water (at its determination) of all rights, benefits and obligations of any Subcontracts in accordance with clause 28.4;
 - (iii) giving Hunter Water ownership and possession of all items reasonably required by Hunter Water for performance of the Services which have formed, or will form, part of any payment made or to be made by Hunter Water;
 - (iv) giving to Hunter Water any records reasonably required relating to the Services which the Service Provider or any of the Service Provider's Engaged Persons have prepared as at the date of termination;
 - (v) giving to Hunter Water the originals of any documents which were provided to the Service Provider by Hunter Water; and
 - (vi) providing all such assistance as may be required by Hunter Water to facilitate the smooth transition of any relevant information, knowledge, systems, personnel, vehicles, plant, equipment or other assets from the Service Provider to Hunter Water (or to a third party nominated by Hunter Water) to enable Hunter Water to continue to obtain the benefit of such information, knowledge, systems, personnel vehicles, plant, equipment or assets for the business purposes of Hunter Water; and
 - (c) at the date of termination:
 - (i) cease performing all Services;
 - (ii) take all measures necessary to protect people and property; and
 - (iii) vacate the Facilities by removing all of the Service Provider's Engaged Persons, vehicles, plant, equipment and other belongings of the Service Provider for which arrangements have not been made for transfer to Hunter Water or its nominee.

44.2 Hunter Water's rights on termination

The Service Provider acknowledges that if this Agreement is terminated in accordance with the provisions of this Agreement:

- (a) Hunter Water may engage others to perform any or all parts of the Services; and
- (b) any such actions of Hunter Water will not give rise to any rights or entitlements of the Service Provider beyond those expressly set out in this Agreement.

44.3 Acknowledgment of amounts payable

The Service Provider agrees that the payments referred to in clauses 43.3 and 43.4 represent its full entitlement in respect of or as a consequence of termination of this Agreement, and that it is not entitled to payment for economic loss, loss of profit or anticipated profit, loss or denial of opportunity or any other special, indirect, remote, abnormal or unforeseeable or consequential loss or damage, whether by way of reimbursement or compensation, in respect of or as a consequence of termination under clause 43 or the requirements of this clause 44.

45. HANDBACK

45.1 Handback Plan

- 1 Within 10 Business Days before the Target Services Commencement Date the Service Provider must prepare and submit the Handback Plan for Endorsement in accordance with clause 25.2.
- 2 The Handback Plan must be suitable for effective implementation under each of three possible events:
 - (a) expiry of the Term;
 - (b) a change in scope of the Services that involves deletion of one or more of the Facilities; and
 - (c) termination of this Agreement in accordance with clause 43.
- 3 The Handback Plan must, as a minimum, address:
 - (a) how information identified in the Handback Plan will be provided to Hunter Water, tenderers during any contested tender process for the Services at the end of the Term and a replacement Services provider (including) in regard to all matters in the Handback Plan
 - (b) the transition of staff, including:
 - (i) how information on the qualifications and experience of personnel will be provided;
 - (ii) how information on entitlements will be made available; and
 - (iii) the planning for availability of staff for interviews;
 - (c) the induction and/or training of the replacement Services provider's staff in site procedures that are necessary to ensure a safe work

environment and the continuity of compliant treatment processes at handover;

- (d) condition assessment of plant and equipment to verify the adequacy of its condition and the status of maintenance programs, to the extent not provided by Ellipse;
- (e) handover of all asset and operational data, correspondence with any Authority, and all other records in a form readily useable by Hunter Water (which may include reference to shared databases);
- (f) the transfer of licences for use of any systems;
- (g) the transfer of spares, plant and equipment and tools (including specialist tools);
- (h) arrangements for stocktake of Stock and Working Assets to enable reconciliation with the opening Stock and Working Assets levels at the Services Commencement Date, and evidence of the applicable supply price;
- (i) arrangements for the protection and return of property (including any Working Asset or Stock) in the possession or control of the Service Provider which Hunter Water owns or in which Hunter Water has, or may acquire, an interest;
- (j) the transfer of security entitlements, passes, identification, IT user and administrator logins, or any other similar matters to enable full and effective use of all of the Facility infrastructure and operating systems;
- (k) in regard to Subcontract and Supply Contracts, where those contracts may extend past the termination date of this Agreement (in the context of a termination scenario) proposed provisions of the Subcontracts and the Supply Contracts to ensure effective transition;
- (l) transition of any Minor Capital Works in progress;
- (m) handover of operator involvement, including summary briefings, on the Service Provider's engagement as the operator in any current Major Capital Works proposals or projects; and
- (n) any other transition arrangements Hunter Water deems necessary to ensure seamless delivery of the Services to the new Services provider.

45.2 Expiry of Term

No less than six months prior to the planned expiry of the Term, or as otherwise set out in the Handback Plan, the Service Provider must implement the Handback Plan.

45.3 Termination

On early termination of this Agreement the Service Provider must implement those aspects of the Handback Plan relevant to an early termination.

45.4 Payment

- 1 If the Service Provider performs handback activities in accordance with the Handback Plan then, subject to clause 29, the Service Provider will be entitled to reimbursement of Additional Costs for undertaking any such handback services.

46. INSPECTION AND REPORTING

46.1 Records

- 1 Throughout the Term the Service Provider must keep and maintain at the Service Provider's principal place of business:
 - (a) an adequate internal control system (including policies, controls and procedures) for the effective planning, performance and reporting of the Services in accordance with this Agreement;
 - (b) records of all operational activities, including process control set-points and data, and of all maintenance activities;
 - (c) records of all sampling and analytical data;
 - (d) books of account and ledgers solely related to the Services; and
 - (e) all other records relating to the Services.
- 2 The Service Provider must ensure that the Services have its own information systems, to enable records and information relating to the provision of the Services to be kept separately from records and information relating to other aspects of the Service Provider's business.
- 3 At the Services End Date, the Service Provider must give Hunter Water a copy of any records referred to in clause 46.1 that Hunter Water deems are necessary for the orderly continuance of the Services.
- 4 Submit and keep the data, books and records referred to at clause 46.1 (1) electronically in a Microsoft office package such as Word or Excel as appropriate or in a software package that is used by Hunter Water. Drawings are to be submitted in accordance with the requirements set out in Practice Note PN506.

46.2 Inspection and audit

- 1 The Service Provider must ensure that all documents and records relating to the Services, including the records referred to in clause 46.1, are available in Newcastle to Hunter Water (or persons nominated by Hunter Water) at all reasonable times for examination, audit, inspection, transcription and (in respect of records only) copying. The Service Provider must retain all documents and records relating to the Services, including the records referred

to in clause 46.1, for at least 7 years after the expiry or earlier termination of the Term.

- 2 In the course of an audit under clause 46.2(1), Hunter Water (or persons nominated by Hunter Water) may:
 - (a) review and assess the reliability, integrity, timeliness and accuracy of financial operating information relating to the Services, and the means and systems (including internal controls) used to identify, measure, classify and report such information; and
 - (b) interview relevant staff or Engaged Persons of the Service Provider. The Service Provider must ensure that all relevant staff or Engaged Persons of the Service Provider will be available for Hunter Water to interview on the giving of reasonable notice to the Service Provider.
- 3 At the conclusion of an audit under clause 46.2(1), Hunter Water must provide a report to the Service Provider and the CMG on the results of the audit.
- 4 The Service Provider must submit a corrective action plan for Endorsement in accordance with clause 25.2. The corrective action plan must document actions or steps (if any) the Service Provider proposes to take to rectify problems, weaknesses, deficiencies or non-compliance detected during the audit (**Corrective Action Plan**).
- 5 The Service Provider must implement the Endorsed Corrective Action Plan.

46.3 Reporting

The Service Provider must provide a Monthly Report to the CMG and copy to Hunter Water in accordance with Practice Note PN804.

47. CONFIDENTIALITY

47.1 Service Provider's obligations

Subject to clause 47.2 the Service Provider must keep confidential and not allow, make or cause any public announcement or other disclosure of or in relation to the terms of this Agreement (including any written or oral agreements, negotiations or information in relation to this Agreement) or information, material or technology disclosed or provided in any form by any party to any other party in connection with or relating to the Services or in any way related to this Agreement (**Confidential Information**) without the prior written consent of Hunter Water.

47.2 Exceptions

Clause 47.1 does not apply to disclosures or announcements to the extent that the disclosure or announcement:

- (a) is required by Law, except that this requirement will not apply to a disclosure or announcement to which section 275(1) of the PPS Act applies except to the extent that clause 47.4 applies;
- (b) is required by any stock exchange to disclose, in which case the Service Provider must immediately notify Hunter Water of the requirement and the Service Provider must take lawful steps and permit Hunter Water to oppose or restrict the disclosure to preserve, as far as possible, the confidentiality of the Confidential Information;
- (c) is required for the Service Provider to perform its obligations under this Agreement;
- (d) subject to clause 47.3, is required to inform the Service Provider's financial or legal advisers or any bona fide potential purchaser or financier of the party or its assets; or
- (e) relates directly to information which is already in the public domain other than through a breach of this Agreement.

47.3 Service Provider to procure compliance

- 1 The Service Provider must ensure that its agreements with its Engaged Persons contain a provision which imposes obligations of confidentiality in the same terms as created by clause 47.1.
- 2 The Service Provider will be liable to Hunter Water for any disclosure:
 - (a) by any other person or party referred to in clause 47.2(d); or
 - (b) by any of the Service Provider's Engaged Persons; and
 - (c) by their respective employees, agents and contractors,which, if made by the Service Provider, would constitute a breach of the obligations created by clause 47.1.

47.4 Hunter Water's obligations

- 1 Subject to clause 47.4(2), clause 47.4(3) and clause 47.4(4), Hunter Water agrees to treat as confidential all information of or relating to the Service Provider that is provided to it under this Agreement by or on behalf of the Service Provider.
- 2 The Service Provider acknowledges that Hunter Water is required under the GIPA Act and other Laws to provide access to information relating to this Agreement.
- 3 The Service Provider hereby consents to:
 - (a) Hunter Water making available to the New South Wales Auditor-General all information that is requested by the New South Wales Auditor-General;

- (b) Hunter Water making available all information in relation to the Service Provider or this Agreement as may be required to comply with its obligations under:
 - (i) the GIPA Act;
 - (ii) the IPART Act; or
 - (iii) any other Law; and
 - (c) Hunter Water disclosing and making available information provided by the Service Provider to IPART as part of any submission or reporting to IPART.
- 4 The Service Provider must provide all reasonable assistance to the extent necessary to enable Hunter Water to comply with its obligations under the GIPA Act, the IPART Act or any other Law.

47.5 Publicity and Media

- 1 The Service Provider must obtain Hunter Water's prior written consent to:
- (a) issue any press release or advertisement it wishes to make or place concerning this Agreement or Hunter Water;
 - (b) release for publication in any media of any information, publication, document or article concerning this Agreement or Hunter Water;
 - (c) issue any external publicity about the Service Provider's role in this Agreement, including through conference papers, external presentations, internal and external newsletters, website or electronic media; or
 - (d) respond to any media enquiries concerning Hunter Water or this Agreement.
- 2 All material must be submitted to Hunter Water for review and approval at least 15 Business Days prior to the intended release date except in the case of media enquiries.
- 3 The Service Provider must ensure that all of the Service Provider's Engaged Persons comply with the requirements of this clause 47.5 and obtain Hunter Water's prior written consent through the Service Provider before responding to enquiries or publishing anything of the type referred to in this clause 47.5.

47.6 Privacy

- 1 The Service Provider must ensure that in providing the Services the Service Provider complies with the *Privacy Act 1988* (Cth), including the Australian Privacy Principles within that Act, and the *Privacy and Personal Information Act 1998* (NSW) in relation to the collection, transfer and use of personal information that comes into its possession.

48. INTELLECTUAL PROPERTY**48.1 Warranty and indemnity**

- 1 The Service Provider warrants that any design, materials, documents and methods of working, each provided by the Service Provider or a Service Provider Engaged Person, shall not infringe any Intellectual Property.
- 2 The Service Provider indemnifies Hunter Water and its Engaged Persons against, and must pay Hunter Water and its Engaged Persons on demand, all Claims, expenses, losses, damages, costs (including the party's own or the party's solicitor's costs) and charges suffered or incurred in respect of or arising out of or as a consequence of any breach of clause 48.1(1) by the Service Provider.

48.2 Services IP

- 1 Hunter Water owns the Services IP, which will vest in Hunter Water upon creation.
- 2 Hunter Water grants the Service Provider a non-exclusive, non-transferable, royalty-free licence to use the Services IP for the purposes of the Services until the Services End Date.
- 3 Hunter Water will consider any request by the Service Provider for the grant of a non-exclusive licence to use the Services IP for a specific purpose other than for the purposes of the Services.

48.3 Background IP

- 1 Each party retains ownership of its Background IP.
- 2 The Service Provider acknowledges that there may be some elements of its Background IP to which it will be necessary for Hunter Water to have access, in order to enable Hunter Water fully to exercise its rights in respect of the Services IP.
- 3 The Service Provider grants Hunter Water a perpetual, irrevocable, royalty-free licence to use, and permit others to use, the Service Provider's Background IP for the purposes of the Services and like services performed by Hunter Water.
- 4 To the extent that any of the necessary Background IP referred to in clause 48.3(2) is held by a Subcontractor, the Service Provider must ensure that Hunter Water is licensed (whether by sub-licence from the Service Provider or direct licence from the Subcontractor) to use that Background IP on the same terms as set out in clause 48.3(3).

48.4 Ownership of Documents

Without limitation to any other parts of this clause 48, ownership of all documents provided to Hunter Water by the Service Provider for the purposes of this Agreement vests in Hunter Water immediately upon delivery to Hunter Water.

48.5 Moral Rights

- 1 The Service Provider must use all reasonable endeavours to procure from each individual who is an author, express agreement not to enforce any Moral Rights that the author may have, presently or in the future, in the documentation relating to the Services, including by executing any Moral Rights consents required by Hunter Water. The Service Provider acknowledges that for authors other than employees of the Service Provider, the Moral Rights agreements or consents must be given in relation to specific acts or omissions or classes of acts or omissions and in relation to specific works, as contemplated by the Copyright Act 1968 (Cth).
- 2 The Service Provider must ensure that any agreement or consent is genuinely given and not obtained by duress or by the making of any false or misleading statement.
- 3 The Service Provider must give Hunter Water the agreements and consents, promptly on request.

49. PERSONAL PROPERTY SECURITIES ACT

49.1 Definitions

In this clause 49:

Collateral means any materials, equipment, Stock or Working Assets, incorporated into or to be incorporated into a Facility or provided for or used in performing the Services.

Financing Statement has the meaning given to that term in the PPS Act.

Financing Change Statement has the meaning given to that term in the PPS Act.

Security Agreement has the meaning given to it in the PPS Act.

49.2 Service Provider obligations

The Service Provider warrants that any Collateral that is the subject of a payment claim by the Service Provider for any element of the Services is not, at the time the relevant payment claim is submitted to Hunter Water, subject to a Security Interest.

49.3 Specific obligations

- 1 Without limiting any other Security Interests of Hunter Water under this Agreement, the Service Provider acknowledges and agrees that this Agreement constitutes a Security Agreement and clause 18.3 creates Security Interests of Hunter Water in the Collateral referred to in clause 18.3.
- 2 Hunter Water may elect to register any Security Interest Hunter Water acquires in relation to the Service Provider performing the Services (including in the Collateral). The Service Provider consents to Hunter Water registering Hunter Water's Security Interest in the Collateral and must ensure that each Subcontractor or Supplier consents to Hunter Water registering Hunter Water's Security Interest in the Collateral.
- 3 The Service Provider must assist Hunter Water to register or improve that Security Interest by complying with any reasonable request from Hunter Water, such as any request that the Service Provider:
 - (a) remove any associated Security Interest from the PPS Register; or
 - (b) ensure that all Engaged Persons remove any associated Security Interest from the PPS Register .
- 4 The Service Provider undertakes to:
 - (a) promptly sign any further documents and provide any further information (such information to be complete, accurate and up-to date in all respects) which Hunter Water may reasonably require to:
 - (i) register a Financing Statement or Financing Change Statement on the PPS Register in relation to a Security Interest in the Collateral;
 - (ii) register any other document on the PPS Register which is necessary to perfect Hunter Water's Security Interest in the Collateral; or
 - (iii) correct a defect in any document referred to in clause 49.3(3)(a)(i) or clause 49.3(3)(a)(ii).
- 5 The Service Provider must not register, or permit to be registered by any third party, including a Subcontractor or a Supplier, a Financing Statement or a Financing Change Statement in respect of any Collateral without the prior consent of Hunter Water, which consent may be given or withheld at Hunter Water's absolute and sole discretion.
- 6 The Service Provider must keep full and complete records of the Collateral.
- 7 Hunter Water and the Service Provider agree that, subject to the terms of this Agreement and to the extent permitted by Law, the following provisions of the PPS Act do not apply to this Agreement:
 - (a) section 95;

- (b) section 121(4);
- (c) section 125;
- (d) section 129;
- (e) section 130;
- (f) section 132(3)(d);
- (g) section 132(4);
- (h) section 135;
- (i) section 142; and
- (j) section 143.

8 Unless otherwise agreed to by Hunter Water, the Service Provider waives its right to receive a Verification Statement (as that term is defined in the PPS Act) in accordance with section 157 of the PPS Act.

9 The Service Provider must not disclose information of the kind mentioned in section 275(1) of the PPS Act and the Service Provider will not authorise, and will ensure that no other party authorises, the disclosure of such information. This subclause 49.3(9) does not prevent disclosure where such disclosure is required under section 275 of the PPS Act because of the operation of section 275(7) of the PPS Act.

50. ASSIGNMENT AND CHANGE IN CONTROL

50.1 Assignment by Service Provider

The Service Provider must not assign, novate or transfer any or all of its rights or obligations under this Agreement without the prior written consent of Hunter Water.

50.2 Change in Control

A Change in Control of the Service Provider without the prior written consent of Hunter Water will be treated as an assignment, novation or transfer of the Service Provider's rights in breach of clause 50.1.

51. CONFLICT OF INTEREST

- 1 For the purposes of this clause 51, Conflict of Interest means any actual or potential:
- (a) obligation of the Service Provider;
 - (b) direct or indirect financial or other interest of the Service Provider;
 - (c) connection of the Service Provider to immediate relatives or close friends with a direct or indirect financial or other interest; or

(d) personal bias, personal obligation, alliance or loyalty of the Service Provider,

which may in any way affect decisions of the Service Provider in connection with the Services or create a conflict with the Service Provider's obligations under this Agreement.

- 2 The Service Provider warrants that no Conflict of Interest exists at the Agreement Date.
- 3 The Service Provider must immediately inform Hunter Water upon becoming aware of the existence, or possibility, of a Conflict of Interest and, if reasonably practicable, take action to eliminate the Conflict of Interest including within any time as required by Hunter Water. If a Conflict of Interest is not resolved by the Service Provider within the time required by Hunter Water to the absolute and sole satisfaction of Hunter Water, then such Conflict of Interest will be a Material Default.

52. NOTICES

52.1 Service Provider's Representative

- 1 The Service Provider's Representative as at the Agreement Date is Alex Lagny. The Service Provider may appoint a replacement Service Provider's Representative with the prior written consent of Hunter Water, which consent is not to be unreasonably withheld.
- 2 Unless this Agreement otherwise specifies, all notices required by this Agreement to be given by Hunter Water to the Service Provider must be addressed to the Service Provider's Representative.
- 3 Unless this Agreement otherwise specifies or Hunter Water's Representative notifies otherwise, all notices required by this Agreement to be given by the Service Provider must be given by the Service Provider's Representative.
- 4 All notices given by Hunter Water to the Service Provider's Representative are taken to have been given to the Service Provider, and, if given orally, must be confirmed in writing as soon as reasonably practicable being no more than 1 Business Day after the oral notice was given.
- 5 As at the Agreement Date the address of the Service Provider's Representative is:

street address: Veolia Water Australia, Bay Centre, Level 4, 65 Pirrama Road, Pyrmont, NSW 2009

postal address: Same as street address

email address: [REDACTED]

telephone: [REDACTED]

mobile: [REDACTED]

6 The Service Provider shall, as soon as reasonably practicable, notify Hunter Water of changes to the address of the Service Provider’s Representative.

52.2 Hunter Water’s Representative

1 Hunter Water’s Representative as at the Agreement Date is Glen Robinson. Hunter Water may appoint a replacement Hunter Water’s Representative by written notice from Hunter Water’s Chief Operating Officer to the Service Provider’s Representative.

2 Unless this Agreement otherwise specifies or Hunter Water’s Representative notifies otherwise, all notices required by this Agreement to be given by the Service Provider to Hunter Water must be addressed to Hunter Water’s Representative.

3 Unless this Agreement otherwise specifies or Hunter Water’s Representative notifies otherwise, all notices required by this Agreement to be given by Hunter Water must be given by Hunter Water’s Representative.

4 All notices given by the Service Provider to Hunter Water’s Representative are taken to have been given to Hunter Water, and, if given orally, must be confirmed in writing as soon as reasonably practicable being no more than 1 Business Day after the oral notice was given.

5 If Hunter Water’s Representative cannot be reached in the case of an Emergency, the Service Provider must contact Hunter Water’s ELG Chairperson for direction.

6 As at the Agreement Date the address of Hunter Water’s Representative is:

street address: 36 Honeysuckle Drive Newcastle NSW 2300

postal address: PO Box 5171 HRMC NSW 2310

email address: glen.robinson@hunterwater.com.au

telephone: (02) 4979 9489

[REDACTED]

7 Hunter Water shall, as soon as reasonably practicable, notify the Service Provider of changes to the address of Hunter Water’s Representative.

52.3 Method of giving notices

- 1 Any notice which is required in this Agreement to be written or in writing may be given by being:
 - (a) hand delivered in person to the addressee ;
 - (b) hand delivered to the address last advised by the addressee in writing as being the appropriate address;
 - (c) sent by mail to the address last advised by the addressee in writing as being the appropriate address; or
 - (d) sent by email transmission to the email address last advised by the addressee in writing as being the appropriate email address, except for any notice under clause 16.5(2), clause 42 or clause 43.
- 2 The date of receipt of a written notice is:
 - (a) if hand delivered, on the date it is delivered but, if delivery occurs after 5:00pm New South Wales time or on a day which is not a Business Day, it is taken to be received on the next Business Day;
 - (b) if sent by mail within Australia, the date three Business Days after it is posted; or
 - (c) if sent by email, the date when the email reaches the addressee's electronic address but, if the email is sent after 5:00pm New South Wales time or on a day which is not a Business Day, it is taken to be received on the next Business Day.
- 3 If a notice is not specified to be given in writing and is given orally and the receiver requests that the notice be given in writing, then the party giving notice must, within a reasonable time, give the notice in writing. Notwithstanding that an oral notice is subsequently given in writing, the notice is taken to have been received when it is given orally.
- 4 If a notice is not specified to be given in writing and is specified to be given immediately or as soon as reasonably practicable, or in the case of an Emergency, give notice, at the first instance, by phone or mobile.
- 5 This clause 52.3 will survive the expiration, termination or frustration of this Agreement.

53. DISPUTE RESOLUTION

- 1 Hunter Water and the Service Provider have both agreed, notwithstanding the existence of a Dispute, each party must continue to perform its obligations under this Agreement.
- 2 Hunter Water and the Service Provider have both agreed to use all reasonable endeavours to resolve any differences collaboratively.

- 3 Subject to clause 53(8), if a difference or dispute (together called a “Dispute”) arises between the parties in relation to or in connection with the subject matter of this Agreement, then either party may give the other party notice of the Dispute (Notice of Dispute).
- 4 The Notice of Dispute must adequately identify and provide details of the Dispute.
- 5 If the Dispute is not able to be resolved by the parties within 5 Business Days of receipt of the Notice of Dispute, either party may submit the Dispute to the CMG. If appropriate the CMG may require the parties to attend the CMG meeting to clarify the Dispute and the reasons why it could not be resolved. All aspects of the CMG meeting as it relates to the Dispute, except the fact of this occurrence, will be confidential and without prejudice to the parties’ rights.
- 6 If a party does not agree with a decision of the CMG with respect to a Dispute then that party may refer the Dispute to the ELG within 5 Business Days of the expiry of the time period set out in clause 14.3(6) for a decision of the CMG Chairperson. All aspects of the ELG meeting as it relates to the Dispute, except the fact of this occurrence, will be confidential and without prejudice to the parties’ rights.
- 7 If the Dispute has been referred to the ELG, two members of the CMG, comprising a representative of each party, shall attend the ELG meeting at which the Dispute is discussed to clarify the Dispute and the reasons why it could not be resolved.
- 8 For the avoidance of doubt, if a Dispute relates to:
 - (a) a party’s disagreement with a decision of the CMG, then clause 53(5) will not apply and the party may proceed to referring the Dispute to the ELG in accordance with clause 53(6); or
 - (b) a party’s disagreement with a decision of the ELG, then clauses 53(5) to 53(7) will not apply and the party may proceed to mediation in accordance with clause 53(9).
- 9 If a Dispute is unresolved after completing the process described in clauses 53(3) to 53(8), either party may give notice in writing to the other party that the Dispute is referred to mediation.
- 10 Any mediation under this Agreement will be conducted in accordance with, and subject to, the Institute of Arbitrators and Mediators Australia Mediation Rules.
- 11 If the parties cannot agree on the identity of the mediator within 10 Business Days of a party receiving notification of referral to mediation under clause

53(9), then either party may request the Institute of Arbitrators and Mediators Australia to nominate the mediator.

- 12 If a Dispute is not settled within 45 days of the mediator accepting his or her appointment (unless such period is extended by agreement of the parties), it shall be and is hereby submitted to an expert in accordance with, and subject to, the Institute of Arbitrators and Mediators Australia Expert Determination Rules.
- 13 The expert's determination shall be final and binding on the parties:
 - (a) where the amount that is the subject of a Dispute is up to \$2,000,000 excluding GST (calculated without including interest on the amount); and
 - (b) where the amount that is the subject of the Dispute exceeds \$2,000,000 excluding GST (calculated without including interest on the amount), unless either party notifies the other party within 21 days from the date of the determination that it does not accept the expert's determination and commences litigation within 42 days from the date of that notice.
- 14 Subject to clause 53(15), and without limiting clause 53(13), it is a condition precedent to commencing litigation that the parties follow the procedures set out in clauses 53(1) to 53(13).
- 15 Nothing in this clause 53 shall prejudice the right of a party to institute proceedings to enforce payment due under this Agreement or to seek injunctive or urgent declaratory relief.
- 16 This clause 53 will survive the expiration, termination or frustration of this Agreement.

54. GENERAL

54.1 Giving effect to this Agreement

Each party must do anything (including execute any document), and must ensure that its employees and agents do anything (including execute any document), that the other party may reasonably require to give full effect to this Agreement.

54.2 Law and jurisdiction

This Agreement will be governed by and construed according to the law in force for the time being in the State of New South Wales, Australia, and the parties irrevocably and unconditionally submit to the exclusive jurisdiction of the courts of New South Wales and any courts entitled to hear appeals from the courts of New South Wales.

54.3 Waiver of Rights

A right may only be waived in writing, signed by the party giving the waiver, and:

- (a) no other conduct of a party (including a failure to exercise, or delay in exercising, the right) operates as a waiver of the right or otherwise prevents the exercise of the right;
- (b) a waiver of a right on one or more occasion does not operate as a waiver of that right if it arises again; and
- (c) the exercise of a right does not prevent any further exercise of that right or of any other right.

54.4 Operation of this Agreement

- 1 This Agreement contains the entire agreement between the parties about its subject matter and any previous understanding, agreement, representation or warranty relating to that subject matter is replaced by this Agreement and has no further effect.
- 2 If this Agreement is inconsistent with any other document or agreement between the parties, this Agreement prevails to the extent of the inconsistency.
- 3 Unless expressly stated to the contrary, any right that a person may have under this Agreement is in addition to, and does not replace or limit, any other right that the person may have.
- 4 If any provision of this Agreement or part of any provision of this Agreement is in any way unenforceable, invalid or illegal, it is to be read down so as to be enforceable, valid and legal. If this is not possible, the provision (or where possible, the offending part) is to be severed from this Agreement without affecting the enforceability, validity or legality of the remaining provisions (or parts of those provisions) which will continue in full force and effect.
- 5 The expiration, termination or frustration of this Agreement does not affect any right that has accrued to a party before the expiration, termination or frustration date.
- 6 Any right or obligation of any party that is expressed to operate or have effect on or after the expiration, termination or frustration of this Agreement for any reason will not merge on the occurrence of that event but will remain in full force and effect.

54.5 Operation of indemnities

- 1 Each indemnity contained in this Agreement constitutes a separate and independent obligation of the party giving the indemnity from its other obligations under this Agreement.

- 2 Any amount payable by the Service Provider under any indemnity contained in this Agreement is payable on demand being made by Hunter Water.
- 3 Each indemnity and limitation of liability in this Agreement survives the expiry, frustration or termination of this Agreement.
- 4 A party may recover a payment under an indemnity in this Agreement before it makes the payment in respect of which the indemnity is given.
- 5 No indemnity given in this Agreement will derogate from a party's rights under this Agreement or at common law.

54.6 Relationship of the parties

- 1 In carrying out its obligations under this Agreement, the Service Provider is and at all times will be an independent contractor and no relationship of employment or partnership arises between the parties or between Hunter Water and any employee, agent or consultant of the Service Provider, as a consequence of this Agreement.
- 2 The Service Provider is not an agent and does not have any authority to and must not purport to bind Hunter Water to any agreement or otherwise hold itself out as an agent of Hunter Water.

54.7 Amendment

- 1 Subject to clause 54.7(2), this Agreement may only be amended, supplemented or varied by a deed signed by the parties.
- 2 The parties, without the need for the parties to sign a deed, may agree in writing, to amend, supplement or vary Schedules 4, 7, 8, 9, 10 and 15 to this Agreement. For the avoidance of doubt all other Schedules can only be amended, supplemented or varied by a deed signed by the parties. The CMG must at all times keep a register of all such amendments and must make the register available to the parties upon request.

54.8 Amounts due

Where no time is stated in this Agreement for payment of an amount due from the Service Provider to Hunter Water, that amount is payable on demand being made by Hunter Water.

54.9 Counterparts

This Agreement may be executed in any number of counterparts. All counterparts taken together constitute one instrument.

54.10 Survival

All clauses which are by their nature intended to operate or continue to operate after the termination or expiration of this Agreement will survive the termination or expiration of this Agreement.

54.11 Attorneys

Each person who executes this Agreement on behalf of a party under a power of attorney declares that he or she is not aware of any fact or circumstance that might affect his or her authority to do so under that power of attorney.

END OF PART D



HUNTER WATER CORPORATION

CS0341

Treatment Operations Contract

Schedules

EXECUTION VERSION

CONTENTS

SCHEDULE 1 - FACILITIES 1

PART A - WATER TREATMENT FACILITIES 1

PART B - WASTEWATER TREATMENT FACILITIES 3

SCHEDULE 2 - SITE MAPS 5

SCHEDULE 3 - PRICING 26

PART A - OVERVIEW 26

PART B - TRANSITION 32

PART C - TRANSFERRING EMPLOYEES 34

PART D - MANAGEMENT FEE 36

PART E - FACILITY FIXED FEES 39

PART F - FACILITY VARIABLE FEES 75

PART G - ABNORMAL OPERATING EVENTS 111

PART H - VARIATIONS 112

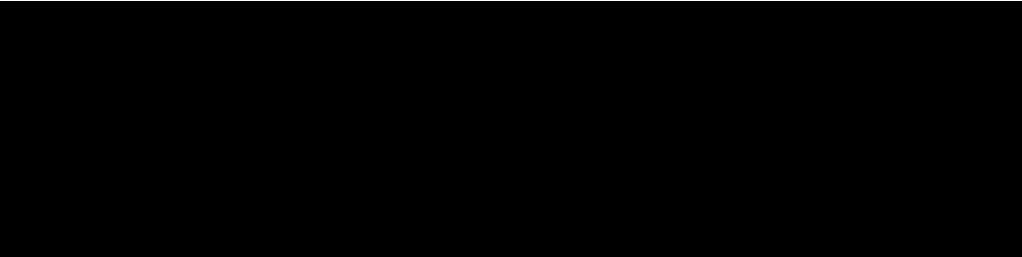
PART I - NOT USED 113

PART J - HANDBACK 114

PART K - INDEXATION OF PRICES 115

SCHEDULE 4 - KEY PERSONNEL 120

SCHEDULE 5 - ABNORMAL OPERATING EVENTS 122



PART D - KEY PERFORMANCE INDICATORS	129
SCHEDULE 7 - PRACTICE NOTES	142
SCHEDULE 8 - DATA COLLECTION	145
SCHEDULE 9 - LABORATORY SAMPLING AND ANALYSIS	146
SCHEDULE 10 - APPROVALS	178
PART A - ENVIRONMENT PROTECTION LICENCES	178
PART B - NSW HEALTH MEMORANDUM OF UNDERSTANDING	178
PART C - WORKCOVER DANGEROUS GOODS NOTIFICATIONS.	179
PART D - CAPITAL WORKS DEVELOPMENT APPROVALS	179
SCHEDULE 11 - EXISTING CONTRACTS	180
SCHEDULE 12 - FORMS	183
SCHEDULE 13 - MANAGEMENT PLANS AND MANAGEMENT SYSTEMS	190
SCHEDULE 14 - DEED OF NOVATION	192
SCHEDULE 15 - DRAFT TRANSITION PLAN	200

SCHEDULE 1 - FACILITIES

PART A - WATER TREATMENT FACILITIES

A1. The Water Treatment Facilities are listed in table 1A.1.

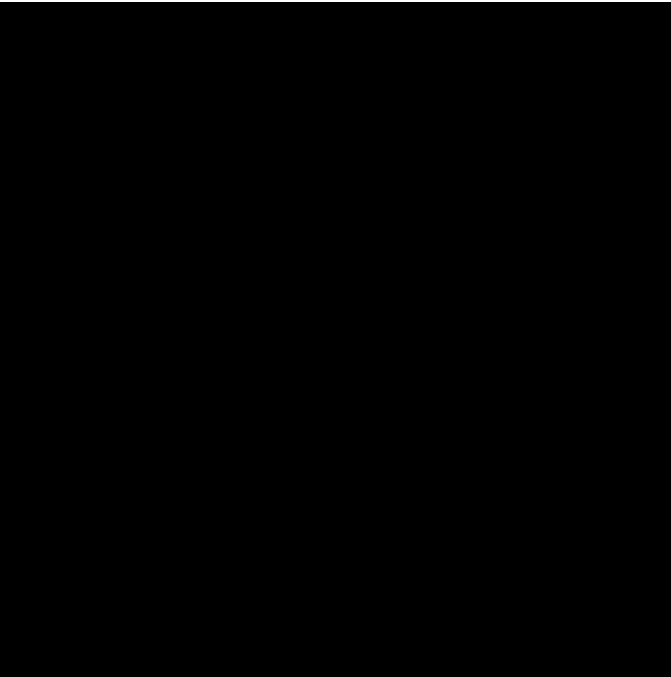
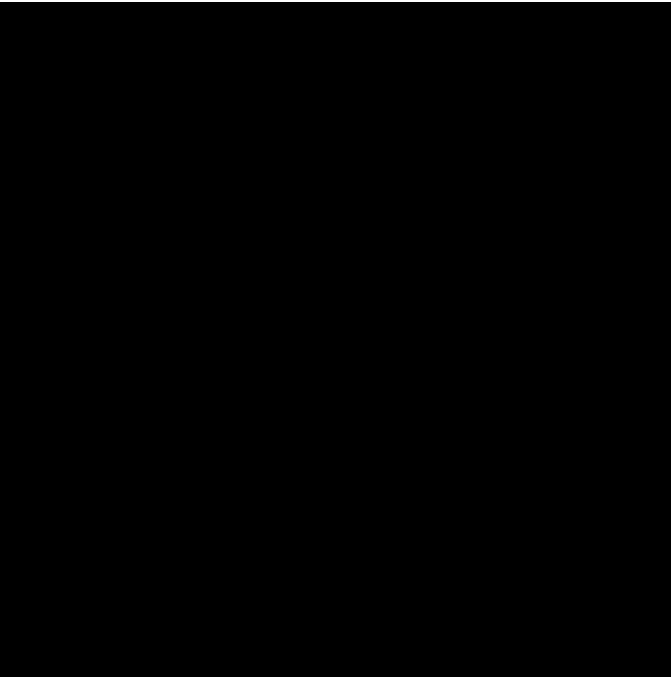
A2. In table 1A.1:

.A.2.1 the "Facility Boundary" must be read in conjunction with the Site Maps in Schedule 2; and

.A.2.2 the "Services Exclusions" must be read in conjunction with clause 3.1 and clause 3.2.

Table 1A.1 Water Treatment Facilities

WTF	Location	Facility Boundary	Services Exclusions
Anna Bay WTP			nil
Chichester Dam Chlorination Facility			maintenance of grounds, roads and fencing
Chichester Dam Destratification system			all services are excluded except advising on when and how the system is to be operated
Dungog WTP			nil
Grahamstown WTP			maintenance of grounds
Grahamstown Mains Chlorination			maintenance of grounds, roads and fencing

WTF	Location	Facility Boundary	Services Exclusions
Grahamstown Fluoride Dosing			maintenance of grounds
Gresford WTP			nil
Lemon Tree Passage WTP			nil
Nelson Bay WTP			maintenance of grounds and roads
Schroder PAC Dosing Facility			maintenance of grounds, roads and fencing

PART B - WASTEWATER TREATMENT FACILITIES

- B1. The Wastewater Treatment Facilities are listed in table 1B.1.
- B2. In table 1B.1, the “Facility Boundary” must be read in conjunction with the Site Maps in schedule 2.
- B3. There are no Services exclusions specific to the WWTFs.

Table 1B.1 Wastewater Treatment Facilities

WWTF	Location	Facility Boundary
Belmont WWTW		security fence and boundaries of the access road
Boulder Bay WWTW		security fence and boundaries of the access road
Branxton WWTW		security fence and boundaries of the woodlots, storage ponds and any interconnecting access and services
Burwood Beach WWTW		security fence and boundaries of the access road from Scenic Drive and the access road to the Ocean Outfall Shaft
Cessnock WWTW		site boundary fences including biosolids storage area maturation ponds and tertiary treatment plant, and boundaries of the access road. Excluding reusers pump and pipeline.
Clarence Town WWTW		site boundary fences encompassing the plant, amenities building, oxidation ponds, reuse shed, access road and reuse area
Dora Creek WWTW		security fence
Dungog WWTW		security fence and boundaries of the ponds and interconnecting access roads and services
Edgeworth WWTW		security fence and boundaries of the access road. Excluding private reusers pumps.
Farley WWTW		security fence and the boundary fence of the wet weather overflow pond, wet weather storage pond, pond 2, interconnecting access roads and services and effluent discharge structures (excludes four privately owned Ferric & Ferrous Chloride tanks and bunds to the west of Hunter Water owned tanks and bunds)
Karuah WWTW		site boundary fences including the irrigation areas, effluent storage dam and interconnecting access roads and services
Kearsley WWTW		security fence and boundaries of the access road

WWTF	Location	Facility Boundary
Kurri Kurri WWTW		security fence and boundaries of the reuse pond and wet weather storage pond, and any interconnecting access roads and services
Morpeth WWTW		security fence and boundaries of the sludge lagoon, ponds and any interconnecting access roads and services
Paxton WWTW		security fence encompassing the plant, woodlot and entrance road and discharge structure to Congewai creek
Raymond Terrace WWTW		security fence and the boundaries of the access road
Shortland WWTW		security fence, and including the biosolids storage areas
Shortland De-chlorination		security fence and the boundaries of the access road
Tanilba WWTW		security fence, boundaries of the access road and infiltration ponds
Toronto WWTW		security fence and boundaries of the access road
Mayfield West AWTP		security fence (due for commissioning June 2014)

SCHEDULE 2 - SITE MAPS

SCHEDULE 3 - PRICING

PART A - OVERVIEW

A1. The pricing structure for performance of the Services comprises the elements set out below. Where an element refers to a "Part" it means a Part of this Schedule 3. The Part referred to outlines how the relevant element is to be priced:

Fees relating to Transition Services during the Transition Period

- (a) fixed prices for each Transition Plan Deliverable (Part B);
- (b) Transferring Employee Entitlement Payments, if applicable (Part C);

Fees relating to personal leave for Transferring Employees

- (c) Preserved Personal Leave Payments, if applicable (Part C);

Fees relating to normal operations and maintenance on and from the Services Commencement Date:

- (d) a fixed monthly Management Fee (Part D);
- (e) a monthly Facility Fixed Fee for each Facility (Part E);
- (f) monthly Facility Variable Fees per unit of flow for each Facility (Part F);

Fees relating to special circumstances or changes of Services scope on and from the Services Commencement Date:

- (g) reimbursement of Additional Costs due to Abnormal Operating Events (Part G);
- (h) for implementing Variations (Part H);

Fees relating to handback:

- (i) reimbursement of Additional Costs for handback activities in accordance with the Handback Plan_(Part J);
- (j) payments for reconciliation of Working Assets and Stock in accordance with clause 18.1.

A2. Payment by Hunter Water of the fixed prices for each Transition Plan Deliverable and any Transferring Employee Entitlement Payment are deemed to comprise the Service Provider's only rights to payment for performance of the Transition Services. Within such payments the Service Provider is deemed to have allowed for all costs of the Service Provider to enable compliance with all of this Agreement's requirements with respect to the Transition Services and for performance of all of the Transition Services.

- A3. Payment by Hunter Water of the Management Fee, the Facility Fixed Fee and the Facility Variable Fee are deemed to comprise the Service Provider's only rights to payment for performance of all of the Services after the Services Commencement Date except where:
- (a) there is a Variation for which a Variation Price is determined under clause 34 to be paid by Hunter Water; or
 - (b) the Service Provider provides any services or undertakes work which requires:
 - (1) reimbursement of Additional Costs due to an Abnormal Operating Event; or
 - (2) payment for handback activities in accordance with the Handback Plan by reimbursement of Additional Costs,
- in which case such reimbursement or payment will be included in the Fees payable by Hunter Water in accordance with clause 29, clause 31 and this Schedule 3.
- A4. Within such fees, payments or reimbursements identified in clause A3 above the Service Provider is deemed to have allowed for all costs of the Service Provider to enable compliance with all of this Agreement's requirements with respect to the Services and for performance of all of the Services. Without limiting any other provision of this Agreement, Hunter Water (or a person nominated by Hunter Water) has the right at any time to audit the financial records of the Service Provider with respect to any payment or reimbursement made in accordance with Schedule 3 including with respect to any Actual Costs, any Additional Costs, any reimbursement of costs incurred or a payment determined by reference to costs incurred (including third party costs). The Service Provider must comply with any request made by Hunter Water under this clause A4 including by providing to Hunter Water (or a person nominated by Hunter Water), within the time required, all documentation and information requested by Hunter Water (or a person nominated by Hunter Water).
- A5. No Margin Amount is payable by Hunter Water to the Service Provider on any goods or services supplied by Hunter Water to any activity jointly undertaken by the parties and for which the Service Provider is responsible for the handling or supervision of the goods or supervision of the services provided by Hunter Water.
- A6. All prices and reference amounts in this Schedule 3 are exclusive of GST.

Actual Costs

- A7. For the purposes of this Agreement, "Actual Costs" means :
- (a) the actual, wholly, necessarily and bona fide costs incurred by the Service Provider in undertaking the relevant work or providing the relevant services after applying any applicable reductions, rebates or offsets but excluding any:

- (i) Margin and Margin Amount applied to such costs;
- (ii) margin-on-margin allowed for by any related body corporate of the Service Provider that has undertaken the work or performed the services, unless the supply by the related body corporate of the Service Provider is competitively procured and approved by Hunter Water as an independent competitive price; and
- (iii) amount or provision in the actual costs relating to a breach of contract, an indemnity under the contract, a Service Standard Adjustment, any fine or penalty levied by a regulatory agency, or any other business cost relating to a non-compliance with the requirements of this Agreement or default under this Agreement;

For the avoidance of doubt, the Service Provider in establishing any Actual Costs cannot rely on the estimated breakdown of costs set out in tables 3E.3 to 3E.32 or tables 3F.3 to 3F.30 to establish its Actual Costs.

Additional Costs

- A8. For the purposes of this Agreement, "Additional Costs" means, subject to clause A9, the Actual Costs incurred or saved, as applicable, by the Service Provider with respect to the applicable event or circumstances which would not have been incurred or not been saved, as applicable, by the Service Provider had the event or circumstance giving entitlement to payment or deduction of Additional Costs, not occurred and the Service Provider had met all its obligations under this Agreement but excluding any costs deemed in Parts D, E and F of this Schedule 3 to be included in the Management Fee, Facility Fixed Fee or the Facility Variable Fee, including the cost of any vehicles, plant, equipment or personnel ordinarily engaged in the performance of the Services.
- A9. If the Service Provider assigns employees of the Service Provider who are not ordinarily engaged in the performance of the Services, to perform work for which Additional Costs are payable, the Additional Costs payable shall include travel and accommodation expenses but exclude payment for travel time.
- A10. If the Service Provider is entitled to be reimbursed for any Additional Costs then the Service Provider must claim reimbursement of such Additional Costs in accordance with clause 31.

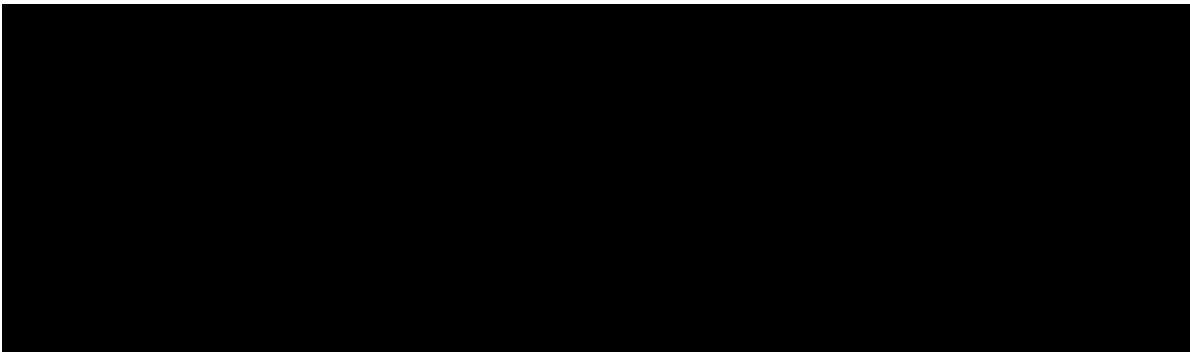
Estimated Additional Costs

- A11. For the purposes of this Agreement, "Estimated Additional Costs" means the Service Provider's estimate of Additional Costs that may be incurred or saved by implementing a Variation (including job-specific risk costs and labour on-costs).
- A12. Not used.
- A13. The Management Fee, the Facility Fixed Fee and the Facility Variable Fee each have an amount for "Margin" incorporated into the relevant fee as respectively

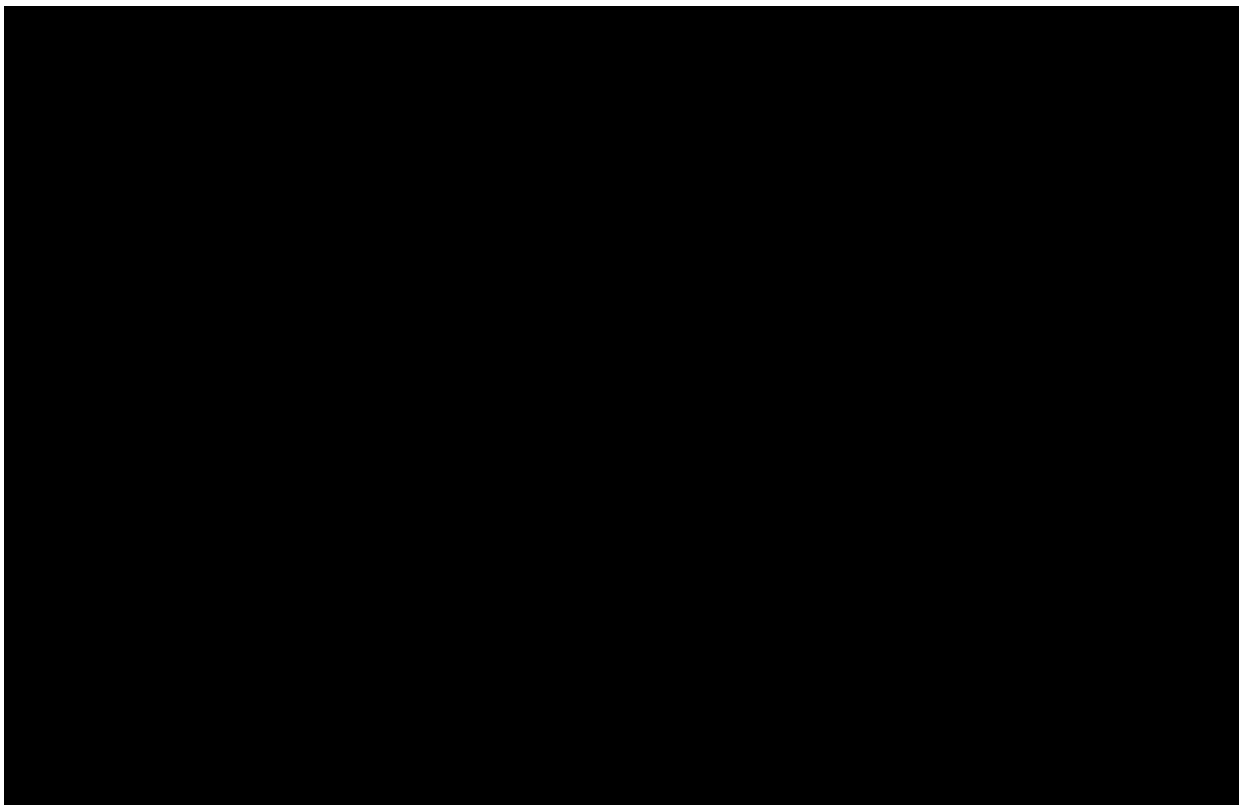
shown in the tables in table 3D.1 of Part D of Schedule 3, tables 3E.3 to 3E.32 of Part E of Schedule 3 and tables 3F.3 to 3F.30 of Part F of Schedule 3 (**Included Margin**). The Included Margin includes the Service Provider's off-site overheads, profit and provision for any matter not otherwise included in the cost component.

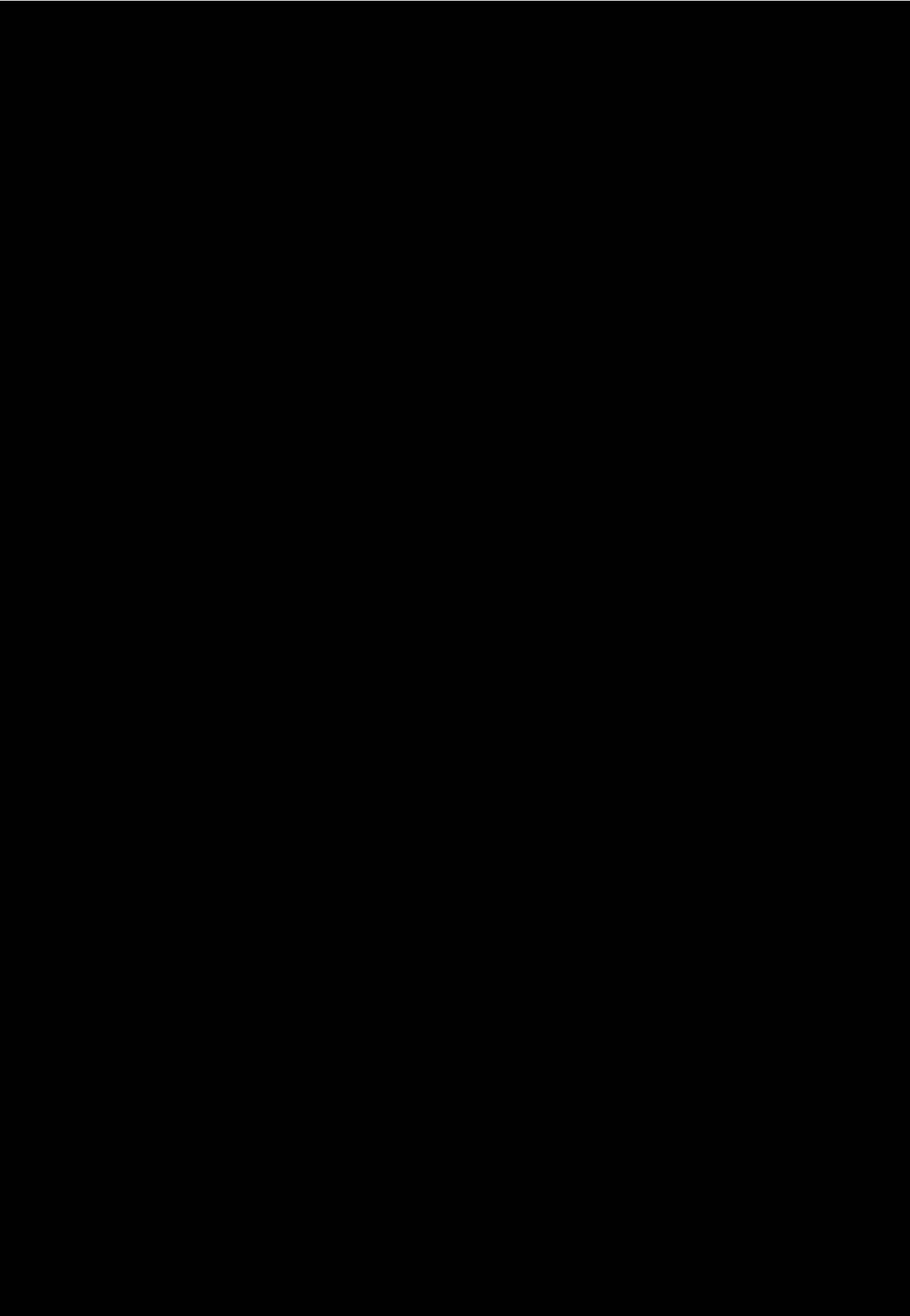
A14. The Margins in table 3A.1 include the Service Provider's off-site overheads, profit and provision for any matter not otherwise included in the cost component and are to be applied as necessary to only value Variations.

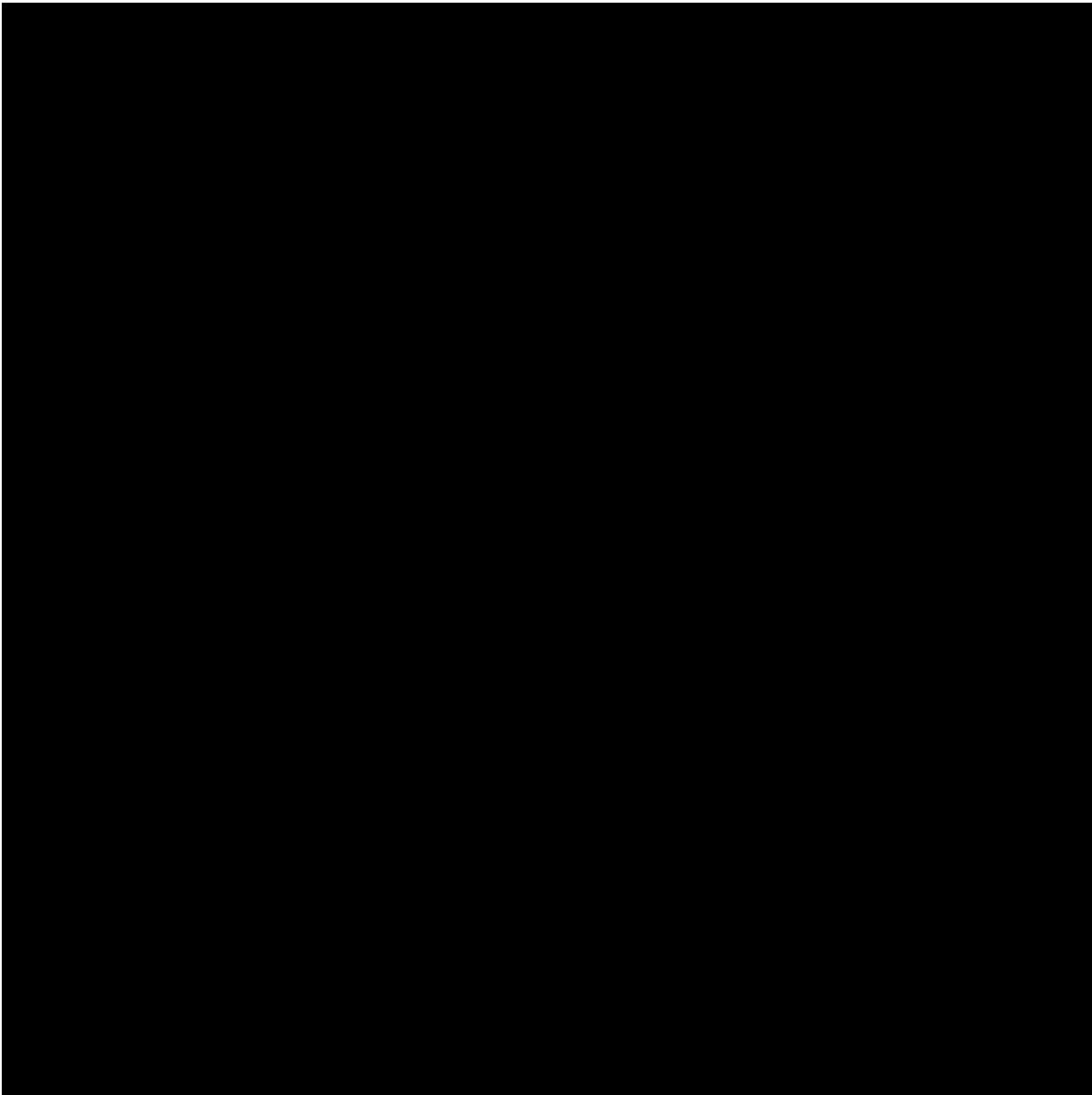
A15. The Management Fee Margin, the Facility Fixed Fee Margin and the Facility Variable Fee Margin set out in table 3A.1 do not apply to the Management Fee, the Facility Fixed Fee or the Facility Variable Fee and such Margins are not to be additionally applied in any payment claim made by the Service Provider with respect to the Management Fee, the Facility Fixed Fee or the Facility Variable Fee.



A16. At the end of each Contract Year a price adjustment of the Fees will be made in accordance with the risk sharing criteria set out below:



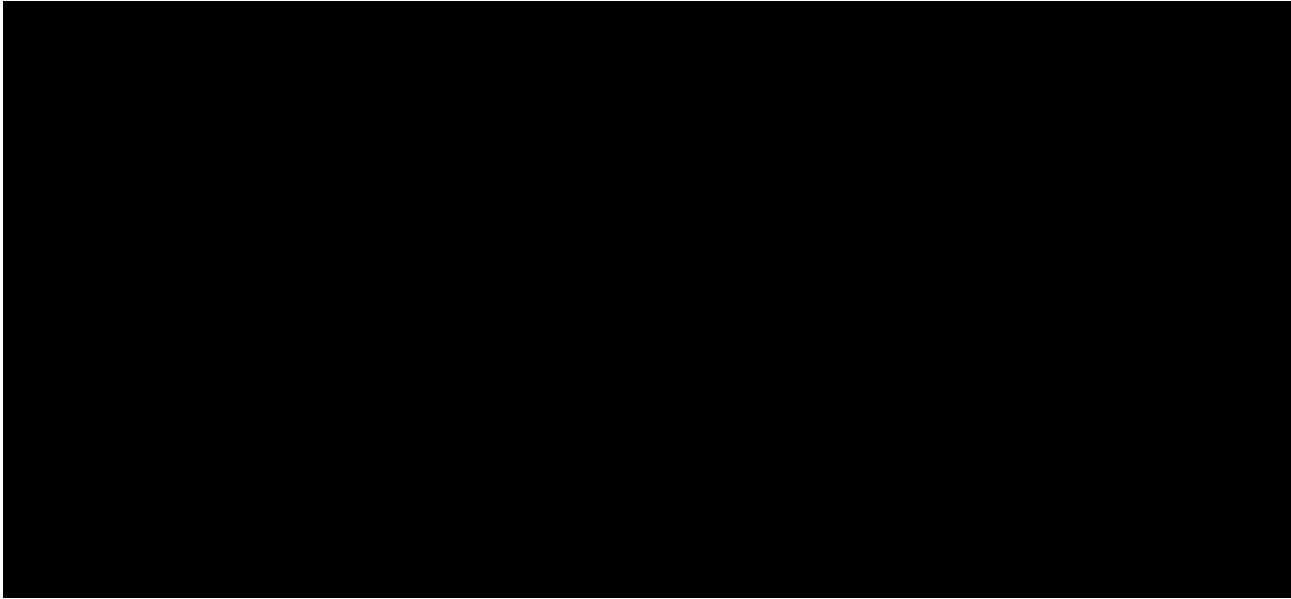




PART B - TRANSITION

- B1. No margin, Margin or Margin Amount is payable for Transition Plan Deliverables.
- B2. The Transition Plan Deliverables comprise:
- (a) substantial development and Endorsement of the WHS Management System in accordance with clause 11.4(1)(b);
 - (b) substantial development and Endorsement of the Environmental Management System in accordance with clause 11.4(2)(b);
 - (c) substantial development and Endorsement of the Quality Management System in accordance with clause 11.4(3)(b);
 - (d) timely arrival of the Key Personnel in accordance with clause 20.1 and the Transition Plan;
 - (e) completion and Endorsement of the Emergency Plan in accordance with clause 41.1(1);
 - (f) completion and Endorsement of the Biosolids Management Plan in accordance with clause 6.4(3);
 - (g) completion and Endorsement of the Facility Cooperative Use Plan in accordance with clause 17.3(1);
 - (h) completion and Endorsement of the Waste Management Plan in accordance with clause 5.4(3);
 - (i) completion and Endorsement of the Procurement Plan in accordance with clause 28.1; and
 - (j) completion and Endorsement of the Handback Plan in accordance with clause 45.1; and
 - (k) such other items explicitly identified as Transition Plan Deliverables in the Transition Plan, which:
 - (i) comprise physical or digital assets or documents in a final version suitable for commencement of the Services from the Target Services Commencement Date; or
 - (ii) deliver a material reduction in risk in regard to completion of the Transition Services.
- B3. The Service Provider is entitled to the payments set out in table 3B.1 when the Transition Plan Deliverables are completed in accordance with clause 16.3.

Table 3B.1 Transition Plan Deliverables



PART C - TRANSFERRING EMPLOYEES

C1. No margin, Margin or Margin Amount is payable by Hunter Water for a Transferring Employee Entitlement Payment or for a Preserved Personal Leave Payment.

C2. In respect of annual leave and long service leave entitlements for Transferring Employees, Hunter Water must pay to the Service Provider a one-off Transferring Employee Entitlement Payment where that amount is calculated as:

$$\text{TEEP} = \text{ALEP} + \text{LSEP}$$

where:

- (a) TEEP is the Transferring Employee Entitlement Payment in respect of a Transferring Employee;
- (b) ALEP is an amount equivalent to the Transferring Employee's annual leave entitlement as at the Transferring Employee's last day of employment with Hunter Water or HWA, excluding any amount of leave cashed-out by that Transferring Employee with effect as of that Transferring Employee's last day of employment with Hunter Water or HWA, calculated at the Transferring Employee's then current pay rate. There will be no adjustment to that calculation for any loading for superannuation, worker's compensation, payroll tax or the like; and
- (c) LSEP is an amount equivalent to the Transferring Employee's accrued long service leave entitlement, calculated on a pro-rata basis for the Transferring Employee's entire period of service as at the Transferring Employee's last day of employment with Hunter Water or HWA, excluding any amount of leave cashed-out by that Transferring Employee with effect as of that Transferring Employee's last day of employment with Hunter Water or HWA, calculated at the Transferring Employee's then current pay rate. There will be no adjustment to that calculation for any loading for superannuation, worker's compensation, payroll tax or the like.

C3. In respect of a Transferring Employee's personal leave:

- (a) Hunter Water will advise the Service Provider, within five Business Days after the Services Commencement Date, of each Transferring Employee's Preserved Personal Leave entitlement.
- (b) Where Clause 21.3(6) applies, Hunter Water must pay to the Service Provider any applicable Transferring Employee's Preserved Personal Leave Payment in accordance with clause 21.3(6) where that amount is calculated as, for each eligible Transferring Employee for the calendar month the subject of the relevant payment claim under clause 31, as follows:

$$\text{PPLP} = \text{PPLC multiplied by ECPR}$$

$$\text{PPLC} = \text{PPLB or (EPLT minus APLE), whichever is lesser.}$$

where

- (i) PPLP is the amount of the Preserved Personal Leave Payment;
- (ii) PPLC is the amount of Preserved Personal Leave claimable by the Transferring Employee at the time of the relevant payment claim;
- (iii) ECPR is the Transferring Employee's actual current pay rate with the Service Provider, as applicable to the period of personal leave taken;
- (iv) PPLB is the Transferring Employee's Preserved Personal Leave balance, calculated as the Transferring Employee's Preserved Personal Leave less all PPLC time claimed under this clause prior to the month of the relevant payment claim;
- (v) EPLT is the personal leave taken by the Transferring Employee in the pay periods accrued by the Service Provider to the end of that calendar month; and
- (vi) APLE is the Transferring Employee's Accrued Personal Leave entitlement with the Service Provider;

provided that

- (vii) the personal leave is properly taken in accordance with the relevant employment agreement and is certified as such by the Service Provider; and
- (viii) there will be no adjustment to the ECPR calculation for any loading for worker's compensation, payroll tax or the like.

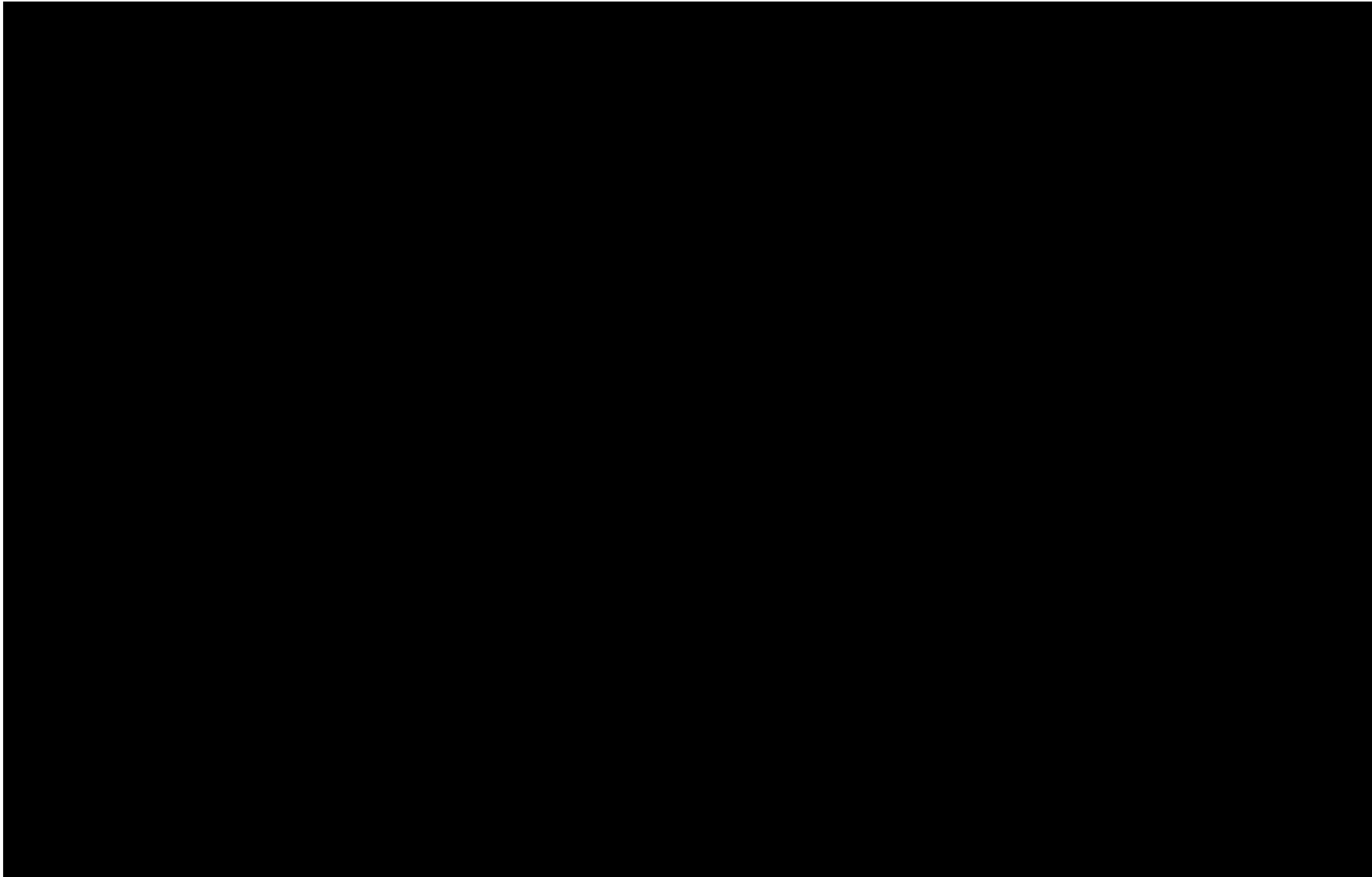
PART D - MANAGEMENT FEE

- D1. The Management Fee payable for each of the first four Contract Years is the price per month listed for item 3D.1 of table 3D.1.
- D2. Having regard to clause A3 of this Schedule 3 and clause D3 and irrespective of clause D4 below and the line items and amounts included in table 3D.1 to determine the Management Fee, the Management Fee is deemed to include allowance for all costs, risks and overheads which are not specific to individual Facilities or variability of flow.
- D3. The Management Fee is deemed to exclude allowance for costs, risks and local overheads that are unique to a particular Facility and as such would not, for example, be incurred if that Facility was excluded from the Services.
- D4. The Management Fee allows for at least the following costs, to the extent that they are not specific to individual Facilities:
- (a) costs related to the ELG, the CMG and any Collaborative Work Teams;
 - (b) full-time and permanent part-time management, administration and support personnel and associated direct on-costs;
 - (c) intermittent management, administration and support personnel required from time to time to perform the Services and associated direct on-costs and expenses;
 - (d) personnel training, conference and seminar costs;
 - (e) personnel travel and accommodation costs;
 - (f) safety, first aid and personal protective equipment;
 - (g) cost of finance, security and insurance;
 - (h) office accommodation costs and related facilities management costs;
 - (i) administration expenses including office equipment and stationery;
 - (j) information technology costs including licence fees, maintenance, network charges, developing and upgrading systems and upgrading software;
 - (k) vehicle operating, maintenance and finance costs;
 - (l) common plant and equipment operating, maintenance and finance costs including the cost of Preventative Maintenance, Breakdown Maintenance and Corrective Maintenance which is not specific to a Facility;
 - (m) community liaison and visitor management costs;
 - (n) common maintenance planning;
 - (o) common spare parts purchase and maintenance costs;

-
- (p) regulatory and licensing fees and charges excluding Approvals that are explicitly the responsibility of Hunter Water;
 - (q) preparation of reports and attendance at meetings;
 - (r) provision for intrinsic risks associated with the above activities;
 - (s) provision for contingent risks associated with the above activities;
 - (t) provision for contingent risks associated with any of the Services which are relevant to more than one Facility;
 - (u) the cost of any goods or services supplied under an Existing Contract which are not specific to a Facility;
 - (v) management of and dealing with any Existing Contractor which is not specific to a Facility; and
 - (w) the relevant risk amount and margin from table 3D.1.

Payments to Existing Subcontractors and Suppliers

- D5. Payments that the Service Provider confirms to Hunter Water can be made and are made by Hunter Water to Existing Contractors under clause 28.6 in relation to costs deemed by Hunter Water to be covered by the Management Fee shall be deducted from the Management Fee due to the Service Provider.



PART E - FACILITY FIXED FEES

- E1. The Facility Fixed Fee payable for each of the first four Contract Years is the price per month listed for each respective Facility in table 3E.1 and table 3E.2.
- E2. The tables 3E.3 to 3E.32 detail the cost items and estimated amounts that the Service Provider used to finalise each Facility Fixed Fee. The tables 3E.3 to 3E.32 are not to be used by the Service Provider in establishing Actual Costs.
- E3. Having regard to clause A3 of this Schedule 3, and irrespective of clause E4 below and the cost items and estimated amounts used by the Service Provider in tables 3E.3 to 3E.32 to finalise the Facility Fixed Fees in table 3E.1 and table 3E.2, the Facility Fixed Fees are deemed to include all costs specific to each Facility that are not primarily related to the variability in flow.
- E4. Each Facility Fixed Fee allows for at least the following costs to the extent that they are specific to each Facility and not primarily related to the variability in flow:
- (a) full-time and permanent part-time labour costs and associated direct on-costs;
 - (b) intermittent labour costs required from time to time to support performance of the Services at the Facility and associated direct on-costs and expenses;
 - (c) personnel training, conference and seminar costs;
 - (d) safety, first aid and personal protective equipment;
 - (e) management, investigation and reporting on incidents;
 - (f) administration expenses including office equipment and stationery;
 - (g) information technology costs including licence fees, maintenance, network charges and upgrading systems and software;
 - (h) vehicle operating, maintenance and finance costs;
 - (i) plant and equipment operating, maintenance and finance costs;
 - (j) facilities management and non-operational maintenance costs including visitor management expenses;
 - (k) coordinating operations with Hunter Water operations;
 - (l) sampling and analysis expenses other than those expenses met by Hunter Water in accordance with Schedule 9;
 - (m) operational maintenance costs including:
 - (i) monitoring and responding to SCADA alarms;
 - (ii) creating jobs and logging details in Ellipse;
 - (iii) supply of associated parts, materials and consumables;
 - (iv) Preventive Maintenance, Breakdown Maintenance and Corrective Maintenance costs specific to each Facility;

but excluding Minor Capital Works or Long Cycle Preventive Maintenance priced as a Variation under part H of Schedule 3;

- (n) recording Facility Data;
 - (o) asset management and capital works planning costs;
 - (p) spare parts purchase and maintenance costs;
 - (q) maintenance and updating of Plant Manuals and Standard Operating Procedures;
 - (r) preparation of Facility specific reports specified under this Agreement;
 - (s) provision for intrinsic risks associated with the above activities;
 - (t) provision for contingent risks associated with the above activities;
 - (u) the cost of any goods or services supplied with respect to the Facility under an Existing Contract;
 - (v) management of and dealing with any Existing Contractor with respect to the Facility; and
 - (w) the relevant risk amount and margin for the relevant Facility from the relevant table set out in tables 3E.3 to 3E.32 in this Part E of Schedule 3.
- E5. Fees relating to the Chichester Dam destratification facility are deemed to be included in the Facility Fixed Fees for Dungog WTP.
- E6. The Service Provider's detailed cost estimates for each Facility Fixed Fee (tables 3E.3 to 3E.32) is to include identification of:
- (a) items which are one-off costs which can be excluded from a base for forecasting future year costs; and
 - (b) items and associated frequencies of periodic costs, so that the items can be appropriately included in forecasting future year costs.

Payments to Existing Contractors

- E7. Payments that the Service Provider confirms to Hunter Water can be made and that are made by Hunter Water to Existing Contractors under clause 28.6 in relation to costs deemed by Hunter Water to be covered by a Facility Fixed Fee shall be deducted from the respective Facility Fixed Fee due to the Service Provider.

PART F - FACILITY VARIABLE FEES

- F1. Each Facility Variable Fee for each of the first four Contract Years is the price per specified unit listed for each respective item in table 3F.1 and table 3F.2.
- F2. The tables 3F.3 to 3F.30 detail the cost items and estimated amounts that the Service Provider used to finalise each Facility Variable Fee. The tables 3F.3 to 3F.30 are not to be used by the Service Provider in establishing Actual Costs. Having regard to clause A3 of this Schedule 3 and irrespective of clause F3 below and the cost items and estimated amounts used by the Service Provider in tables 3F.3 to 3F.30 to finalise the Facility Variable Fees in tables 3F.1 and 3F.2, the Facility Variable Fees are deemed to include all costs specific to each Facility that are primarily related to the variability in flow.
- F3. Each Facility Variable Fee allows for at least the following costs to the extent that clause F2 of this Schedule 3 applies:
- (a) all electricity costs, charges or expenses at each Facility;
 - (b) treatment process chemicals;
 - (c) waste disposal costs for biosolids, residuals, grit, screenings and general waste;
 - (d) provision for intrinsic risks associated with the above activities;
 - (e) provision for contingent risks associated with the above activities; and
 - (f) the relevant risk amount and margin for the relevant item from the relevant table set out in tables 3F.3 to 3E.30 in this Part F of Schedule 3.
- F4. The Service Provider's detailed cost estimates for each Facility Variable Fee are presented in tables 3F.3 to 3F.30. The tables 3F.3 to 3F.30 are not to be used by the Service Provider in establishing Actual Costs.

Electricity Costs

- F5. Hunter Water is responsible for the negotiation and execution of electricity supply contracts for the whole of Hunter Water's assets including the Facilities.
- F6. The Service Provider is liable to pay Hunter Water for any costs, charges or expenses that Hunter Hunter is charged by its electricity supplier for any electricity used (including all associated fees, tariffs and charges, whether they are fixed or based on consumption) by the Service Provider or a Facility whilst the Service Provider is performing the Services (**Electricity Costs**).
- F7. Hunter Water shall:
- .F.7.1 pay the electricity supplier the Electricity Costs; and

.F.7.2 deduct from the respective Facility Variable Fees due to the Service Provider, the full amount of the Electricity Costs that would have been due to the electricity supplier if all rates, fees, tariffs and charges used in the determination of the electricity supplier's invoice had not varied from those applicable as at 31 July 2013 (**Base Date**) unless rebasing of the rates, fees, tariffs or charges applied by the electricity supplier as at the Base Date (**Base Date Rates**) is undertaken under clause F8 below; and

.F.7.3 subject to clause F7.F.7.2, calculation of the amount to be deducted shall have regard to Practice Note PN704.

- F8. The Base Date Rates may be modified at any time by Hunter Water in its absolute and sole discretion, and the Fees adjusted appropriately to maintain the same margin between fees and costs, in conjunction with:
- (a) Hunter Water entering into a new electricity supply contract based on a different tariff structure;
 - (b) change to the tariff structure arising from change to regulated electricity pass-through charges (e.g. network charges or environmental charges);
 - (c) a Variation involving commissioning or decommissioning of works;
 - (d) a Value Enhancement; or
 - (e) pricing for Contract Year 5 and subsequent Contract Years in accordance with clause 29.4.

Payments to Existing Subcontractors and Suppliers

- F9. Payments that the Service Provider confirms to Hunter Water can be made and are made by Hunter Water to Existing Contractors under clause 28.6 in relation to costs deemed by Hunter Water to be covered by a Facility Variable Fee shall be deducted from the respective Facility Variable Fee due to the Service Provider.

PART G - ABNORMAL OPERATING EVENTS

- G1. If an Abnormal Operating Event occurs and the Service Provider is entitled to reimbursement of Additional Costs pursuant to clause 23.3, then the Service Provider shall be entitled to be reimbursed such Additional Costs.
- G2. No margin, Margin or Margin Amount is payable by Hunter Water in relation to any Additional Costs to be reimbursed with respect to any Abnormal Operating Event.

PART H - VARIATIONS

- H1. A Variation shall be priced in accordance with Practice Note PN705 Preparation of Variation Price.
- H2. If a cost component of the Variation:
- .H.2.1 relates to the Management Fee, then the Margin to apply to the Management Fee cost component shall be the Management Fee Margin in Table 3A.1;
 - .H.2.2 relates to the Facility Fixed Fee, then the Margin to apply to the Facility Fixed Fee cost component shall be the Facility Fixed Fee Margin in Table 3A.1;
 - .H.2.3 relates to the Facility Variable Fee, then the Margin to apply to the Facility Variable Fee cost component shall be the Facility Variable Fee Margin in Table 3A.1; or
 - .H.2.4 does not relate to the Management Fee, the Facility Fixed Fee or the Facility Variable Fee, then the Margin to apply to that cost component shall be the Variation Component Margin in Table 3A.1.

PART I - NOT USED

PART J - HANDBACK

- J1. If the Service Provider performs handback services in accordance with the Handback Plan and the Service Provider is entitled to reimbursement of Additional Costs pursuant to clause 45.4, then the Service Provider shall be entitled to be reimbursed such Additional Costs.
- J2. No margin, Margin or Margin Amount is payable by Hunter Water in relation to any Additional Costs reimbursed with respect to any handback activities in accordance with the Handback Plan.

PART K - INDEXATION OF PRICES

- 1 The Management Fee, each Facility Fixed Fee and each Facility Variable Fee shall be subject to adjustment by indexation on the first day of Contract Year 5 and each anniversary of that date thereafter until the Services End Date. The indexation of the Management Fee and each Facility Fixed Fee and Facility Variable Fee shall be determined as described in clause 2 of this Part K below.
- 2 The Management Fee, each Facility Fixed Fee and each Facility Variable Fee shall be adjusted by indexation:
 - a. on the dates identified in clause 1 of this Part K; and
 - b. adjusted by multiplying the relevant Reference Fee by the Indexation Factor applicable to the relevant Reference Fee.
- 3 For the purposes of this Part K, the following definitions apply:

Reference Fee means:

- a. for the Management Fee, the Reference Fee is the average of the Management Fee at item 3D.1 of table 3D.1 Management Fee of Schedule 3 for the previous three Contract Years;
- b. for the Facility Fixed Fee, the Reference Fees are the average, for the previous three years, of each of the Facility Fixed Fees at items 3E.1.1 to 3E.1.10 of table 3E.1 Water Treatment Facility Fixed Fees of Schedule 3 and items 3E.2.1 to 3E.2.21 of table 3E.2 Wastewater Treatment Facility Fixed Fees of Schedule 3; and
- c. for the Facility Variable Fees, the Reference Fees are the average, for the previous three years, of each of the Facility Variable Fees at items 3F.1.1 to 3F.1.10 of table 3F.1 Water Treatment Facility Variable Fees of Schedule 3 and items 3F.2.1A to 3F.2.21 of table 3F.2 Wastewater Treatment Facility Fixed Fees of Schedule 3.

Indexation Factor means, for each relevant fee referred to in table 3K.1, the sum of the product of each Portion of the Fee multiplied by the relevant Index Ratio for each row of table 3K.1 for the relevant fee.

Index Ratio means the most recent index value released at 1 July of the new Contract Year divided by the index value on the 1 January 18 months prior to the start of the new Contract Year.

Portion of the Fee means the percentage in the column “Portion of Fees” in the table 3K.1 that applies to the part of the relevant fee identified in the same line under the “Component” column.

Table 3K.1 Fee Indices

Component		Portion of Fee	Index
A. Indices for Management Fee			
3K.1.A.1	Labour (portion to be no more than 75%)		ABS publication 6302.0 Average Weekly Earnings, Australia TABLE 13A. Average Weekly Earnings, NSW (Dollars) – Original Series A2723373V – Earnings, Persons, Full Time, Adult, Ordinary time earnings, NSW.
3K.1.A.2	Other		ABS publication 6401 Consumer Price Index, Australia, TABLE 5, CPI: Groups, Index Numbers by Capital City Series A2325806K All Groups CPI, Sydney
3K.1.A.3	Fixed (This component will not be indexed)		1
	Total		
B. Facility Fixed Fee Indexes			
3K.1.B.1	Labour (portion to be no more than 40%)		ABS publication 6302.0 Average Weekly Earnings, Australia TABLE 13A, Average Weekly Earnings, NSW (Dollars) - Original Series A2723373V – Earnings, Persons, Full Time, Adult, Ordinary time earnings, NSW.
3K.1.B.2	Other		ABS publication 6401 Consumer Price Index, Australia, TABLE 5. CPI: Groups, Index Numbers by Capital City Series A2325806K All Groups CPI, Sydney
3K.1.B.3	Fixed (This component will not be indexed)		1
	Total		
C. Facility Variable Fees Indexes			
3K.1.C.1	Labour (portion to be no more than 20%)		ABS publication 6302.0 Average Weekly Earnings, Australia, TABLE 6, Average Weekly Earnings, Private Sector - Australia (Dollars) - Original Series A2739723C – Earnings, Persons, Full Time, Adult, Ordinary time earnings, Private sector.
3K.1.C.2	Electricity		
3K.1.C.3	Other		ABS publication 6401 Consumer Price Index, Australia, TABLE 5. CPI: Groups, Index Numbers by Capital City Series A2325806K All Groups CPI, Sydney
3K.1.C.4	Fixed (This component will not be indexed)		1
	Total		

EXAMPLE INDEXATION CALCULATION

Calculation of revised rates based on indexation schedule

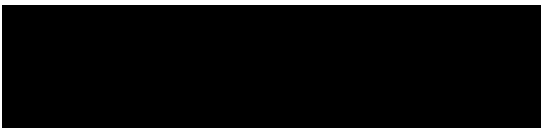
Original rates

			E	F	G	
3E.2	WWTF Fixed Fees	Tendered Price per Unit (\$)				
			2014/15	2015/16	2016/17	2017/18
3E.2.1	Belmont WWTW	month				
3E.2.2	Boulder Bay WWTW	month				

Calculation of Fixed Reference Fee

Facility Fixed Reference Fee for 3E.2.1 Belmont WWTW

Facility Fixed Reference Fee for 3E.2.2 Boulder Bay WWTW



Tendered Portion of Fee

	Component	Portion of Fee	Index
<i>B. Facility Fixed Fee Indices</i>			
3K.1.B.1	Labour (portion to be no more than 40%)		ABS publication 6302.0 Average Weekly Earnings, Australia TABLE 13A. Average Weekly Earnings, NSW (Dollars) - Original Series A2723373V - Earnings, Persons, Full Time, Adult, Ordinary time earnings, NSW
3K.1.B.2	Other		ABS publication 6401 Consumer Price Index, Australia, TABLE 5. CPI: Groups, Index Numbers by Capital City Series A2325806K All Groups CPI, Sydney
3K.1.B.3	Fixed		1
	Total		

Calculation of Index

Ratio based on indices

		F	G	H		
		Index at 1 July 2018	Index at 1 January 2017	Index Ratio	formula	
3K.1.B.1	ABS publication 6302.0 Average Weekly Earnings, Australia TABLE 13A. Average Weekly Earnings, NSW (Dollars) - Original Series A2723373V - Earnings, Persons, Full Time, Adult, Ordinary time earnings, NSW					
3K.1.B.2	ABS publication 6401 Consumer Price Index, Australia, TABLE 5. CPI: Groups, Index Numbers by Capital City Series A2325806K All Groups CPI, Sydney					

Calculation of Indexation Factor

	Component	Portion of Fee	Index Ratio	Product of Portion of fee and Index Ratio
	B. Facility Fixed Fee Indices			
3K.1.B.1	Labour (portion to be no more than 40%)			
3K.1.B.2	Other			
3K.1.B.3	Fixed			
	Total			

Indexation factor for Facility Fixed Fee

Calculation of indexed Facility Fixed Fee for Contract Year 5

Facility Fixed Reference Fee X Indexation Factor

Facility Fixed Reference Fee for 3E.2.1 Belmont WWTF

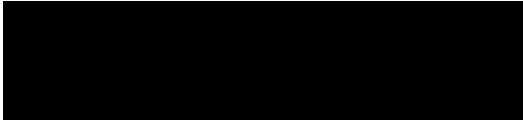
Indexation factor for Facility

Rate for Contract Year 5 for 3E.2.1 Belmont WWTF

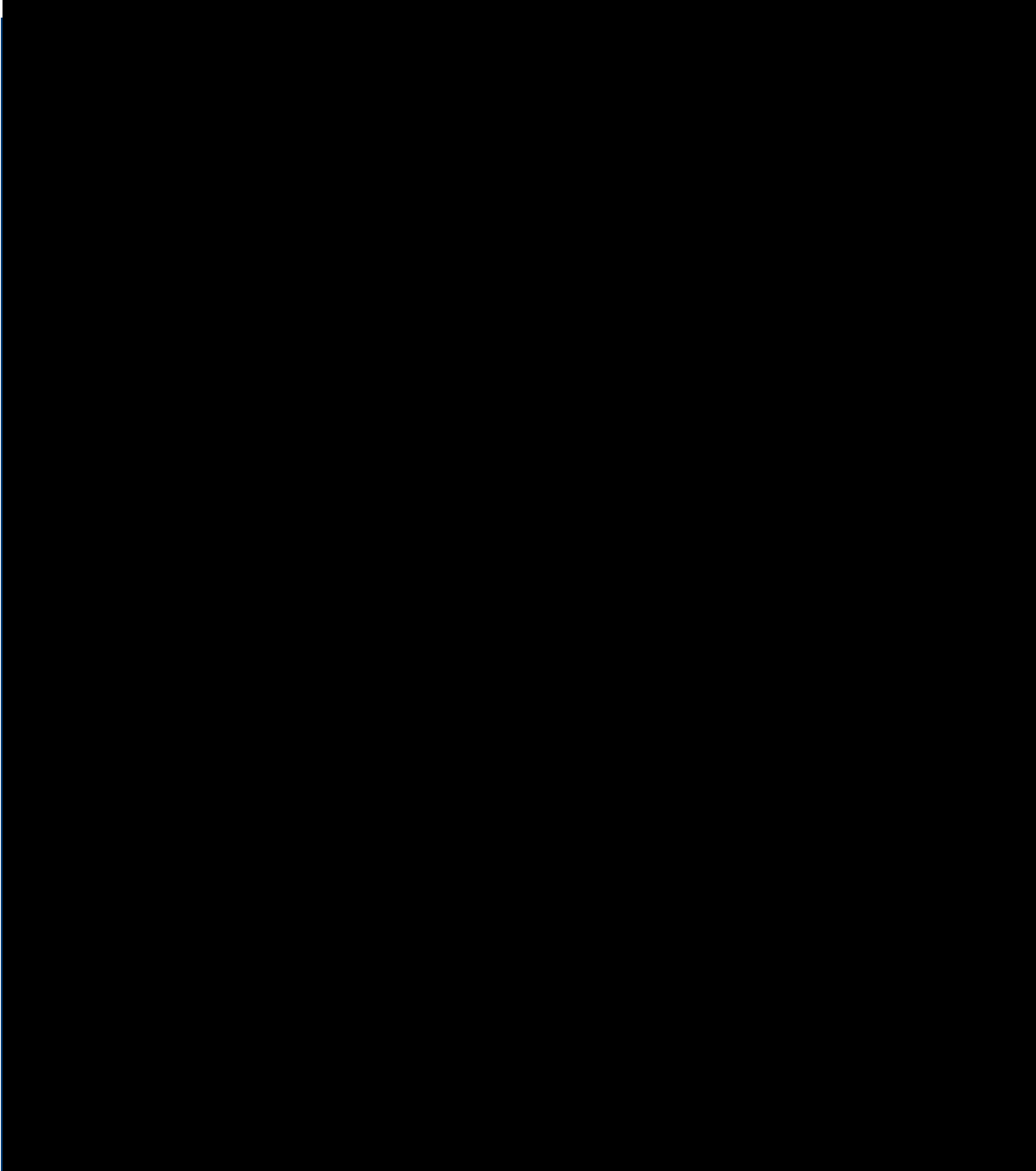
Facility Fixed Reference Fee for 3E.2.2 Boulder Bay WWT

Indexation factor for Facility

Rate for Contract Year 5 for 3E.2.1 Belmont WWTF



SCHEDULE 4 - KEY PERSONNEL



Darren Cleary	Chief Operating Officer
Clint Thomson	Manager Systems Operations
Glen Robinson	Manager Treatment

		Operations
	Stuart Horvath	Manager Asset Management
	Greg Small	Manager Contracts

SCHEDULE 5 - ABNORMAL OPERATING EVENTS

Abnormal Operating Events are limited to the following events:

- (a) the following, provided they cause a sudden, substantial and unavoidable increase in the resources required by the Service Provider to maintain provision of the Services or continuity of treatment operations:
 - (i) an event in which the Intrinsic Capacity Limit of a WTF or WWTF is exceeded including:
 - (a) an abnormal variance in the raw water supply to a WTF that exceeds the Intrinsic Capacity Limit of the relevant WTF; and
 - (b) an abnormal variance in the raw wastewater inflow to a WWTF that exceeds the Intrinsic Capacity Limit of the relevant WWTF;
 - (ii) an unplanned outage of the SCADA system;
 - (iii) an unplanned power outage exceeding 4 hours due to failure of the electricity supply authority's distribution system, or Hunter Water's high voltage distribution system, except at a Facility which incorporates a back-up generator;
 - (iv) presence of taste and odour compounds in the raw water supply leading to the need to commence PAC dosing using permanent and/or temporary dosing facilities;
 - (vi) substantial failure of a structure or structural element;
 - (vii) supply of water to Grahamstown WTP from the Tomago Sandbeds (instead of Grahamstown Dam) for more than 6 weeks in a Contract Year;
- (b) an event of the nature referred to in (a) affecting Hunter Water's distribution and collection systems leading to a direction from Hunter Water for the Service Provider to provide resources to support Hunter Water in responding to the event;
- (c) an event of Force Majeure; and
- (d) establishment of a temporary PAC dosing plant in accordance with clause 5.6(2),

except to the extent that the event arose out of or was a consequence of the negligent act or negligent omission of the Service Provider or of the Service Provider being in breach of this Agreement and provided that an event is not an Abnormal Operating Event if the Additional Cost of the event is less than [REDACTED] per Facility per event except if:

- (a) the Additional Costs are due to an Abnormal Operating Event that occurs across multiple Facilities or is recurring; and
- (b) the total aggregate Additional Costs incurred arising out of the Abnormal Operating Event exceeds ██████████ for the period up to the Initial Expiry Date.

SCHEDULE 7 - PRACTICE NOTES

- 1 The following Practice Notes are to apply from the Agreement Date. Copies are provided in annexure A.
- 2 The CMG may determine that new Practice Notes be developed or existing Practice Notes be amended in accordance with clause 15.
 - (a) General Management
 - PN001 - Contacts
 - PN101 - Good Practice
 - PN102 - Operator Competency
 - PN103 - Nelson Bay WTP Access Procedure
 - PN104 - Hunter Water Site Safety Rules
 - PN105 - Access to Laboratory Records
 - PN106 - Right of Access Agreements
 - PN110 - Recycled Water Standards
 - PN111 - Drinking Water Standards
 - PN112 - Environmental Protection Criteria
 - (b) Notifications
 - PN201 - Water Quality Incident Notification
 - PN202 - EP Licence Non-Conformance Notification
 - PN203 - Recycled Water Interruption Notification
 - PN204 - Safety and Environmental Incident Notification
 - PN205 - Asset Deficiency Notification
 - PN206 - Abnormal Inflow Notification
 - (c) Operations
 - PN301 - Controlling WTP Raw and Treated Water Flow Rates
 - PN302 - Controlling WWTW Influent Rates
 - PN303 - Controlling Effluent and Recycled Water Flow Rates
 - PN304 - On-Site Storage of Biosolids
 - PN307 - Tanker Management
 - PN308 - Shortland WWTW Sludge Dewatering
 - PN309 - Identified Facility Limitations

- PN310 - Civil Field Staff Requirements
- PN311 - Measurement of Quantities for variable fees
- (d) SCADA
 - PN402 - SCADA Alarm Monitoring and Handling
 - PN403 - Amending SCADA Alarms
- (e) Operational Maintenance
 - PN501 - Creating a Maintenance Job
 - PN502 - Ellipse Data Entry
 - PN504 - Ellipse Data Field Requirements
 - PN505 - Breakdown Response and Restoration of Service
 - PN506 - Asset Information Procedure
- (f) Facilities Management
 - PN603 - Guided Facility Tours
- (g) Capital Works
 - PN702 - New Work Handover
 - PN703 - Minor Capital Works Definition
 - PN704 - Electricity Billing Procedures
 - PN705 - Preparation of Variation Price
 - PN706 - Minor Capital Works Procedures
 - PN707 - Pricing of Minor Capital Works
- (h) Meetings and Reports
 - PN801 - Treatment Planning Meetings
 - PN802 - Recycled Water Quality Meetings
 - PN803 - Water Quality Committee Meetings
 - PN804 - Monthly Contract Reports
 - PN805 - IPART Pricing Submissions
 - PN806 - Customer Complaint Investigations and Reporting
 - PN808 - Audit Recommendation Status Report
 - PN809 - Australian Bureau of Statistics Data
 - PN810 - Annual Information Report (AIR)
 - PN811 - Compliance and Performance Report (website)
 - PN812 - Contractor WHS Report
 - PN813 - Drinking Water and Recycled Water Exception Report

PN815 - EPA Pollution Monitoring Monthly Summary Report (HWC website)

PN816 - EPL Annual Returns

PN817 - Fluoride Monitoring

PN818 - Monthly Compliance and Performance (Drinking Water)

PN819 - Monthly Performance and Issues at WWTW (Recycled Water)

PN820 - Monthly Performance Report

PN821 - National Performance Report

PN822 - National Pollutant Inventory

PN823 - Operating Licence Audit

SCHEDULE 8 - DATA COLLECTION

- 1 Facility data is data on the operational performance, status and conditions for each Facility as detailed in the Plant Spreadsheets (**Facility Data**).
- 2 In general, the Facility Data includes details of:
 - (a) various flow volumes throughout the plant;
 - (b) chemical dosing rates and deliveries;
 - (c) water, effluent and other product qualities throughout the plant based on instrument readings, on-site analysis and off-site laboratory analysis;
 - (d) volumes of biosolids, residuals and other waste; and
 - (e) details of significant events,but the specific type of Facility Data for each Facility is as detailed in the Plant Spreadsheets.
- 3 The existing Facility Data is held by Hunter Water in Plant Spreadsheets which Hunter Water will supply to the Service Provider in accordance with this Agreement. For the avoidance of doubt the existing Facility Data and the Plant Spreadsheets Hunter Water supplies to the Service Provider cannot be relied upon by the Service Provider and do not form part of this Agreement.
- 4 The Service Provider must as part of the Services continue the collection and recording of the Facility Data for each Facility at the same frequency and for the same parameters as indicated by the Plant Spreadsheets or as otherwise directed by Hunter Water.
- 5 The Service Provider in collecting the Facility Data may elect to use a different data system or format to that of the Plant Spreadsheets to suit the Service Provider's normal practices, but:
 - (a) the Service Provider must ensure that Hunter Water must have remote access to read and copy any Facility Data at any time without notice;
 - (b) past Facility Data (including any Facility Data provided by Hunter Water) must be incorporated in the system to provide a continuous historical record;
 - (c) all Facility Data collected during the Term must be provided to Hunter Water at the Services End Date; and
 - (d) the Facility Data system and format must be Endorsed in accordance with clause 25.2.

SCHEDULE 9 - LABORATORY SAMPLING AND ANALYSIS

- 1 Hunter Water is responsible for arranging and meeting the cost of the laboratory analysis required by this Schedule 9. This includes the cost of sampling for tests noted as "LAB" in the "Sample Taken By" column in the table below and transport to the laboratory for those noted as "LAB" in the "Sample Delivered By" column in the table below.
- 2 The Service Provider is responsible for arranging, at its own expense, any:
 - a. sampling for tests noted as "SP" in the "Sample Taken By" column in the table below ; or
 - b. transport to the laboratory for those noted as "SP" in the "Sample Delivered By" column in the table below.

Where the "Sample Taken By" column in the table below and the "Sample Delivered By" column in the table below both note "SP" then the Service Provider is responsible for both the tasks.

The sampling to be undertaken by the Service Provider must cover, at a minimum, the relevant parameters detailed in the table below and be completed at regular intervals or as otherwise directed by Hunter Water.

- 3 The Service Provider is also responsible for arranging, at its own expense, any additional testing the Service Provider may require to properly perform the Services which is not expressly required by regulation or this Agreement.
- 4 The Service Provider is also responsible for arranging and meeting the cost of all sampling and analysis in accordance with the relevant EP Licence in the event of any overflows.
- 5 Some on-site analysis is required for operational records as required by Schedule 8. That analysis is the responsibility of the Service Provider and is not covered in this Schedule 9.
- 6 The Service Provider is responsible for reviewing this Schedule 9 and ensuring that all sampling and analysis required under EP Licences relating to the Facilities is accounted for, complies with the EP Licence requirements and completed at regular intervals or as otherwise directed by Hunter Water. The Service Provider must immediately notify Hunter Water if any sampling required by an EP Licence is not expressly or correctly listed.
- 7 Hunter Water may at any time update or amend the table below on the giving of notice to the Service Provider and the Service Provider must comply with any such

update or amendment on and from the date that Hunter Water’s notice is received by the Service Provider.

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
HS11	Anna Bay WTP		1950-100-20	
<i>HS11.1</i>	<i>Anna Bay TW - Raw Water</i>		<i>1615000</i>	
52	LAB	LAB	Arsenic	Ecoli
			Total Coliform	
13	LAB	LAB	Total Hardness by Calculation (Ca + Mg)	
			Ammonia	Total Kjeldahl Nitrogen
			Nitrites	Total Phosphorus
			Total Oxidised Nitrogen	Total Organic Carbon
			Silica	
4	LAB	LAB	Conductivity	Chromium Low Level
			Chloride	Cobalt
			BOD Total	Copper Low Level
			Suspended Solids	Iodide
			Oxygen Absorbed	Lead Low Level
			Sulphide	Molybdenum
			Sulphate	Mercury
			Total Solids 105°C	Nickel Low Level
			Free Cyanide	Potassium Total
			Antimony	Selenium
			Barium	Silver Low Level
			Beryllium	Sodium Total
			Boron	Tin
			Cadmium Low Level	Zinc Total
6	LAB	LAB	Pesticides (Full Organochlorins Screen Bi-Monthly)	
<i>HS11.2</i>	<i>Anna Bay TW - CWT</i>		<i>1616000</i>	
52	LAB	LAB	Arsenic	Ecoli
			Total Coliform	Heterotrophic Plate Count
13	LAB	LAB	Ammonia	Total Phosphorus
			Nitrites	Soluble Reactive Phosphorus
			Total Oxidised Nitrogen	Total Organic Carbon
			Total Kjeldahl Nitrogen	Total Hardness by Calculation (Ca + Mg)
			Silica	
4	LAB	LAB	Conductivity	Cobalt
			Chloride	Copper Low Level
			BOD Total	Iodide

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Suspended Solids	Lead Low Level
			Total Solids 105°C	Molybdenum
			Sulphate	Mercury
			Oxygen Absorbed	Nickel Low Level
			Free Cyanide	Potassium Total
			Antimony	Selenium
			Barium	Silver Low Level
			Beryllium	Sodium Total
			Boron	Tin
			Cadmium Low Level	Zinc Total
			Chromium Low Level	
1	LAB	LAB	NDMA	
<i>HS11.3</i>	<i>Anna Bay Bores 1</i>		<i>1615820</i>	
	<i>Anna Bay Bores 2</i>		<i>1615821</i>	
	<i>Anna Bay Bores 3</i>		<i>1615822</i>	
	<i>Anna Bay Bores 4</i>		<i>1615001</i>	
	<i>Anna Bay Bores 5</i>		<i>1615002</i>	
	<i>Anna Bay Bores 6</i>		<i>1615003</i>	
	<i>Anna Bay Bores 7</i>		<i>1615004</i>	
	<i>Anna Bay Bores 8</i>		<i>1615005</i>	
	<i>Anna Bay Bores 10</i>		<i>1615006</i>	
	<i>Anna Bay Bores 11</i>		<i>1615823</i>	
	13	LAB	LAB	Aluminium
Iron				Turbidity
HS7	Dungog WTP		1950-100-20	
<i>HS7.1</i>	<i>Dungog WTP Raw</i>		<i>1610100</i>	
52	LAB	LAB	Total Hardness by Calculation (Ca + Mg)	Ecoli
			Total Coliform	Heterotrophic Plate Count
13	LAB	LAB	Ammonia	Total Kjeldahl Nitrogen
			Nitrates	Total Phosphorus
			Nitrites	Soluble Reactive Phosphorus
			Total Oxidised Nitrogen	Bromide
			Silica	Total Organic Carbon
4	LAB	LAB	Conductivity	Cadmium Low Level
			Chloride	Chromium Low Level
			BOD Total	Copper Low Level
			Suspended Solids	Iodide
			Oxygen Absorbed	Lead Low Level
			Sulphide	Molybdenum
			Sulphate	Mercury Potable Water

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Total Solids 105°C	Nickel Low Level
			Free Cyanide	Potassium Total
			Antimony	Selenium
			Arsenic	Silver Low Level
			Barium	Sodium Total
			Beryllium	Tin
			Boron	Zinc Total
HS7.2		Dungog CWT Outlet	1610100	
52	LAB	LAB	Total Coliform	Heterotrophic Plate Count
			Ecoli	
13	LAB	LAB	Ammonia	Total Phosphorus
			Nitrites	Soluble Reactive Phosphorus
			Total Oxidised Nitrogen	Total Organic Carbon
			Total Kjeldahl Nitrogen	Total Hardness by Calculation (Ca + Mg)
			Silica	
4	LAB	LAB	Conductivity	Cadmium Low Level
			Chloride	Chromium Low Level
			BOD Total	Copper Low Level
			Sulphide	Iodide
			Suspended Solids	Lead Low Level
			Total Solids 105°C	Molybdenum
			Sulphate	Mercury
			Oxygen Absorbed	Nickel Low Level
			Free Cyanide	Potassium Total
			Antimony	Selenium
			Arsenic	Silver Low Level
			Barium	Sodium Total
			Beryllium	Tin
			Boron	Zinc Total
HS7.3		Dusodie	1630020	
13	LAB	LAB	Total Organic Carbon	Heterotrophic Plate Count
52	LAB	LAB	Total Coliform	
			Ecoli	
HS7.4		Dungog WTP - Fresh Sludge	WRO1000	
2	SP	LAB	pH	Copper
			Ammonia	Iron
			COD Filtered	Lead
			Suspended Solids	Manganese

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Total Oxidised Nitrogen	Mercury
			Total Kjeldahl Nitrogen	Nickel
			Sulphate	Selenium
			Total Phosphorus	Zinc
			Aluminium	Total Coliform (sludge)
			Arsenic	Faecal Coliform (sludge)
			Cadmium	Giardia Cysts and Cryptosporidium Oocystis
			Chromium	Enteric Viruses
2	SP	LAB	Pesticides (Screen, Organochlorines, PCB's)	
HS7.5		Dungog WTP - Dry Sludge		WRO5000
2	SP	LAB	pH	Copper (dry wt)
			Ammonia	Iron (dry wt)
			COD Filtered	Lead (dry wt)
			Suspended Solids	Manganese (dry wt)
			Total Oxidised Nitrogen	Mercury (dry wt)
			Total Kjeldahl Nitrogen (dry wt)	Nickel (dry wt)
			Sulphate	Selenium (dry wt)
			Total Phosphorus	Zinc (dry wt)
			Aluminium (dry wt)	Total Coliform (sludge)
			Arsenic (dry wt)	Faecal Coliform (sludge)
			Cadmium (dry wt)	Giardia Cysts and Cryptosporidium Oocystis
			Chromium (dry wt)	Enteric Viruses
2	SP	LAB	Pesticides (Screen, Organochlorines, PCB's)	
2	SP	LAB	TCLP	
HS7.5		Dungog WTP - Creek		1610111
12	LAB	LAB	Aluminium	Suspended Solids
			Iron	pH
			Manganese	
HS6		Grahamstown WTP		1950-120-20
HS6.1		Grahamstown WTP Raw Water (Inlet Pit)		1621000
52	LAB	LAB	Alkalinity	Total Coliform
			Total Hardness by Calculation (Ca + Mg)	Heterotrophic Plate Count
			Chlorophyll-a & Pheophytin	Total Phytoplankton / Zooplankton
			Total Coliform	
			Heterotrophic Plate Count	
			Total Phytoplankton / Zooplankton	

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
52	LAB	LAB	Ecoli	
13	LAB	LAB	Ammonia	Total Phosphorus
			Nitrites	Soluble Reactive Phosphorus
			Total Oxidised Nitrogen	Bromide
			Silica	Total Organic Carbon
			Total Kjeldahl Nitrogen	
4	LAB	LAB	Conductivity	Cadmium Low Level
			Chloride	Chromium Low Level
			BOD Total	Copper Low Level
			Suspended Solids	Iodide
			Oxygen Absorbed	Lead Low Level
			Sulphide	Molybdenum
			Sulphate	Mercury Potable Water
			Total Solids 105°C	Nickel Low Level
			Free Cyanide	Potassium Total
			Antimony	Selenium
			Arsenic	Silver Low Level
			Barium	Sodium Total
			Beryllium	Tin
Boron	Zinc Total			
6	LAB	LAB	Pesticides (Full Organochlorines Screen Bi-Monthly)	
HS6.1			Grahamstown WTP Raw Water (East Dip) 1621010	
52	LAB	LAB	Ecoli	Heterotrophic Plate Count
			Chlorophyll-a & Pheophytin	Total Phytoplankton / Zooplankton
			Total Coliform	
HS6.2			Grahamstown WTP Raw Water Tank (West) 1622005	
1	LAB	LAB	Perfluorooctane Sulphonate (PFOS)	
6	LAB	LAB	Arsenic	Total Coliform
			Ecoli	
2	LAB	LAB	Total Hardness by Calculation (Ca + Mg)	Barium
			Ammonia	Beryllium
			Nitrites	Boron
			Total Oxidised Nitrogen	Cadmium Low Level
			Silica	Chromium Low Level
			Total Kjeldahl Nitrogen	Cobalt
			Total Phosphorus	Copper Low Level
Total Organic Carbon	Iodide			
1	LAB	LAB	Conductivity	Lead Low Level

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Chloride	Molybdenum
			BOD Total	Mercury Potable Water
			Suspended Solids	Nickel Low Level
			Oxygen Absorbed	Potassium Total
			Sulphide	Selenium
			Sulphate	Silver Low Level
			Total Solids 105°C	Sodium Total
			Free Cyanide	Tin
			Antimony	Zinc Total
1	LAB	LAB	Pesticides (Full Organochlorines Screen Bi-Monthly)	
HS6.3	Grahamstown Stage 1 Filtered		1661100	
	Grahamstown Stage 2 Filtered		1661200	
26	LAB	LAB	Total Organic Carbon	Ecoli
			Total Coliform	Heterotrophic Plate Count
	Grahamstown Stage 2 Filtered		1661200	
6	LAB	LAB	Arsenic	
HS6.4	Grahamstown WTP CWT Outlet		1691000	
52	LAB	LAB	Total Coliform	Heterotrophic Plate Count
			Ecoli	Total Phytoplankton / Zooplankton
13	LAB	LAB	Ammonia	Silica
			Nitrates	Total Phosphorus
			Nitrites	Soluble Reactive Phosphorus
			Total Oxidised Nitrogen	Total Organic Carbon
			Total Kjeldahl Nitrogen	Total Hardness by Calculation (Ca + Mg)
1	LAB	LAB	Conductivity	Cadmium Low Level
			Alkalinity	Chromium Low Level
			Chloride	Copper Low Level
			BOD Total	Iodide
			Sulphide	Lead Low Level
			Suspended Solids	Molybdenum
			Total Solids 105°C	Mercury
			Sulphate	Nickel Low Level
			Oxygen Absorbed	Potassium Total
			Free Cyanide	Selenium
			Antimony	Silver Low Level
			Arsenic	Sodium Total
			Barium	Tin
			Beryllium	Zinc Total

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Boron	
1	LAB	LAB	NDMA	
HS6.5		Grahamstown WTP - Fresh Sludge		WRO2000
2	SP	LAB	pH	Copper
			Ammonia	Iron
			COD Filtered	Lead
			Suspended Solids	Manganese
			Total Oxidised Nitrogen	Mercury
			Total Kjeldahl Nitrogen	Nickel
			Sulphate	Selenium
			Total Phosphorus	Zinc
			Aluminium	Total Coliform (sludge)
			Arsenic	Faecal Coliform (sludge)
			Cadmium	Giardia Cysts and Cryptosporidium Oocystis
			Chromium	Enteric Viruses
			Copper	
2	SP	LAB	Pesticides (Screen, Organochlorines, PCB's)	
HS6.6		Grahamstown WTP (Gtown/Tom) - Dry Sludge		WRO6000
2	SP	LAB	pH	Copper (dry wt)
			Ammonia	Iron (dry wt)
			COD Filtered	Lead (dry wt)
			Suspended Solids	Manganese (dry wt)
			Total Oxidised Nitrogen	Mercury (dry wt)
			Total Kjeldahl Nitrogen (dry wt)	Nickel (dry wt)
			Sulphate	Selenium (dry wt)
			Total Phosphorus	Zinc (dry wt)
			Aluminium (dry wt)	Total Coliform (sludge)
			Arsenic (dry wt)	Faecal Coliform (sludge)
			Cadmium (dry wt)	Giardia Cysts and Cryptosporidium Oocystis
			Chromium (dry wt)	Enteric Viruses
2	SP	LAB	Pesticides (Screen, Organochlorines, PCB's)	
2	SP	LAB	TCLP	
HS6.7		Grahamstown WTP /Tomago Source - Fresh Sludge		WRO2500
1	SP	LAB	pH	Copper
			Ammonia	Iron
			COD Filtered	Lead
			Suspended Solids	Manganese
			Total Oxidised Nitrogen	Mercury

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Total Kjeldahl Nitrogen	Nickel
			Sulphate	Selenium
			Total Phosphorus	Zinc
			Aluminium	Total Coliform (sludge)
			Arsenic	Faecal Coliform (sludge)
			Cadmium	Giardia Cysts and Cryptosporidium Oocystis
			Chromium	Enteric Viruses
1	SP	LAB	Pesticides (Screen, Organochlorines, PCB's)	
HS9		Lemon Tree Passage WTP	1950-130-20	
<i>HS9.1</i>		<i>Lemon Tree Passage WTP - Raw Water</i>	<i>1614000</i>	
52	LAB	LAB	Arsenic	Ecoli
			Total Coliform	
13	LAB	LAB	Total Hardness by Calculation (Ca + Mg)	Silica
			Ammonia	Total Kjeldahl Nitrogen
			Nitrites	Total Phosphorus
			Total Oxidised Nitrogen	Total Organic Carbon
4	LAB	LAB	Conductivity	Chromium Low Level
			Chloride	Cobalt
			BOD Total	Copper Low Level
			Suspended Solids	Iodide
			Oxygen Absorbed	Lead Low Level
			Sulphide	Molybdenum
			Sulphate	Mercury Potable Water
			Total Solids 105°C	Nickel Low Level
			Free Cyanide	Potassium Total
			Antimony	Selenium
			Barium	Silver Low Level
			Beryllium	Sodium Total
			Boron	Tin
			Cadmium Low Level	Zinc Total
6	LAB	LAB	Pesticides (Full Organochlorines Screen Bi-Monthly)	
<i>HS9.2</i>		<i>Lemon Tree Passage WTP - CWT</i>	<i>1694000</i>	
52	LAB	LAB	Arsenic	Ecoli
			Total Coliform	Heterotrophic Plate Count
13	LAB	LAB	Ammonia	Total Phosphorus
			Nitrites	Soluble Reactive Phosphate
			Total Oxidised Nitrogen	Total Organic Carbon
			Total Kjeldahl Nitrogen	Total Hardness by Calculation (Ca + Mg)

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Silica	
4	LAB	LAB	Conductivity	Cobalt
			Chloride	Copper Low Level
			BOD Total	Iodide
			Suspended Solids	Lead Low Level
			Total Solids 105°C	Molybdenum
			Sulphate	Mercury
			Oxygen Absorbed	Nickel Low Level
			Free Cyanide	Potassium Total
			Antimony	Selenium
			Barium	Silver Low Level
			Beryllium	Sodium Total
			Boron	Tin
			Cadmium Low Level	Zinc Total
			Chromium Low Level	
1	LAB	LAB	NDMA	
HS9.3			Lemon Tree Passage WTP - Fresh Sludge	
			WRO4000	
2	SP	LAB	pH	Copper
			Ammonia	Iron
			COD Filtered	Lead
			Suspended Solids	Manganese
			Total Oxidised Nitrogen	Mercury
			Total Kjeldahl Nitrogen	Nickel
			Sulphate	Selenium
			Total Phosphorus	Zinc
			Aluminium	Total Coliform (sludge)
			Arsenic	Faecal Coliform (sludge)
			Cadmium	Giardia Cysts and Cryptosporidium Oocystis
			Chromium	Enteric Viruses
			2	SP
HS9.4			Lemon Tree Passage WTP - Dry Sludge	
			WRO8000	
2	SP	LAB	pH	Copper (dry wt)
			Ammonia	Iron (dry wt)
			COD Filtered	Lead (dry wt)
			Suspended Solids	Manganese (dry wt)
			Total Oxidised Nitrogen	Mercury (dry wt)
			Total Kjeldahl Nitrogen (dry wt)	Nickel (dry wt)
			Sulphate	Selenium (dry wt)
			Total Phosphorus	Zinc (dry wt)

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Aluminium (dry wt)	Total Coliform (sludge)
			Arsenic (dry wt)	Faecal Coliform (sludge)
			Cadmium (dry wt)	Giardia Cysts and Cryptosporidium Oocystis
			Chromium (dry wt)	Enteric Viruses
2	SP	LAB	Pesticides (Screen, Organochlorines, PCB's)	
2	SP	LAB	TCLP	
HS10		Nelson Bay WTP		1950-140-20
<i>HS10.1</i>		<i>Nelson Bay WTP - Raw Water</i>		<i>1613000</i>
52	LAB	LAB	Arsenic	Ecoli
			Total Coliform	
13	LAB	LAB	Alkalinity	Silica
			Total Hardness by Calculation (Ca + Mg)	Total Kjeldahl Nitrogen
			Ammonia	Total Phosphorus
			Nitrites	Total Organic Carbon
			Total Oxidised Nitrogen	
4	LAB	LAB	Conductivity	Chromium Low Level
			Chloride	Cobalt
			BOD Total	Copper Low Level
			Suspended Solids	Iodide
			Oxygen Absorbed	Lead Low Level
			Sulphide	Molybdenum
			Sulphate	Mercury
			Total Solids 105°C	Nickel Low Level
			Free Cyanide	Potassium Total
			Antimony	Selenium
			Barium	Silver Low Level
			Beryllium	Sodium Total
			Boron	Tin
			Cadmium Low Level	Zinc Total
6	LAB	LAB	Pesticides (Full Organochlorines Screen Bi-Monthly)	
<i>HS10.1</i>		<i>Nelson Bay WTP - CWT</i>		<i>1693000</i>
52	LAB	LAB	Arsenic	Ecoli
			Total Coliform	Heterotrophic Plate Count
13	LAB	LAB	Ammonia	Total Phosphorus
			Nitrites	Soluble Reactive Phosphate
			Total Oxidised Nitrogen	Total Organic Carbon
			Total Kjeldahl Nitrogen	Total Hardness by Calculation (Ca + Mg)

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Silica	
4	LAB	LAB	Conductivity	Chromium Low Level
			Alkalinity	Cobalt
			Chloride	Copper Low Level
			BOD Total	Iodide
			Suspended Solids	Lead Low Level
			Total Solids 105°C	Molybdenum
			Sulphate	Mercury
			Oxygen Absorbed	Nickel Low Level
			Free Cyanide	Potassium Total
			Antimony	Selenium
			Barium	Silver Low Level
			Beryllium	Sodium Total
			Boron	Tin
			Cadmium Low Level	Zinc Total
1	LAB	LAB	NDMA	
WS1	Belmont WWTW		SO 013 505	
<i>WS1.1</i>	<i>Aeration Tank B</i>		<i>5SC0140</i>	
52	SP	LAB	Suspended Solids	Volatile Suspended Solids
<i>WS1.2</i>	<i>Aeration Tank C</i>		<i>5SC0150</i>	
	<i>Aeration Tank A</i>		<i>5SC0111</i>	
	<i>Aeration Tank D</i>		<i>5SC0120</i>	
	<i>Aeration Tank E</i>		<i>5SC0135</i>	
12	SP	LAB	Suspended Solids	
<i>WS1.3</i>	<i>Secondary Effluent A</i>		<i>5CE0100</i>	
61	LAB	LAB	BOD Total	Total Oxidisable Nitrogen
			Total Kjeldahl Nitrogen	Suspended Solids
			Ammonia	Alkalinity
<i>WS1.4</i>	<i>Final combined</i>		<i>5SJ0100</i>	
4	LAB	LAB	Fluoride	Ammonia
61	LAB	LAB	pH	BOD Total
			Total Kjeldahl Nitrogen	Suspended Solids
			Total Oxidised Nitrogen	Total Oil & Grease
			Total Phosphorus	
12	LAB	LAB	Wastewater Suite 3 (OC's+OP's+PCB+Metals)	
<i>WS1.5</i>	<i>Redhead Beach - Bathing</i>		<i>5MC1200</i>	
	<i>Blacksmiths - Awabakal Street</i>		<i>5MD0600</i>	
61	LAB	LAB	Enterococci	
<i>WS1.6</i>	<i>DAF Sludge</i>		<i>5DA0100</i>	
26	SP	LAB	Suspended Solids	Volatile Suspended Solids

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
WS1.7 DAF Supernatant 5DA0110				
52	SP	LAB	Total Kjeldahl Nitrogen	Suspended Solids
WS1.8 Centrifuge Sludge Cake 5BF0101				
52	SP	LAB	% Total Solids	
2	SP	LAB	Ecoli	
WS1.9 WAS 5CB0100				
26	SP	LAB	Suspended Solids	
WS1.10 Centrifuge Centrate 5BF0111				
52	SP	LAB	Total Kjeldahl Nitrogen	Suspended Solids
WS1.11 Sludge Cake 5SC0100				
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS1.12 Aerobic Digester 1 - Inlet 5CD0114				
Aerobic Digester 1 - Outlet 5CD0115				
Aerobic Digester 2 - Inlet 5CD0116				
Aerobic Digester 2 - Outlet 5CD0117				
52	SP	LAB	Volatile Suspended Solids	Suspended Solids
WS1.13 Raw 5SA0101				
4	SP	LAB	Ammonia	
WS2 Boulder Bay WWTW SO 031 605				
WS2.1 Aeration Tank 1 5SE0400				
52	SP	LAB	Suspended Solids	Volatile Suspended Solids
WS2.2 Outfall Final 5SJ0400				
30	LAB	LAB	pH	
52	LAB	LAB	Faecal Coliform	Enterococci
61	LAB	LAB	Ammonia	Total Phosphorus
			Alkalinity	BOD Total
			Total Kjeldahl Nitrogen	Total Oil & Grease
			Total Oxidised Nitrogen	Suspended Solids
12	LAB	LAB	COD Flocculated Filtered	UV Absorbance
2	LAB	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS2.3 One Mile Beach Bathing 5MC2600				
Fingal Bay 5MC2800				
61	LAB	LAB	Enterococci	
WS2.4 Sludge Cake 5CL0400				
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS2.5 Boulder Bay Sludge Cake 5CL0400				
52	SP	LAB	% Total Solids	Ecoli
12	SP	LAB	% Volatile Solids	
WS2.6 Belt Press Centrate 5CL0415				
52	SP	LAB	Suspended Solids	

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
WS2.7 Raw 5SA0741				
4	SP	LAB	Ammonia	
WS3 Branxton WWTW SO 041 505				
WS3.1 Aeration Tank 5SC0501				
Anoxic Zone 5SC0502				
RAS 5SC0503				
Membrane zone 5SC0504				
52	LAB	LAB	Suspended Solids	
12	LAB	LAB	Volatile Suspended Solids	
WS3.2 Permeate Diversion Chamber 5SL0501				
52	LAB	LAB	Conductivity	Total Dissolved Solids
			pH	Ammonia
			Total Oil & Grease	Total Kjeldahl Nitrogen
			BOD Total	Total Oxidised Nitrogen
			Suspended Solids	Clostridium Perfringens
			Total Phosphorus Low Level	Ecoli
			Turbidity	Faecal Coliform
			Total Dissolved Solids	Enterococci
12	LAB	LAB	Ammonia	
			COD Flocculated Filtered	Copper
			Total Dissolved Solids	Lead
			Alkalinity	Mercury
			Aluminium	Nickel
			Arsenic	Zinc
			Boron	SAR
Cadmium	Somatic Coliphage			
WS3.3 Anvil Creek Upstream 5MF6000				
Anvil Creek Downstream 5MF6010				
52	LAB	LAB	Total Chlorine	Total Oxidised Nitrogen
			BOD Total	Total Kjeldahl Nitrogen
			Suspended Solids	Total Phosphorus
			pH	Faecal Coliforms
			Ammonia	
WS3.4 Thickened Mixed Liquor 5ML0500				
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS3.5 Raw 5SA0500				
4	LAB	LAB	Ammonia	
52	LAB	LAB	Ecoli	Clostridium Perfringens
			Faecal Coliforms	

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
12	LAB	LAB	Somatic Coliphage	
WS3.6			<i>Branxton Farmers Reuse Storage Pond</i>	
			5SK0530	
52	LAB	LAB	pH	Ammonia
			BOD Total	Total Chlorine
			Conductivity	Total Kjeldahl Nitrogen
			Suspended Solids	Total Phosphorus
			Total Dissolved Solids	Ecoli
			Chlorophyll 'a'	Enterococci
			Total Oil & Grease	Faecal Coliforms
			Total Oxidised Nitrogen	
WS3.7			<i>Woodlots Bore 1</i>	
			54Z0501	
			<i>Woodlots Bore 2</i>	
			54Z0502	
			<i>Woodlots Bore 3</i>	
			54Z0503	
			<i>Woodlots Bore 4</i>	
			54Z0504	
			<i>Woodlots Bore 5</i>	
			54Z0505	
4	LAB	LAB	pH	Total Oxidised Nitrogen
			Conductivity	Total Phosphorus
			Ammonia	Faecal Coliform
WS3.8			<i>Final Pond</i>	
			5SL5000	
52	LAB	LAB	pH	Total Kjeldahl Nitrogen
			BOD Total	Total Oil & Grease
			Suspended Solids	Total Chlorine
			Total Phosphorus Low Level	Total Oxidised Nitrogen
			Chlorophyll 'a'	Faecal Coliform
			Ammonia	Enterococci
12	LAB	LAB	Total Dissolved Solids	Conductivity
WS3.9			<i>Reuse Pump Station</i>	
			5SK0535	
52	LAB	LAB	pH	Total Kjeldahl Nitrogen
			BOD Total	Chlorophyll
			Conductivity	Total Oxidised Nitrogen
			Total Dissolved Solids	Faecal Coliform
			Suspended Solids	Ecoli
			Total Phosphorus Low Level	Enterococci
			Ammonia	
26	LAB	LAB	<i>Total Oil & Grease</i>	
WS3.10			<i>Black Creek Discharge</i>	
			5BL0500	
52	LAB	LAB	Total Chlorine	
WS3.11			<i>Black Creek Effluent</i>	
			5BL0499	

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters		
52	LAB	LAB	Total Chlorine		
WS4		Burwood Beach WWTW		SO 051 505	
<i>WS4.1</i>	<i>Raw</i>			<i>5SA0600</i>	
12	SP	LAB	Ammonia		
4	SP	LAB	Speciated Phenols	VOC's	
WS4.2		Aeration Tank		5SC0600	
52	SP	LAB	Suspended Solids	Alkalinity	
			Volatile Suspended Solids		
WS4.3		Burwood Combined Total Flow		5SL0600	
31	LAB	LAB	pH	Total Phosphorus	
			Total Kjeldahl Nitrogen	BOD Total	
			Ammonia	Total Oil & Grease	
			Total Oxidised Nitrogen	Suspended Solids	
12	LAB	LAB	COD Flocculated Filtered	UV Absorbance	
4	LAB	LAB	Fluoride		
12	LAB	LAB	Wastewater Suite 3 (OC's+OP's+PCB+Metals)		
WS4.4		Burwood Combined Clarifier (Grab)		5SG0601	
61	SP	LAB	% Total Solids		
WS4.5		Burwood Beach Scum Pump Station		5CC0600	
61	SP	LAB	% Total Solids		
4	SP	LAB	BOD Total	Total Oil & Grease	
			Total Kjeldahl Nitrogen	Fluoride	
			Total Oxidised Nitrogen	Suspended Solids	
			Total Phosphorus		
4	SP	LAB	Wastewater Suite 3 (OC's+OP's+PCB+Metals)		
WS4.6		Bar Beach Bathing		5MC2200	
			Burwood Beach South		5MD1500
			Burwood Beach North		5MD1700
			Glenrock Lagoon Beach		5MD1400
			Dudley Beach Bathing		5MC1300
61	LAB	LAB	Enterococci		
WS4.7		Merewether Beach Bathing			
61	LAB	LAB	Enterococci		
WS4.8		Bar Beach Bathing		5MC2200	
			Merewether Beach Bathing		5MC2000
			Burwood Beach South		5MD1500
			Burwood Beach North		5MD1700
35	LAB	LAB	Faecal Coliforms	Enterococci	
WS4.9		Burwood Beach WAS		5CB0600	
12	SP	LAB	Wastewater Suite 4 (OC's, OP's+PCB)		
61	SP	LAB	Ammonia	% Total Solids	

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Total Oil & Grease	% Total Volatile Solids
4	SP	LAB	Fluoride	
52	SP	LAB	Arsenic	Manganese
			Cadmium	Mercury
			Chromium	Nickel
			Chromium VI	Selenium
			Copper	Silver
			Lead	Zinc
WS4.10 Burwood Beach WAS Composite			5CB0601	
31	SP	LAB	Total Kjeldahl Nitrogen	BOD Total
			Total Oxidised Nitrogen	Suspended Solids
			Total Phosphorus	
WS4.11 Burwood Beach Sludge Effluent			5CL0001	
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS4.12 Burwood Leachate			5LE1000	
2	SP	LAB	analysis as per EPA Leachate Test Acceptance Criteria	
WS4.13 Burwood Beach Post Grit			5SH0599	
52	SP	LAB	Volatile Suspended Solids	COD Settled
			BOD Total	TKN
			BOD Settled	Suspended Solids
			COD Total	Alkalinity
WS5 Cessnock WWTW			SO 061 505	
WS5.1 Combined Humus			5SI0700	
52	LAB	LAB	pH	Ammonia
			BOD Total	Total Oxidised Nitrogen
			Suspended Solids	Total Kjeldahl Nitrogen
			Total Phosphorus	Alkalinity
WS5.2 Cessnock 1st Pond			5SB0700	
52	LAB	LAB	Phosphorus Ortho-Filtered	Alkalinity
			Ammonia	Chlorophylla-a
			Total Oxidised Nitrogen	Suspended Solids
			Total Kjeldahl Nitrogen	
WS5.3 Centrifuge Feed			5CD0710	
52	SP	LAB	Total Solids 105°C	% Total Volatile Solids
WS5.4 Heated Digester			5HD5269	
52	SP	LAB	pH	Total Solids 105°C
			Alkalinity	% Total Volatile Solids
			Volatile Acids	
WS5.5 Cessnock Final Pond 3			5SL0710	
52	LAB	LAB	Ammonia	Total Oil & Grease

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			pH	Total Kjeldahl Nitrogen
			BOD-T	Total Dissolved Solids
			Total Suspended Solids	Total Oxidised Nitrogen
			Total Phosphorus	Faecal Coliform
			Chlorophyll-a	
WS5.6	Cessnock 2nd Pond Outlet			5SL0720
52	LAB	LAB	Ammonia	Alkalinity
			Total Oxidised Nitrogen	Chlorophyll-a
			Total Kjeldahl Nitrogen	Suspended Solids
WS5.7	Cessnock TTP Effluent			5TE8459
52	LAB	LAB	Alkalinity	Chlorophyll-a
			Ammonia	Total Oil & Grease
			pH	Total Kjeldahl Nitrogen
			BOD-T	Total Oxidised Nitrogen
			Total Suspended Solids	Faecal Coliform
			Total Phosphorus	
12	LAB	LAB	Conductivity	Total Dissolved Solids
WS5.8	Biosolids Cake			5BC0700
52	SP	LAB	%Total Solids	Volatile Suspended Solids
2	SP	LAB	Ecoli	
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS5.9	Dewatered Sludge Centrate			5GD1320
52	SP	LAB	Suspended Solids	
WS5.10	Raw			
4	SP	LAB	Ammonia	
WS5.11	Cessnock Ferrous Sulphate			5FS0500
4	SP	LAB	Iron	SG@4C
WS6	Dora Creek WWTW			SO 061 505
WS6.1	Bioreactor 1			5SC0801
26	SP	LAB	Volatile Suspended Solids	
52	SP	LAB	Suspended Solids	
WS6.2	Combined Clarifier			5SD0801
52	SP	LAB	pH	Total Oxidised Nitrogen
			Ammonia	Suspended Solids
WS6.3	Thickened Mixed Liquor			5ML0800
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS6.4	Bioreactor 2			5SC0802
26	SP	LAB	Volatile Suspended Solids	
52	SP	LAB	Suspended Solids	
WS6.5	Raw			5SA0700

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
4	SP	LAB	Ammonia	
WS6.6		Eraring Offtake		5SL0800
52	LAB	LAB	pH	Manganese
			Conductivity	Total Oil & Grease
			BOD Total	Turbidity
			Suspended Solids	Dissolved Oxygen
			Total Kjeldahl Nitrogen	Total Hardness
			Total Oxidised Nitrogen	Alkalinity
			Ammonia	Iron
			Chloride	Total Organic Carbon
			Total Phosphorus	Chlorophyll 'a'
WS18		Dungog WWTW		SO 061 505
WS18.1		Humus Effluent		5DU0002
52	SP	LAB	pH	Ammonia
			BOD Total	Total Oxidised Nitrogen
			Suspended Solids	Total Kjeldahl Nitrogen
			Total Phosphorus	Alkalinity
WS18.2		Dungog 1st Pond		5DU0003
12	SP	LAB	Total Oxidised Nitrogen	Chlorophyll-a
			Total Kjeldahl Nitrogen	Suspended Solids
			Alkalinity	
WS18.3		Digester 1 Primary		5DU0004
52	SP	LAB	Suspended Solids	Faecal Coliforms
			Chlorophyll 'a'	Enterococci
12	SP	LAB	Total Phosphorus	Total Oil & Grease
			Total Dissolved Solids	Ammonia
			Chloride	Total Oxidised Nitrogen
			Sulphate	Total Kjeldahl Nitrogen
			Conductivity	
Dungog Final Licence Discharge				
	SP	LAB	pH	Total Kjeldahl Nitrogen
			BOD-T	Total Oil & Grease
			Total Oxidised Nitrogen	Suspended Solids
			Ammonia	Chlorophyll-a
			Phosphorus Ortho-Filtered	Ecoli
			Total Phosphorus	Faecal Coliforms
Dungog Williams R Upstream				
Dungog Williams R Downstream				
	SP	LAB	Faecal Coliforms	Phosphorus Ortho-Filtered
			Ecoli	pH
			Enterococci	Total Phosphorus

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Total Oxidised Nitrogen	Total Kjeldahl Nitrogen
			Ammonia	
<i>Dungog Geotube Cake</i>				
	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS20	Clarence Town WWTW			SOT27804
<i>WS20.1</i>	<i>Effluent Reuse</i>			<i>5CT0001</i>
52	SP	LAB	pH	Chloride
			BOD Total	Sulphate
			Suspended Solids	Ammonia
			Total Phosphorus	Nitrates
			Total Oil & Grease	Total Kjeldahl Nitrogen
			Iron	Faecal Coliforms
			Chlorophyll 'a'	Enterococci
			Total Dissolved Solids	
12	SP	LAB	Calcium	Potassium
4	SP	LAB	Conductivity	
2	SP	LAB	PCP (Pentachlorophenol)	Lithium
			Conductivity	Magnesium
			Aluminium	Molybdenum
			Beryllium	Sodium
			Boron	Calcium
			Cobalt	Potassium
			Fluoride	
1	SP	LAB	Wastewater Suite 3 (OC's+OP's+PCB+Metals)	
<i>WS20.2</i>	<i>Effluent Reuse Scheme Bore GW1</i>			<i>5CL0031</i>
	<i>Effluent Reuse Scheme Bore GW2</i>			<i>5CL0032</i>
	<i>Effluent Reuse Scheme Bore GW3</i>			<i>5CL0033</i>
4	LAB	LAB	Chlorine	8.00
			Conductivity	BOD
			pH	Potassium
			Suspended Solids	Total Phosphorus
			Total Kjeldahl Nitrogen	Turbidity
			Nitrate	Faecal Coliforms
1	LAB	LAB	Cadmium	Calcium
			Chloride	Magnesium
			Chromium	Arsenic
			Copper	Zinc
			Mercury	Iron
			Manganese	Aluminium
			Lead	Pesticides (OC+PCB)

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Sodium	
WS20.3		Clarence Town WWTW Wallaroo Creek Downstream		5CL0002
		Clarence Town WWTW Wallaroo Creek Upstream		5CL0003
12	LAB	LAB	BOD Total	Nitrates
			Chlorophyll 'a'	Total Kjeldahl Nitrogen
			Suspended Solids	Total Phosphorus
			pH	Faecal Coliforms
			Ammonia	
WS7		Edgeworth WWTW		SO 081 605
WS7.1		Aeration Tank 1 Outlet		5SI0970
52	SP	LAB	Suspended Solids	
26	SP	LAB	Volatile Suspended Solids	
WS7.2		Aeration Tank 2 Outlet		5SI0980
52	SP	LAB	Suspended Solids	
WS7.3		Combined Clarifier		5SI1006
52	SP	LAB	pH	Alkalinity
			Suspended Solids	Total Oxidised Nitrogen
			Ammonia	
26	SP	LAB	Total Kjeldahl Nitrogen Total	
12	SP	LAB	Total Phosphorus	BOD Total
WS7.4		Effluent Pumping Station		5CP0001
52	SP	LAB	BOD Total	Faecal Coliforms
			pH	Enterococci
			Suspended Solids	Total Oxidised Nitrogen
12	SP	LAB	Total Phosphorus	Total Oil & Grease
			Total Kjeldahl Nitrogen	
12	SP	LAB	Wastewater Suite 3 (OC's+OP's+PCB+Metals)	
WS7.5		Belt Press Centrate		5CL0912
52	SP	LAB	Suspended Solids	
WS7.6		Sludge Cake		5CL0910
52	SP	LAB	% Total Solids	
WS7.7		Sludge Cake		5CL0910
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS7.8		Reuse Wet Well		5RW0900
12	SP	LAB	Total Phosphorus	Total Oxidised Nitrogen
			Total Kjeldahl Nitrogen Total	Total Oil & Grease
12	SP	LAB	Wastewater Suite 3 (OC's+OP's+PCB+Metals)	
52	SP	LAB	Faecal Coliforms	BOD - Total
			Enterococci	Suspended Solids

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			pH	
WS7.9	Raw		5SA0900	
4	SP	LAB	Ammonia	
WS7.10	Disinfected Effluent		5DE0900	
52	SP	LAB	Faecal Coliforms	UV Transmittance
			Enterococci	
WS8	Farley WWTW		SO 201 505	
WS8.1	Raw Screens		5SA2300	
4	SP	LAB	Ammonia	
WS8.2	Aeration Tank		5SC2300	
52	SP	LAB	Suspended Solids	
26	SP	LAB	Volatile Suspended Solids	
WS8.3	Disinfected Effluent		5DE2300	
52	LAB	LAB	pH	Total Oxidised Nitrogen
			Total Oil & Grease	Total Kjeldahl Nitrogen
			BOD Total	Chlorophyll 'a'
			Suspended Solids	Total Phosphorus
			Ammonia	Faecal Coliform
WS8.4	Final Pond 2		5SL2300	
52	LAB	LAB	pH	Total Kjeldahl Nitrogen
			BOD Total	Total Oxidised Nitrogen
			Suspended Solids	Chlorophyll 'a'
			Total Phosphorus	Total Dissolved Solids
			Total Oil & Grease	Blue Green Algae
			Ammonia	Faecal Coliform
WS8.5	Thickened Mixed Liquor		5ML2300	
11	SP	LAB	Zinc	
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS8.6	Farley Ferrous Chloride		5FC2300	
4	SP	LAB	Iron	SG@4C
WS8.7	Farley Clarifier Combined		5SG2300	
52	LAB	LAB	pH	Total Oxidised Nitrogen
			BOD Total	Total Kjeldahl Nitrogen
			Suspended Solids	Chlorophyll 'a'
			Ammonia	Total Phosphorus
WS7	Karuah WWTW		SO 221 505	
WS9.1	Aeration Tank		5AE3000	
52	SP	LAB	Suspended Solids	Volatile Suspended Solids
WS9.2	Decant Effluent		5SD3000	
52	SP	LAB	pH	Ammonia
			Suspended Solids	Chlorophyll-a

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters
			Total Oxidised Nitrogen
12	SP	LAB	BOD Total Alkalinity
			UV Absorbance
WS9.3 Final Pond Reuse			5SL3000
52	SP	LAB	pH
			BOD Total Faecal Coliforms
			Suspended Solids Enterococci
12	SP	LAB	Total Phosphorus Sulphate
			Iron Ammonia
			Chlorophyll 'a' Total Oxidised Nitrogen
			Total Dissolved Solids Total Kjeldahl Nitrogen
			Chloride
2	SP	LAB	Conductivity Lithium
			Aluminium Manganese
			Arsenic Magnesium
			Beryllium Molybdenum
			Boron Nickel
			Cadmium Selenium
			Chromium Sodium
			Cobalt Zinc
			Copper Calcium
			Fluoride Potassium
			Lead Disinfected Effluent
WS9.4			5DE3000
52	SP	LAB	Faecal Coliform
WS9.5 Thickened Mixed Liquor			5ML3000
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)
WS9.6	Karuah Bore 1		5SP0001
	Karuah Bore 2a		5SP0002
	Karuah Bore 2b		5SP0003
	Karuah Bore 3		5SP0004
	Karuah Bore 4		5SP0005
	Karuah Bore 5a		5SP0006
	Karuah Bore 5b		5SP0008
	Karuah Bore 6a		5SP0009
	Karuah Bore 6b		5SP0010
	Karuah Bore 6c		5SP0011
4	LAB	LAB	Cadium pH
			Dissolved Oxygen Salinity
			Conductivity Total Kjeldahl Nitrogen
			Chromium Total Oxidised Nitrogen

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Copper	Total Phosphorus
			Mercury	Turbidity
			Manganese	Faecal Coliforms
			Lead	Zinc
WS9.7		Karuah Ferrous Chloride		5FE8548
4	SP	LAB	Iron	SG@4C
WS9.8		Final Effluent		5CE3000
52	SP	LAB	Faecal Coliform	Total Oxidised Nitrogen
			BOD Total	Total Phosphorus
			Ammonia	pH
			Suspended Solids	Chlorophyll-a
			Total Kjeldahl Nitrogen	
26	SP	LAB	Total Oil & Grease	
12	SP	LAB	Total Dissolved Solids	
WS10		Kearsley WWTW		SO 091 505
WS10.1		Final Pond 2		5SL2600
52	LAB	LAB	pH	Suspended Solids
			BOD Total	Chlorophyll 'a'
12	LAB	LAB	Ammonia	Total Phosphorus
			Total Kjeldahl Nitrogen	Total Oil & Grease
			Total Oxidised Nitrogen	Faecal Coliform
WS17		Kurri Kurri WWTW		SO 101 505
WS17.1		Raw		5SA1000
4	SP	LAB	Ammonia	
WS17.2		Secondary Effluent		5SE1000
52	SP	LAB	Alkalinity	pH
			BOD Total	Total Phosphorus
			Suspended Solids	UV Absorbance
WS17.3		Disinfected Effluent (Composite)		5DE3005
52	LAB	LAB	BOD Total	Total Kjeldahl Nitrogen
			Suspended Solids	Total Oxidised Nitrogen
			Ammonia	Total Phosphorus
			pH	
26	LAB	LAB	Total Dissolved Solids	Total Oil & Grease
12	LAB	LAB	COD Flocculated Filtered	
WS17.4		Disinfected Effluent (Grab)		5DE3006
52	LAB	LAB	Faecal Coliforms	Enterococci
WS17.5		Anoxic Zone		5AN1000
52	SP	LAB	Total Oxidisable Nitrogen	
WS17.6		RAS		5RA1000

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
26	SP	LAB	Suspended Solids	
WS17.7 Biological Reactor			5BR1200	
52	SP	LAB	Suspended Solids	Alkalinity
			Ortho Phosphorus	Volatile Suspended Solids
			pH	
WS17.8 Digested WAS			5DW1000	
52	SP	LAB	Suspended Solids	Volatile Suspended Solids
3	SP	LAB	Soluble Oxygen Uptake Rate (SOUR)	
WS17.9 Thickened WAS			5TW1000	
52	SP	LAB	Suspended Solids	Volatile Suspended Solids
WS17.10 Dewatered Biosolids			5DB1000	
2	SP	LAB	Ecoli	
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
52	SP	LAB	% Total Solids	% Volatile Solids
WS17.11 Centrate Return			5CE1200	
52	SP	LAB	Suspended Solids	
26	SP	LAB	Total Kjeldahl Nitrogen	Ammonia
			Total Oxidisable Nitrogen	BOD - Total
WS17.12 Effluent Reuse Pond			5RE1819	
52	SP	LAB	BOD - Total	Total Phosphorus
			Suspended Solids	Ammonia
			pH	Ecoli
			Total Kjeldahl Nitrogen	Faecal Coliforms
			Total Oxidisable Nitrogen	
WS17.13 Effluent Reuse Pond (Composite)			5RE1820	
12	SP	LAB	BOD - Total	Total Oxidisable Nitrogen
			Suspended Solids	Total Phosphorus
			Total Dissolved Solids	Total Oil and Grease
			Total Kjeldahl Nitrogen	
WS17.14 GDD Filtrate			5FR1001	
26	SP	LAB	BOD - Total	Total Oxidisable Nitrogen
			Total Kjeldahl Nitrogen	Ammonia
52	SP	LAB	Suspended Solids	
WS17.15 Kurri Kurri Ferrous Chloride			5FE1817	
4	SP	LAB	Iron	SG@4C
WS17.16 Aerobic Digester 2			5DA1002	
52	SP	LAB	Suspended Solids	Volatile Suspended Solids
WS17.17 Aerobic Digester 4			5DA1004	
52	SP	LAB	Suspended Solids	Volatile Suspended Solids
WS11 Morpeth WWTW			SO 131 505	
WS11.1 Raw			5SA1300	

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
4	SP	LAB	Ammonia	
<i>WS11.2</i>	<i>Anoxic Zone 2</i>			<i>5AN1302</i>
	<i>Anoxic Zone 7</i>			<i>5AN1303</i>
	<i>Anoxic Zone 8</i>			<i>5AN1304</i>
52	SP	LAB	Total Oxidised Nitrogen	
<i>WS11.3</i>	<i>Anaerobic Zone</i>			<i>5AN1300</i>
52	SP	LAB	Ortho-Phosphorus	
<i>WS11.4</i>	<i>Aerobic Zone</i>			<i>5AE1300</i>
52	SP	LAB	Suspended Solids	Aerobic Zone-Settle
			Volatile Suspended Solids	
52	SP	LAB	Ortho-Phosphorus	Total Oxidised Nitrogen
			Ammonia	
<i>WS11.6</i>	<i>RAS 1</i>			<i>5RS1301</i>
	<i>RAS 2</i>			<i>5RS1302</i>
52	SP	LAB	Ortho-Phosphorus	Total Oxidised Nitrogen
<i>WS11.7</i>	<i>Disinfected Effluent</i>			<i>5DE1300</i>
52	SP	LAB	pH	Total Kjeldahl Nitrogen
			BOD Total	Total Oxidised Nitrogen
			Suspended Solids	Total Phosphorus
			Ortho Phosphorus	Faecal Coliform
			Ammonia	Enterococci
26	SP	LAB	Total Oil & Grease	
12	SP	LAB	Conductivity	Chloride
			COD Flocculated Filtered	Sulphate
			Total Dissolved Solids	
<i>WS11.8</i>	<i>Aerobic Digester 3</i>			<i>5DA1300</i>
1	SP	LAB	Suspended Solids	
3	SP	LAB	SOUR (Soluble Oxygen Uptake Rate)	
<i>WS11.9</i>	<i>Aerobic Digester 1</i>			<i>5DA1301</i>
26	SP	LAB	Volatile Suspended Solids	Suspended Solids
<i>WS11.10</i>	<i>Sludge Dewatering Supernatant</i>			<i>5DS1300</i>
52	SP	LAB	Ortho-Phosphorus	
26	SP	LAB	Suspended Solids	
<i>WS11.11</i>	<i>Biosolids Cake</i>			<i>5BC1300</i>
52	SP	LAB	%Total Solids	
2	SP	LAB	Ecoli	
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
<i>WS11.12</i>	<i>Lime Clarifier</i>			<i>5LC1300</i>
52	SP	LAB	pH	Ortho-Phosphorus

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Total Oxidised Nitrogen	
<i>WS11.13</i>	<i>UV Upstream</i>			<i>5DE1302</i>
	<i>Effluent PS Licence Point</i>			<i>5DE1303</i>
52	SP	LAB	Faecal Coliform	
WS12	Paxton WWTW			SO 141 605
<i>WS12.1</i>	<i>Aeration Tank</i>			<i>5SC2800</i>
	<i>Membrane zone</i>			<i>5PA2804</i>
52	SP	LAB	Suspended Solids	
	SP	LAB	Volatile Suspended Solids	
<i>WS12.2</i>	<i>Effluent Distribution</i>			<i>5PA2805</i>
52	LAB	LAB	Conductivity	BOD Total
			Ammonia	Turbidity
			Total Oxidised Nitrogen	Suspended Solids
			Total Kjeldhal Nitrogen	Chlorophyll 'a'
			Total Phosphorus	Faecal Coliforms
			Total Oil & Grease	Enterococci
			pH	
12	LAB	LAB	COD Flocculated Filtered	Alkalinity
			Total Dissolved Solids	
<i>WS12.3</i>	<i>Thickened Mixed Liquor</i>			<i>5ML2800</i>
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
<i>WS12.4</i>	<i>Paxton Woodlot Bore 1</i>			<i>5BO1501</i>
	<i>Paxton Woodlot Bore 2</i>			<i>5BO1502</i>
	<i>Paxton Woodlot Bore 3</i>			<i>5BO1503</i>
4	LAB	LAB	Conductivity	Total Oxidised Nitrogen
			Ammonia	Total Phosphorus
			pH	Faecal Coliforms
<i>WS12.5</i>	<i>Aerobic Digester</i>			<i>5DA2800</i>
12	SP	LAB	pH	Suspended Solids
			Alkalinity	Volatile Suspended Solids
3	SP	LAB	SOUR (Soluble Oxygen Uptake Rate)	
WS13	Raymond Terrace WWTW			SO 151 505
<i>WS13.1</i>	<i>Raw</i>			<i>5SA1500</i>
52	SP	LAB	Total Phosphorus	
4	SP	LAB	Ammonia	
<i>WS13.2</i>	<i>RAS Denitrification</i>			<i>5RA1500</i>
52	SP	LAB	Total Oxidised Nitrogen	
<i>WS13.3</i>	<i>Anaerobic Reactor 3</i>			<i>5AN1500</i>
52	SP	LAB	Total Oxidised Nitrogen	

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
WS13.4 Anaerobic Reactor 4 5AN1501				
52	SP	LAB	Total Oxidised Nitrogen	
			Ortho-Phosphorus	
WS13.5 Aerobic Reactor 5 5AN1502				
52	SP	LAB	Suspended Solids	
WS13.6 Aerobic Reactor 6 5AN1503				
52	SP	LAB	Volatile Suspended Solids	Ortho-Phosphorus
WS13.7 Combined Effluent 5CE1500				
52	SP	LAB	UV absorbance	
WS13.8 Disinfected Effluent 5DE1500				
52	LAB	LAB	pH	Total Kjeldahl Nitrogen
			BOD Total	Total Oxidised Nitrogen
			Suspended Solids	Total Phosphorus
			Chlorophyll 'a'	Alkalinity
			Phosphorus Ortho - Filtered	Faecal Coliform
26	LAB	LAB	Ammonia	
26	LAB	LAB	Total Oil & Grease	
12	LAB	LAB	Conductivity	Total Dissolved Solids
			Chloride	Sulfate
WS13.9 Aerobic Digester 2 5DA1502				
52	SP	LAB	pH	Suspended Solids
			Alkalinity	Volatile Suspended Solids
WS13.10 Aerobic Digester 1 5DA1501				
52	SP	LAB	Suspended Solids	Volatile Suspended Solids
WS13.11 Sludge Dewatering Supernatant 5DS1500				
52	SP	LAB	Ortho-Phosphorus	
26	SP	LAB	Suspended Solids	
WS13.12 Biosolids Cake 5BC1500				
52	SP	LAB	%Total Solids	
2	SP	LAB	Ecoli	
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS13.13 GDD Sludge 5GD1500				
52	SP	LAB	Suspended Solids	Volatile Suspended Solids
WS13.14 GDD Filtrate 5GD1501				
52	SP	LAB	Ortho-Phosphorus	Suspended Solids
WS13.15 Raymond Terrace Ferrous Chloride 5FE1515				
4	SP	LAB	Iron	SG@4C
1	SP	LAB	Arsenic	Manganese
			Cadmium	Mercury

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Chromium	Nickel
			Copper	Selenium
			Lead	
WS13.16	Aerobic Digester 3		5DA1503	
52	SP	LAB	pH	Suspended Solids
			Alkalinity	Volatile Suspended Solids
WS13.17	Aerobic Digester 4		5DA1504	
52	SP	LAB	pH	Suspended Solids
			Alkalinity	Volatile Suspended Solids
3	SP	LAB	SOUR (Soluble Oxygen Uptake Rate)	
WS14	Shortland WWTW		SO 161 505	
WS14.1	Shortland Discharge Hunter River		5SL1810	
52	LAB	LAB	pH	Suspended Solids
			BOD Total	Alkalinity
			Turbidity	
26	LAB	LAB	Ammonia	Total Phosphorus
			Total Kjeldahl Nitrogen	Total Oil & Grease
			Total Oxidised Nitrogen	Faecal Coliform
12	LAB	LAB	Total Dissolved Solids	Conductivity
			Chloride	SO2
			Sulphate	
WS14.1	Shortland Discharge Hunter River		5SL1810	
12	LAB	LAB	Wastewater Suite 3 (OC's+OP's+PCB+Metals)	
WS14.2	Thickened Mixed Liquor		5ML1804	
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS14.3	Aeration Tank 1		5ML1800	
52	SP	LAB	Suspended Solids	
			Volatile Suspended Solids	
WS14.4	Decant Effluent		5DE1800	
52	SP	LAB	Suspended Solids	Total Phosphorus
			Ammonia	Total Oxidised Nitrogen
			Total Kjeldahl Nitrogen	Alkalinity
WS14.5	Aeration Tank 2		5ML1801	
52	SP	LAB	Suspended Solids	Volatile Suspended Solids
WS14.6	Decant Effluent 2		5DE1801	
52	SP	LAB	Suspended Solids	Total Oxidised Nitrogen
			Ammonia	Total Phosphorus
			Total Kjeldahl Nitrogen	Alkalinity
WS14.7	Raw		5SA1800	
4	SP	LAB	Ammonia	

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
WS15	Tanilba Bay WWTW		SO 181 505	
<i>WS15.1</i>	<i>Aeration Tank 1</i>		<i>5SC2900</i>	
52	SP	LAB	Suspended Solids	
12	SP	LAB	Volatile Suspended Solids	
<i>WS15.2</i>	<i>Final Licence Point</i>		<i>5SL2900</i>	
52	LAB	LAB	Ammonia	Total Kjeldahl Nitrogen
			pH	Total Oxidised Nitrogen
			BOD Total	Total Phosphorus
			Suspended Solids	Faecal Coliform
			Total Oil & Grease	
12	LAB	LAB	Total Dissolved Solids	UV absorbance
			COD Flocculated Filtered	Conductivity
<i>WS15.3</i>	<i>Tilligerry Creek Oyster Farm Road</i>		<i>54Z2908</i>	
52	LAB	LAB	Faecal Coliform	
<i>WS15.4</i>	<i>Bore 51</i>		<i>54Z2901</i>	
	<i>Bore 151</i>		<i>54Z2902</i>	
	<i>Bore 251</i>		<i>54Z2903</i>	
	<i>Bore 52</i>		<i>54Z2904</i>	
	<i>Bore 152</i>		<i>54Z2905</i>	
	<i>Bore 252</i>		<i>54Z2906</i>	
	<i>Bore 53</i>		<i>54Z2907</i>	
	<i>Bore 153</i>		<i>54Z2933</i>	
	<i>Bore 253</i>		<i>54Z2934</i>	
4	LAB	LAB	pH	Total Oxidised Nitrogen
			BOD Total	Total Phosphorus
			Suspended Solids	Conductivity
			Ammonia	Faecal Coliform
			Total Kjeldahl Nitrogen	
<i>WS15.5</i>	<i>Thickened Mixed Liquor</i>		<i>5ML2900</i>	
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
<i>WS15.6</i>	<i>Raw</i>		<i>5CL2200</i>	
4	SP	LAB	Ammonia	
<i>WS15.7</i>	<i>Decant Effluent</i>		<i>5IE2900</i>	
52	SP	LAB	Suspended Solids	Ammonia
			Total Oxidised Nitrogen	Total Kjeldahl Nitrogen
WS16	Toronto WWTW		SO 191 605	
<i>WS16.1</i>	<i>Aeration Tank 1</i>		<i>5SC2100</i>	
52	SP	LAB	Suspended Solids	Volatile Suspended Solids
<i>WS16.2</i>	<i>Aeration Tank 2</i>		<i>5SC2120</i>	
52	SP	LAB	Suspended Solids	

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
WS16.3 Decant Effluent 1 5SD2101				
52	SP	LAB	pH	Total Oxidised Nitrogen
			Suspended Solids	Total Kjeldahl Nitrogen
			Ammonia	
12	SP	LAB	Alkalinity	
WS16.4 Decant Effluent 2 5SD2121				
52	SP	LAB	pH	Ammonia
			Suspended Solids	Total Oxidised Nitrogen
WS16.5 Sludge Cake 5SU1000				
52	SP	LAB	% Total Solids	
12	SP	LAB	% Volatile Solids	
2	SP	LAB	Ecoli	
WS16.6 Effluent Pump Station to Belmont 5SG2140				
52	LAB	LAB	Suspended Solids	
26	LAB	LAB	Total Oil & Grease	
12	LAB	LAB	pH	
WS16.7 Belt Press Centrate 5CL2200				
26	SP	LAB	Suspended Solids	
WS16.8 Waste Aeration Tank 5HU1000				
26	SP	LAB	Suspended Solids	
WS16.9 Sludge Cake 5SU1000				
12	SP	LAB	Wastewater Suite 1 (OC+PCB+Metals)	
WS16.10 Raw 5SA0334				
4	SP	LAB	Ammonia	
WS21 Mayfield West AWTW				
WS21.1 Inlet Water 5IW1800				
52	SP	LAB	Total Dissolved Solids	Total Chlorine
			Chloride	Aluminium
			pH	Temperature
			Total Hardness	Potassium
			Alkalinity	Zinc
			Silica	Fluoride
			Iron	Sulphate
			Copper	CO2
			Total Kjeldahl Nitrogen	Sodium
			Nitrate	Arsenic
			Ammonia	BOD Total
			TOC	Chloroamine
			Total Phosphorus	Somatic Coliphage
			Orthophosphorus	Faecal Coliforms

Samples Per Year	Sample Taken By	Sample Delivered By	Parameters	
			Suspended Solids	Clostridium Perfringens
4	SP	LAB	Cryptosporidium	
WS21.2 Treated Water				
52	SP	LAB	Total Dissolved Solids	Total Chlorine
			Chloride	Aluminium
			pH	Temperature
			Total Hardness	Potassium
			Alkalinity	Zinc
			Silica	Fluoride
			Iron	Sulphate
			Copper	CO2
			Total Kjeldahl Nitrogen	Sodium
			Nitrate	Arsenic
			Ammonia	BOD Total
			TOC	Chloroamine
			Total Phosphorus	Somatic Coliphage
			Orthophosphorus	Faecal Coliforms
Suspended Solids	Clostridium Perfringens			
12	SP	LAB	Total Oil & Grease	
4	SP	LAB	Cryptosporidium	
12	SP	LAB	Wastewater Suite 3 (OC's+OP's+PCB+Metals)	

SCHEDULE 10 - APPROVALS

PART A - ENVIRONMENT PROTECTION LICENCES

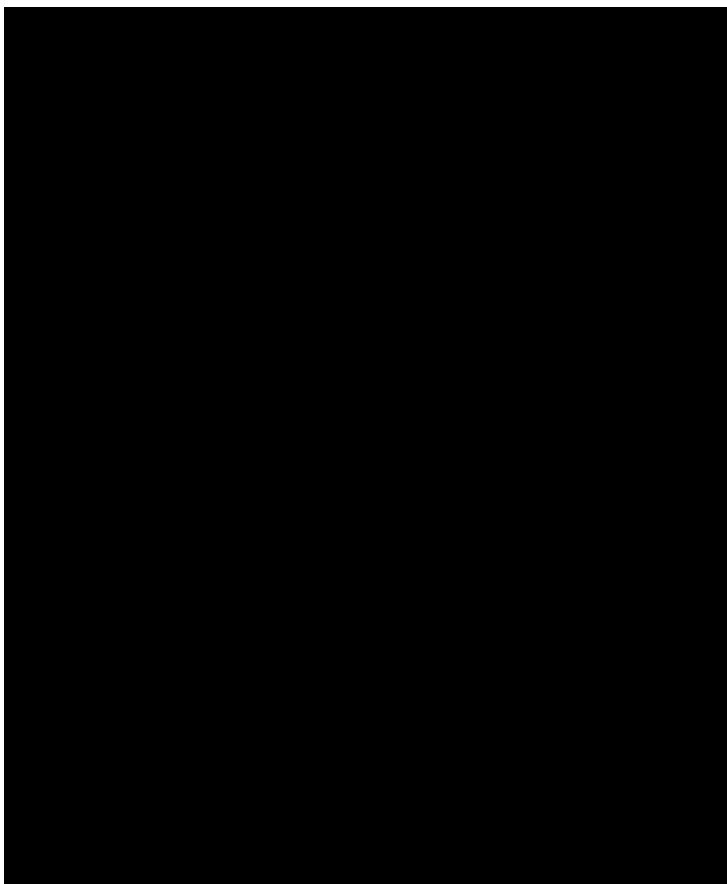
- 1 Hunter Water is responsible for updating and maintaining in effect the following Environment Protection Licences issued under the POEA Act in relation to the Facilities.
- 2 Copies, including past Annual Returns may be obtained from the EPA website (epa.nsw.gov.au).
 - (a) Belmont WWTW - EP Licence 1771
 - (b) Boulder Bay WWTW - EPA Licence 358
 - (c) Branxton WWTW - EPA Licence 1680
 - (d) Burwood Beach WWTW - EPA Licence 1683
 - (e) Cessnock WWTW - EPA Licence 227
 - (f) Clarence Town WWTW - EPA Licence 13250
 - (g) Dora Creek WWTW - EPA Licence 1771
 - (h) Dungog WWTW - EPA Licence 4197
 - (i) Edgeworth WWTW - EPA Licence 1771
 - (j) Farley WWTW - EPA Licence 733
 - (k) Karuah WWTW - EPA Licence 10230
 - (l) Kearsley WWTW - EPA Licence 3232
 - (m) Kurri Kurri WWTW - EPA Licence 1767
 - (n) Morpeth WWTW - EPA Licence 10693
 - (o) Paxton WWTW - EPA Licence 3755
 - (p) Raymond Terrace WWTW - EPA Licence 217
 - (q) Shortland WWTW - EPA Licence 1683
 - (r) Tanilba WWTW - EPA Licence 4435
 - (s) Toronto WWTW - EPA Licence 1771

PART B - NSW HEALTH MEMORANDUM OF UNDERSTANDING

A copy of the memorandum may be obtained from the Hunter Water website (hunterwater.com.au).

PART C - WORKCOVER DANGEROUS GOODS NOTIFICATIONS.

Copies of the following acknowledgements are provided in annexure B.



PART D - CAPITAL WORKS DEVELOPMENT APPROVALS

All approvals required under the Environmental Planning and Assessment Act 1979 (NSW) in relation to Capital Works.

SCHEDULE 11 - EXISTING CONTRACTS

- 1 The table below lists the Existing Contracts.
- 2 Those Existing Contracts having an expiry date prior to the Services Commencement Date but with no option to extend at Hunter water's discretion, shall be extended by Hunter Water by negotiation with the relevant Existing Contractor only until the Services Commencement Date and at such time the relevant contracts will not constitute Existing Contracts under this Agreement.
- 3 It is Hunter Water's intention to exercise all options under contract CS0308.
- 4 Exercise of all extension options under an Existing Contract is at Hunter Water's absolute and sole discretion.
- 5 Hunter Water's Procurement Manager should be contacted to discuss procurement background to Contract CS0307.

Contract Number	Description	Supplier	Expiry Date	Hunter Water Trim Reference	Extension Options Available
CS0010	WWTW - sludge lagoon dewatering	Waste Processing Solutions Pty Ltd	31/08/2014	HW2007-2971/2	nil
CS0123	Aluminium sulphate - supply and delivery	Omega Chemicals	16/05/2015	HW2006-2247/19/2	nil
CS0123	Ferric sulphate - supply and delivery	Orica Australia Pty Ltd	16/05/2015	HW2006-2247/19/2	nil
CS0123	Liquid chlorine - supply and delivery	Orica Australia Pty Ltd	16/05/2015	HW2006-2247/19/2	nil
CS0123	Sodium hydroxide - supply and delivery	Omega Chemicals	16/05/2015	HW2006-2247/19/2	nil
CS0123	Sodium hypochlorite - supply and delivery	Orica Australia Pty Ltd	16/05/2015	HW2006-2247/19/2	nil
CS0123	Ferrous Chloride – supply and delivery	Odour Control Systems Australia Pty Ltd	16/5/2014	HW2007-2247/021	nil
CS0157	Polyelectrolyte and polyacrylamide - supply and delivery	SNF Australia Pty Ltd	28/02/2015	HW2007-1768/7/11	1 year
CS0188	Hydrated Lime - supply and delivery	Boral Cement	30/11/2014	HW2011-567/6	2 x 1 year
CS0192	Sodium Bisulphate - supply and delivery	Orica Australia Pty Ltd	30/11/2014	HW2011-679/5	2 x 1 year
CS0192	Citric acid - supply and delivery	Redox Pty Ltd	30/11/2014	HW2011-679/5	2 x 1 year
CS0283	WWTW - Grit and screening collection and disposal	Cleanaway	08/09/2016	HW2012-1480/1/4.034	2 x 1 year
CS0293	Dungog WTP – CO ₂ supply and storage vessel maintenance	Air Liquide Australia Pty Ltd	31/08/2016	HW2008-582/6/11	2 x 1 year
CS0302A	WWTW - Biosolids collection and transport	Mountain Industries Pty Ltd	31/08/2016	HW2008-1570/11/11	2 x 1 year
CS0302B	WWTW - Biosolids collection and transport	Scott Corporation Limited	31/08/2016	HW2008-1570/11/11	2 x 1 year
CS0307	Fluoride - supply and delivery	Redox Pty Ltd	9/12/2016	HW2006-2247/30/11	2 x 1 year
CS0308	WWTW - Grounds maintenance	House With No Steps	31/07/2016	HW2008-149/22/13	2 x 1 year
TOC	Cessnock - Hire of 3 tonne tank and supply of gas	Elgas Ltd	anytime	HW2007-2383/9/38.031	
CS0352	Aqueous Ammonia – supply and delivery	Redox Pty Ltd	31/12/2016	HW2013-1019/2/11	2 x 1 year
CS0352	Sulphuric Acid – supply and delivery	Redox Pty Ltd	31/12/2016	HW2013-1019/2/11	2 x 1 year
CS0352	Hydrochloric Acid – supply and delivery	Redox Pty Ltd	31/12/2016	HW2013-1019/2/11	2 x 1 year
CS0352	Antiscalent – supply and delivery	GE Betz Pty Ltd	09/03/2017	HW2013-1019/2/11	2 x 1 year
CS0362	Biosolids processing and reuse	Resource Recovery Management Pty Ltd	28/02/2015	HW2008-1568/12/11	1 year

CS0312	FARM OPERATIONS MANAGEMENT - KARUAH EFFLUENT REUSE ENTERPRISE	Sanders and Associates Pty Ltd	30/9/2015	HW2006-2039/6/11	1 year
CS0232	OPERATIONAL MANAGEMENT OF CLARENCE TOWN EFFLUENT REUSE SCHEME	Sanders and Associates Pty Ltd	31/5/2015	HW2011-1384/3	2 x 1 year

SCHEDULE 12 - FORMS

Deed of Parent Company Guarantee

THIS DEED of Guarantee is made on the day of 20

BETWEEN

VEOLIA EAU – COMPAGNIE GENERALE DES EAUX S.C.A. [# - Insert company number]
of [# - Insert address] (**'Guarantor'**)

and

Veolia Water Australia Pty Ltd ACN 061 161 279 of Level 4, 65 Pirrama Road, Pyrmont NSW
2009 (**'Service Provider'**)

and

Hunter Water Corporation (ABN 46 228 513 446) of 36 Honeysuckle Drive, Newcastle,
NSW, Australia 2300. (**'Hunter Water'**)

RECITALS

- A. The Service Provider has on or about the date of this Deed entered into a contract with Hunter Water for the operation and maintenance of Hunter Water's water treatment plants and wastewater treatment plants (**'Contract'**).
- B. The Guarantor is the parent company of the Service Provider.
- C. Hunter Water requires the Guarantor to guarantee that the Service Provider's liabilities and obligations will be met under the Contract.
- D. The Guarantor considers there will be a commercial benefit flowing to it by providing this guarantee and assisting the Service Provider to win the Contract.
- E. This Deed is entered into by the parties in reliance upon the obligations of the Guarantor to Hunter Water to guarantee that the Service Provider's liabilities and obligations will be met under the Contract.

NOW THIS DEED WITNESSES as follows:

1 Undertaking & Indemnity

- 1.1 In consideration of Hunter Water entering into the Contract, the Guarantor unconditionally and irrevocably guarantees to Hunter Water to:
- (a) procure that the Service Provider performs, observes and discharges the Guaranteed Obligations; and
 - (b) in the event that the Service Provider defaults, breaches or fails in any respect to perform, observe or discharge the Guaranteed Obligations, the Guarantor shall immediately on first demand by Hunter Water in writing requiring it to do so, perform, observe and discharge and continue to perform, observe and discharge those Guaranteed Obligations specified in Hunter Water's notice until the Guaranteed Obligations are fully satisfied in accordance with the terms of the Contract.
- 1.2 Subject to clause 1.4, the Guarantor indemnifies and will keep Hunter Water indemnified against any and all losses, damages, claims, costs, charges and expenses however arising incurred by Hunter Water as a result of any breach, delay in performing or non-observance of:
- (a) any of the Guaranteed Obligations by the Service Provider; or
 - (b) the obligations under this Deed by the Guarantor.
- 1.3 The obligations of the Guarantor under this Deed:
- (a) may not be treated as ancillary or collateral to any right or obligation; and
 - (b) are independent of and not in substitution for or affected by another security, interest or guarantee or other document or agreement which Hunter Water or any other person may hold concerning the Guaranteed Obligations and the Guarantor waives any right it has of first requiring Hunter Water to commence proceedings or enforce any other right against the Service Provider before claiming under this Deed.
- 1.4 The aggregate liability of the Guarantor in relation to this Deed will not exceed the aggregate liability of the Service Provider in relation to the Contract.

2. Guarantor's Liability

- 2.1 The liability of the Guarantor hereunder is not reduced, discharged or any way affected by:
- (a) the grant to the Service Provider or any other person of any time, waiver or other indulgence, or the discharge or release of the Service Provider or any other person from any liability or obligation;
 - (b) any transaction or arrangement that may take place between Hunter Water and the Service Provider or any other person or the Service Provider and a financier or any other person in respect of financing of the Contract;

- (c) the insolvency or winding up of the Service Provider or any other person;
- (e) any legal limitation, disability, incapacity or other circumstances related to the Service Provider or any other person.

2.2 The Guarantor's obligations under this Deed is a continuing guarantee and indemnity and despite assignment, expiry, revocation, discontinuance or discharge of the Contract, remains in full force and effect for so long as the Service Provider has any liability or obligation to Hunter Water and until all of those liabilities or obligations are fully discharged.

3. Acknowledgments, Representations and Warranties

3.1 The Guarantor makes the following representations and warranties as at the date of this Deed:

- (a) it has reviewed the terms of the Contract and has obtained its own legal and financial advice and has satisfied itself concerning the Guaranteed Obligations prior to executing this Deed;
- (b) it has the corporate power to enter into, and to perform all of its obligations under, this Deed;
- (c) it has taken all necessary corporate action to authorise the entry into and performance of this Deed and to carry out the transactions contemplated by this Deed;
- (d) there are no Claims (meaning any notice, demand, debt, account, action, expense, cost, lien, proceeding, litigation including legal costs, investigation, judgment or other liability of any nature), current or, to its knowledge, threatened, which may have a material adverse effect on the Guarantor's ability to perform its obligations under this Deed;
- (e) the execution and performance by the Guarantor of this Deed does not and will not:
 - (i) violate any law or treaty or judgment, ruling, order or decree of a Authority binding on it;
 - (ii) violate its constitution or other constituent documents;
 - (iii) require the consent or approval of its shareholders or its board of directors which has not been obtained;
 - (iv) require the consent or approval of, or filing or registration with, any Authority which has not been obtained; or
 - (v) result in a breach of or constitute a default under, or result in the imposition of any lien, charge or encumbrance upon any property of the Guarantor pursuant to any agreement, document or other

instrument to which the Guarantor is a party or by which the Guarantor or any of its property may be bound or affected.

- 3.2 The Guarantor acknowledges that, except as expressly set out in this Deed and the Contract, it has not entered into its obligations under this Deed as a result of or by reason of any promise, representation, warranty, inducement or information given to it or the Service Provider or to any person on their respective behalf by or on behalf of Hunter Water.

4. Miscellaneous

4.1 Notices

A notice given may be served on the Guarantor at the following address or such other address as the Guarantor may have notified to Hunter Water:

To the Guarantor:

Attention: [INSERT]

Address: [INSERT]

Email: [INSERT]

The method of service and deemed delivery date permitted under the Contract apply equally to any notices to be served under this Deed.

4.2 Entire agreement

This Deed contains the entire agreement between the Guarantor and Hunter Water with respect to its subject matter and supersedes all prior agreements and understandings between them in connection with it.

4.3 Remedies cumulative

The rights, powers and remedies provided to Hunter Water under this Deed are in addition to, and do not exclude or limit, any right, power or remedy provided by law or equity or by any agreement.

4.4 Assignment

A party may not assign any of its rights and obligations arising out of this Deed without the consent of the other parties to this Deed.

4.5 Successors and Assignees

This Deed and the undertakings provided in this Deed are binding on the successors and assignees of the Guarantor and extend to and endure for the benefit of the successors or permitted assignees of Hunter Water.

4.6 Further assurances

The Guarantor will do all things and execute all deeds, instruments, transfers or other documents as may be necessary or desirable to give full effect to the provisions of this Deed and the transactions contemplated by it.

4.7 Costs

Each party must bear its own costs arising out of the negotiation, preparation and execution of this Deed. All stamp duty (including fines, penalties and interest) that may be payable on or in connection with this Deed must be borne by the Guarantor.

4.8 Severability

Any provision of this Deed which is prohibited or unenforceable in any jurisdiction is ineffective as to that jurisdiction to the extent of the prohibition or unenforceability. This does not invalidate the remaining provisions of this Deed nor does it affect the validity or enforceability of that provision in any other jurisdiction.

4.9 Jurisdiction

This Deed is governed by the laws of New South Wales. Each party submits to the non-exclusive jurisdiction of the courts of that State and any courts competent to hear appeals from those courts.

4.10 Definitions

For the purposes of this Deed

'Authority' means any:

- (a) Government;
- (b) government department;
- (c) local government council;
- (d) public, local, governmental or statutory authority;
- (e) a utility or telecommunications provider; or
- (f) other person or entity under a Law, which has a right to impose a requirement or whose consent is required in relation to the Services.

'Guaranteed Obligations' means all obligations of the Service Provider under the Contract and all liabilities of the Service Provider under the Contract.

'Corporations Act' has the same meaning as in the Contract.

'Law' has the same meaning as in the Contract.

Executed as a Deed on this day of 20

Executed by Hunter Water Corporation)

ABN 46 228 513 446 by its attorney under a)
Power of Attorney dated 24 November 2011)
Registered Book 4624 No. 483 and the Attorney)
declares that the Attorney has not received notice)
of the revocation of such Power of Attorney in the)
presence of:)

.....
Signature of Witness

Executed by Veolia Water Australia Pty Ltd
ACN 061 161 279
in accordance with Section 127 of the
Corporations Act 2001 (Cth)

.....
Director Director/Secretary

.....
Name of Signatory Name of Signatory

Executed by VEOLIA EAU – COMPAGNIE
GENERALE DES EAUX S.C.A.
[# - Insert relevant execution attestation]

SCHEDULE 13 - MANAGEMENT PLANS AND MANAGEMENT SYSTEMS

Plan	Clause	Date for submission for Endorsement (as applicable)
Emergency Plan	41.1	40 Business Days before the Target Services Commencement Date
WHS Management System	11.4(1)	40 Business Days before the Target Services Commencement Date with respect to substantial development of the WHS Management System
Environmental Management System	11.4(2)	40 Business Days before the Target Services Commencement Date with respect to substantial development of the Environmental Management System
Quality Management System	11.4(3)	40 Business Days before the Target Services Commencement Date with respect to substantial development of the Quality Management System
Drinking Water Quality Management System	11.4(4)	
Biosolids Management Plan	6.4(3)	25 Business Days before the Target Services Commencement Date
Waste Management Plan	5.4 (3)	15 Business Days before the Target Services Commencement Date
Procurement Plan	28.1 (2)	10 Business Days before the Target Services Commencement Date
Handback Plan	45.1	10 Business Days before the Target Services Commencement Date

Facility Cooperative Use Plan	17.3(1)	10 Business Days before the Target Services Commencement Date
-------------------------------	---------	---

SCHEDULE 14 - DEED OF NOVATION

Hunter Water Corporation
ABN 46 228 513 446
Hunter Water

[# - Subcontractor]
Subcontractor

[# - Service Provider]
Service Provider

Deed of Novation

THIS DEED OF NOVATION is dated

20[#]

PARTIES:

Hunter Water Corporation ABN 46 228 513 446 of 36 Honeysuckle Drive, Newcastle NSW 2300 (**Hunter Water**)

[# - SUBCONTRACTOR] ACN [# - ACN] of [# - Address] (**Subcontractor**)

[# - SERVICE PROVIDER] ACN [# - ACN] of [# - Address] (**Service Provider**)

INTRODUCTION:

- A** Under the Agreement Hunter Water has engaged the Service Provider to provide the Services in relation to operation and maintenance of Hunter Water's water treatment facilities and wastewater treatment facilities.
- B** Under the Subcontract the Service Provider has engaged the Subcontractor to undertake the Subcontract Works.
- C** The parties agree that the Subcontract may be novated from the Service Provider to Hunter Water with effect from the Novation Date on the terms set out in this deed.

IT IS AGREED:

1 DEFINITIONS AND INTERPRETATION

1.1 Definitions

In this deed, unless the context clearly indicates otherwise:

Address for Service means the address of a party appearing in clause 5.3 of this deed or any new address notified by a party to the other parties as its new address for service;

Agreement means the agreement entered into by Hunter Water and the Service Provider for the provision of the Services dated [# - insert date] and includes any amendment of that agreement;

Business Day means any day that is not a Saturday, Sunday or public holiday in New South Wales;

Corporations Act means the *Corporations Act 2001 (Cth)*;

GST Law means the *A New Tax System (Goods and Services Tax) Act 1999 (Cth)*;

New Subcontract has the meaning in clause 2.2(a);

Notice has the meaning in clause 5.3;

Novation Date means the date of novation stated in any notice under clause 2.1;

Recipient has the meaning in clause 4.3(a);

Services means the services in relation to operation and maintenance of Hunter Water's water treatment facilities and wastewater treatment facilities and more specifically described in the Agreement.

Subcontract means the agreement entered into by the Service Provider and the Subcontractor for the Subcontract Works dated [# - insert date] and includes any amendment of that agreement;

Subcontract Works means [# - insert description]; and

Supplier has the meaning in clause 4.3(a).

1.2 Interpretation

In this deed, unless the context clearly indicates otherwise:

- (a) clause headings are inserted for convenience only and do not form part of this deed;
- (b) the introduction forms part of this deed;
- (c) a reference to legislation or a legislative provision includes:
 - (i) any modification or substitution of that legislation or legislative provision; and
 - (ii) any subordinate legislation issued under that legislation or legislative provision including under that legislation or legislative provision as modified or substituted;
- (d) a reference to a person includes that person's successors and permitted assignees and novatees;
- (e) an obligation or warranty on the part of 2 or more persons binds them jointly and severally and an obligation or warranty in favour of 2 or more persons benefits them jointly and severally;
- (f) including and includes are not words of limitation;
- (g) a word that is derived from a defined word has a corresponding meaning;

- (h) monetary amounts are expressed in Australian dollars;
- (i) the singular includes the plural and vice-versa;
- (j) words importing one gender include all other genders; and
- (k) a reference to a thing includes each part of that thing.

1.3 Construction

Neither this deed nor any part of it is to be construed against a party on the basis that the party or its lawyers were responsible for its drafting.

2 NOVATION

2.1 Notice

- (a) The parties agree that upon termination of the Agreement by Hunter Water or the Service Provider, Hunter Water may give notice to the Service Provider and the Subcontractor stating that on and from the date of novation stated in the notice the Subcontract is novated from the Service Provider to Hunter Water.

2.2 Novation

The parties agree that on and from any Novation Date:

- (a) subject to clause 2.2(b), Hunter Water is a party to the Subcontract instead of the Service Provider and all references in the Subcontract to the Service Provider are to be read as references to Hunter Water (**New Subcontract**); and
- (b) with respect to the obligations of the Service Provider under the Subcontract immediately prior to the Novation Date, Hunter Water will under the New Subcontract perform those obligations to the extent not performed as at the Novation Date; and
- (c) with respect to the obligations of the Subcontractor under the Subcontract immediately prior to the Novation Date, the Subcontractor will under the New Subcontract perform those obligations to the extent not performed as at the Novation Date.

2.3 Warranty

As at any Novation Date:

- (a) the Subcontractor warrants to Hunter Water that it has performed its obligations under the Subcontract; and

- (b) the Service Provider warrants to Hunter Water that:
 - (i) it has performed its obligations under the Subcontract; and
 - (ii) no amount is due by the Service Provider to the Subcontractor under the Subcontract.

3 ASSIGNMENT, TRANSFER AND AMENDMENT

3.1 Assignment by Hunter Water

Hunter Water may assign any or all of its rights under this deed without the consent of the other parties.

3.2 Transfer by Service Provider and Subcontractor

- (a) The Service Provider and the Subcontractor must not assign any or all of their rights under this deed without the prior consent of Hunter Water.
- (b) On and from the date of this deed until any Novation Date, the Service Provider and the Subcontractor must not transfer any right or obligation under the Subcontract without the prior consent of Hunter Water.

3.3 Amendment of Subcontract

On and from the date of this deed until any Novation Date, the Service Provider and the Subcontractor must not amend the Subcontract without the prior consent of Hunter Water.

4 GST

4.1 Definitions

Words used in this deed that are defined in the GST Law have the meaning given in that legislation where used in this deed.

4.2 Consideration is GST-exclusive

Unless otherwise specified, all amounts payable under this deed are exclusive of GST and must be calculated without regard to GST.

4.3 GST payable on taxable supply

- (a) If a supply made under this deed is a taxable supply, the recipient of that taxable supply (**Recipient**) must, in addition to any other consideration, pay to the party making the taxable supply (**Supplier**) the amount of GST in respect of the supply.

- (b) The Recipient will only be required to pay an amount of GST to the Supplier if and when the Supplier provides a valid tax invoice to the Recipient in respect of the taxable supply.
- (c) If there is an adjustment to a taxable supply made under this deed then the Supplier must provide an adjustment note to the Recipient.
- (d) The amount of a party's entitlement under this deed to recovery or compensation for any of its costs, expenses, losses, damages or other liabilities is reduced by the input tax credits to which that party is entitled in respect of those costs, expenses, losses, damages or liabilities.

5 GENERAL

5.1 Governing law and jurisdiction

- (a) The laws applicable in New South Wales govern this deed.
- (b) The parties submit to the non-exclusive jurisdiction of the courts of New South Wales and any courts competent to hear appeals from those courts.

5.2 Counterparts

This deed may be executed in any number of counterparts. All counterparts taken together constitute one instrument.

5.3 Notices

Any notice, demand, consent, approval, request or other communication (**Notice**) to be given under this deed must be in writing and must be given to the recipient at its Address for Service by being:

- (a) hand delivered;
- (b) sent by facsimile transmission; or
- (c) sent by prepaid ordinary mail within Australia.

The date of receipt of a Notice is:

- (a) if hand delivered, on the date of delivery but, if delivery occurs after 5.00pm New South Wales time or on a day which is not a Business Day, it is taken to be received on the next Business Day;
- (b) if sent by facsimile transmission, on the date that the sending party's facsimile machine records that the facsimile has been successfully transmitted but, if the transmittal is recorded as after 5.00pm New South

Wales time or on a day which is not a Business Day, it is taken to be received on the next Business Day; or

- (c) if sent by prepaid ordinary mail within Australia, on the date that is 3 Business Days after the date of posting.

The addresses and facsimile numbers of the parties are:

- (a) for Hunter Water: [# - insert];
- (b) for the Subcontractor: [# - insert]; and
- (c) for the Service Provider: [# - insert].

This clause 5.3 will survive the expiration, termination or frustration of this deed.

EXECUTED as a deed.

Executed by Hunter Water Corporation)
ABN 46 228 513 446 by its attorney under a)
 Power of Attorney dated)
 Registered Book No. and)
 the Attorney declares that the Attorney has not)
 received notice of the revocation of such Power of)
 Attorney in the presence of:)
)
)
)

.....
Signature of Witness

EXECUTED by [# - SUBCONTRACTOR] in)
accordance with section 127 of the)
Corporations Act:)

.....
Signature of Director

.....
Signature of Director/Secretary

.....
Name of Director

.....
Name of Director/Secretary

EXECUTED by [# - SERVICE PROVIDER])
in accordance with section 127 of the)
Corporations Act:)

.....
Signature of Director

.....
Signature of Director/Secretary

.....
Name of Director

.....
Name of Director/Secretary



HUNTER WATER CORPORATION

CS0341 Treatment Operations Contract

Annexures

EXECUTION VERSION

CONTENTS

ANNEXURE A - PRACTICE NOTES

PN001 Contacts

PN101 Good Practice

PN102 Operator Competency

PN103 Nelson Bay WTP Access Procedure

PN104 Hunter Water Site Safety Rules

PN105 Access to Laboratory Records

PN106 Right of Access agreements

PN110 Recycled Water Standards

PN111 Drinking Water Standards

PN112 Environmental Protection Criteria

PN201 Water Quality Incident Notification

PN202 EP Licence Non-Conformance Notification

PN203 Recycled Water Interruption Notification

PN204 Safety and Environmental Incident Notification

PN205 Asset Deficiency Notification

PN206 Abnormal Inflow Notification

PN301 Controlling WTP Raw and Treated Water Flow Rates

PN302 Controlling WWTW Influent Rates

PN303 Controlling Effluent and Recycled Water Flow Rates

PN304 On-Site Storage of Biosolids

PN307 Tanker Management

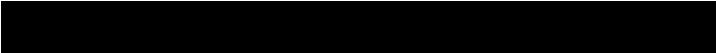
PN308 Shortland WWTW Sludge Dewatering

PN309 Identified Facility Limitations

PN310 Civil Field Staff Requirements

PN311 Measurement of Quantities for Variable Fees
PN402 SCADA Alarm Monitoring and Handling
PN403 Amending SCADA Alarms
PN501 Creating a Maintenance Job
PN502 Ellipse Data Entry
PN504 Ellipse Data Field Requirements
PN505 Breakdown Response and Restoration of Service
PN506 Asset Information Procedure
PN603 Guided Facility Tours
PN702 New Work Handover
PN703 Minor Capital Works Definition
PN704 Electricity Billing Procedures
PN705 Preparation of Variation Price
PN706 Minor Capital Works Procedures
PN707 Pricing of Minor Capital Works
PN801 Treatment Planning Meetings
PN802 Recycled Water Quality Meetings
PN803 Water Quality Committee Meetings
PN804 Monthly Contract Report
PN805 IPART Pricing Submissions
PN806 Customer Complaint Investigations and Reporting
PN808 Audit Recommendation Status Report
PN809 Australian Bureau of Statistics Data
PN810 Annual Information Report (AIR)
PN811 Compliance and Performance Report (website)
PN812 Contractor WHS Report
PN813 Drinking Water and Recycled Water Exception Report
PN815 EPA Pollution Monitoring Monthly Summary Report (website)

- PN816 EPL Annual Returns
- PN817 Fluoride Monitoring
- PN818 Monthly Compliance and Performance (Drinking Water)
- PN819 Monthly Performance and Issues at WWTW (Recycled Water)
- PN820 Monthly Performance Report
- PN821 National Performance Report
- PN822 National Pollutant Inventory
- PN823 Operating Licence Audit



ANNEXURE A – PRACTICE NOTES



PN001 CONTACTS

The contact details for Hunter Water personnel who may be referred to in the Practice Notes are listed below:

Position	Name	Work Phone
After Hours Officer (After Hours Only)	Varies	
Manager Treatment Operations	Glen Robinson	02 4979 9489
Water Quality Engineer	Pam O'Donoghue	02 4979 9490
Process Engineer – Wastewater	Bob Jennar	02 4979 9588
Treatment Operations Engineer	Ken Moore	02 4979 9532
Duty Officer	Varies	
Manager System Operations	Clint Thomson	02 4979 9636
Manager Network Operations	Colin Cribb	02 4979 9479
Chief Operating Officer	Darren Cleary	
Manager Environment and Sustainability	Angus Seberry	
WHS Advisor – Contracts	Rob Watt	

Recycled Water

For matters relating to Recycled Water, except cases where the Agreement requires otherwise, initial contact should be made with the Account Executive or Recycled Water Team Leader. If the matter is urgent and initial contact has been unsuccessful, the Manager Commercial Services or Manager Technical Services should be contacted. The Chief Customer Service Officer should only be contacted following unsuccessful attempts to contact the other listed numbers and the incident could have health, environmental or media impacts.

Position	Name	Work Phone
Account Executive	Melanie Berry	4979 9650
Recycled Water Team Leader	Martin Robards	4979 9590
Manager Commercial Services	Doug Lucas	4979 9714
Manager Technical Services	Victor Prasad	4979 9679
Chief Customer Service Officer	Dean Taylor	4979 9495



Collaborative Management Group – Treatment Operations Contract

Position	Name	Work Phone
Manager Treatment Operations	Glen Robinson	02 4979 9489
Manager Asset Management	Stuart Horvath	02 4979 9481
Manager Contracts	Greg Small	02 4979 9722

The above positions, names and phone numbers may be changed from time to time at Hunter Water's absolute and sole discretion.

[PN001 ends]



PN101 GOOD PRACTICE

Application and Definition

The Service Provider must perform each aspect of the Services in a manner, to the extent and to a standard which is consistent with Good Practice.

Establishing Good Practice Benchmark

In the event of a Dispute between the parties as to what is Good Practice or on the decision of the Executive Leadership Group, Hunter Water will seek to establish evidence of Good Practice in relation to a particular issue by conducting a benchmarking exercise with respect to the particular issue. The benchmarking exercise, which may be undertaken by Hunter Water in such manner and time period as Hunter Water sees fit in its absolute and sole discretion, shall analyse those practices, methods, behaviours and actions used by SA Water, Sydney Water, Unitywater and Yarra Valley Water and, as determined by Hunter Water in its absolute and sole discretion, other utilities in Australia which operate water treatment or wastewater treatment plants and serve a population of the same order of magnitude as the population that Hunter Water services or greater (**Benchmark Utilities**). Hunter Water will provide the Service Provider, the CMG and the ELG with a copy of Hunter Water's benchmarking findings following Hunter Water's completion of its benchmarking exercise.

In cognisance of the variability in treatment assets in terms of processes, age, capacity and loading the Executive Leadership Group will interpret results recognising the following:

- a) Good Practice is not equivalent to "best practice" and thus a level of performance which is adopted by only one Benchmark Utility is not an appropriate measure.
- b) Good Practice with regard to a particular performance issue is that adopted by multiple Benchmark Utilities.
- c) The lowest level of performance adopted by a Benchmark Utility is not Good Practice unless all Benchmark Utilities perform at the same level.

[PN101 ends]



PN102 OPERATOR COMPETENCY

The Service Provider shall ensure plant operators are competent to perform their duties. Competency means the plant operator has acquired through training, qualification or experience the knowledge and skills to carry out specific tasks associated with the Services including, but not limited to, the Relevant Qualifications and Training listed below.

This includes ensuring operators are trained so they are at all times familiar with:

- all relevant safety and emergency procedures;
- site hazards including the storage and handling of hazardous materials;
- site safety rules and restrictions on movement access and activities;
- location of first aid equipment, eyewashes and showers;
- correct use of personal protective equipment, its care and maintenance;
- conditions applicable to work permits including confined space entry;
- any changes made to plant, equipment or operating procedures.

Relevant Qualifications and Training for plant operators include:

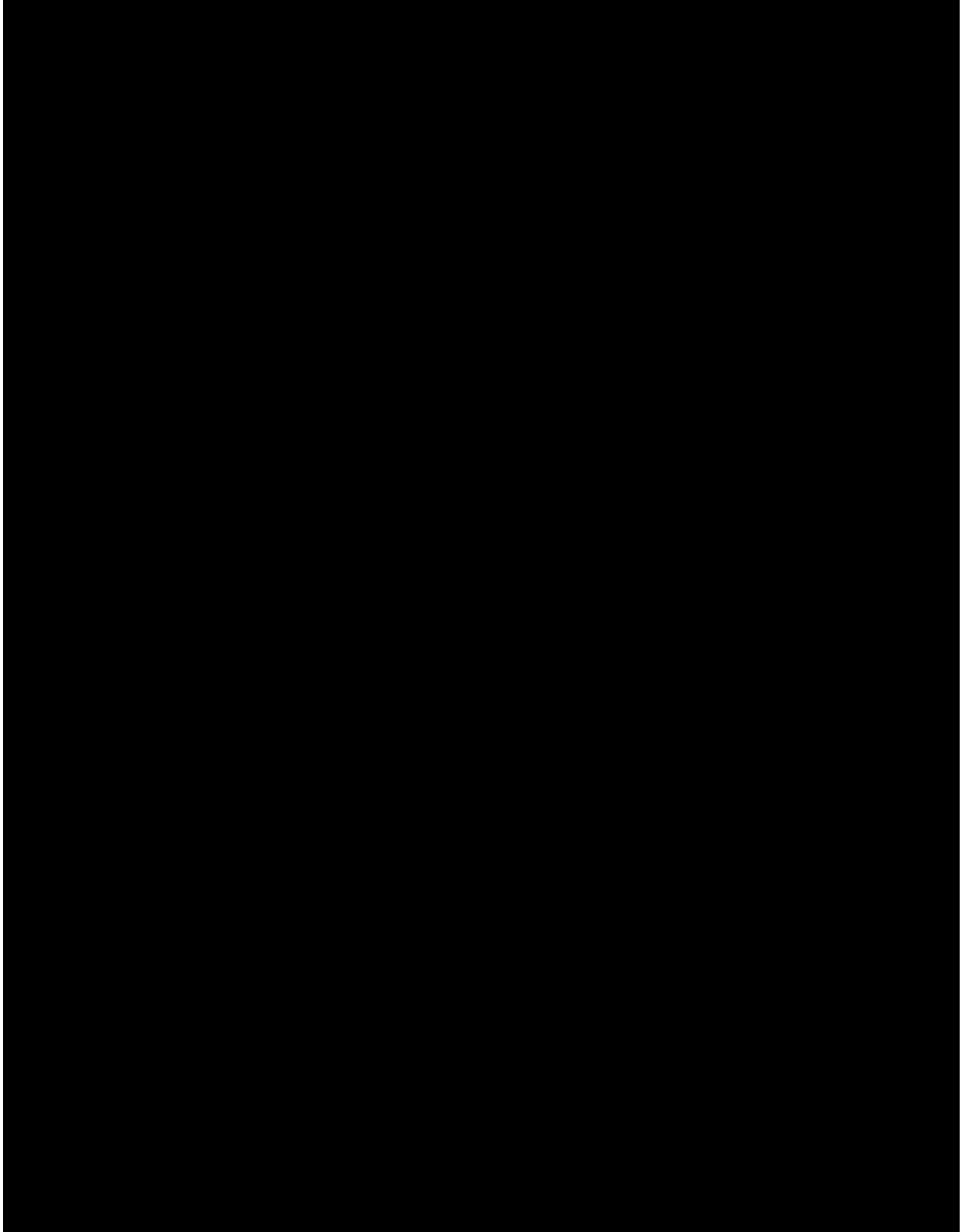
- Holding or "working towards" Certificate III in Water Industry Operations from an accredited training provider such as TAFE NSW. "Working towards" means being enrolled in a Certificate II or Certificate III course with an agreed time frame for successful completion of Certificate III.
- For fluoridation plant operators, holding a Fluoride Plant Operator's Certificate issued by NSW Health.
- For chlorination dosing facility operators, regular chlorine awareness and handling training as required by AS/NZS 2927:2001 Storage and handling of liquefied chlorine gas.

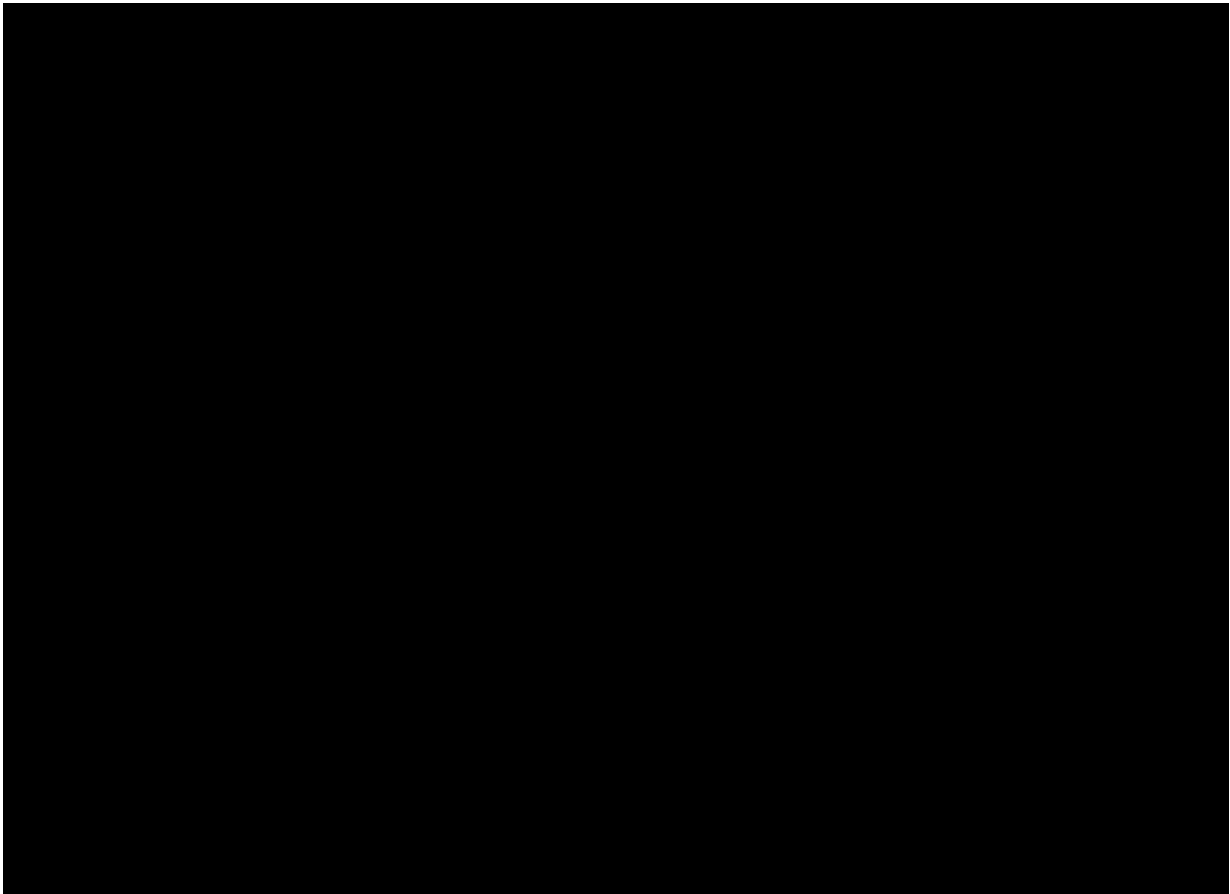
The Relevant Qualifications and Training above is a non exhaustive list and the Service Provider must ensure plant operators acquire and maintain any additional competencies necessary to safely perform their duties.

[PN102 ends]



PN103 NELSON BAY WTP ACCESS PROCEDURE





Definitions

Essential staff: Any Hunter Water employee or contractor whose role is necessary to ensuring the ongoing supply of safe, clean drinking water from the NBWTP.

Urgent and essential purposes: Those activities deemed critical to enable the ongoing supply of safe, clean drinking water from the Nelson Bay WTP.

[PN103 ends]



PN104 HUNTER WATER SITE SAFETY RULES

In addition to any site safety rules adopted by the Service Provider, all persons (including the Service Provider) at workplaces on Hunter Water property must, as a minimum, comply with the site safety rules below. These requirements are not exhaustive and the Service Provider should implement any necessary additional site safety rules following its own risk assessment of the Facilities and the Services.

- (a) **Workplace Specific Training.** Persons are only allowed to enter the workplace if they have been suitably informed, trained and instructed in the nature of any risks associated with their work or presence at the workplace and the controls measures to be adopted.
- (b) **Procedures, Signs and Instructions.** All persons must comply with safety procedures, posted signs and any instructions given by those persons having control of the workplace.
- (c) **Personal Protective Equipment.** All persons must wear footwear which provides protection to the entire foot. Thongs, sandals, high-heel or open-toe shoes are not permitted. All persons working in the open must wear long sleeve shirts and trousers. Persons working on or near roads and other trafficable areas must wear high-visibility clothing. Persons using chemicals must wear the personal protective equipment as specified in the relevant material safety data sheet.

All persons in any part of the workplace designated as a construction site must wear safety helmets and safety footwear at all times. Safety helmets must comply with AS 1801 Occupational protective helmets and safety footwear must comply with AS 2210 Occupational protective footwear

- (d) **Tags/Lock-out.** Equipment fitted with a Danger tag, an Out of Service tag or a lock-out device must not be operated. The only person permitted to remove a Danger tag is the person named on the tag. Out of Service tags may only be removed by the person who fitted the tag, their supervisor or the maintenance worker who repaired the equipment.
- (e) **Alcohol and Drugs.** No person is allowed to use or be in possession of any alcohol or illicit drugs while at a workplace on Hunter Water property. No person under the influence of any intoxicating substance is allowed at a workplace on Hunter Water property.
- (f) **Smoking.** Smoking is not allowed on Hunter Water property.
- (g) **Firearms, Weapons and Explosives.** Firearms, weapons and explosives are not permitted on Hunter Water property without explicit permission from Hunter Water.
- (h) **Bullying, Harassment and Discrimination.** All forms of bullying, harassment and discrimination are not permitted at a workplace on Hunter Water property.

- (i) Emergencies. All persons must be aware of, and comply with, their employer's emergency procedures.
- (j) Incident notification. Workplace incidents, near misses and previously unidentified hazards must be reported immediately to supervisors.
- (k) Confined spaces. No person is permitted to enter a confined space, including all sewerage structures and water reservoirs, unless they hold evidence of appropriate training.
- (l) Working at heights. Fall prevention equipment must be adopted when working at heights of two metres or greater if appropriate fencing, handrails or barriers are not already provided.
- (m) Asbestos. No person is allowed to bring asbestos in any form onto Hunter Water property.
- (n) Fire Prevention. Provide suitable extinguishing equipment if work includes the use of flame or spark generating equipment. Avoid driving or parking motor vehicles on long dry grass as heat generated by the exhaust system can start a fire.
- (o) Housekeeping. Keep work areas in a clean and orderly state and walkways free from obstructions. Store any materials, plant and equipment so that it doesn't present a hazard.
- (p) Electrical safety. Worker's electrical appliances must be inspected and tagged prior to being used at a workplace on Hunter Water property. Electrical work may only be performed by a qualified electrician. (q) Site Security. Any unauthorized access must be reported immediately to supervisors.
- (r) Pets/animals. Dogs, cats and other domestic animals are not permitted at workplaces on Hunter Water property.

Confined Spaces

For the purposes of item (k), the following structures and spaces are hereby deemed to be confined spaces within the meaning of the WHS Regulation:

all sewerage system structures including access holes, pipes, pumping station wet and dry wells, valve pits, digesters, ABF towers and aeration tanks

[PN104 ends]



PN105 ACCESS TO LABORATORY RECORDS

All laboratory analysis results associated with the Hunter Water treatment plants will be provided by Hunter Water electronically to the Service Provider. Procedures for transferring data from Hunter Water Australia Pty Ltd laboratories will be established to the satisfaction of Hunter Water during the Transition Period, by amendment of this Practice Note, to suit the Service Provider's system requirements.

[PN105 ends]



PN106 RIGHT OF ACCESS AGREEMENTS

Application

This Practice Note lists details of access arrangements to access Hunter Water land associated with the Facilities and also any agreements or arrangements with third parties that Hunter Water has in place in relation to shared access to Hunter Water land associated with the Facilities.

The Service Provider must:

1. comply with all access arrangements to access Hunter Water land associated with the Facilities and the requirements of such access arrangements; and
2. with respect to any agreement or arrangement with a third party that Hunter Water has in place in relation to shared access to Hunter Water land associated with the Facilities, comply with the requirements of such agreement or arrangement and also ensure that the relevant third party and its representatives are provided with access in accordance with the relevant agreement or arrangement.



Right of Access Agreements

Q Number			Colloquial Name		Dealing creating access	Licence/Easement affecting HWC land
1971			CESSNOCK WWTW		Government Gazette for access Q1966	no recorded licences
2115			KURRI KURRI WWTW			Licence to RMS expired 30.1.14, TBC whether they are still accessing
3578			BRANXTON WWTW		dealing CON 63 BK 3092 for access Q1925	1. easements in favour of Ausgrid for power and access 2. Licence to Telstra expiring 2018 for mobile network tower - access appears to be down different access and tower located outside WWTW perimeter - TBC
3579			KEARSLEY WWTW		no registered dealing, HWC relies on Hunter Water Act	
3920			PAXTON WWTW		dealing No. 2090627 using DP 848796 Q3921	easements in favour of Ausgrid for power and access within the WWTW freehold boundaries



Right of Access Agreements

		CLARENCE TOWN WWTW		Dealing AE341189 Q4851	
4792		DUNGOG WWTW		Conveyance book 3061 number 891	Reciprocal Licence agreements between HWC and adjoining farmer (Alison) for HWC to access monitoring point on river and for farmer for farming and grazing both expiring 2015
1757		BELMONT WWTW			1. easement in favour of Ausgrid for power 2. licence agreements with Telstra and Optus
1880 & 1879		TORONTO WWTW			
1978		DORA CREEK WWTW			
2036		EDGEWORTH WWTW			easements in favour of Ausgrid for power and access



Right of Access Agreements

2039		FARLEY WWTW			<ul style="list-style-type: none"> ROC in favour of adjoining farmer along HWC access road 2. Licence to Odour Control Systems expiring 2015
4405		MORPETH WWTW			<ul style="list-style-type: none"> 1. easements in favour of Ausgrid for power and access 2. Licence to Optus for transmitter expiring 2015 3. Licence to East Maitland Bowling Club for recycled water pump, power and access
2381, 2385		SHORTLAND WWTW			<ul style="list-style-type: none"> 1. easements in favour of CMA for access and monitoring equipment 2. Licence to Telstra for transmitter expiring June 2014
3474		BURWOOD BEACH WWTW			<ul style="list-style-type: none"> easements in favour of Ausgrid for power and access
2073		BOULDER BAY WWTW		GG Q2074	<ul style="list-style-type: none"> easements in favour of Ausgrid for power and access
4183		KARUAH WWTW			



Right of Access Agreements

2140		TANILBA BAY WWTW			
2278		RAYMOND TERRACE WWTW		CON 118 BK 2592 CON 921 BK 3179 DP 557719	
4794		GRESFORD WTP			
546		DUNGOG WTP			
3504		GRAHAMSTOWN 1 WTP			
		ANNA BAY WTP			
		NELSON BAY WTP			
4157		LEMON TREE PASSAGE WTP			



Right of Access Agreements

[PN106 ends]



PN110 RECYCLED WATER STANDARDS

General Recycled Water

Any breaches of the microbiological target values must be reported to Hunter Water as soon as practicable. Cessation of supply to the customer may be required depending on the nature of the breach and median results. Hunter Water must notify NSW Health if two consecutive results breach the target values in water supplied to customers.

Send weekly sample results for the parameters in Table 1 to recycledwaternotifications@hunterwater.com.au and include specific notice of any parameters that breach the target values. Investigate corrective actions if a target level is breached. Resample if target levels for E.Coli or FC are breached.

Contact Hunter Water upon two consecutive parameter results from Table 1 breaching the target values.

If directed by Hunter Water immediately cease the supply to the customer. Do not recommence supply until directed by Hunter Water.

A target value is breached when the measured levels exceed the value in the table or for pH when the measured level is outside the range of values.

Table 1 – General Recycled Water Quality Requirement

WWTW	Monitoring Point	Target Value			
		Faecal Coliforms E. Coli	BOD	NFR	pH
Branxton	Farmers Reuse Pond	<100	20	30	6.5 - 8.5
	Reuse Pump Station	<1	5	10	6.5 - 8.5
Cessnock	Cessnock TTP Effluent	<100	20	30	6.5 - 8.5
Clarence Town	Effluent Reuse	<1000	20	30	6.5 - 8.5
Dora Creek	Eraring Off-Take	see Table 2			
Dungog	Dungog Final Dam Reuse	<1000	20	30	6.5 - 8.5
Edgeworth	Reuse Wet Well	<1000	20	30	6.5 - 8.5
Farley	Final Pond 2	<1000	20	30	6.5 - 8.5
Karuah	Karuah Final Pond Reuse	<1000	20	30	6.5 - 8.5
Kurri Kurri	Disinfected Effluent	<1000	20	30	6.5 - 8.5
	Effluent Reuse Pond	<1000	20	30	6.5 - 8.5
Mayfield West	Product Water Tank	See Table 5			



Recycled Water Standards

Advanced Water Treatment Plant					
Morpeth	Disinfected Effluent	<1000	20	30	6.5 - 8.5
Paxton	Effluent Dist. Chamber	<10,000	20	30	6.5 - 8.5

Eraring Energy

Hunter Water has a specific agreement with Eraring Energy for the supply of recycled water.

Send weekly sample results for each parameter in Table 2 to recycledwaternotifications@hunterwater.com.au and include specific notice of any parameters that breach the Target Values, the Upper Maximum or the Cut Off Value. Investigate corrective actions if a target level is breached. Resample if target levels for E.Coli or FC are breached.

If directed by Hunter Water immediately cease the supply to the customer. Do not recommence supply until directed by Hunter Water.

Any breaches of the cut off values must be reported to Hunter Water as soon as practicable.

Table 2 – Eraring Energy Recycled Water Quality Requirements

Parameter	Unit	Target Value	Upper Maximum	Cut Off Value
Conductivity	us/m	<130,000	150,000	170,000
Chloride	mg/L	<250	300	400
NFR	mg/L	<20	30	50
BOD	mg/L	<20	30	40
Chlorophyll	ug/L	<40	75	100
TP	mg/L	<10	12	16
pH		7.0 – 7.8	6.5 – 8.2	<6.5 or >8.2
Turbidity	NTU	<10	20	30
Oil and grease	mg/L	<5	7	9
DO	mg/L	>6	3	1.5
Total hardness	mg/L	<150	180	220
Total alkalinity	mg/L	<200	250	330
Manganese	mg/L	<0.05	0.1	0.15
Iron	mg/L	<0.5	1	1.5
Ammonia	mg/L	<2	5	10
TOC	mg/L	20	30	50



Recycled Water Standards

Vintage

Hunter Water has a specific agreement with the Vintage for the supply of recycled water.

Send weekly sample results for each parameter in Table 3 to recycledwaternotifications@hunterwater.com.au and include specific notice of any parameters that breach the 50th Percentile, 90th Percentile or 100th Percentile values. Investigate corrective actions if a target level is breached. Resample if target levels for E.Coli or FC are breached.

If directed by Hunter Water immediately cease the supply to the customer. Do not recommence supply until directed by Hunter Water.

Table 3 – Vintage requirements in addition to requirements for Branxton WWTW in table 1.

Parameter	Unit	Target Value	50th Percentile	90th Percentile	100th Percentile
pH		6.5 – 8.5			6.5 – 8.5
BOD	mg/L	5	5	10	
TSS	mg/L	10	10	20	
Ammonia	mg/L	1	1	3	
TN	mg/L	7.5	7.5	10	
TP	mg/L	0.3	0.3	1.0	
FC	cfu/100mL	<1.0			
Chlorophyll	ug/L	3	3	20	
Algae (as needed)		10,000	10,000	30,000	

Orica

Hunter Water has a specific agreement with Orica for the supply of recycled water.

Send weekly sample results for each parameter in Table 4 to recycledwaternotifications@hunterwater.com.au and include specific notice of any parameters that breach the 50th Percentile, 90th Percentile or 100th Percentile values. Investigate corrective actions if a target level is breached. Resample if sample results for FC exceeds 1.0 cfu/100ml.

If directed by Hunter Water immediately cease the supply to the customer. Do not recommence supply until directed by Hunter Water.



Recycled Water Standards

Table 4 – Orica Recycled water Quality Requirements.

Parameter	Unit	Target Value	100 th Percentile	50 th Percentile (rolling monthly)	90 th Percentile (rolling monthly)
TDS	mg/L	<50			<50
Chloride	mg/L	<15			<15
Calcium	mg/L	<5			<5
pH		5.5-7.5			
Total Hardness	mg/L CaCO3	<10			<10
M Alkalinity	mg/L CaCO3	<20			<20
Total Silica (SiO2)	mg/L	<2			<2
Iron	mg/L	<0.015			<0.015
Total N	mg/L	<1.8		<1.8	<2.5
Ammonia (Free)	mg/L N	<0.5			<0.5
Faecal Coliforms	cfu/100ml	Not Detectable			Not Detectable
Somatic Coliphage	-	Not Detectable			Not Detectable
Cryptosporidium	oocysts./50L	Not Detectable			Not Detectable
TOC	mg/L	<1			<1
Total Phosphorous	mg/L	<0.05			<0.05
TSS	mg/L	<2			<2
Chloramine	mg/L	<0.5			<0.5
Aluminum	mg/L	<0.1			<0.1
Temperature	degrees C	<27			<27
Potassium	mg/L	<3			<3
Zinc	mg/L	<0.2			<0.2
Fluoride	mg/L	<0.1			<0.1
Sulphate	mg/L	<5			<5
Carbon Dioxide	mg/L	<5			<5
Sodium	mg/L	<15			<15
Hexavalent Chromium	mg/L	<0.002			<0.002
Arsenic	mg/L	<0.002			<0.002



Recycled Water Standards

Send monthly a Final Water Quality Reporting Table to Hunter Water on the second Wednesday of each month with a tabulated summary of the results for the parameters in table 4 with any exceedence highlighted and commented on, as in the example at Table 5.

Table 5: Example Final Water Quality Reporting Table

	Parameter	Unit	Target 90%ile	Sample Count	12 Month Max	Rolling Monthly 90%ile	Rolling Monthly Average	Comments
1	TDS	mg/L	<50	12	42	35	27	
2	Chloride	mg/L	<15	12	16	13	5	
3	Calcium	mg/L	<5	12	3.5	2	2	
4	pH		5.5 - 7.5	12	7.6	6.2 to 7.2	6.4	
5	--	-	--	--		--	--	--

The agreement with Orica requires Hunter Water to supply 9ML/d to Orica. Before any planned or unplanned maintenance or any disruption to the facility which may result in a reduction in supply to Orica, advise Orica via email (recycled_water@orica.com) and with a follow up phone call (Orica 24 Hour Line) of the expected outage. The plant operator is to discuss the outage and its impacts with Orica’s representative. Provide an estimate of the impact of the event on Orica and advise the reason for the outage, the expected duration and the expected available flow during the outage if it is not a complete shutdown.

Following the discussion between the facility operator and the Orica representative submit an email to both HWC (recycledwaternotifications@hunterwater.com.au) and Orica (recycled_water@Orica.com) outlining this event and the possible impacts.

Required Monthly Flow

Hunter Water has contractual arrangements in place which require the following quantity of recycled water to be delivered to its customers. Advise Hunter Water immediately if the minimum flows are not available to be supplied for the specified period. Include actual volumes supplied with the monthly report.

Customer	Minimum Flow	Maximum Flow
The Vintage (Branxton)	225 ML per annum 18.75 ML per month	
Oceanic Coal (Edgeworth)	7 0ML per month	
Orica (Mayfield)	6.3 ML per day	9 ML per day
Ering (Dora Creek)	3.5 ML per day	
Cessnock Golf Club (Cessnock)	30 ML per quarter	

[PN110 ends]



[PN110 ends]



PN111 DRINKING WATER STANDARDS

APPLICATION

This Practice Note sets out:

- Specific requirements for management of drinking water standards, and
- the target requirements and critical requirements to be measured for water quality service standards

SPECIFIC REQUIREMENTS FOR MANAGEMENT OF DRINKING WATER STANDARDS

1. The Critical Control Points (CCPs) proposed for inclusion in the Drinking Water Quality Management System (DWQMS) to be prepared by the Service Provider have been submitted to NSW Health for its review and feedback. Any requirements of NSW Health are to be incorporated into the DWQMS. These CCP's, the critical limits and target criteria are included in Hunter Water's current DWQMS which is to be adopted until such time as the Service Provider's DWQMS is introduced.
2. The service provider will need to demonstrate the accuracy of all on-line water quality instrumentation – The Drinking Water Quality Management System must include protocols and procedures to ensure accuracy of on-line water quality and flow instrumentation.
3. Hunter Water is developing a protocol to report to NSW Health on:
 - a. percentage of time and percentage of flow where filtered turbidity is within the target (< 0.2 NTU), based on continuous (online) data.
 - b. percentage of time and/or percentage of flow where CT is within the target at the first customer based on continuous on-line data (>15min.mg/L for surface waters and > 10min.mg/L for groundwaters, ie Nelson Bay, Anna Bay and LTP), based on continuous (online) data.Reporting will commence on 1st July 2014 and is to be undertaken by the Service Provider during the Term.
4. Automatic shut-down control logic is in place (operator set) for some but not all critical water quality parameters at water treatment plants.
5. For the purpose of water quality performance assessment Critical Requirements apply if the water is supplied to the distribution system. If the plant is shut down and the Clear Water Tank is scoured to waste, without any of the water exceeding the critical requirement being supplied to the distribution system, then the critical requirement is not considered to have been breached. Where exceedance of a critical requirement does not potentially impact on public health, for example, if lime dosing fails at Dungog WTP, causing the pH to fall slightly below the critical requirement (say 6.4), Hunter Water may direct that supply from the plant be maintained.



Drinking Water Standards

6. The Service Provider may apply for short term exemptions from Target and Critical Requirements to facilitate maintenance activities provided Health and Aesthetic parameters will not be compromised.



Drinking Water Standards

DRINKING WATER QUALITY PERFORMANCE REQUIREMENTS

Target requirements and critical requirements for water quality service standards are set out in tables 1 to 6.

Table 1 – Anna Bay WTP Drinking Water Quality Target and Critical Requirements

Water Quality Parameter	Target Requirement	Critical Requirement
Turbidity at the clear water tank outlet ¹ measured continuously on-line	< 1 NTU for more than 99% of the time for each month	< 5 NTU
Turbidity at clear water tank outlet daily samples	< 1 NTU for more than 99% of daily samples for each financial year	< 5 NTU
Free chlorine concentration x contact time (CT) at first customer from calculation based on HWC protocol	> 10 min.mg/L for more than 95% of the time for each month	> 4 min.mg/L
Free chlorine residual at the clear water tank inlet measured continuously on-line	> 0.7 mg/L and < 1.3 mg/L for more than 95% of the time for each month, and The average residual for each month is > 1.05 mg/L and < 1.15 mg/L	> 0.3 and < 3.0 mg/L
Free chlorine at clear water tank inlet daily samples	> 0.7 mg/L and < 1.3 mg/L for more than 99% of daily samples for each financial year	> 0.3 and < 3.0 mg/L
pH at the clear water tank outlet measured continuously on-line	> 6.8 and < 8.2 for >95% of the time for each month, and The average pH for each month is > 7.4 and < 7.6	> 6.5 and < 9.2
pH at clear water tank outlet daily samples	> 6.8 and < 8.2 for more than 99% of daily samples for each financial year	> 6.5 and < 9.2
Fluoride at the clear water tank outlet measured continuously on-line	> 0.9 and < 1.1 mg/L for more than 95% of the time for each month	< 1.5 mg/L
Fluoride at clear water tank outlet daily samples	More than 95% of daily fluoride results for the last 12 months (on a rolling basis) must be > 0.9 and < 1.5 mg/L	< 1.5 mg/L
<i>E. coli</i> at clear water tank outlet weekly samples		< 1 MPN / 100ml
Other Drinking Water Quality Parameters clear water tank outlet periodic samples	< ADWG Aesthetic Guideline for more than 99% of periodic samples analysed for water quality parameters with an ADWG aesthetic guideline (other than the other water quality parameters listed within this table) for each financial year	< ADWG Health Based Guideline



Drinking Water Standards

¹ for any period of time, except for the following operational exclusions:

- Plant start up, causing turbidity spike for a maximum of 5 minutes (i.e. stirring up lime solids).
- Sample pumps when WTP starts up or sample line cleaned causing brief turbidity meter spike (i.e. not representative of treated or filtered water).
- Single SCADA data point



Drinking Water Standards

Table 2 – Dungog WTP and Chichester Chlorinator Drinking Water Quality Target and Critical Requirements

Normal operation is for both clear water tanks (CWT) to be operational with flow directed through tank 1 then to tank 2 before leaving the facility.

The continuous free chlorine residual and continuous pH measurements are to be taken downstream of clear water tank 1 under normal operation. When CWT 1 is offline the continuous free chlorine residual and continuous pH measurements are to be taken upstream of CWT 2.

All other CWT outlet samples are to be taken at the outlet to CWT 2 unless it is offline when they are to be taken from the outlet to CWT 1.

Water Quality Parameter	Target Requirement	Critical Requirement
Free chlorine at Chichester chlorinator measured continuously on-line	> 0.7 mg/L and < 1.3 mg/L for more than 95% of the time for each month	< 3.0 mg/L and > 0.2mg/L
Filtered water turbidity at each filter based on continuous on-line measurement from individual filter outlets and continuous on-line flow measurement from filter flow meter	< 0.2 NTU for more than 95% of flow through the individual filter for each month	< 0.5 NTU – must not exceed 0.5 NTU for > 15 minutes.
Free chlorine concentration x contact time (CT) at first customer from calculation based on continuous on-line data at plant	> 15 min.mg/L for more than 95% of the time for each month	> 4 min.mg/L
Free chlorine residual at the clear water tank measured continuously on-line	> 0.7 mg/L and < 1.3 mg/L for more than 95% of the time for each month, and The average residual for each month is > 0.95 mg/L and <1.05 mg/L	< 3.0 mg/L and > 0.2mg/L



Drinking Water Standards

Water Quality Parameter	Target Requirement	Critical Requirement
Free chlorine at clear water tank outlet daily samples	> 0.7 mg/L and < 1.3 mg/L for more than 99% of daily samples for each financial year	< 3.0 mg/L and >0.2mg/L
pH at clear water tank outlet measured continuously on-line	> 6.8 and < 8.2 for more than 95% of the time for each month, and The average pH for each month is > 7.4 and < 7.6	> 6.5 and < 9.2
pH at clear water tank outlet daily samples	> 6.8 and < 8.2 for more than 99% of daily samples for each financial year	> 6.5 and < 9.2
Fluoride at the clear water tank outlet measured Continuously on-line	> 0.9 and < 1.1 mg/L for more than 95% of the time for each month	< 1.5 mg/L
Fluoride at clear water tank outlet daily samples	More than 95% of daily fluoride results for the last 12 months (on a rolling basis) must be > 0.9 and 1.5 mg/L	< 1.5 mg/L
Turbidity at the clear water tank outlet measured continuously on-line	< 1 NTU for > 99% of the time each month	< 5 NTU
Turbidity at clear water tank outlet daily samples	< 1 NTU for more than 99% of daily samples for each financial year	< 5 NTU
Total Alkalinity at pH 4.5 as Calcium Carbonate at clear water tank Outlet daily samples	> 33 and < 45 mg/L for more than 99% of daily samples for each financial year , and Average alkalinity of daily samples over month > 38 and < 42 mg/L	> 15 and < 55 mg/L



Drinking Water Standards

Water Quality Parameter	Target Requirement	Critical Requirement
True colour at clear water tank outlet daily samples	< 5 HU for more than 99% of daily samples for each financial year	< 15 HU
Iron clear at water tank outlet daily samples	< 0.1 mg/L for more than 99% of daily samples for each financial year	< 0.3 mg/L
Manganese at clear water tank outlet daily samples	< 0.02 mg/L for more than 99% of daily samples for each financial year	< 0.1 mg/L
Aluminium at clear water tank outlet daily samples	< 0.15 mg/L for more than 99% of daily samples for each financial year	< 0.2 mg/L
<i>E. coli</i> at clear water tank outlet weekly samples		< 1 MPN / 100ml
Giardia in filtered water periodic samples		< 1 cysts / 100L
Cryptosporidium in filtered water periodic samples		< 1 oocysts / 100L
Other drinking water quality parameters at clear water tank outlet periodic samples	< ADWG Aesthetic Guideline for more than 99% of periodic samples analysed for water quality parameters with an ADWG aesthetic guideline (other than the other water quality parameters listed within this table) for each financial year	< ADWG Health Based Guideline



Drinking Water Standards

Table 3 – Grahamstown WTP Drinking Water Quality Target and Critical Requirements

Water Quality Parameter	Target Requirement	Critical Requirement
Geosmin concentration at Grahamstown Clear Water – measured twice weekly during periods of elevated Geosmin in Grahamstown Raw water	< 10 ng/L for more than 90% of daily samples for each financial year	< 15 ng/L
Microcystin concentration in Grahamstown Clear Water Tank - measured twice weekly during periods of elevated potentially toxigenic blue-green algae in Grahamstown source	Not detected	< 1.3 ug/L
Saxitoxin concentration measured twice weekly during periods of elevated potentially toxigenic blue-green algae in Grahamstown Source	Not detected	none
MIB concentration at Grahamstown Clear Water Tank - measured twice weekly during periods of elevated potentially toxigenic blue-green algae in Grahamstown Source	< 10 ng/L for more than 90% of daily samples for each financial year	< 15 ng/L
Filtered water turbidity at each filter based on continuous on-line measurement from individual filter outlets and continuous on-line flow measurement from filter flow meter	< 0.2 NTU for more than 95% of flow through the individual filter for each month	< 0.5 NTU – must not exceed 0.5 NTU for > 15 minutes
Free chlorine concentration x contact time (CT) at first customer from calculation based on continuous on-line data at plant	> 15 min.mg/L for more than 95% of the time for each month	> 4 min.mg/L



Drinking Water Standards

Water Quality Parameter	Target Requirement	Critical Requirement
Free chlorine residual at the clear water tank inlet based on continuous on-line measurement	> 0.7 mg/L and < 1.3 mg/L for more than 95% of the time for each month, and The average residual for each month is > 1.05 mg/L and <1.15 mg/L	> 0.3 or < 3.0 mg/L
Free chlorine at clear water tank inlet daily samples	> 0.7 mg/L and < 1.3 mg/L for more than 99% of daily samples for each financial year	> 0.3 or < 3.0 mg/L
Free chlorine residual at Grahamstown Mains Chlorination measured continuously on-line at Grahamstown Mains chlorine analyser	> 1.2 mg/L and < 1.8 mg/L for more than 95% of the time for each month, and The average residual for each month is > 1.45 mg/L and <1.55 mg/L	> 0.25 and < 3.0 mg/L
Free chlorine at Grahamstown Mains Chlorination daily samples	> 1.2 mg/L and < 1.8 mg/L for more than 99% of daily samples for each financial year	> 0.25 and < 3.0 mg/L
pH at the clear water tank outlet measured Continuously on-line	> 6.8 and < 8.2 for more than 95% of the time for each month, and The average pH for each month is between 7.3 and 7.5	> 6.5 and < 9.2
pH at the clear water tank outlet daily samples	> 6.8 and < 8.2 for more than 99% of daily samples for each financial year	> 6.5 and < 9.2
Fluoride at the clear water tank outlet measured continuously on-line	> 0.9 and < 1.1 mg/L for more than 95% of the time for each month	< 1.5 mg/L
Fluoride at the clear water tank outlet daily samples	More than 95% of daily fluoride results for the last 12 months (on a rolling basis) must be > 0.9 and 1.5 mg/L	< 1.5 mg/L
Turbidity at the clear water tank outlet measured	< 1 NTU for more than 99% of the time for each month	< 5 NTU



Drinking Water Standards

Water Quality Parameter	Target Requirement	Critical Requirement
continuously on-line		
Turbidity at the clear water tank outlet daily samples	< 1 NTU for more than 99% of daily samples for each financial year	< 5 NTU
True colour at clear water tank outlet daily samples	< 10 HU for more than 99% of daily samples for each financial year	< 15 HU
Iron at clear water tank outlet daily samples	< 0.1 mg/L for more than 99% of daily samples for each financial year	< 0.3 mg/L
Manganese at clear water tank outlet daily samples	< 0.02 mg/L for more than 99% of daily samples for each financial year	< 0.1 mg/L
Aluminium at clear water tank outlet daily samples	< 0.18 mg/L for more than 99% of daily samples for each financial year	< 0.2 mg/L
<i>E. coli</i> at Clear Water Tank outlet weekly samples		< 1 MPN / 100ml
Giardia in filtered water periodic samples		< 1 cysts / 100L
Cryptosporidium in filtered water periodic samples		< 1 oocysts / 100L
Other Drinking Water Quality Parameters at clear water tank outlet periodic samples	< ADWG Aesthetic Guideline for more than 99% of periodic samples analysed for water quality parameters with an ADWG aesthetic guideline (other than the other water quality parameters listed within this table) for each financial year	< ADWG Health Based Guideline



Drinking Water Standards

Table 4 – Gresford WTP Drinking Water Quality Target and Critical Requirements

Water Quality Parameter	Target Requirement	Critical Requirement
Filtered water turbidity based on continuous on-line measurement and continuous on-line flow measurement	< 0.2 NTU for more than 95% of flow for each month	< 0.5 NTU – must not exceed 0.5 NTU for > 15 minutes.
Membrane integrity measured by pressure decay	< 5 kPa/min for more than 90% of measurements for each financial year	< 10 kPa/min
Free chlorine concentration x contact time (CT) at first customer from calculation based on continuous on-line data at plant	> 15 min.mg/L for more than 95% of the time for each month	> 4 min.mg/L
Free chlorine residual at the clear water tank inlet measured continuously on-line	> 2 mg/L and < 3 mg/L for more than 95% of the time for each month, and The average residual for each month is > 2.4 mg/L and <2.6 mg/L	> 0.2 and < 5.0 mg/L
Free chlorine residual at the clear water tank inlet 3 times per week samples	> 2 mg/L and < 3 mg/L for more than 98% of samples for each financial year	> 0.2 and < 5.0 mg/L
pH at the clear water tank inlet based on continuous on-line measurement	> 6.7 and < 9 for more than 95% of the time for each month	> 6.5 and < 9.2
pH at the clear water tank outlet 3 times per week samples	> 7 and < 9 for more than 98% of samples for each financial year	> 6.5 and < 9.2
Turbidity at the clear water tank outlet 3 times per week samples	< 1 NTU for more than 98% of samples for each financial year	< 5 NTU



Drinking Water Standards

<i>E. coli</i> at Clear Water Tank outlet weekly samples		< 1 MPN / 100ml
Giardia in filtered water periodic samples		<1 cysts / 100L
Cryptosporidium in filtered water periodic samples		<1 oocysts / 100L
Other Drinking Water Quality Parameters at Clear Water Tank outlet periodic samples	< ADWG Aesthetic Guideline for more than 99% of periodic samples analysed for water quality parameters with an ADWG aesthetic guideline (other than the other water quality parameters listed within this table) for each financial year	< ADWG Health Based Guideline



Drinking Water Standards

Table 5 – Lemon Tree Passage Drinking Water Quality Target and Critical Requirements

Water Quality Parameter	Target Requirement	Critical Requirement
Filtered water turbidity ² (combined filtered) based on continuous on-line measurement and continuous on-line flow measurement	< 0.2 NTU for more than 95% of flow	< 5 NTU
Free chlorine concentration x contact time (CT) at first customer from calculation based on continuous on-line data at plant	> 10 min.mg/L for more than 95% of the time for each month	> 4 min.mg/L
Free chlorine residual at the clear water tank inlet measured continuously on-line	> 0.9 mg/L and < 1.7 mg/L for more than 95% of the time for each month, and The average residual for each month is > 1.2 mg/L and <1.4 mg/L	> 0.25 and < 4.0 mg/L
Free chlorine residual at the clear water tank inlet daily samples	> 1 mg/L and < 1.6 mg/L for more than 99% of daily samples for each financial year	> 0.25 and > 4.0 mg/L
Free chlorine residual at the clear water tank outlet measured continuously on-line		< 3.0 mg/L
pH at the clear water tank outlet measured continuously on-line	> 6.8 and < 8.2 for more than 95% of the time for each month, and The average pH for each month is > 7.4 and < 7.6	> 6.5 and < 9.2
pH at the clear water tank outlet daily samples	> 6.8 and < 8.2 for more than 99% of daily samples for each financial year	> 6.5 and > 9.2
Fluoride concentration at the clear water tank outlet measured Continuously on-line	> 0.9 and < 1.1 mg/L for more than 95% of the time for each month	< 1.5 mg/L



Drinking Water Standards

Fluoride concentration at the clear water tank outlet daily samples	More than 95% of daily fluoride results for the last 12 months (on a rolling basis) must be > 0.9 and 1.5 mg/L	< 1.5 mg/L
Total Alkalinity at pH 4.5 as Calcium Carbonate at Clear Water Tank Outlet daily samples	> 45 and < 62 mg/L, and Average alkalinity of daily samples over month > 56 and < 60 mg/L	> 40 and < 75 mg/L
True colour at clear water tank outlet daily samples	< 5 HU for more than 99% of daily samples for each financial year	< 15 HU
Iron at clear water tank outlet from daily samples	< 0.1 mg/L for more than 99% of daily samples for each financial year	< 0.3 mg/L
Manganese at clear water tank outlet from daily samples	< 0.02 mg/L for more than 99% of daily samples for each financial year	< 0.1 mg/L
Aluminium at clear water tank outlet from daily samples	< 0.15 mg/L for more than 99% of daily samples for each financial year	< 0.2 mg/L
<i>E. coli</i> at Clear Water Tank outlet from weekly samples		< 1 MPN / 100ml
Giardia in filtered water from periodic samples		<1 cysts / 100L
Cryptosporidium in filtered water from periodic samples		<1 oocysts / 100L
Other Drinking Water Quality Parameters at Clear Water Tank outlet periodic samples	< ADWG Aesthetic Guideline for more than 99% of periodic samples analysed for water quality parameters with an ADWG aesthetic guideline (other than the other water quality parameters listed within this table) for each financial year	< ADWG Health Based Guideline



Drinking Water Standards

² for any period of time, except for the following operational exclusions:

- Clearwater pumps stop/start operation & plant restarting causing brief turbidity spike (stirring up lime solids).
- Filter in a backwash cycle causing brief turbidity spike. Backwashing of a roughing filter or a secondary filter may cause turbidity spikes on either or both secondary filters due to flow changes and ripening effects.
- Sample pumps when WTP starts up or sample line cleaned causing brief turbidity meter spike (not representative of treated or filtered water).
- Single SCADA data point



Drinking Water Standards

Table 6 – Nelson Bay WTP Drinking Water Standards Critical Control Points, Target Limits and Critical Limits

Water Quality Parameter	Target Requirement	Critical Requirement
Turbidity at the clear water tank outlet based on continuous on-line measurement	< 1 NTU for more than 99% of flow through the individual filter for each month	< 5 NTU
Turbidity at the clear water tank outlet daily samples	< 1 NTU for more than 99% of daily samples for each financial year	< 5 NTU
Free chlorine concentration x contact time (CT) at first customer from calculation based on continuous on-line data at plant	> 10 min.mg/L for more than 95% of the time for each month	> 4 min.mg/L
Free chlorine residual at the clear water tank inlet based on continuous on-line measurement	> 0.3 mg/L and < 0.9 mg/L for more than 95% of the time for each month, and The average residual for each month is > 0.55 mg/L and < 0.65 mg/L	> 0.2 and < 4.0 mg/L
Free chlorine residual at the clear water tank inlet daily samples	> 0.3 mg/L and < 0.9 mg/L for more than 99% of daily samples for each financial year	> 0.2 and < 4.0 mg/L
pH at the clear water tank inlet measured continuously on-line	> 6.8 and < 8.2 for more than 95% of the time for each month, and The average pH for each month is between 7.3 and 7.5	> 6.5 and < 9.2
pH at the clear water tank outlet daily samples	> 6.8 and < 8.2 for more than 99% of daily samples for each financial year	> 6.5 and < 9.2
Fluoride at the clear water tank inlet measured continuously on-line	> 0.9 and < 1.1 mg/L for more than 95% of the time for each month	< 1.5 mg/L
Fluoride at the clear water tank outlet daily	More than 95% of daily fluoride results for the last 12 months (on a	< 1.5 mg/L



Drinking Water Standards

samples	rolling basis) must be > 0.9 and 1.5 mg/L	
<i>E. coli</i> at clear water tank outlet from weekly samples		<1 MPN / 100ml
Other Drinking Water Quality Parameters at clear water tank outlet periodic sampling	> ADWG Aesthetic Guideline for more than 99% of periodic samples analysed for water quality parameters with an ADWG aesthetic guideline (other than the other water quality parameters listed within this table) for each financial year	< ADWG Health Based Guideline



Drinking Water Standards

[PN111 ends]



PN112 ENVIRONMENTAL PROTECTION CRITERIA

APPLICATION

This Practice Note sets out conditions to be adopted at specific facilities in addition to the EP Licence conditions.

The Service Provider is to use “best endeavours” to meet the effluent concentration and performance targets set out below for Morpeth WWTW.

Morpeth WWTW

Effluent Concentration Performance Targets

Parameter	50 percentile	90 percentile	100 percentile
BOD (mg/L)	4	10	-
TSS (mg/L)	10	20	-
pH	-	-	6.5 – 8.5
TN (mg/L)	8	12	-
TP (mg/L)	1.5	3	-
Faecal coliforms (cfu/100 mL)	40	500	-

Effluent Load Performance Targets

	Load (kg/y)
BOD	45,620
TSS	81,010
TN	49,505
TP	9,369
O&G	15,854

Shortland WWTW

Faecal coliform limit: <200 cfu/100mL (90th percentile) (Conditions of Consent, C20/9520 vol 1).

Free Cl residual: 2 mg/L with 2 hour contact time (ref: revised concept design, SKM 1996)

Shortland Dechlorination

Free Cl at Hunter River: No free chlorine in discharge to Hunter River.



PN201 WATER QUALITY INCIDENT NOTIFICATION

Application and Definition

It is a requirement of the Operating Licence that Hunter Water immediately notify NSW Health of any incident in the delivery of Hunter Water's services which may adversely affect public health.

It is the Service Provider's responsibility to immediately notify Hunter Water of any water quality incident. Hunter Water will then prepare and forward notification reports to NSW Health. The Service Provider is to provide Hunter Water with all necessary assistance that Hunter Water requires within the time Hunter Water requires in order for Hunter Water to prepare and forward any notification reports to NSW Health.

For the purposes of this document **incident** is defined as an exceedance of the criteria listed in the following documents:

- a) Drinking Water Quality - Criteria for Notification to NSW Health HW2006-2096/4/6.008; or
- b) Recycled Water Quality Incident Response Standard Operating Procedure HW2008-1592/8/2.002.

Notification Procedure

The Service Provide must comply with the following requirements:

a) NOTIFY:

i) Drinking Water

The Service Provider must immediately notify the Water Quality Engineer Treatment Operations by phone (refer [Hunter Water Contacts](#) list at PN001) of a water quality incident where the drinking water quality criteria for notification to NSW Health is exceeded (refer to HW2006-2096/4/6.008 Drinking Water Quality - Criteria for Notification to NSW Health). If the Water Quality Engineer cannot be contacted (a voice message is not adequate) work down the [Hunter Water Contacts](#) list until direct contact has been made; or

ii) Recycled Water

The Service Provider must immediately notify the appropriate [Hunter Water Recycled Water Contact](#) by phone and emailing

████████████████████ of a water quality incident where the recycled water quality criteria for notification to NSW Health is exceeded (refer to Appendix 2 of Recycled Water Quality Incident Response Standard Operating Procedure). After business hours the Service Provider is responsible for notifying the



Water Quality Incident Notification

reuse customers directly of a likely impact on reuse quality. The Service Provider is also required to notify the After Hours Officer (refer to the [Hunter Water Contacts](#) list)

- b) DOCUMENT: Maintain an Incident Log
 - i) The Service Provider must maintain accurate diary records of events (eg: communications and actions) during the incident until the incident is officially called off by Manager Treatment Operations.
 - ii) Copies of diary records must be submitted to Manager Treatment Operations on request by Hunter Water or the Manager Treatment Operations.
- c) REPORT: A brief report is to be prepared as soon as possible and emailed to the Water Quality Engineer Treatment Operations (drinking water) or [REDACTED] (recycled water). The report is to contain details of the location and date of the incident, the relevant parameter/s, the criteria for notification to NSW Health (e.g. allowable limit exceeded) and relevant water quality and flow data. The duration of the incident and actions taken are also to be included. This information will be used by Hunter Water to prepare the notification to NSW Health and so must be provided as soon as possible following the incident. Links to NSW Health proforma notification documents are included in the document Drinking Water Quality - Criteria for Notification to NSW Health.
- d) COLLATE: Collect and provide to Hunter Water any further data requested including additional sampling to enable NSW Health to assess the potential impact on public health.
- e) INVESTIGATE: Undertake root cause analysis to identify the cause of the incident. Submit a report to the Water Quality Engineer Treatment Operations (drinking water) or [REDACTED] (recycled water) within the agreed [REDACTED] incident summarising the results of the root cause analysis and outlining actions required to prevent or minimise recurrence. Submit an Asset Deficiency Notice (Refer PN205) if required.

References

HWC Operating Licence 2012-2017 hunterwater.com.au/Resources/Documents/Legislation-and-Governance/Operating-Licence.pdf (Refer Section 8.2: Reporting)

HWC Operating Licence Reporting Manual 2012-2017 (HW2010-2072/13/5.002) Refer Section 2.3.1 NSW Health Reporting

Drinking Water Quality - Criteria for Notification to NSW Health (HW2006-2096/4/6.008)



Water Quality Incident Notification

Recycled Water Quality Incident Response Standard Operating Procedure (HW2008-1592/8/2.002)

Recycled Water Quality Monitoring and Communication Business Rules HW2008-1592/6/1.019

The Water Quality Management and Exceptions intranet page



HWA SOP DQS0021 Notification of Water Quality Problems

[PN201 ends]



PN202 EP LICENCE NON-CONFORMANCE NOTIFICATION

Application and Definition

The POEO Act as well as the various EP Licences requires that Hunter Water report to the EPA and other Authorities any:

- a) incidents causing or threatening material harm to the environment,
- b) licence non-compliances, and
- c) bypass or overflow incidents that are likely to cause a significant risk to public health.

It is the Service Provider's responsibility to notify Hunter Water of any of the events listed above. Hunter Water will then prepare and forward notification reports if required to the relevant authorities.

Notification Procedure

Incidents causing or threatening material harm to the environment

- a) NOTIFY: The Service Provider must immediately notify Hunter Water of any incidents causing or threatening material harm to the environment. Follow the procedure in [Practice Note PN204](#).

Licence Non-Compliances

- a) NOTIFY: If the licence non-compliance does not relate to an environmental incident or pose a significant risk to public health, the Service Provider must notify the Process Engineer - Wastewater as soon as possible. If the Process Engineer – Wastewater cannot be contacted within a reasonable timeframe refer to the [Hunter Water Contacts](#) list and work down the list.
- b) REPORT: A brief report is to be prepared within 24 hours and emailed to the Process Engineer - Wastewater. The report is to contain details of the Licence number, location, date of the non-compliance, the relevant licence limit and test results. Any actions taken are also to be included in the report.

Include any non-compliance in the Annual Return for the relevant licence.

- c) INVESTIGATE: Undertake root cause analysis to identify the cause of the incident. Submit a report within the agreed timeframe (7 days unless agreed otherwise) of the incident summarising the results of the root cause analysis and outlining actions required



EP Licence Non-Conformance Notification

to prevent or minimise recurrence. Submit an Asset Deficiency Notice (Refer PN205) if required.

Bypass or overflow incidents that are likely to cause a significant risk to public health

- a) **NOTIFY:** The Service Provider must immediately notify the Process Engineer - Wastewater by phone. If they cannot be contacted immediately (a voice message is not adequate), refer to the [Hunter Water Contacts](#) list (refer PN001) and work down the list until direct contact has been made.
- b) **REPORT:** A brief report is to be prepared as soon as possible and emailed to the Process Engineer - Wastewater. The report is to include:
 - i) the Licence number, location, date and duration of the incident;
 - ii) the nature of the incident that led to the bypass;
 - iii) the type, volume and concentration of every pollutant discharged as a result of the event;
 - iv) any testing or inspections of the discharge or receiving waters that have been carried out;
 - v) any testing or inspections currently occurring and when results are anticipated; and
 - vi) any other available information regarding harm or potential harm to the environment

This information will be used by Hunter Water to prepare the notification to the relevant Authorities and so must be provided without delay following the incident.

- c) **COLLATE:** Collect and provide to Hunter Water any further data requested including additional sampling to enable NSW Health to assess the potential impact on public health.
- d) **INVESTIGATE:** Undertake root cause analysis to identify the cause of the incident. Submit a report within the agreed timeframe (7 days unless agreed otherwise) of the incident summarising the results of the root cause analysis and outlining actions required to prevent or minimise recurrence. Submit an Asset Deficiency Notice (Refer PN205) if required.

[PN202 ends]



Recycled Water Interruption Notification

PN203 RECYCLED WATER INTERRUPTION NOTIFICATION

Application and Definition

Hunter Water has entered into agreements with various customers for the supply of Recycled Water. Hunter Water is required to advise these customers if there is an interruption to the planned supply.

It is the Service Provider's responsibility to notify Hunter Water as soon as possible of any water quality or process issues which may interrupt the supply of recycled water. Hunter Water will then notify and provide updates to the affected customer in accordance with the individual recycled water customer agreement.

Notification Procedure

- a) NOTIFY: The Service Provider must notify Hunter Water as soon as possible of any incident likely to interrupt the supply of recycled water by emailing [REDACTED]. Advise the cause of the incident and likely duration of the interruption. If the incident occurs after hours the Service Provider is responsible for contacting the affected reuse customers directly. The Service Provider is also required to notify the After Hours Officer (refer to the [Hunter Water Contacts](#) list).

If the issue relates to recycled water quality that may impact public health, the Service Provider must advise the appropriate [Hunter Water Recycled Water Contacts](#) immediately by phone (Refer to Practice Note PN201).

- b) REPORT: A brief report is to be prepared by the Service Provider as soon as possible and emailed to the Recycled Water Team Leader. The report is to contain details of the location and date of the incident, the cause of the interruption and any test results. The duration of the incident and actions taken are also to be included.
- c) INVESTIGATE: The Service Provider must undertake root cause analysis to identify the cause of the incident. The Service Provider must submit a report within 2 weeks of the incident summarising the results of the root cause analysis and outlining actions required to prevent recurrence. Submit an Asset Deficiency Notice (Refer PN205) if required.

[PN203 ends]



Safety and Environmental Incident Notification

PN204 SAFETY AND ENVIRONMENTAL INCIDENT NOTIFICATION**Application and Definition**

Legislation (including the WHS Act and the PEO Act) requires immediate notification of certain safety and environmental incidents.

The Service Provider is to report all safety incidents to Hunter Water (and NSW WorkCover if a notifiable incident), and all environmental incidents to Hunter Water who will then notify the appropriate authorities.

Notifiable incident means:

- a) the death of a person;
- b) a serious injury or illness of a person; or
- c) a dangerous incident.

As defined in the [WHS Act](#).

Notification Procedure**Safety Incidents**

- a) NOTIFY: **Report ALL Incidents ASAP, except first aid incidents but including high potential near misses**

Report all notifiable incidents IMMEDIATELY

The Service Provider is to report all incidents, except for first aid incidents, by phone to Manager Treatment Operations (refer PN001 Contacts). If Manager Treatment Operations cannot be contacted (a voice message is not adequate) work down the Contacts list (refer PN001) until direct contact has been made.

The Service Provider is to also report all incidents by text message (SMS), except for first aid incidents, to each of the following Hunter Water personnel:

- i) Collaborative Management Group – Treatment Operations Contract
- ii) Manager Treatment Operations
- iii) Manager System Operations
- iv) Chief Operating Officer
- v) WHS Adviser – Contracts (Rob Watt)

Refer to [Contacts List](#) in PN001 for phone numbers for the above personnel.

Text message is to include:



Safety and Environmental Incident Notification

- i) Name of Service Provider
 - ii) Date and time of incident
 - iii) Location of incident
 - iv) Brief description of incident
 - v) Brief description of response / next steps (including which Hunter Water representative has been contacted by phone)
- b) DOCUMENT: Maintain an Incident Log
- i) The Service Provider must maintain accurate diary records of events (eg: communications and actions) during the incident until the incident is officially called off by Manager Treatment Operations.
 - ii) Copies of diary records must be submitted to Manager Treatment Operations on request
- c) REPORT: Submit copies to Manager Treatment Operations of any documents provided to NSW WorkCover Authority in relation to a Notifiable Incident. Supply a detailed report on the safety incident within twenty four hours.
- d) INVESTIGATE: Record, investigate and analyse all incidents, work related illnesses and injuries and their causes in consultation with workers and their supervisors to bring about improvements in policies, standards, procedures, processes and work practices. Submit a written report detailing the investigation, analysis and proposed corrective actions within 5 Business Days of the incident.

Environmental Incidents

- a) NOTIFY: **Report ALL Incidents ASAP**

Report ALL Pollution incidents causing or threatening material harm to the environment IMMEDIATELY

The Service Provider is to report all incidents by phone to either the Process Engineer-Wastewater, Treatment Operations Engineer or Water Quality Engineer (refer PN001 Contacts). If direct contact is not successful (a voice message is not adequate) work down the Contacts list (refer PN001) until direct contact has been made.

The Service Provider is to also report all incidents by text message (SMS) to each of the following Hunter Water personnel:

- i) Collaborative Management Group - Treatment Operations Contract
- ii) Manager Treatment Operations
- iii) Manager System Operations
- iv) Chief Operating Officer
- v) Manager Environment & Sustainability (Angus Seberry)



Safety and Environmental Incident Notification

Refer to [Contacts List](#) in PN001 for phone numbers for the above personnel.

Text message is to include:

- i) Name of Service Provider
 - ii) Date and time of incident
 - iii) Location of incident
 - iv) Brief description of incident
 - v) Brief description of response / next steps (including which Hunter Water representative has been contacted by phone)
- b) DOCUMENT: Maintain an Incident Log
- iii) The Service Provider must maintain accurate diary records of events (eg: communications and actions) during the incident until the incident is officially called off by Manager Treatment Operations.
 - iv) Copies of diary records must be submitted to Manager Treatment Operations on request.
- c) REPORT: Supply a detailed report on the environmental incident within twenty four hours of the incident.
- d) INVESTIGATE: Undertake root cause analysis to identify the cause of the incident. Submit a report within 5 Business Days of the incident summarising the results of the analysis and outlining actions required to prevent recurrence.

Emergency Services or Media Interest

The Service Provider is to report all incidents (safety, environmental or other), leading to interest by Emergency Services or Media, by phone to Manager Treatment Operations (refer PN001 Contacts). If Manager Treatment Operations cannot be contacted (a voice message is not adequate) work down the Contacts list (refer PN001) until direct contact has been made.

[PN204 ends]



PN205 ASSET DEFICIENCY NOTIFICATION

Application and Definition

The Service Provider is to notify Hunter Water of any asset or process in a Facility that is considered to be deficient. Hunter Water will assess the issue raised and confirm the action to be taken.

Deficient means:

- a) the asset or process in a Facility is inadequate to enable the Service Provider to meet this Agreement's requirements, or
- b) there is a potential to improve the performance of the asset or process in a Facility.

Notification Procedure

The Service Provider must:

- a) **NOTIFY:** Notify Hunter Water of any asset that is considered to be deficient. Provide the notification to both Manager Treatment Operations and Manager Asset Management by email.
- b) **REPORT:** Following discussions with Hunter Water submit a brief report detailing:
 - i) Which asset/s are deficient including site, location, asset name and number ;
 - ii) Why the asset is considered to be deficient;
 - iii) The impact of the deficiency on the ability to fulfil the contract requirements;
 - iv) The available options and proposed solution;
 - v) Any other information which Hunter Water has requested.

[PN205 ends]



PN206 ABNORMAL INFLOW NOTIFICATION

Application

The Service Provider is to notify Hunter Water of any abnormal inflows to a treatment plant. This information is important as it may assist with the identification of a system operation issue (eg: low influent flow may indicate a rising main break).

Notification Procedure

The Service Provider is to notify Manager Network Operations by phone immediately on becoming aware of any abnormal inflows to a treatment plant. If Manager Network Operations cannot be contacted (a voice message is not adequate) work down the [Hunter Water Contacts](#) list until direct contact has been made.

[PN206 ends]



Controlling WTP Raw and Treated Water Flow Rates

PN301 CONTROLLING WTP RAW AND TREATED WATER FLOW RATES

Application

The Service Provider must notify Hunter Water of any required temporary or ongoing changes to the raw or treated water flow rates at a water treatment plant.

Changes required by Service Provider

1. Planned Work

- a) If the Service Provider requires the raw or treated water flow rate at a water treatment plant to be varied they must submit a written request to Hunter Water's Manager Network Operations a minimum of 2 weeks prior to the proposed change. The request is to include the following information:
 - i) What change the Service Provider is requesting (eg: to reduce the flow rate of treated water from Dungog WTP)
 - ii) The reason for the request (eg: repair, scheduled maintenance, power outage etc)
 - iii) The timing of the change including:
 - Date/s
 - Time of day
 - Expected duration
 - iv) The expected impact of the change on water supply and how compliance with Operating Licence conditions will be ensured (eg: volume limit and treatment conditions).
 - v) Any measures that will be taken by the Service Provider to minimise the impact of the change
 - vi) Any measures required to be taken by Hunter Water to minimise the impact of the change
 - vii) Any particular actions by Hunter Water (eg: isolation of Tomago Water Pump Station)
- b) Hunter Water will review the request, advise if approved and provide any conditions that apply to the approval. (Note: the approval conditions may include the ability for Hunter Water to cancel the work at short notice based on system operation requirements). Allow 5 Business Days for Hunter Water approval.



Controlling WTP Raw and Treated Water Flow Rates

- c) Prior to commencing work the Service Provider is to submit a work plan to Hunter Water for its approval showing how the work will be completed and addressing the Hunter Water approval conditions. The work plan is also to include a contingency plan detailing the actions required to be taken if the work does not go as planned. This must include how the water treatment plant will be returned to full capacity and the expected time this would take.

2. Urgent Work

In the event that urgent work is required, the Service Provider is to provide the notification to Manager Network Operations or the Duty Officer as soon as possible. If the incident occurs after hours contact the After Hours Officer (refer to the Hunter Water Contacts list in PN001).

If the urgent work is a result of a water quality incident also refer to PN201 Water Quality Incident Notification.

Changes required by Hunter Water

3. If Hunter Water requires the raw or treated water flow rate at a plant to be varied, written notification will be provided to the Service Provider:
 - a) a minimum of 2 weeks prior to the proposed change for planned work, or
 - b) as soon as possible for urgent work.

The notification is to include the information listed in items 1(a) above. Hunter Water will work with the Service Provider to determine what actions are required to manage the change and maintain compliance with the Operating Licence conditions.

The Service Provider must comply with the Hunter Water notification.

[PN301 ends]



PN302 CONTROLLING WWTW INFLUENT RATES

Application

The Service Provider must notify Hunter Water of any required temporary or ongoing changes to the influent flow rate at a wastewater treatment plant. Compliance with Environment Protection Licences must be maintained at all times.

Changes required by the Service Provider

1. Planned Work

- a) If the Service Provider requires the influent flow rate at a wastewater treatment plant to be varied they must submit a written request to Manager Network Operations a minimum of 2 weeks prior to the proposed change. The request is to include the following information:
 - i) What change the Service Provider is requesting
 - ii) The reason for the request (eg: repair, scheduled maintenance, power outage etc)
 - iii) The timing of the change including:
 - Date/s
 - Time of day
 - Expected duration
 - iv) The expected impact of the change and how compliance with EP Licence Conditions will be ensured (eg: volume limit and treatment conditions if applicable).
 - v) Any measures that will be taken by the Service Provider to minimise the impact of the change
 - vi) Any measures required to be taken by Hunter Water to minimise the impact of the change
 - vii) Any particular actions by Hunter Water (eg: isolation of upstream pump stations)
- b) Hunter Water will review the request, advise if approved and provide any conditions that apply to the approval. (Note: the approval conditions may include the ability for Hunter Water to cancel the work at short notice based on system operation requirements/wet weather). Allow 5 Business Days for Hunter Water approval.



Controlling WWTW Influent Rates

- c) Prior to commencing work the Service Provider is to submit a work plan to Hunter Water for its approval showing how the work will be completed and addressing the Hunter Water approval conditions. The work plan is also to include a contingency plan detailing the actions required to be taken if the work does not go as planned. This must include how the wastewater treatment plant will be returned to full capacity and the expected time this would take.

2. Urgent Work

In the event that urgent work is required, the Service Provider is to provide the notification to Manager Network Operations or the Duty Officer as soon as possible. If the incident occurs after hours contact the After Hours Officer (refer to the [Hunter Water Contacts](#) list in PN001).

Note that if the urgent work is a result of an environmental incident immediate notification of the incident is required. Refer to PN204 Safety and Environmental Incident Notification.

Changes required by Hunter Water

3. If Hunter Water requires the influent flow rate at a plant to be varied, written notification will be provided to the Service Provider:
 - a) a minimum of 2 weeks prior to the proposed change for planned work, or
 - b) as soon as possible for urgent work.

The notification is to include the information listed in items 1(a) i) to vii) above. Hunter Water will work with the Service Provider to determine what actions are required to manage the change and maintain compliance with the EP Licence conditions.

The Service Provider is to comply with the Hunter Water notification.

[PN302 ends]



Controlling Effluent and Recycled Water Flow Rates

PN303 CONTROLLING EFFLUENT AND RECYCLED WATER FLOW RATES

Application

The Service Provider must notify Hunter Water of any required temporary or ongoing changes to the effluent or recycled water flow rate at a wastewater treatment plant. Compliance with EP Licence must be maintained at all times.

Changes required by Service Provider

1. Planned Work

- a) If the Service Provider requires the effluent or recycled flow rate at a wastewater treatment plant to be varied they must submit a written request to Manager Treatment Operations (for effluent flow rates) or recycledwaternotifications@hunterwater.com.au (for recycled water) a minimum of 2 weeks prior to the proposed change. The request is to include the following information:
 - i) What change the Service Provider is requesting
 - ii) The reason for the request (eg: repair, scheduled maintenance, power outage etc)
 - iii) The timing of the change including:
 - Date/s
 - Time of day
 - Expected duration
 - iv) The expected impact of the change, how compliance with applicable licence conditions will be ensured (eg: volume limit and treatment conditions) and impacts for reuse customers.
 - v) Any measures that will be taken by the Service Provider to minimise the impact of the change
 - vi) Any measures required to be taken by Hunter Water to minimise the impact of the change
 - vii) Any particular actions by Hunter Water
- b) Hunter Water will review the request, advise if approved and provide any conditions that apply to the approval. (Note: the approval conditions may include the ability for Hunter Water to cancel the work at short notice based on system operation requirements/wet weather). Allow 5 Business Days for Hunter Water approval.



Controlling Effluent and Recycled Water Flow Rates

- c) Prior to commencing work the Service Provider is to submit a work plan to Hunter Water for its approval showing how the work will be completed and addressing the Hunter Water approval conditions. The work plan is also to include a contingency plan detailing the actions required to be taken if the work does not go as planned. This must include how the wastewater treatment plant will be returned to full capacity and the expected time this would take.

2. Urgent Work

In the event that urgent work is required, the Service Provider is to provide the notification to Manager Treatment Operations or the Duty Officer (for effluent) or recycledwaternotifications@hunterwater.com.au (for recycled water) as soon as possible. If the recycled water flow rate is affected after hours the Service Provider is responsible for contacting the affected reuse customers directly and also notifying Hunter Water's After Hours Officer (refer to the Hunter Water Contacts list).

Note that if the urgent work is a result of an environmental incident, immediate notification of the incident is required. Refer to PN204 Safety and Environmental Incident Notification.

Changes required by Hunter Water

3. If Hunter Water requires the effluent or recycled water flow rate at a plant to be varied, written notification will be provided to the Service Provider:
 - a) a minimum of 2 weeks prior to the proposed change for planned work, or
 - b) as soon as possible for urgent work.

The notification is to include the information listed in items 1(a) i) to vii) above. Hunter Water will work with the Service Provider to determine what actions are required to manage the change and maintain compliance with the EP Licence conditions.

The Service Provider is to comply with the Hunter Water notification.

[PN303 ends]



PN304 ON-SITE STORAGE OF BIOSOLIDS

Application

This Practice Note sets out the requirements for the management and on-site storage of biosolids at wastewater treatment plants.

Background

The Environment Protection Licences issued for Hunter Water's Wastewater Treatment Works include the standard Operational Condition that biosolids at the premises must be stored, treated, processed, classified, transported and disposed in accordance with the Biosolids Guidelines, or as otherwise approved in writing by the EPA.

The Service Provider is required to comply with all requirements of the relevant Environment Protection Licences, the EPA document Environmental Guidelines: Use and Disposal of Biosolids Products, and the Protection of the Environment Operations Act.

References

Protection of the Environment Operations Act 1997 (POEO Act)

<http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N>

Environmental Guidelines: Use and Disposal of Biosolids Products (EPA)

<http://www.environment.nsw.gov.au/resources/water/BiosolidsGuidelinesNSW.pdf>

EPA POEO Public Register (search for licences) epa.nsw.gov.au/prpoeoapp/

Process

- a) For biosolids that are produced as part of the normal wastewater treatment process at the site the Service Provider must:
 - i) Store the biosolids in accordance with the Environmental Guidelines: Use and Disposal of Biosolids Products (Refer to Section 5: Disposal of Biosolids Products – note the title of this section is incorrectly marked as section 4 in the Guidelines)
 - ii) Keep Hunter Water informed on the volume of biosolids on site and the estimated number of days' storage remaining.
 - iii) Take samples in accordance with the Environmental Guidelines: Use and Disposal of Biosolids Products (Refer to Section 3: Classification of Biosolids Products) and facilitate testing of the biosolids (by others) to enable grading and classification.



On-Site Storage of Biosolids

- iv) Maintain records and provide reports as required by the Environmental Guidelines: Use and Disposal of Biosolids Products (refer Section 4.6 Record Keeping and Information Transfer)
 - v) Dispose of the biosolids off site in accordance with clause 6.4 Biosolids Reuse and Disposal.
- b) From time to time biosolids from other sources may need to be received and stored at a wastewater treatment works site. Biosolids may be required to be relocated from one Hunter Water Wastewater Treatment Works site to another (eg: as a result of temporary changes during upgrades of a wastewater treatment works) or be received as a result of an environmental incident off-site (eg: a sewage spill on to soil may be classed as biosolids by the EPA). In these cases the imported biosolids may need to be blended with on-site biosolids prior to reuse.

On-Site Storage Facilities

Hunter Water will consider suggestions from the Service Provider for the improvement of the on-site biosolids storage facilities at a treatment plant. The Service Provider should submit an Asset Deficiency Notification (refer PN205) to Hunter Water providing details of the suggestion.

[PN304 ends]



PN307 TANKER MANAGEMENT

Application

This Practice Note sets out the requirements for the management of liquid waste tankers that are permitted by Hunter Water to discharge at the WWTWs.

Information

During the Transition Period, Hunter Water shall supply the Service Provider with up to date details of the tanker companies that are permitted to discharge liquid waste at the WWTW and the relevant conditions of their permits.

Process

The Service Provider must:

- a) Only allow tankers to discharge waste at the inlet works and in the presence of the Service Provider.

To facilitate this it is *suggested* that the Service Provider develop an on-line booking system identifying time slots at each WWTW available for tanker discharge. Hunter Water would cooperate in communicating this to tanker operators as a requirement and provide a link from Hunter Water's website.

- b) The Service Provider must take a sample from each tanker load discharged. Samples must be labelled to identify time and date of discharge and tanker operator.
- c) A process of selecting random samples for analysis will be agreed between Hunter Water and the Service Provider (and recorded in this Practice Note), or, if agreement cannot be reached within 10 Business Days of Hunter Water first proposing a process, as directed by Hunter Water. Analysis shall be at Hunter Water's expense. Other samples must be kept until the Service Provider is confident that the load relating to the sample has not had an adverse impact on the treatment process.
- d) The Service Provider must submit details weekly of each load discharged including:
 - (i) name of tanker company
 - (ii) date and time of discharge
 - (iii) type of waste (eg. septic tank sludge)
 - (iv) amount



- (v) docket number and any other relevant information from the docket

[PN307 ends]

**Shortland WWTW Sludge Dewatering****PN308 SHORTLAND WWTW SLUDGE DEWATERING**

Flow from Newcastle 10 Wastewater Pumping Station has been diverted to Shortland WWTW to meet the expected demand for effluent from Mayfield West AWTP under the Kooragang Industrial Water Scheme. The Shortland WWTW sludge management system will be operating at full capacity until upgrade works are commissioned.

An Interim Sludge Management Operational Plan (see attached) has been adopted to address the additional load on the sludge management system until commissioning of the upgrade planned for 2016.

The Service Provider must advise Hunter Water before diverging from the attached plan and shall carry all risk associated with doing so.

Memorandum

6/11/2013

To Robert De Boos Hunter Water
Rennie Ferguson Hunter Water

Prepared By Michael Collins Hunter Water Australia
Reviewed By Robert Deboos Hunter Water Corporation

Issue Final

Subject Shortland WWTW Interim Sludge Dewatering Operational Plan

Introduction

Shortland Wastewater Treatment Works (WWTW) sludge management system is operating at its capacity. The WWTW is required to service additional flows to meet the effluent demand of the new Kooragang Industrial Water Scheme (KIWS) likely to be commissioned in early 2014. Hunter Water plans to upgrade the sludge management system, however, the upgrade works will not be commissioned until 2016. Hunter Water engaged HWA to develop an interim sludge management strategy to minimise the compliance risks at both plants in the interim period (2014-16) until the planned upgrade works have been completed.

HWA developed a range of 14 interim sludge management options to assist in the development of an interim sludge management strategy. These options were presented in a separate "Shortland WWTW Interim Sludge Dewatering Options" technical memorandum. The developed options were also presented to Hunter Water at a workshop held on 20th September 2013 where a preferred plan was formulated based on a range of financial and non-financial criteria.

The purpose of this memorandum is to present a high level overview of the interim sludge dewatering operational plan.

Interim Sludge Management Operational Plan

The preferred interim plan was agreed in the workshop held on 20th September 2013. The plan consists of a main component with two levels of contingency to provide adequate operational flexibility in the event of unanticipated events. The key elements of the interim plan are:

1. Main component – increased contract dewatering
2. Supplementary components – increase the time between contract dewatering by:
 - a. Recuperative thickening
 - b. Transporting sludge to other treatment plants
3. Final Redundancy – cease diversion of additional flows to Shortland WWTW.

The details of each component are presented below.

Main Component

The main component of the interim plan involves expanding the existing contract dewatering approach, whereby the waste activated sludge would continue to be discharged to the lagoons to maintain required sludge inventories within the reactors.

Under this arrangement, a contractor periodically dredges and dewateres each lagoon utilising their own equipment, with generated biosolids stockpiled on site. A contracted transport company then transports the stockpile to a reuse area, where a third contractor is responsible for utilising the biosolids for their preferred reuse application (as per the current arrangement).

The increased loads will result in reduced storage and more frequent lagoon dewatering (this is because the solids load delivered to the lagoons will approximately double). Figure 1 shows the estimated filling and retention time for each lagoon (assuming a dewatering time of 1 month).

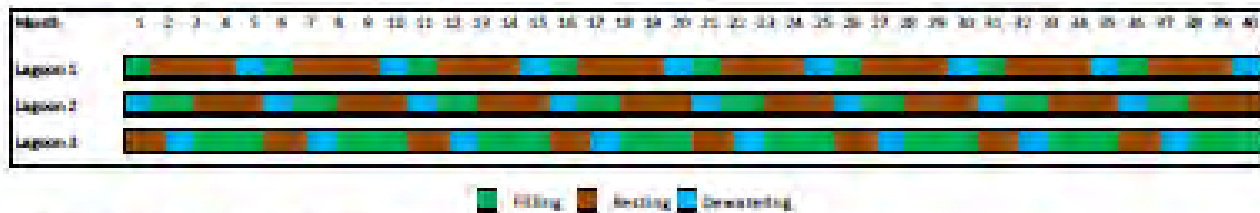


Figure 1 Adopted Sludge Lagoon Operating Principal

As evident from above, the sludge lagoons vary in retention time from 1.5 and 3.5 months due to their different operational volumes. The post filling, stabilisation time will be less than the 6 months required to automatically qualify for Grade B stabilisation under the NSW EPA Biosolids Guidelines. The dewatered biosolids will be less stable than that currently produced, which may make it unfeasible to stockpile onsite prior to transport due to increased odour generation potential. This may increase the transport costs, as sludge will have to be immediately moved offsite (i.e. sludge dewatered directly into an awaiting trailer). However, the sludge will have undergone at least 45 days anaerobic digestion and will be less odorous than Grade C biosolids (that produced from Edgeworth WWTW). The feasibility of onsite stockpiling will not be known until the sludge has been dewatered for the first time (it is possible that sludge produced from lagoons 1&2 can be stockpiled but not from lagoon 3). An allowance for increased handling costs has been made within the budget estimates.

The current dewatering contractors have indicated they can dewater the required sludge within approximately 20 weeks per year. They are proposing that a centrifuge and associated equipment will be dedicated to Hunter Water sites such that when the gear is not required at Shortland it can process other Hunter Water sites, whilst still being readily available for Shortland WWTW. This approach represents a small risk that equipment will not be immediately available as needed, this risk can be removed by paying a substantial retainer to base the centrifuge at Shortland WWTW full time. It is assumed that the existing transport and reuse contracts can be expanded to accommodate the additional biosolids. Centrate generated from the process will be directed to the existing supernatant pump station to be returned to the inlet works.

Supplementary Component

If there is an issue with the main approach, it may be necessary to temporarily implement a supplementary approach to defer contract dewatering until the issue is resolved (i.e. extended wet weather, equipment failure). Two options have been selected.

- a. Recuperative thickening
- b. Transporting sludge to other treatment plants.

Recuperative Thickening

If sludge within the lagoons is thickened beyond that occurring via gravity, dewatering can be deferred due to an increased retention time. This provides additional storage time such that the main approach can be restored.

Recuperative thickening involves drawing sludge from the lagoons at approximately 3 – 3.5% and running it through a centrifuge to increase the concentration up to 5.5 - 6% before returning it to the same lagoon. To maximise thickening efficiency, a lagoon should be thickened during the fill cycle, when it is approaching capacity (i.e. when the lagoon is full of solids following unassisted gravity settling). This approach removes close to 40% of the liquid volume and provides additional storage within the lagoons. Dewatering contractors have indicated that they can use the same centrifuge to undertake recuperative thickening if it is available. They would however need to modify the discharge conveyor and include a secondary pumping station to return the thickened sludge into the lagoon. Following thickening,

additional WAS can be added to the lagoon without exceeding lagoon capacity. Once the lagoon is full (for a second time) the solids are dewatered as per the main approach.

As the solids generated by the centrifuge during thickening operations are returned directly to the lagoons, the process is not severely impacted by extended wet weather. This is because heavy vehicle access and exposed stockpile areas do not have to be maintained (as during centrifuge dewatering operations). Recuperative thickening therefore provides an opportunity to defer dewatering if unfavourable climatic conditions prevail, by storing additional sludge within the lagoons until dewatering can recommence. The increased retention time will also produce more stable sludge that may resolve issues associated with onsite stockpiles (in the event odour issues arise).

It is important to note that as the sludge becomes thicker it is more difficult to extract. The dewatering process is likely to take longer (additional 1 – 2 weeks) and require significant dilution water so that the sludge can be fed to the centrifuge. There is an existing 100mm recycled water main at the dewatering pad that is used for lagoon dilution (it is possible to supply this main with potable water if required for polymer solution makeup). As this service is sufficient for current dewatering practices, it has been assumed that no upgrade is required. The additional time to dewater the lagoons increases the costs associated with this approach and an allowance has been made within the budget estimates.

Discussions with dewatering contractors have indicated that blending polymer with WAS as it enters the lagoon is often able to increase final solids concentrations (i.e. assists the efficiency of gravity settling). An allowance has been made to trial this approach with the use of a small polymer emulsion dosing system directly on the WAS line. This may increase lagoon retention time without the need to run a thickening centrifuge.

Sludge Transport

If the contractor's centrifuge equipment cannot be used (i.e. breakdown or extended wet weather), the sludge can be effectively managed by transporting all or a fraction of the WAS to different WWTW's (transporting all of the generated sludge equates to approximately 300 kL/day). An assessment of potential discharge locations has identified that sludge can be accepted at the following locations:

- Burwood Beach WWTW – Minimal operational impact provided transfer does not occur during significant wet weather events.
- Belmont WWTW – Requires extended operational hours but is not influenced by wet weather
- Edgeworth WWTW – Process modifications required to reduce sludge age – longer operational hours required.

It is possible to distribute the sludge between each of the locations to limit the operational impacts on individual plants. To minimise transport costs, the sludge will be extracted from the reactors during the decant phase to maximise solids content (i.e. the sludge is thickest during the decant phase). Previous modifications made to the Mixed Liquor Return (MLR) pipework as part of an inlet works odour control trial allow the tankers to be filled with the existing MLR pumps (pipework and fittings are available onsite to run mixed liquor as far as the inlet works). Utilisation of the MLR pumps over the WAS pumps has the added advantage that the MLR suction pipework includes a diffused pipe running the length of the reactor that should reduce the risk of effluent short-circuiting to the pump suction (i.e. effluent 'ratholing' through the thickened sludge and diluting the transported sludge). This approach has been confirmed with tanker companies and allows for a much shorter fill time. It is assumed that the tankers will discharge via gravity (with the assistance of on-board pumps) at the receival locations. The attached sketches show the proposed discharge location at each of the receival plants and Shortland WWTW MLR modifications. Discharge location pipework will consist of fixed DN150 PVC pipe fitted with a 'kamlock' fitting. An allowance has been made for pipework modifications at Shortland WWTW and the discharge locations within budget estimates.

Logistically, the tankers can only withdraw when one of the IDEA tanks is in the decant phase which represents 50% of the time. In a worse case scenario, where the sludge lagoons cannot accept any of the waste sludge, tankers are required to transport approximately 300 kL of thickened sludge per day

(solids thicken to approximately 0.8%). Tanker companies have indicated that rigs transporting the sludge will most likely have a capacity of 21 kL each. A plan has been developed based on a 10 hour, 7 day week utilising 3 tankers. Table 1 summarises the logistic associated with transporting Shortland WWTW WAS and highlights the distinct periods available for extraction as a result of the cyclic nature of the reactors.

Table 1 Logistic Summary for Tankering WAS from Shortland WWTP

Hour	IDEA 1 Phase	IDEA 2 Phase	Tanker Movements	Volume
1	Decant	Aerate	Extraction & Delivery	63 kL
2	Aerate	Settle	Discharge & Return	0
3	Aerate	Decant	Extraction & Delivery	63 kL
4	Settle	Aerate	Discharge & Return	0
5	Decant	Aerate	Extraction & Delivery	63 kL
6	Aerate	Settle	Discharge & Return	0
7	Aerate	Decant	Extraction & Delivery	63 kL
8	Settle	Aerate	Discharge & Return	0
9	Aerate	Decant	Extraction & Delivery	63 kL
10	Settle	Aerate	Discharge & Return	0
			TOTAL	315 kL

Analysis of the MLR pump curve has indicated that the each tanker will take approximately 10 minutes (including changeover time) to fill utilising the MLR pumps and modified pipework. It is envisaged that a single MLR pump within each tank will be modified to allow tanker discharge and that Local Control Panels will be used to control the pumps in order to adequately fill the tankers. Discussions with transport companies indicate that the tankers will take approximately 20 minutes to discharge. This leaves well in excess of an hour for the return trip to the treatment plant, which is achievable for all potential discharge locations. If all three tankers are discharging to the same location, it will be necessary for the discharge pipework to accommodate two tankers simultaneously to allow sufficient time for the return trip (i.e. tankers do not have to queue to utilise the discharge pipework). If there is an issue with filling the tankers with the MLR pipework, it will be necessary to fill the tankers with their on-board pumps. This increases the fill time to 45 minutes (leaving only 55 minutes for a return trip), which may represent a challenge when discharging at Belmont WWTW.

This approach may also be implemented to 'shandy' a portion of the load away from Shortland WWTW if solids carryover becomes an issue (i.e. transport only a portion of the maximum 315 kL/day).

Final Redundancy

If there is an unforeseen issue that cannot be resolved with the supplementary approaches, it will be necessary to suspend the diversion from Newcastle No.10 pump station and cease or decrease feed to KIWS. Although not ideal, this approach avoids potential licence breaches associated with the Shortland WWTW.

There is a 10 week performance and validation period associated with the commissioning of KIWS. During this period, the increased flow (i.e. 12.7 ML/day) at the required quality must be continuously available to satisfy contractual testing requirements. Once these requirements are met, the incoming flow can be decreased with minimal impact on the KIWS commissioning contract. As can be seen from Figure 1 the lagoons provide in excess of 5 months retention time before dewatering is required. Even if major issues arise with the interim sludge management plan, this retention time should allow sufficient time at peak flows to satisfy contractual commissioning requirements (after which inflows can be decreased to return to current sludge management practices).

There are some key considerations when implementing this 'last resort approach' that have been discussed with the Hunter Treatment Alliance:

- It is possible that the testing phase will exceed the minimum requirement if issues arise. If all other options are not available, there is a limit to how long the increased flow can be accepted at Shortland WWTW.
- There are no financial penalties with the supply contract as it stands with the schemes single customer (Orica) if the full quota of recycled water is not provided – any shortcomings in supply will be made up with potable water supplied by Hunter Water.
- At the time of writing, the supply contract is being re-negotiated as a result of an IPART review of water prices.
- Changes to the proposed recycled water supply volumes will likely strain working relationships with Orica.
- KIWS is being marketed to stakeholders and the wider community as a flagship recycled water enterprise – failing to deliver recycled water as promised will likely generate significant negative publicity.
- The business case submitted by Hunter Water to secure State and Federal funding for the project indicated that recycled water would be available continuously from 2014 – if this is not the case then there may be funding implications into the future.
- It is understood that the discharge conditions within the Shortland WWTW operating licence will not be changed once KIWS is operational. If there is a full shut down of the Newcastle No.10 diversion and KIWS, current dry weather flows and loads will be returned to the Hunter River. It is vital that this provision remains in any licence update subsequent to KIWS commissioning.

If the Newcastle No.10 diversion is suspended, the operational approach for KIWS can take two paths:

- Supply KIWS with current ADWF and supplement flows with potable water
- Suspend KIWS operation and divert effluent flows to the Hunter River (current scenario).

The selected approach should be discussed with Orica prior to implementation, but either is relatively simple to implement. The biological process at Shortland WWTW is more capable of dealing with instantaneous decreases in load than increases and the bacterial concentrations will automatically adjust in accordance with the available incoming load. The Newcastle No.10 diversion can therefore occur relatively quickly, with treated effluent diverted depending on the agreed approach with Orica. If KIWS is to be shutdown, it will be necessary to clean the membranes and then enter a maintenance storage arrangement in accordance with manufacturer instructions until the plant is again required.

Given the level of contingency built into the interim plan, modifying the flows to KIWS is only considered necessary in the most extreme scenarios.

Budget

Modelling has predicted a daily sludge production of approximately 2500 dry kg/day. Onsite sampling and modelling data has indicated that sludge within the lagoons thickens to between 3 – 3.5% solids (3% assumed when developing cost estimates). Budgetary figures have been established by conservatively assuming zero VSS destruction within the lagoons (i.e. sludge into lagoons = sludge out at dewatering) and reuse costs equate to those currently applied to Edgeworth WWTW (i.e. Grade C sludge). Table 2 shows the budget costs developed for the Shortland WWTW Interim Sludge Management Plan.

Table 2 Shortland WWTW Interim Sludge Management Plan Budget Costs

Description	Rate	Quantity	Initial Capital Cost	Annual Ops Cost	Current Ops Cost
Contract Dewatering					
Site Est. / Diest.	\$5700 per event	3	-	\$17,100	\$11,400
Dewatering	\$8.28 / kL	30,500 kL	-	\$252,500	\$116,000
Onsite Biosolids handling	\$140 / day	100 days	-	\$14,000	\$6,500
Transport	\$30 / ton	6000 tonnes	-	\$180,000	\$82,500
Reuse Rate	\$31.46	6000 tonnes	-	\$188,800	\$86,500
Total			\$0	\$652,400	
Recuperative Thickening					
Site Est. / Diest.	\$5700 per event	1	-	\$5,700	
Thickening	\$7.69 / kL	12,000 kL	-	\$92,300	
Difficulty allowance	\$8.28 / kL	6,000 kL	-	\$49,700	
Discharge Modifications	\$25,000	1	\$25,000	-	
Total			\$25,000	\$147,700	
Sludge Transport					
Transport	\$17 / kL	9,400 kL	-	\$159,800	
Shortland WAS Modifications	\$15,000	1	\$15,000	-	
Plant discharge pipework	\$15,000	1	\$15,000	-	
Operational hours	\$80/hour	70 hours	-	\$5,600	
Total			\$30,000	\$165,400	
Polymer Trial					
Temporary Unit & Polymer	\$15,000	1	\$15,000	-	
Total			\$15,000	\$0	
Hunter Water Project Mgmt.				\$75,000	
Additional Mgmt. Plans				\$13,000	
GRAND TOTAL			\$88,000	\$1,040,500	\$302,900
ESTIMATED TOTAL COST				\$2,164,000	\$605,900
				Assuming 24 month interim plan duration	

Assumptions

- Annual Ops Costs presented based on total sludge production at the treatment plant (i.e. current arrangement is abandoned)
- Dewatering contractors attend site 3 x per year to dewater solids (i.e. 3 x establishment and disestablishment costs per year – multiple lagoons may be dewatered during each stay).
- Dewatered solids achieve 15% solids – this is less than that currently achieved and takes into account the reduced retention time within the lagoons and the potential that sludge cannot be stockpiled on site to increase solids content.
- Transport loading rate increased by 20% to account for possibility of loading each day for odour concerns
- Transport cost includes a loading rate and is the average of current discharge locations
- Reuse rate equates to current Edgeworth WWTW disposal rate (worse case scenario)
- Allowance made to thicken each lagoon once per year – i.e. 12 ML/year

- During dewatering of thickened lagoons, dilution water equating to 50% of total volume is required – therefore the dewatering difficulty allowance equates to dewatering an additional 6 ML/year on top of the solids already dewatered.
- Discharge modifications during thickening include a large water tank and return pump and pipework to return slurry to the lagoon
- Polymer trial includes 1 x IBC of emulsion and a small dosing pump connected to WAS line
- Sludge transport allowance includes all sludge produced at the plant for a period of 30 days. The sludge will be transported as thickened WAS extracted during the decant phase.
- Tankers take 2 hours to complete return trip and have a capacity of 21 kL
- Operational allowance includes half a week for operators spread over all sites to manage the discharge and receipt of thickened WAS.
- Nominal allowance for Hunter Water management of the plan of \$75,000 per annum – includes engineer support to program sludge handling operations beyond the existing operations contract, also includes additional reporting issues associated with increased sludge production.
- Additional management plans include an updated REF, traffic management plan and an erosion/sediment control plan.
- Contract dewatering rates have not been decreased to account for solids managed by supplementary measures – this is a conservative approach and provides a level of contingency to costs.
- Current ops costs are presented for comparison only and have been calculated based on current daily sludge production of (1,150 kg/day, including 25% VSS destruction) applied to the rates presented within the Table 2. Actual annual costs may differ slightly depending on the exact rates applied at the time the sludge is dewatered and transported offsite.

Cost Risks

- The supplementary approaches would incur higher cost than the main approach. If the plan is required to utilise the supplementary approaches over a longer period than assumed above then the costs will increase (e.g. extended wet weather)
- If the farthest reuse sites for land application of dewatered biosolids is utilised then the costs may further increase by approximately 20%.
- Transportation rates may increase if the tankers are not able to synchronise deliveries with the bioreactor cycles effectively.
- Prices are based on an ability to vary the existing sludge management and tankering contracts. If this is not possible, market rates may result in higher prices.
- No allowance has been made for a retainer to keep a centrifuge at Shortland WWTW – if a retainer is required at \$6,000 per week, likely cost approximately \$200,000 per annum (assuming 20 week dewatering time). This is considered a low risk as the existing contractor has indicated that a centrifuge can be dedicated to HWC sites for the duration of the interim plan and supplementary approaches can be used whilst an alternate centrifuge is supply issues are encountered.

Utilising the above rates, to dewater all three lagoons once (i.e. upon transition to the long term dewatering upgrade) would cost in the order of \$260,000. It may be possible to capitalise the cost associated with the final dewatering with the EPCM construction works.

Timeline

The interim plan is able to commence as soon as Newcastle No.10 pump station is diverted to provide the additional flow. In the lead up to this phase it is important to formalise the following operational contracts to ensure a smooth transition:

- Dewatering contractor
- Transport contractor
- Reuse contractor
- Tanker contractor

Hunter Water has existing contracts in place for all the required services and where possible these contracts should be varied to include the services required for the interim plan. This represents the easiest procurement pathway for HWC. If this is not possible then Hunter Water must move quickly to ensure that alternatives are in place in time for implementation of the plan.

The minor capital works required for the supplementary options should also be commenced to ensure the measures can be implemented quickly if there is an issue with the main approach shortly after commencement of the plan. It is envisaged that this work can be completed under the minor capital works budget.

The interim strategy will continue until one of the existing sludge lagoons is successfully converted to an aerobic digester and the ultimate EPCM upgrade can commence. Figure 2 shows the implementation program for the interim sludge management plan. To ensure that Newcastle 10 pump station can be diverted as planned, procurement must be completed within 12 weeks (assuming the plan is approved by Hunter Water before 8 November 2013).

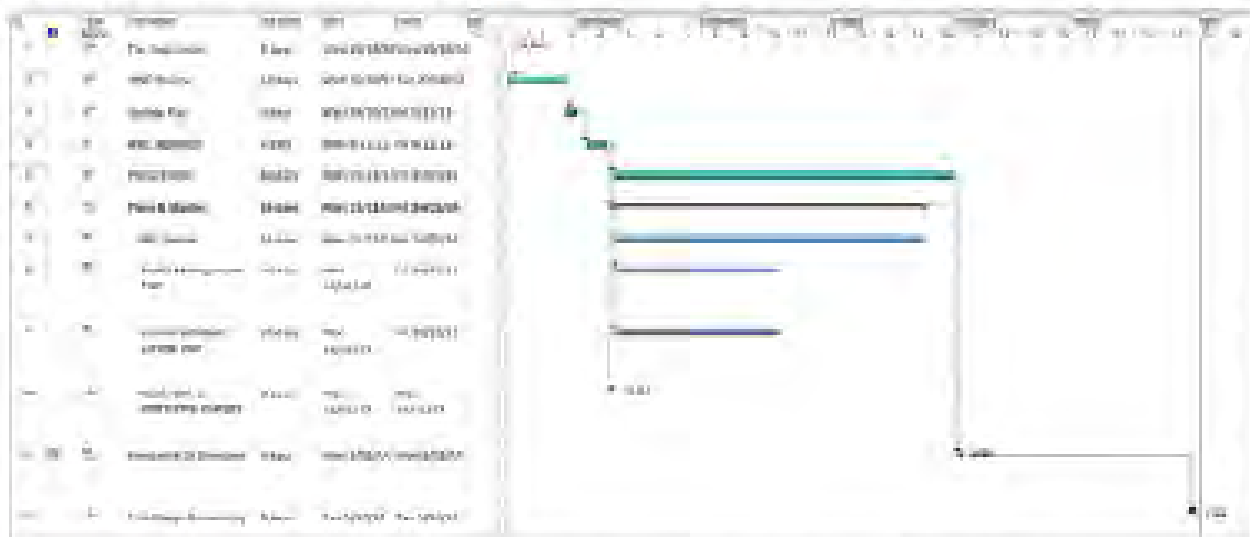


Figure 2 Implementation Program for Shortland WWTW Interim Sludge Management Plan

Operational Impacts

The interim plan does not represent a major shift from the current operational regime except that lagoons will be more frequently dewatered. The limited operational impacts are listed below;

- Increased truck movements
- Increased odour generation potential – may need to be managed by continuous removal of biosolids from site
- Fast filling of lagoons increases potential of returning solids within supernatant streams – lagoons will have to be closely managed to ensure sludge inventories are controlled
 - a. Reduced retention time will likely reduce settling performance increasing carryover risk
 - b. Reduced stabilisation time increases the risk of upturning of the lagoon

Due to the risk posed by solids return within the supernatant, it will be vital to closely manage the dewatering frequency of the lagoons. If required HWA can assist in the management of the lagoons during the interim phase, but an allowance has not been made at this stage.

Effluent Quality

Modelling indicates that effluent quality will remain largely unchanged from existing performance and will meet the minimum quality requirements for KIWS. The increased flows and dewatering frequency will actually dilute the shock nitrogen loads currently returned to the process during lagoon dewatering, leading to a more robust treatment process.

The effluent quality will remain relatively stable regardless of what strategy of the plan is being employed. Modelling has also indicated that each of the nominated receival plants associated with the tankering option will maintain required effluent quality.

According to Licence Condition L5.4 of EPL 1683 (Burwood/Shortland) the licensee may receive, store, treat, process or reprocess and/or transfer at the premises sewage products generated or stored outside the premises by the licensee's other sewage treatment systems. Sewage products must be received, treated, processed or reprocessed in accordance with this licence. According to Q5.3 biosolids at the premises must be stored, treated, processed, classified, transported and disposed in accordance with the Biosolids Guidelines, or as otherwise approved in writing by the EPA.

Hunter Water has confirmed that WAS can be tankered between Hunter Water sites for processing. The EPA should be notified in writing of the operational plan to ensure that licence conditions are met. It is envisaged that tanker delivery dockets will be utilised to record the total volume of sludge that is transported from Shortland WWTW. Information from the dockets should be transferred to plant operational spreadsheets (both Shortland and the receiving WWTW).

Further Studies

As the interim strategy is an extension of the existing sludge management approach the need for further studies is limited, however the following studies / plans should be initiated as soon as practicable so they can be implemented in conjunction with the interim sludge management plan.

- **Review of Environmental Factors (REF)** – A REF was prepared for Shortland WWTW in 2010. The recommended approach is to prepare a letter style report that provides assessment of the impacts related to the interim sludge management measures and identifies any mitigation measures required (i.e. for issues such as increased frequency of traffic management, biosolids stabilisation, odour, additional equipment on site etc.) This would not be prepared in the standard REF format and would just focus on any additional impacts relevant to the interim arrangements. It would form an addendum to the existing REF. It is noted that the statutory requirement under the Environmental Planning and Assessment Act 1979 is to fully consider the impacts of an activity.
- **Erosion Sediment Control Plan (ESCP)** – to effectively manage site runoff with the additional sludge handling and potential additional sludge stockpiling
- **Traffic Management Plan (TMP)** – to effectively manage additional truck movements associated with transporting biosolids and sludge offsite.

The costs and development times associated with these studies / plans is summarised in Table 3. It has been assumed that it will take an additional two weeks to engage a consultant to undertake the work. A further 2 weeks has been allowed for Hunter Water review and subsequent update of the plans.

Table 3 Additional Studies & Plans Summary

Item	Cost	Development Time
REF Addendum	\$7,000	7 weeks
ESCP	\$3,000	2 weeks
TMP	\$3,000	2 weeks

Procurement Pathway

The preferred procurement pathway is to vary the existing sludge management contracts held by Hunter Water to include the increased scope of works. If this is not possible, it will be necessary for Hunter Water to move quickly to formalise the required contracts prior to the schedule commissioning of KIWS. The interim plan requires the following contracts:

- Dewatering contractor
- Transport contractor
- Reuse contractor
- Tanker contractor.

The additional sludge generated will be approximately twice the existing quantity. This equates to around 10% of the total sludge within the management contracts. The existing dewatering contractor has indicated that they can commit a dewatering centrifuge to Hunter Water for the duration of the interim plan and the machine will only service Hunter Water sites. This minimises the risk associated with rapid equipment availability.

It is envisaged that the minor capital works required for the supplementary measures will be procured as minor capital works.

The following items demonstrate value for money for the developed plan;

- The rates for the existing contracts have already been tested and awarded as part of a competitive tendering process.
- Large scale capital items are not required, such that the risk of redundant infrastructure is low
- Inbuilt flexibility allows alternate approaches to be implemented if costs for one aspect exceed expectations.

Transition Program

The longer term strategy (i.e. EPCM upgrade) is to construct permanent dewatering onsite and to provide stabilisation by two aerobic digesters. The aerobic digesters will use existing Lagoons 2 & 3. These lagoons will be taken off line, dewatered, the liner replaced and floating surface aeration installed.

In regards to the interaction between the interim sludge strategy and the longer term upgrade, the construction plan will broadly follow this approach:

1. Upgrade the power supply (if required)
2. Construct the permanent dewatering system onsite as first stage
3. Procure the surface aeration
4. Construct switchgear and power systems for the surface aeration for both digesters.
5. Once all the above is complete then progressively take lagoons offline for conversion to aerobic digesters (first Lagoon 3 followed by Lagoon 2).

It will take time in the construction program to reach task 5. It is anticipated to take at least 5 months to dewater and re-commission a lagoon to an aerobic digester. During this period the recommended interim strategy discussed above will be followed, this will increase the frequency of dewatering and sludge stability will be further decreased. The likelihood of requiring supplementary approaches around this period is much higher.

Once one lagoon has been converted to a digester the interim strategy will be shut down. At this point there will be at least one active aerobic digester and a functional dewatering facility. Time can then be taken to de-sludge and convert the remaining lagoon to an aerobic digester.



Shortland WWTW Sludge Dewatering

[PN308 ends]



PN309 IDENTIFIED FACILITY LIMITATIONS

Application

This Practice Note sets out the known limitations to the adequacy and suitability of the treatment facilities to enable the Service Provider to perform the services.

- Non-compliance with Condition L4.1 'Volume and Mass' limits and Condition A1.1 'Scheduled Activity' limits on EPL is possible at all WWTF due to the operation of the wastewater distribution system.
- Burwood Beach WWTF does not have the treatment process capability to ensure compliance with Condition L2 'Load Limits for Nitrogen (total)(Coastal Water)'
- Dungog WWTF does not have the treatment process capability to comply with the requirements of the Australian Guidelines for Water Recycling 2006.

- [PN309 ends]



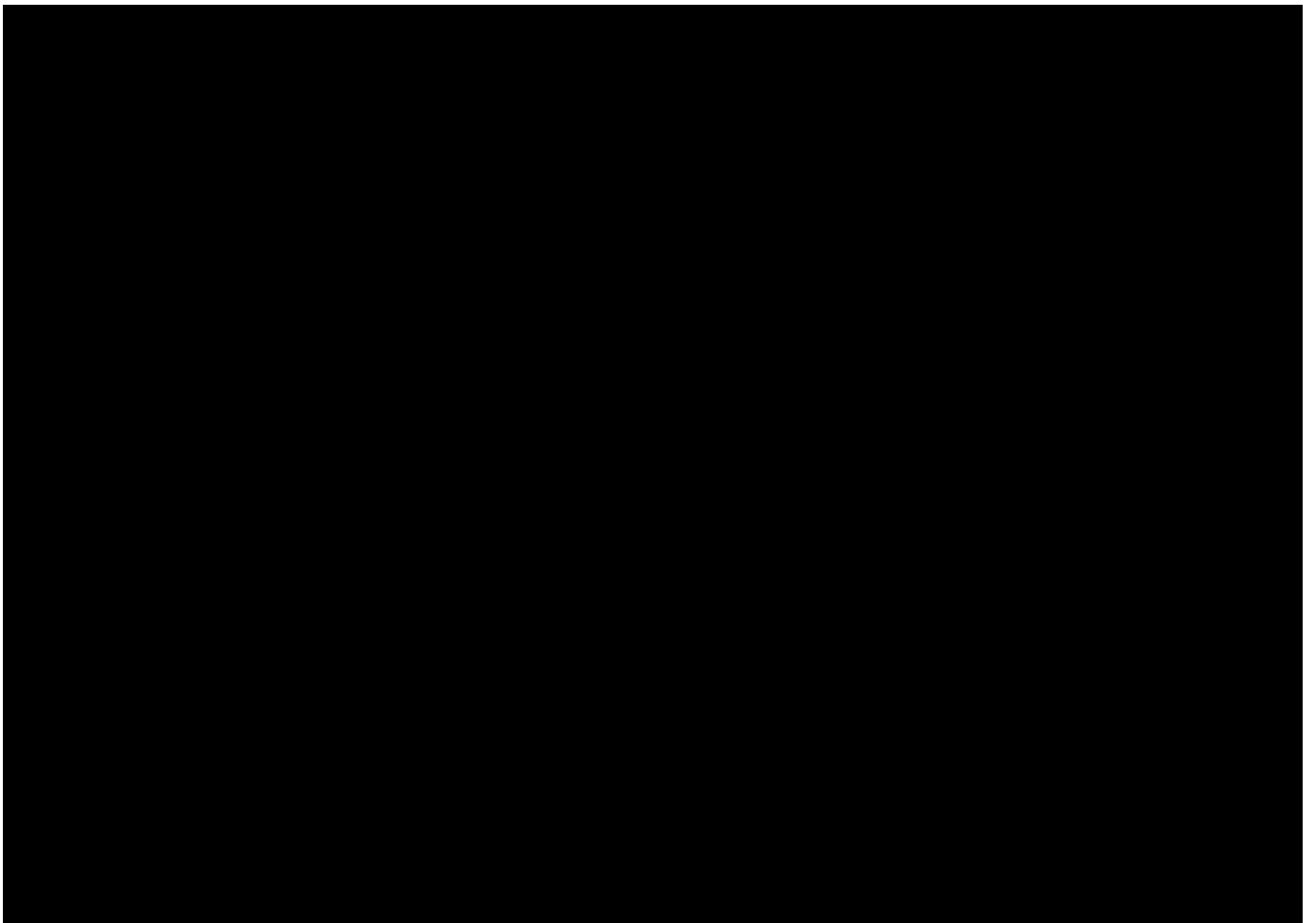
PN310 CIVIL FIELD STAFF REQUIREMENTS

Application

Hunter Water civil field staff use parts of some of the Facilities for storage of bulk materials for storage of pipes and fittings or for office space.

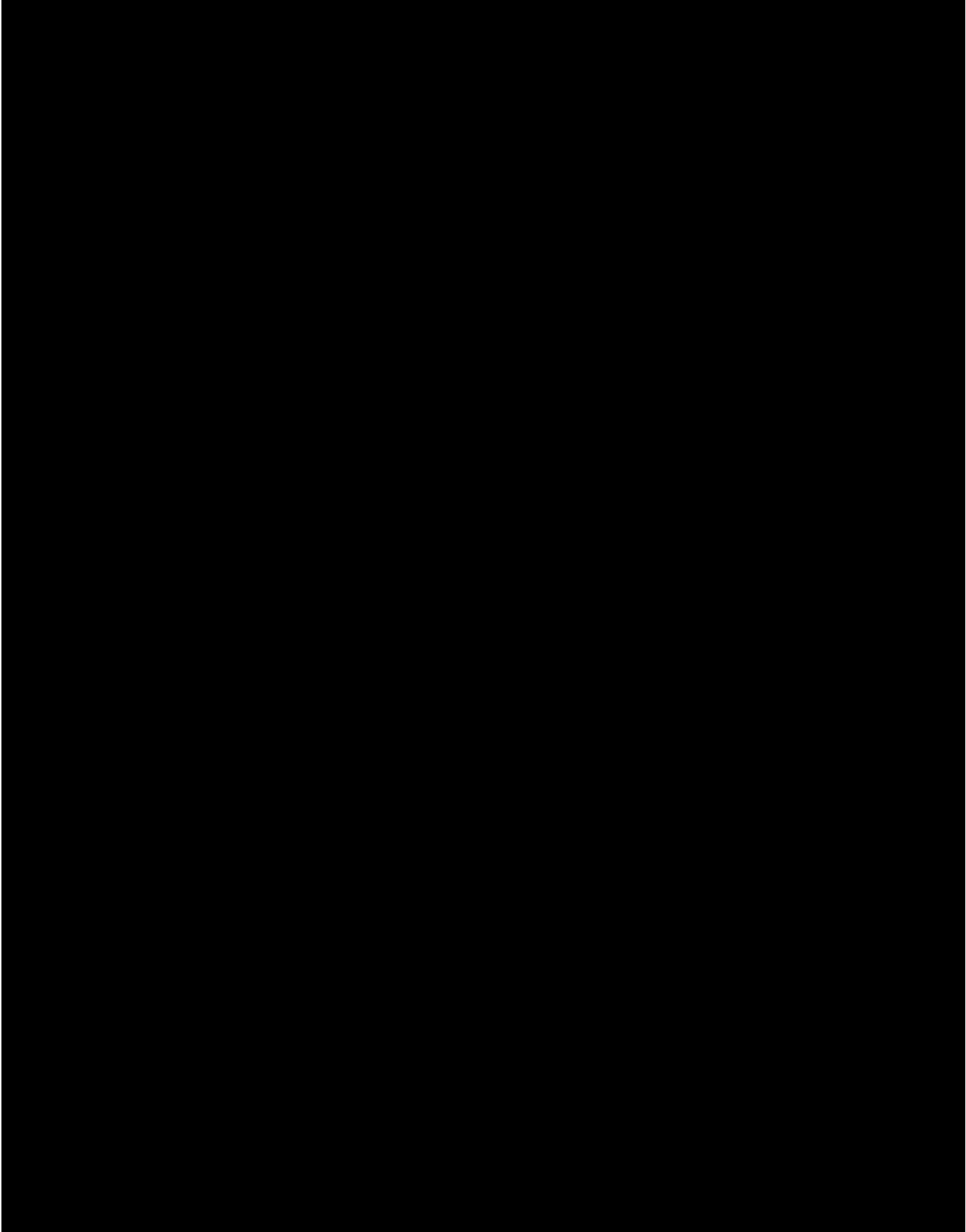
Hunter Water staff will continue to use parts of the Facilities for this use including the locations noted in this practice note. The specific locations are circled in red and noted on the diagrams.

Hunter Water staff will also continue to use the amenities at the Facilities from time to time.



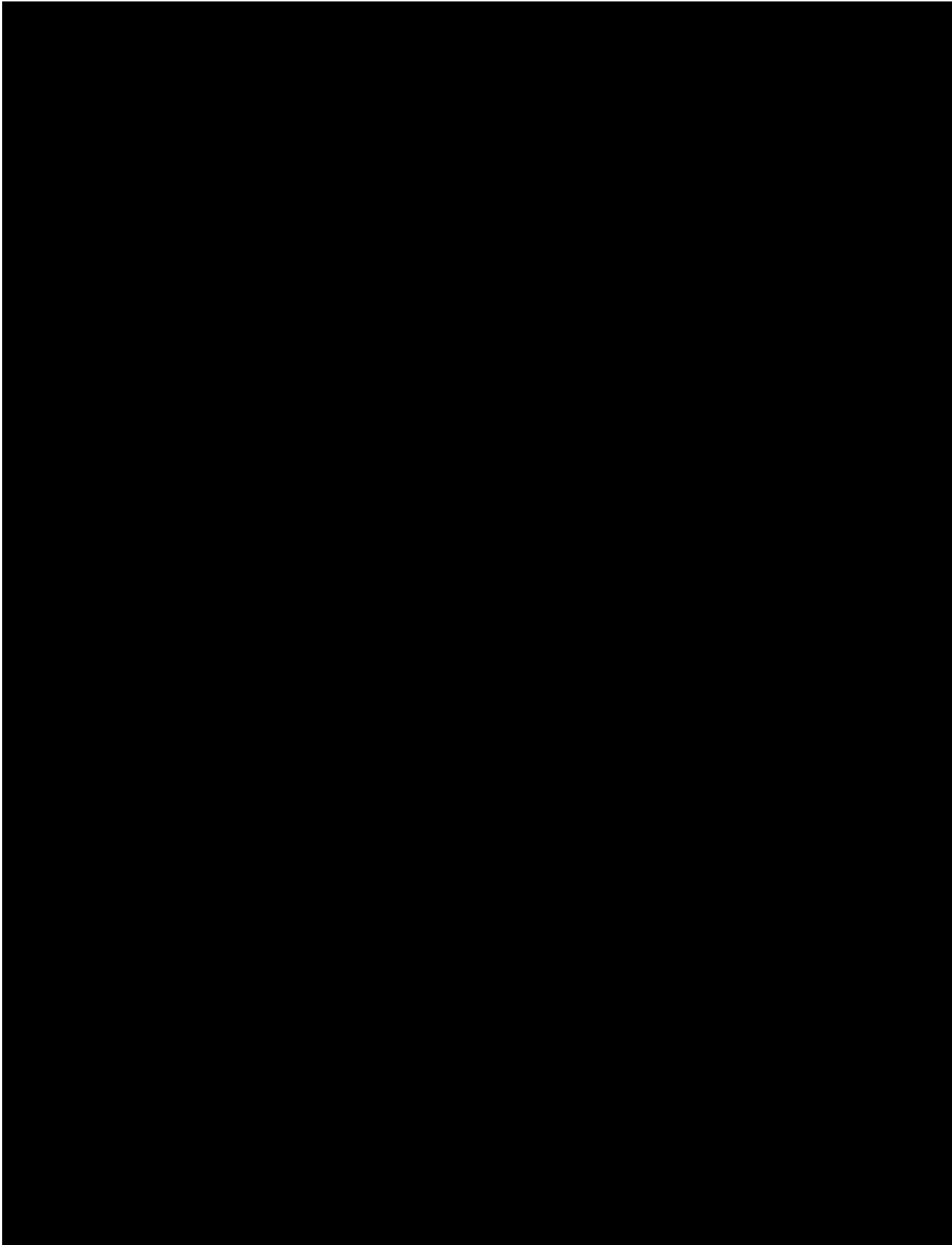


Civil Field Staff Requirements





Civil Field Staff Requirements





Civil Field Staff Requirements

- [PN310 ends]



PN311 MEASUREMENT OF QUANTITIES FOR VARIABLE FEES

PN311 Measurement of Quantities for Variable Fees

Application

This Practice Note sets out the methodology to be used for measuring the quantities used to determine the variable fee to be paid at each facility each month. It also identifies the meters available for measurement and the calibration requirements.

Context

The tables in Schedule 3 Part F list the basis for determining the flows to be used for payment.

The preamble to table 3F.1 Water Treatment Facility Variable Fees states that the flow volumes are to be measured at the meters nominated in the description as listed in SCADA.

The preamble to table 3F.2 Wastewater Treatment Facility Variable Fees states that the flow volumes are to be measured at the EP Licence monitoring points or flow meters listed in the table calculated as necessary by combining flows.

For some facilities, direct measurement of the nominated volumes cannot be made as meters are not located at the measuring point. This Practice Note provides guidance on making the indirect measurements.

There is some data not included in the tables below and some that needs to be confirmed. This information will be gathered during the transition period and the Practice Note will be updated.

Volume Measurement for Treatment Facilities

The tables below have been derived from Schedule 3, and contain more detailed information regarding the meter type and location than is set out in Schedule 3. In some cases an alternate measurement method is defined to facilitate a more accurate, or more reliable, measurement of the flow than the location nominated in the schedule.

Tables 1 and 2 also show the calibration frequency for the meters. Hunter Water will arrange for the meters to be calibrated.

Tables 1 and 2 list the SCADA screens where information relating to the meters referred to can be seen. The table also lists the equipment number or other reference number, as available, for each meter and the type of meter. This information must be updated for each site during initial site inspections, and an updated version of this Practice Note issued.

The formulae for the calculation of the volumes for payment are listed in the Volume Calculation column of tables 1 and 2. The formulas reflect the schedules but are based on a reference to the meters by equipment number, where available. In some cases, there are no meters available and



Measurement of Quantities for Variable Fees

an alternate method for the volume calculation has been nominated. In cases where there are no meters at the referenced measuring point an alternative method for calculation of the volume of flow using meters at other locations is nominated.

The volume for each month's payment for each schedule item is to be calculated from the meter readings at the end of each month. The reading for each meter is to be taken within 5 days of the last calendar day of the month and the reading and the date of the reading is to be recorded and submitted with the claim. Where only one meter is referenced in the Volume Calculation column the volume will be calculated as the difference between the reading at the end of the current month less the reading at the end of the previous month. Where the Volume Calculation column references more than one meter (eg FIT1234 less meter FIT4567) use the meter readings and the formula to calculate the "combined flow" for the end of the month. The volume will be calculated as the difference between the combined flow for the current month and the combined flow for the previous month.

The meter reading for each month and the date of the reading is to be submitted with the payment claim in the format shown in table 3 below. The table also shows the calculation of the flow for each schedule item.

The attached Process Flow Diagrams show the approximate location of the meters.

Calibration

The method used to calibrate the meters will vary depending on the type of meter.

The magnetic flow meters will be calibrated on site by providing an electronic signal to the meter to simulate a flow level and comparing this to the SCADA output reading.

The ultrasonic flow meters will be calibrated on site by providing an electronic signal to the meter to simulate a flow level and comparing this to the SCADA output reading.

The flume meters and V notch weirs will be calibrated by checking the depth measurements of the sensor and that the SCADA reading correlates with the calculated flow for the flume dimensions and flow depth. The flume will be inspected to confirm that it has no obstructions and is flowing smoothly.



Measurement of Quantities for Variable Fees

Table 1 – Volume Measurement for Water Treatment Facilities							
Sched Item No.	Schedule item description	SCADA screen		Flow meter type	Calibration schedule	Volume calculation	Comment
3F.1.1	Anna Bay WTP – Clear Water Flow	Anna Bay WTP Overview		Ultrasonic	annual	WTANNCWFM	
3F.1.2	Chichester Dam Chlorination Facility – Pseudo Flow	HO SCADA Chichester Dam		Ultrasonic	annual	WMCHI-USFM	Note that the pseudo flow set in SCADA for chlorine dosing is determined based on the flow in the CTGM and should be within 10% of that flow.
3F.1.3	Chichester Dam Destratification Facility	N/A		NA	N/A	N/A	N/A
3F.1.4	Dungog WTP – Clear Water Flowmeter			Ultrasonic	annual	WTP.Dungog WTP.Clear Water.Flowmeter 4.Instantaneous Flow	



Measurement of Quantities for Variable Fees

Table 1 – Volume Measurement for Water Treatment Facilities							
Sched Item No.	Schedule item description	SCADA screen		Flow meter type	Calibration schedule	Volume calculation	Comment
3F.1.5	Grahamstown WTP – Grahamstown WTP Flow	HO SCADA Grahamstown 3		Ultrasonic	annual	WTGRACWTTPFM	
3F.1.6	Grahamstown Mains Chlorination	NA		NA		NA	
3F.1.7	Gresford WTP – Plant Flow Yesterday	HO SCADA		Nil meters		WSGRS142FM01 <u>plus</u> WSGRS136FM01	Calculate the flow for payments based on the two water pump stations that feed the plant.
3F.1.8	Lemon Tree Passage WTP –	HO SCADA		Magnetic flow meter		WTLEMCWFM	



Measurement of Quantities for Variable Fees

Table 1 – Volume Measurement for Water Treatment Facilities							
Sched Item No.	Schedule item description	SCADA screen		Flow meter type	Calibration schedule	Volume calculation	Comment
	Clear Water Flow						
3F.1.9	Nelson Bay WTP – Bores Flow	HO SCADA		to be identified	annual	WTP.Nelson Bay WTP.Bores.Flow	The Nelson Bay meter is not working (June 2014). Use the alternative “WTP.Nelson Bay WTP.Bores.Anna Bay Bores. In Flow” (Fingal Bay bores) until repairs are completed on the primary meter.
3F.1.10	Schroder PAC Dosing Facility	NA		NA		NA	



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities							
Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.1A	Belmont WWTW – fully treated to ocean EPA1771/2	Grit Handling System		Khafagi Venturi Flume	Annual	FT3116	FT3116 is located upstream of the grit traps.
3F.2.1B	Belmont WWTW – screened bypass to ocean EPA1771/3	Storm Bypass Overview		Khafagi Venturi Flumes	Annual	FT3151 <u>plus</u> FT3152 <u>plus</u> FT3153	
3F.2.2A	Boulder Bay WWTW – fully treated to ocean EPA358/2	Inlet Works Overview		Khafagi Venturi Flume	Annual	FIT2015	



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities							
Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.2B	Boulder Bay WWTW – screened and de-gritted to ocean EPA358/3	Inlet Works Overview		Khafagi Venturi Flume	Annual	FIT2016	
3F.2.3A	Branxton WWTW – fully treated to Anvil Creek EPA1680/1	Storage Ponds		V Notch Weir	annual	FIT3821	
3F.2.3B	Branxton WWTW – fully treated to Farmer EPA1680/6			Mechanical meter	Annual	Mechanical meter	There is a mechanical meter on the farmer’s offtake which is not connected to SCADA. Needs to be read manually.
3F.2.3C	Branxton WWTW – fully treated to Branxton Golf	Reuse Water Pump		to be identified	annual	FIT3412	



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
	EPA1680/7	Station					
3F.2.3D	Branxton WWTW – fully treated to Vintage GolfEPA1680/10	Reuse Water Distribution		to be identified	annual	FIT3502	
3F.2.3E	Branxton WWTW – fully treated to Black Creek EPA1680/11	Reuse Water Distribution		to be identified	annual	FIT3501	
3F.2.3F	Branxton WWTW – screened and de-gritted bypass to Anvil Creek	Storage Ponds		V Notch Weir(to be confirmed)	annual	FIT3144	



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
	EPA1680/13						
3F.2.4A	Burwood Beach WWTW – fully treated to ocean Secondary Flow FIT2200	Secondary Pumping Station Overview		to be identified	annual	FIT2200	
3F.2.4B	Burwood Beach WWTW – screened and de-gritted to ocean EPA1683/12 less Secondary Flow FIT2200	Burwood Beach HO SCADA		Ultrasonic	annual	FQT1203 <u>plus</u> FQT1224 <u>less</u> FIT2200	



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.5A	Cessnock WWTW – primary and secondary treated bypass to Black Creek EPA227/1	*Tertiary Plant Feed Pumping system *Grit Removal			annual	FIT4109E	
3F.2.5B	Cessnock WWTW – fully treated to Black Creek EPA227/2	*Tertiary Plant Feed Pumping system *Grit Removal			annual	FIT4100 <u>less</u> FIT8302	
3F.2.6A	Clarence Town WWTW – fully treated to effluent irrigation area	HO Clarence Town WWTW		to be identified	annual	Total Meter reading less quantity for	Flow meter is located up stream of the valve that controls the direction of flow to either the irrigation area or to



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
	EPA13250/1					item3F.2.6B	Wallaroo Creek. Calculate flow based on full meter reading less the volume paid at item 3F.2.6B for flow to Wallaroo Creek.
3F.2.6B	Clarence Town WWTW – fully treated precautionary discharge to Wallaroo Creek EPA13250/5	HO Clarence Town WWTW			annual	Calculate volume from the meter readings for the times when flow is directed towards the creek	Flow meter is located as above. The meter reading and the direction of flow is to be recorded each time the valve controlling the direction of flow is changed.



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.7	Dora Creek WWTW – fully treated to Eraring/Rathmines EPA1771/16	Effluent Main Hydraulic Overview		to be identified	annual	STDOR-EFM?	
3F.2.8	Dungog WWTW – fully treated to farm/Williams River EPA4197/3 plus EPA4197/4	Dungog WWTW HO SCADA		Siemens Mag 3100 (HO SCADA)	annual	STDUNPTW FM01	This meter is for inlet flow not outlet flow as per the schedule.



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.9A	Edgeworth WWTW – fully treated to Toronto EPA1771/14 – Bypass Flow meter	Inlet Works Grit Chamber Overview		Khafagi Venturi Flume (FIT1153)	(FIT1153) annual (FIT954 & FIT964) annual	FIT1153 <u>less</u> FIT954 <u>less</u> FIT964	Calculate the flow to licenced outlet (EPA1771/14) as flow through flow meter downstream of grit trap (FIT1153) less flow through UV system to effluent reuse.
3F.2.9B	Edgeworth WWTW – screened and de-gritted to Toronto Bypass Flow meter	Inlet Works Screening Overview +HO SCADA Edgeworth WWTW			annual	FIT1152	Flow directly measured by flow meter downstream of grit trap.



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.9C	Edgeworth WWTW – UV treated recycled water FIT954 UV1 Flow plus FIT964 UV2 Flow	Recycled Water			annual	FIT954 plus FIT964	
3F.2.10A	Farley WWTW – fully treated to Fishery Creek EPA733/3	UV System Overview			annual	FIT3470	Flow meter downstream of UV treatment
3F.2.10B	Farley WWTW – fully treated to reuse customer EPA733/5	Reclaimed Effluent Overview			annual	FIT3480	Flow meter downstream of UV treatment



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.10 C	Farley WWTW – screened bypass to Fishery Creek EPA733/4	Wet Weather Storage Overview		Rectangular Weir	annual	FIT3510	Flow meter downstream of wet weather storage ponds.
3F.2.11	Karuah WWTW – fully treated to reuse enterprise EPA10230/1	Catch Pond and Effluent Overview			annual	STKAR-EIFM	
3F.2.12	Kearsley WWTW – fully treated to unnamed creek EPA3232/1					calculated	There is no meter at Kearsley. Flow calculated based on hours run of upstream pump stations.



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.13A	Kurri Kurri WWTW – fully treated to Swamp Creek EPA1767/2 minus Secondary Bypass flow meter	UV & Reclaimed Effluent Systems (remote SCADA)			annual	Filters.UV System.UV WeirFlow <u>Less</u> Item 3F.2.13B secondary Bypass flow	Flow as measured passing through the UV treatment.
3F.2.13B	Kurri Kurri WWTW - screened, de-gritted, clarified, disinfected to Swamp Creek Secondary Bypass flow meter	Grit Removal and inlet pumping station		NA		calculated	Flow can be assessed based on the depth of flow over the weir.



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.14A	Morpeth WWTW – fully treated to Hunter River EPA10693/2	Grit Removal		Magnetic flowmeter, not working.	annual	STMORBRO LI	Flow meter downstream of grit traps at Licence monitoring point.
3F.2.14B	Morpeth WWTW – screened bypass to Hunter River EPA10693/3 minus EPA10693/2	UV Disinfection & Effluent Discharge System			(STMOR-EFM) annual (STMORBR OLI) annual	STMOR-EFM <u>less</u> STMORBRO LI	Bypass flow calculated assuming no flow to effluent reuse pond during bypassing. Note that EPA1069/3 monitoring point has been relocated from Hunter River outlet line as shown on original Process Flow Diagram to the effluent pond outlet line on the revised diagram.



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.15A	Paxton WWTW – fully treated to woodlot EPA3755/2			Mechanical meter	annual	Mechanical meter	Meter not shown on SCADA
3F.2.15B	Paxton WWTW – fully treated to creek EPA3755/3	Backpulse Tank, Recycled Effluent, and Potable Water		Magnetic flowmeter.	annual	FIT2350	
3F.2.15 C	Paxton WWTW – screened bypass to creek EPA3755/4	Sludge Digestion System + HO SCADA		Magnetic flowmeter.	annual	FIT3878	



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.16A	Raymond Terrace WWTW – fully treated to Grahamstown Drain EPA217/2 – Storm Bypass Flow	UV System		Magnetic flowmeter.	(STRAY_FE FM) annual	STRAY-FE FM <u>Less</u> STRAY-BFM	
3F.2.16B	Raymond Terrace WWTW – screened, de-gritted and disinfected to Grahamstown DrainStorm Bypass Flow	Grit Removal		Khafagi Venturi Flume	annual	STRAY-BFM	



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.17	Shortland WWTW – fully treated to Mayfield West AWTP plus Shortland De-chlorination EPA1683/19	Chlorination Overview			annual	FIT3003	Measures flow into chlorine contact tank, includes flows to both Mayfield and the dechlorination unit.
3F.2.18	Shortland De-chlorination Facility – de-chlorinated to Hunter River	De-Chlorination Overview			annual	FIT7009	
3F.2.19	Tanilba Bay WWTW – fully treated EPA4435/1	UV Disinfection		Magnetic flowmeter	annual	STTAN-PEFM	



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities

Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.20A	Toronto WWTW – fully treated to ocean EPA1771/5 minus Edgeworth WWTW effluent	HO SCADA		Khafagi Venturi Flume	(STTOR-TLUFM2) annual (FIT1152) annual	STTOR-TLUFM2 less item_3F.2.9A Edgeworth less item 3F.2.9B Edgeworth less item 3F2.20B Toronto Bypass	The STTOR-TLUFM2 meter is located at Green Point on the east side of the lake.
3F.2.20B	Toronto WWTW – screened bypass to ocean Bypass Flow	T-D10 Step Screens			No	FIT2115	



Measurement of Quantities for Variable Fees

Table 2 - Volume Measurement for Wastewater Treatment Facilities							
Sched Item No.	Treatment Facility	SCADA Screen		flow meter type	Calibration Schedule	Volume Calculation	Comment
3F.2.21	Mayfield West AWTP – fully treated to customers fully treated to customers						

Table 3 – Monthly Flow Meter Reading Details and Volume Calculation

This table is incomplete and will be completed by adding all of the schedule items and the volume calculation formulae. The table will need to be filled out and submitted with each payment claim.



Measurement of Quantities for Variable Fees

Monthly Payment Claim Calculation											
Claim Period: Jun-14											
Schedule Item No.	Description	Meter No.									
		Meter Reading Previous Claim (or initial meter reading) ML			Meter Reading This Claim ML			Calculated / Combined Flow This Claim ML			Volume this Claim ML
3F.2.1A	Belmont WWTW – fully treated to ocean EPA1771/2	FT3116			FT3116			FT3116			FT3116
	date of reading	30/5/14			30/6/14						
		1500			2000			500			500
3F.2.1B	Belmont WWTW – screened bypass to ocean EPA1771/3	FT3151	FT3152	FT3153	FT3151	FT3152	FT3153	FT3151	FT3152	FT3153	FT3151 plus FT3152 plus FT3153
	date of reading	30/5/14	30/5/14	30/5/14	29/6/14	30/6/14	30/6/14				
		350	400	300	650	600	500	300	200	200	700
3F.2.2A	Boulder Bay WWTW – fully treated to ocean EPA358/2	FT2015			FT2015			FT2015			FT2015
	date of reading	30/05/2014			30/06/2014						
		750			950			200			200
3F.2.2B	Boulder Bay WWTW – screened and de-gritted to ocean EPA358/3	FIT2016			FIT2016			FIT2016			FT2016
	date of reading	30/05/2014			30/06/2014						
		1000			1500			500			500



Measurement of Quantities for Variable Fees

Process Flow Diagrams with Approximate Locations of the Flow Meters



Measurement of Quantities for Variable Fees

[PN 311 ends]

**SCADA Alarm Monitoring and Handling****PN402 SCADA ALARM MONITORING AND HANDLING**

Hunter Water's Control Centre monitors all SCADA alarms at all times but shall only contact the Service Provider if:

- (a) a priority 1 alarm occurs outside working hours;
- (b) a priority 1 alarm occurs during working hours but the Control Centre knows that the Facility is not manned; or
- (c) a priority 1 alarm has not been acknowledged by an operator within 30 minutes.

The Service Provider is responsible to monitor SCADA for all other alarms and to initiate the necessary response.

Before the Target Services Commencement Date, the Service Provider must propose amendments to this Practice Note to include:

- its working days and hours for each Facility;
- a protocol for advising Hunter Water's Control Centre if operators arrive at a Facility which is not permanently manned; and
- contact details / roster for notifying the Service Provider of priority 1 alarms.

Until such time as the Practice Note is revised to include the above, and for the purpose of this Practice Note, working hours shall be assumed to be 7am to 3:30pm.

[PN402 ends]



PN403 AMENDING SCADA ALARMS

At any time during the Term the Service Provider may propose:

- (a) amendment of the level at which a SCADA alarm is triggered;
- (b) amendment of the priority assigned to a SCADA alarm;
- (c) amendment of the action text associated with a SCADA alarm;
- (d) programming of a new alarm; or
- (e) deletion of an existing alarm.

The proposal must be in writing submitted to the CMG for Endorsement in accordance with clause 25.2.

The proposal must detail the reason for the proposed change including an explanation of any impacts on safety, environmental and regulatory risk and any expected benefits.

Hunter Water shall make changes to the SCADA alarm monitoring and handling process Endorsed by the ELG.

[PN403 ends]



PN501 CREATING A MAINTENANCE JOB

Details of all maintenance work must be recorded directly in Hunter Water's Enterprise Asset Management System, ELLIPSE. Up load from the Service Provider's system is not acceptable.

Hunter Water is currently upgrading to ELLIPSE version 8. Requirements for providing system access for downloading programmed maintenance, creating maintenance jobs and entering completion data shall be established during the Transition Period.

[PN501 ends]



PN502 ELLIPSE DATA ENTRY

Details of all maintenance work must be recorded directly in Hunter Water's Enterprise Asset Management System, ELLIPSE. Up load from the Service Provider's system is not acceptable.

Hunter Water is currently upgrading to ELLIPSE version 8. Requirements for providing system access for downloading programmed maintenance, creating maintenance jobs and entering completion data shall be established during the Transition Period.

[PN502 ends]



Ellipse Data Field Requirements

PN504 ELLIPSE DATA FIELD REQUIREMENTS

Application

Data entry into Ellipse must include population of a minimum set of fields to allow for appropriate tracking and maintenance records to be maintained. The table below sets out the fields that are mandatory and must be completed for all jobs and the required fields that must be completed where applicable or available. The fields are based on Ellipse 5 and will need to be updated following the introduction of Ellipse 8.

HEADER	Mandatory	Required Fields	Comments
Work Order Number	Yes	Yes	Automatically generated by Ellipse
Work Order Description	Yes	Yes	Clear description of work (40 chars.)
District Code	Yes	Yes	To be defined
DEFINITION			
Equipment Reference	Yes	Yes	Equipment No. or Plant No. as recorded in Equipment Register
Equipment Location	Yes	Yes	Populated from Equipment Register - change if incorrect suburb. Value from predefined table file
Equipment Status	Yes	Yes	Populated from Equipment Register - change if current status differs from predefined table file (eg. In Service, Decommissioned, etc)
Originator Id	Yes	Yes	Person responsible for creating the work order
Work Order Work Group	Yes	Yes	Work group to whom the work order has been assigned
Originator Priority	No	No	Priority assigned by originator. Value from predefined table file
Originating Document Type	No	No	Type of document that triggered work order. Value from predefined table file (eg. maintenance schedule, condition assessment, etc.)
Originating Document Number	No	No	
Request ID	No	Yes	Where the work order has been generated in response to a Work Request this field needs to be populated with the Work Request ID
PLANNING			
Work Order Type	Yes	Yes	Value from predefined table file (eg. Capital, Maintenance, Warranty etc.)
Maintenance Type	Yes	Yes	Value from predefined table file (eg. Preventative, Predictive, Programmed, etc)
Component Code	No	Yes	To be populated when work order relates to equipment component. Value from predefined table file.



Ellipse Data Field Requirements

HEADER	Mandatory	Required Fields	Comments
Component Modifier Code	No	Yes	To be populated when work order relates to equipment component that requires modifier code. Value from predefined table file.
Assign Person/Crew	No	Yes	Person/Crew who has been assigned responsibility for the work order. This should be updated as required.
Required By Date	No	No	
Required By Time	No	No	
Planners Priority	No	No	Priority assigned by work planner. Value from predefined table file
Units of Work	No	No	May be required after upgrade to Ellipse 8
Units Required	No	No	May be required after upgrade to Ellipse 8
User Status	No	No	Status of work. Value from predefined table file (eg. Approved, Commenced, Deferred, etc.)
Standard Job No.	No	Yes	To be populated when work based on standard job.
Related Work Order Number	No	Yes	To be populated where related work order exists.
TASKS			
WOTaskNo	No	Yes	To be populated when work order tasks have been defined.
WO Tsk Desc	No	Yes	To be populated when work order tasks have been defined.
Work Group	No	Yes	To be populated when work order tasks have been defined.
Crew	No	Yes	To be populated when work order tasks have been defined.
Assign To	No	Yes	To be populated when work order tasks have been defined.
TaskStatusD	No	Yes	To be populated when work order tasks have been defined.
Start Date	No	Yes	To be populated when work order tasks have been defined.
Finish Date	No	Yes	To be populated when work order tasks have been defined.
Offset Days	No	Yes	To be populated when work order tasks have been defined.
Linked	No	Yes	To be populated when work order tasks have been defined.
Task Dur Hrs	No	Yes	To be populated when work order tasks have been defined.
Float	No	Yes	To be populated when work order tasks have been defined.
Units Required	No	No	May be required after upgrade to Ellipse 8
UnitOfWorkD	No	No	May be required after upgrade to Ellipse 8
Units Complete	No	No	May be required after upgrade to Ellipse 8
ClosedStatusD	No	Yes	To be populated when work order tasks have been defined.
Completed Date	No	Yes	To be populated when work order tasks have been defined.
CompletedByD	No	Yes	To be populated when work order tasks have been



Ellipse Data Field Requirements

HEADER	Mandatory	Required Fields	Comments
			defined.
SCHEDULING			
Shutdown Equipment	No	No	May be required after upgrade to Ellipse 8
Shutdown Equipment Reference	No	No	May be required after upgrade to Ellipse 8
Shutdown No.	No	No	May be required after upgrade to Ellipse 8
Shutdown Type	No	No	May be required after upgrade to Ellipse 8
Maintenance Scheduled Task	No	Yes	To be populated when work order is generated in response to Maintenance Scheduled Task
Plan Finish Date	No	No	May be required after upgrade to Ellipse 8
Plan Finish Time	No	No	May be required after upgrade to Ellipse 8
Plan Priority	No	No	May be required after upgrade to Ellipse 8
Plan Start Date	No	No	May be required after upgrade to Ellipse 8
Plan Start Time	No	No	May be required after upgrade to Ellipse 8
Planned Stat Type	No	No	May be required after upgrade to Ellipse 8
Planned Stat Value	No	No	May be required after upgrade to Ellipse 8
COSTS			
Estimated Equipment Cost	No	No	May be required after upgrade to Ellipse 8
Estimated Material Cost	No	No	May be required after upgrade to Ellipse 8
Estimated Other Cost	No	No	May be required after upgrade to Ellipse 8
Estimated Resource Cost	No	No	May be required after upgrade to Ellipse 8
Estimated Resource Hours	No	No	May be required after upgrade to Ellipse 8
Actual Equipment Costs	No	Yes	
Actual Resource Hours	No	Yes	
Actual Material Costs	No	Yes	
Actual Other Costs	No	Yes	
Actual Resource Cost	No	Yes	
COST ALLOCATION			
Cost Centre/Account Code	Yes	Yes	
Project Number	No	Yes	To be populated when work has been carried out as part of a capital project
Parent Work Order	No	Yes	To be populated when work order has been collected under a parent work order
Units Complete	No	No	May be required after upgrade to Ellipse 8
Units Invoiced Charged	No	No	May be required after upgrade to Ellipse 8
Percent units Complete	No	No	May be required after upgrade to Ellipse 8
COMPLETION			
Part causing failure	No	Yes	To be populated when part can be identified (30 chars.)
Completed Code	Yes	Yes	Value from predefined table file (eg. Completed - No Defects, Completed - Defects Fixed, etc)



Ellipse Data Field Requirements

HEADER	Mandatory	Required Fields	Comments
Completed By	Yes	Yes	Person responsible for completing the work order
Completed Date	Yes	Yes	
Completed Time	Yes	Yes	
Out of Service Date	No	No	
Out of Service Time	No	No	
Completion Comments	No	Yes	Any additional information regarding the completion of the work order
JOB CODES			
Job Code 1	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Job Code 2	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Job Code 3	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Job Code 4	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Job Code 5	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Job Code 6	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Job Code 7	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Job Code 8	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Job Code 9	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Job Code 10	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
HISTORY			
Creation Date	Yes	Yes	
Creation Time	No	No	
Raised Date	No	No	
Raised Time	No	No	
Authorised By	No	No	
Authorised Date	No	No	
Authorised Position	No	No	
Authorised Time	No	No	
Close Date	Yes	Yes	
Closed Time	No	No	
REFERENCE CODES			
Reference Code 1	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 2	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 3	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8



Ellipse Data Field Requirements

HEADER	Mandatory	Required Fields	Comments
Reference Code 4	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 5	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 6	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 7	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 8	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 9	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 10	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 11	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 12	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 13	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 14	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 15	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 16	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 17	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 18	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8
Reference Code 19	No	No	Currently under development. Will be required and may be mandatory after upgrade to Ellipse 8

[PN504 ends]



Breakdown Response and Restoration of Service

PN505 BREAKDOWN RESPONSE AND RESTORATION OF SERVICE

Application and Definition

The Service Provider is required to carry out breakdown maintenance of assets within the treatment plants.

Breakdown Maintenance is a reactive maintenance job undertaken in response to a failure which prevents equipment or an asset from performing its intended function or achieving a required level of performance.

Restoration of Service is achieved when any service interrupted or restricted by the failure is restored. A breakdown maintenance job is considered to be completed immediately if backup equipment (eg: backup pump or generator) switches on automatically. Work undertaken after restoration of service to restore full asset configuration is considered to be corrective maintenance (eg: a pump fails and is replaced with a spare as a breakdown maintenance job – repair of the failed pump and its return to storage as a spare is a corrective maintenance job).

Response Time is defined as the time elapsed between the time of notification of the breakdown and the commencement by the Service Provider of appropriate on-site action.

Rectification Time is the time elapsed between time of notification of a fault in a system or an asset and the restoration by the Service Provider of the intended function of that system or asset.

The time of notification is, for:

A priority 1 alarm notified to the Service Provider in accordance with PN402, the time that the Service Provider is notified;

A priority 1, 2 or 3 alarm directly identified by the Service Provider, the time the alarm is recorded by SCADA;

A priority 2 or 3 alarm raised by SCADA out of working hours, 8am on the morning after the alarm is recorded in SCADA.

Breakdown Response and Restoration of Service Timeframes

Priority levels have been assigned to the breakdown of particular assets based on the assessed consequence of the failure. In the event that a Priority 1 breakdown alarm is raised out of working hours a Hunter Water representative will notify the Service Provider of the fault and the priority level.



Breakdown Response and Restoration of Service

The following table sets out the required timeframe for the Service Provider's response to breakdowns and restoration of service for the various priority levels.

Priority	Response Time	Restoration of Service
1	Within 1 hour of the time of notification	Within 5 hours of the time of notification or else provide alternate service
2	Within 3 hours of the time of notification	Within 6 hours of the time of notification
3	N/A	Within 2 days of the time of notification

Maintain a record of the work carried out and notify Hunter Water when service has been restored. Submit records showing the response time and rectification time for the breakdown as well as details of the failure mode, failure cause and repair method. A list of failure mode categories is available from Hunter Water on request.

If further work is required to restore the asset to full asset configuration (corrective maintenance) submit an Asset Deficiency Notification (Refer PN205).

[PN505 ends]



PN506 ASSET INFORMATION PROCEDURE

Application

This practice note sets out the requirements for the information capture associated with asset modifications.

Process

The Service Provider shall provide to Hunter Water all altered asset information associated with asset modifications undertaken by the Service Provider to allow Hunter Water to update the original asset information source. The specific information includes:

- Asset design information
- Asset nameplate information
- Operational & maintenance information
- Drawings (Electrical, P&ID, SCADA, Civil, Mechanical)
- Warranty Information

This information is to be added to the Ellipse database and to be submitted to Hunter Water electronically in a Microsoft office package such as word or excel as appropriate.

Information (including drawings) is, where applicable, to be submitted in accordance with the requirements set out in STS903, STS904 and STS911 (attached) (as such Standard Technical Specifications may be updated by Hunter Water from time to time) and the civil drawing package available on the Hunter Water Corporation website.



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23



Hunter Water Corporation A.B.N. 46 228 513 446

Standard Technical Specification for:

WORK AS CONSTRUCTED INFORMATION**STS903**

This Standard Technical Specification was developed by Hunter Water Corporation to be used for the design, construction/installation and/or maintenance of facilities that are, or are to become, the property of Hunter Water Corporation. It is intended that this Standard Technical Specification be used in conjunction with various other standard and project specific drawings and design requirements as defined by Hunter Water Corporation for each particular project.

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Page 1 of 23



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

- 1 Purpose..... 4**
- 2 Interpretation..... 5**
 - 2.1 Order of Precedence..... 5
- 3 Roles and Responsibilities..... 6**
 - 3.1 Document Owner..... 6
 - 3.2 Responsibilities..... 6
- 4 Definitions 7**
- 5 Compliance Requirements 8**
 - 5.1 Standards..... 8
 - 5.1.1 Hunter Water Standards..... 8
- 6 Work as Constructed Requirements..... 9**
 - 6.1 Information Provided by Hunter Water..... 9
 - 6.2 Survey 9
 - 6.3 Operation and Maintenance Manuals..... 9
 - 6.3.1 Draft at Pre-Commissioning..... 10
 - 6.3.2 Final Manual at Commissioning..... 10
 - 6.3.3 Changes..... 10
 - 6.4 Drawing Requirements..... 10
 - 6.4.1 Linear Assets..... 10
 - 6.4.2 Point Assets..... 14
 - 6.5 Submission of WAC Information..... 15
 - 6.6 Technical Data..... 15
- 7 Related Documents..... 16**
- 8 Document control..... 17**

TABLES

- Table 1: Drawing Accuracy for Survey Data..... 9
- Table 2: Example Coordinates for General Arrangement..... 10
- Table 3: Examples of WAC Notes amended from Construction Drawings..... 11

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Version: 1.0

Page 2 of 23

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

APPENDICIES

Appendix 1. Junction Sheet 18

Appendix 2. Work as Constructed Checklist..... 19

Appendix 3. Schedule A – Water, Recycled Water and Sewer Pipes..... 21

Appendix 4. Schedule B – Water and Sewer Pipe Rehabilitation..... 22

Appendix 5. Schedule C – Pipe Fittings and Miscellaneous 23

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Version: 1.0

Date Approved: February 2014

Page 3 of 23



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23



Standard Technical Specification Work as Constructed Information - STS 903

1 Purpose

This Standard Technical Specification details the preparation and submission of all Work as Constructed (WAC) Information for Hunter Water Corporation (Hunter Water). The information is required to identify the location and provide specifications for surface fittings and linear assets. This document supersedes requirements included in WSA02 and WSA03 Appendix 3B.

It does not include requirements for

- Civil Structural and Mechanical Drawings specified in *STS911*
- Electrical Drawings specified in *STS904*.
- Operation and Maintenance Manual requirements in *STS906*

This Specification is available on the Hunter Water website <http://www.hunterwater.com.au>.

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Version: 1.0

Date Approved: February 2014

Page 4 of 23



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

2 Interpretation

For the purposes of the interpretation of this STS, except where the context requires otherwise.

- "Construction Drawings" are all drawings defining the physical characteristics of the works to be constructed.
- "Work-As-Constructed Drawings" (WAC) are all drawings defining the physical characteristics of the works constructed.
- 'Drawings' means the drawings detailing the work involved in a particular project
- 'Include' means including but not limited to, and is used to provide clarification or examples of the type and nature of items intended
- 'Standards' means applicable industry standards including the Australian Standards (AS), Australian / New Zealand Standards (AS/NZS), and ISO Standards (ISO)
- 'Specification' means a specification detailing the work involved in a particular project
- 'Standard Technical Specification' (STS) is a reference to any of Hunter Water's Standard Technical Specifications, as implied by the text.

Headings are for the convenience of the reader and shall not be used in the interpretation of this STS.

Unless the stated otherwise any expression such as "give notice", "submit", "approval", or "directed" means give notice to, submit to, approval by, or directed by the person nominated by the Hunter Water.

Approval does not imply acceptance of responsibility by Hunter Water for compliance with this STS. Unless approval has been issued in writing by Hunter Water, approval has not been granted.

2.1 Order of Precedence

The order of precedence of technical documents for a project should be stated in the project's documentation. The hierarchy of specifications are:

1. Specification, Drawings, Standard Drawings (project documents)
2. Facility related STS
3. Equipment related STS
4. STS904, STS911 and STS906
5. This STS

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Version: 1.0

Page:5 of 21

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

3 Roles and Responsibilities

3.1 Document Owner

The Document Owner of this STS is the Manager Asset Management.

3.2 Responsibilities

Any request for a variation to this STS shall be made in accordance with the change management process in the *Hunter Water QAS003 Asset Standards Management Plan*.

The Document Owner shall approve in writing the issue of any updates.

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Version: 1.0

Date Approved: February 2014

Page 6 of 23



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

4 Definitions

Where the following term, abbreviation or expression occurs in this STS, it is defined as follows, unless the context implies otherwise:-

Term / Abbreviation / Expression	Definition
Designer	Person or organisation creating design and drawings for manufacture of equipment or construction of a system of mechanical equipment.
Hunter Water	Hunter Water Corporation.
O&M Manual	Operation and Maintenance Manual and all associated documents
Linear Assets	The Hunter Water installed pipe network installed and maintained in segments.
Point Assets	Assets which act as connections within the Linear Asset network, such as surface fittings.

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Version: 1.0

Page 7 of 23

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

5 Compliance Requirements

5.1 Standards

Civil structural and mechanical drawings shall comply with:

- This STS
- Other relevant Hunter Water Standards
- Relevant Australian Standards

Except where otherwise required in this specification, drawings shall comply with the current relevant Standards.

Any deviation from STS903 shall be approved in writing on a case by case basis by an authorised Hunter Water representative.

5.1.1 Hunter Water Standards

Drawings shall be prepared as per the requirements of:

- STS911 Preparation of Civil, Structural and Mechanical Engineering Drawings, and
- STS904 Preparation of Electrical Engineering Drawings

Operation and Maintenance Manuals shall be prepared as per the requirements of:

- STS906 Operation and Maintenance Manual Requirements

Where the standards are referenced throughout this STS, they will refer to the number only.

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Version: 1.0

Page 8 of 23

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

6 Work as Constructed Requirements

6.1 Information Provided by Hunter Water

The following information shall be provided by the Hunter Water Project Manager, if required:

- Equipment Number
- Asset Name
- Index Number
- Maintenance hole number
- Maintenance shaft number
- Line number
- Vent number
- Flow relief structure number

6.2 Survey

To determine any location co-ordinates required by this STS, the information shall be provided by:

- A registered surveyor; or
- A surveyor with the following accreditation:
 - AS/NZS ISO 9001:2008 Quality management systems – Requirements

Coordinates shall be stated in Map Grid of Australia (GDA94 Zone 56) and levels in Australian Height Datum (AHD).

Survey information accuracy shall be as the table below.

Table 1: Drawing Accuracy for Survey Data

Feature	Level Accuracy	Coordinate Accuracy
Buried work (located by prodding or electronic detector)	± 0.05m/m depth	± 0.05m/m depth
Fencing	Not required	± 0.10m
All other features.	± 0.005m	± 0.05m

6.3 Operation and Maintenance Manuals

The requirements for the provision of an Operation and Maintenance Manual (O&M Manual) are specified in *STS906 Preparation of Operation and Maintenance Manuals*.

The O&M Manual also contains contract and WAC information to be provided as part of Commissioning.

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Version: 1.0

Page 9 of 22

First Approved: February 2011



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

6.3.1 Draft at Pre-Commissioning

Supply a draft copy of the O&M Manual for review prior to the equipment pre-commissioning.

6.3.2 Final Manual at Commissioning

Supply the approved O&M Manual at commissioning.

6.3.3 Changes

The O&M Manual will require and update and resubmission should changes to assets be made during Commissioning.

6.4 Drawing Requirements**6.4.1 Linear Assets****6.4.1.1 General**

Revise the electronic version of all Construction Drawings in accordance with *STS911* to accurately depict the work as constructed. Check and revise all dimensions, co-ordinates, levels, materials and other drawing notations.

Provide a table of coordinates for all constructed surface fittings on the General Arrangement similar to Table 2. This table will describe the location and type of Surface Fittings.

Table 2: Example Coordinates for General Arrangement

Chainage	Easting	Northing	Fitting
547.15	345448.54	6383845.98	STOP VALVE
548.98	345448.55	6383847.81	AIR VALVE
549.58	345448.56	6383848.41	SCOUR TEE
551.97	345448.58	6383850.80	TEE-X CONNECTION
578.50	345448.43	6383877.33	STOP VALVE
600.36	345463.94	6383892.74	MANHOLE
670.95	345465.73	6383963.31	SCOUR TEE
722.04	345464.25	6384014.38	END BORE
731.00	345463.58	6384023.31	AIR VALVE
1339.71	345379.66	6384625.51	MANHOLE
1342.27	345379.20	6384627.99	HYDRANT
1346.97	345378.32	6384632.64	VERTICAL BEND

Indicate measurement accuracy (e.g. GPS, Measured, Survey quality).

Amend the notation to indicate actual details of features noted on the Construction Drawing to be located, sized or determined during construction.

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Version: 1.0

Page 10 of 23

Date Approved: February 2011



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

For example:

Table 3: Examples of WAC Notes amended from Construction Drawings

Construction Notes	WAC notes
A drawing note indicates pipe work as being either PVC or DICL	Amend the note to identify the as installed condition
A drawing note indicating concrete encasement of pipe work is required where cover is less than 700mm	Indicate the actual extent of encasement installed
the dimension or size on a Construction Drawing is nominal(e.g. pipe diameter)	only correct the dimension if a different size is used
Cast in-situ concrete work	Correct dimensions when the work constructed is outside the tolerances defined in AS3610 Formwork for concrete

State the origin of all levels and co-ordinates on each drawing as well as any additional survey control marks.

When specified, modify contours to indicate work as constructed.

On each drawing, state the month and year in which all field work was completed.

Add a WAC notation in the Revision table located in the lower left corner of each drawing to indicate that it is Work-As-Constructed even if no other changes have been made to the Construction Drawing.

Supply completed WAC drawings on CD/DVD, USB Key or similar in .dwg and .pdf file format. Provide one signed A3 hardcopy print of the drawings.

6.4.1.2 Sewer Fitting Coordinates

Record each of the sewer fitting easting and northing coordinates on the WAC drawing if not already provided in Section 6.4.1.1 for the following:

- Maintenance Hole (MH)
- (Access chamber)
- Maintenance Shaft (MS)
- (Access shaft)
- Air valve
- Dead end
- Detention structure
- Flow meter
- Flushing Tank
- Gate valve
- Inspection chamber
- Lamp hole
- Odour Control Dosing Unit
- Pump out scour pit
- Scour discharge point
- Stop valve

6.4.1.3 Measured Location of Fittings in Gravity Sewer Mains

Record the information below on supplied the Junction Sheet template in Appendix 1

Supply Junction Sheets in .dwg and .pdf file format and one hardcopy.

Scanned Junction Sheets shall be a minimum resolution of 300 dpi.

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Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

Information required includes:

1	Fitting type
2	The orientation of the junction (J-Back, RJ-Left, RJ-Right, Sewer Inlet, YJ-Left, YJ-Right)
3	Material
4	Depth
5	Downstream MH and MS number
6	Distance to the centre of the downstream MH or MS
7	Distances to any convenient prominent features such as boundary fences

Include the following items on the Junction Sheets

- Bulk head spacing
- Cap
- Change of material type
- Start of concrete encasement
- End of concrete encasement
- Start of thrust bore or directional drill
- End of thrust bore or directional drill
- Line junction
- Horizontal bend
- Horizontal and vertical bend
- Junction
- Vertical bend
- Bedding

6.4.1.4 Sewer Vents

Determine the following information for items which are not required to be recorded on the table of coordinates in Section 6.4.1.1, and present the table on the WAC drawing.

Description	Details
Vent number	
Easting co-ordinate	
Northing co-ordinate	
Vent material	
Vent diameter at base (mm)	
Vent height (m)	
Vent Stack Type (tapered, straight walled etc)	
Surface level (Ground level)	

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Version: 1.0

Page 12 of 25

Date Approved: February 2011



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

6.4.1.5 Sewer Flow Relief/Emergency Detention Structures and pipe work

For information not required to be recorded on the table of coordinates in Section 6.4.1.1, record the following information for all components of the flow relief or detention structure and pipe work. Present the table on the WAC drawing.

Description	Details
Flow relief or detention structure number	
Surface level (Ground level)	
Easting co-ordinate	
Northing co-ordinate	
Invert levels of incoming and any outgoing pipe work	
Invert level where overflow or detention structure pipe connects to gravity sewer	
Overflow outlet type (duckbill, flap valve etc)	

6.4.1.6 Water/Recycled Water Fittings Co-ordinates

For information not required to be recorded on the table of coordinates in Section 6.4.1.1, record the easting and northing co-ordinates for each of the water fittings on the WAC drawing.

- Air valve
- Auto inlet valve
- Ball valve
- Blank hydrant
- Booster control valve
- Borewell
- Butterfly valve
- Cluster box
- Flushing Tap
- Double air/control valve
- Hydrant
- Hydrant bend
- Hydrant control valve
- Manhole
- Meter
- Pitot cock valve
- Chlorine Dosing Unit
- Built-in Bypass valves
- Pressure reducing valve
- Pressure sustaining valve
- Reflux valve
- Scour
- Strainer
- Stop valve
- Water pump

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Version: 1.0

Page 13 of 21

2014 Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

6.4.1.7 Measured Location of Fittings in Water/Recycled Water and Sewer Rising Mains

Record the following information on the Construction drawing as the work progresses. Transfer the information to the WAC drawing.

1	Fitting type
2	Pipe sizes and materials
3	Chainage from the start of the water, recycled water or rising main
4	Distances to any convenient prominent features such as boundary fences

Provide a copy of the original marked up Construction drawing showing all field measurements with the WAC AutoCAD drawing.

- Bend
- Blank flange
- Cap
- Cross
- End of concrete encasement
- End of thrust bore or directional drill
- Gibault joint
- Start of concrete encasement
- Start of thrust bore or directional drill
- Taper
- Tapping
- Tee

6.4.2 Point Assets

6.4.2.1 General

Drawings for Point Assets shall comply with:

- STS904, and
- STS911

WAC drawings shall include drawings as follows:

- One full set of electrical drawings; and
- Three civil drawings submitted with the O&M Manual in accordance with STS906. The three required drawings are:
 - The facility general arrangement,
 - Elevations; and
 - Site plan.

The WAC details required on the civil drawing are the operational levels and any major variation from the construction drawings made to the asset.

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Version: 1.0

Page 14 of 21

Date Approved: February 2011



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

6.4.2.2 Electrical drawings

6.4.2.2.1 Draft at Pre-Commissioning

Supply a draft copy of the electrical drawings for review prior to the equipment pre-commissioning.

6.4.2.2.2 Final Manual at Commissioning

Supply the approved electrical drawings at commissioning.

6.4.2.3 Asset handover

At asset handover, a WAC hardcopy of the electrical drawings shall be provided to the site. If the asset handover occurs at commissioning and the electrical drawings require revision, then red line mark-up copies shall be left on site.

6.4.2.3.1 Changes

Any changes required to be made to the electrical drawings as a result of asset modifications in the commissioning process will be rectified and resubmitted.

6.5 Submission of WAC Information

The Work as Constructed checklist in Appendix 2 is to be completed and provided with the WAC information.

6.6 Technical Data

The schedules of technical data in Appendix 3, Appendix 4, and Appendix 5 are to be completed and provided with the WAC information.

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Version: 1.0

Page 18 of 21

First Approved: February 2011



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

7 Related Documents

Other Hunter Water drawing standards include:

- *STS904 – Standard Technical Specification – Preparation of Electrical Engineering Drawings*
- *STS906 – Standard Technical Specification – Operation and Maintenance Manual Requirements*
- *STS911 – Standard Technical Specification – Preparation of Civil and Structural Engineering Drawings*

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Version: 1.0

Page 16 of 23

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

8 Document control

Version	Date	Author	Details of change	Approval Date	Approved by	Next Scheduled Review
Feb 2010	Feb 2010	J Yearsley	Current	Feb 2010		
1.0	Feb 2014	R Payne	Full revision Update to new format Add O&M Information	Feb 2014	S Horvath	Feb 2016

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Version: 1.0

Date Approved: February 2014

Page 17 of 23



Asset Information Procedure

Standard Technical Specification – Work as Constructed Information

TRIM: HW2009-2368/2/23

Appendix 1. Junction Sheet

HUNTER WATER		JUNCTION SHEET		SHEET No.		
STREET				WORK ORDER NO.		
SUBURB				LINE NO.		
PIPE SIZE				INDEX NO.		
TYPE OF PIPE				CONTRACT NO.		
SHOW/AVERAGE DEPTH FROM SURFACE TO ROCK AT POINTS INDICATED	ROCK	UPSTREAM AC NO.	○	LOT NO.	DEPTH OF JUNCTION	
		DEPTH OF AC				
	TYPE OF BEDDING					
		DOWNSTREAM AC NO.				
		DEPTH OF AC	○			
	DISTANCE BETWEEN AC METRES					
				GANGER/OVERSEER		
				DATE		

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Version: 1.0

Page 18 of 23

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Preparation of Civil and Structural Engineering Drawings

TRIM: HW2009-2368/2/25

Appendix 2. Work as Constructed Checklist

Section	Requirement	Yes	No	Comments
6.2	WAC location co-ordinates determined by surveyor 6.2			
6.2	Co-ordinates stated in Map Grid Australia (GDA94 zone 56)			
6.2	Levels in Australian Height Datum (PM or SSM)			
6.4.1.1	Electronic version of Construction Drawing revised depicting work as constructed			
6.4.1.1	Dimensions, co-ordinates, levels, materials and other drawing notations checked and revised			
6.4.1.1	Constructed surface fittings table of co-ordinates provided on General Arrangement drawing			
6.4.1.1	Measurement accuracy indicated (eg GPS, Measured, Survey quality)			
6.4.1.1	Amended notation supplied indicating actual details of features noted on the Construction Drawing located, sized or determined during construction			
6.4.1.1	Origin of all levels, co-ordinates and additional survey control marks stated on each drawing			
6.4.1.1	Contours modified to depict work as constructed			
6.4.1.1	Month and year by which all field work was completed stated on each drawing			
6.4.1.1	"WAC" notation added in Revision table even if no other changes have been made to the Construction Drawing			
6.4.1.1	Completed WAC drawings supplied on CD/DVD in .dwg and .pdf			
6.4.1.1	Signed A3 hardcopy prints of drawings provided			
6.4.1.2	Sewer fittings	Sewer fitting co-ordinates recorded on WAC drawing		
6.4.1.3	Gravity sewer mains	Completed junction sheets supplied in hard copy and .pdf with the AutoCAD drawing		
		Junction sheets scanned at 300 dpi		
6.4.1.4	Sewer vents	Completed table presented on WAC drawing		
6.4.1.5	Sewer Flow Relief/Emergency Detention Structures and pipe work	Completed table of all flow relief or detention structure components and pipe work presented on WAC drawing		
6.4.1.6	Water/Recycled water fitting co-ordinates	Easting and northing co-ordinates of each water fitting recorded on WAC drawing		

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Version: 1.0

Page 18 of 23

Date Approved: February 2014

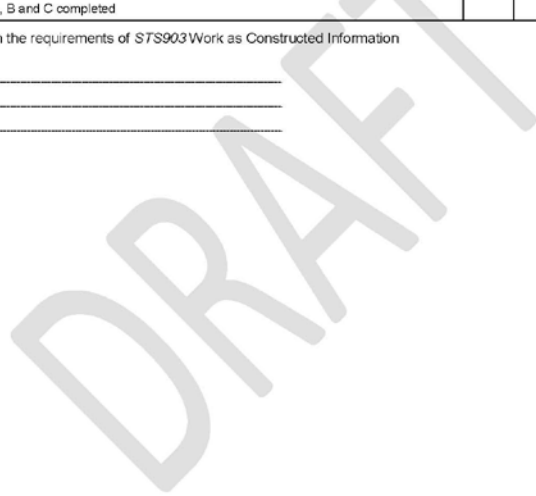
Standard Technical Specification – Preparation of Civil and Structural Engineering Drawings

TRIM: HW2009-2368/2/25

Section	Requirement	Yes	No	Comments
6.4.1.7	Measured location of fittings in water, recycled water and sewer mains	Information recorded on Construction drawing and transferred to WAC drawing		
		Copy of original marked up Construction drawing showing all field measurements provided with WAC AutoCAD drawing		
6.6	Supplied Schedules A, B and C completed			

WAC submission complies with the requirements of STS903 Work as Constructed Information

Contractor Name _____
 Contractor Signature _____
 Date _____



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Version: 1.0

Page 20 of 23

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Preparation of Civil and Structural Engineering Drawings

TRIM: HW2009-2368/2/25

Appendix 3. Schedule A – Water, Recycled Water and Sewer Pipes

Contractor				Contract No			Date Works Complete		
Ref / Drawing	Pipe Material	Pipe Lining	Structured Wall	Series (if applicable)	Pressure Class (PN)	Stiffness Class (SN)	Joint System	Manufacturer	Supplier
Note 1	Note 2	Note 3	Note 4			Note 5	Note 6		
Note 1 Drawing number or other reference if applicable									
Note 2 DI (Ductile Iron) CI (Cast Iron) S (Steel) PVC-U PVC-M PVC-O PE (Polyethylene) PP (Polypropylene) GRP ABS Cu RC VC									
Note 3 If applicable - CL (Cement Lined) FBPE (Fusion Bonded Polyethylene) PL (Plastic lined - eg. plasti liner for concrete pipes)									
Note 4 If applicable - Profile, Sandwich									
Note 5 Required for PVC non-pressure pipe (eg. SN6, SN8) and all GRP (eg. SN5000 or SN10000)									
Note 6 RRJ (Rubber ring joint) W (Welded) RRJL (Rubber ring joint with locking segments eg. "Tyton-Lock") MC (Mechanical coupling) EF (Electrofusion welded) LJ (Lead joint) SCJ (Solvent cement joint)									
Hunter Water Use Only	Hunter Water Representative				Project/Task No.		SWIMS Reference		

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Version: 1.0 Page 21 of 22
Date Approved: February 2014

Standard Technical Specification – Preparation of Civil and Structural Engineering Drawings

TRIM: HW2009-2368/2/25

Appendix 4. Schedule B – Water and Sewer Pipe Rehabilitation

Contractor				Contract No			Date Works Complete		
Ref/Drawing/MHS	Host Pipe Material	Replacement Pipe System	Pipe System	Material Class	Pressure Class (PN)	Technology	Junction/Lateral Sealing Method	Liner Trade Name	
Note 1	Note 2	Note 3	Note 4			Note 5	Note 6		
Note 1 Drawing number, upstream and downstream MH or MS numbers or other reference # applicable									
Note 2 DI (Ductile Iron) CI (Cast Iron) S (Steel) PVC-U PVC-M PVC-O PE (Polyethylene) PP (Polypropylene) GRP ABS Cu RC VC									
Note 3 PE (Polyethylene) ERIF (Epoxy Resin Impregnated Felt) PRIF (Polyester Resin Impregnated Felt) EP (Epoxy - sprayed or spread)									
Note 4 If applicable - generally for PE only eg. 20B									
Note 5 PC (Pipe Cracking) SL (Slip Lining) CIPL (Cured-in-place liner) CF (Close Fit Liner) SW (Spiral Wound) SWL (Swage Lining) PJ (Pipe Jacking) PEAT (Pipe EATING)									
Note 6 None PU (Polyurethane Grout) CF (Cementitious Fully grouted annulus) EP (Epoxy) THJL (Top Hat Junction Liner) FJL (Full Junction Liner)									
Hunter Water Use Only	Hunter Water Representative				Project/Task No.		SWIMS Reference		

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Version: 1.0 Page 22 of 22
Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Preparation of Civil and Structural Engineering Drawings

TRIM: HW2009-2368/2/25

Appendix 5. Schedule C – Pipe Fittings and Miscellaneous

Contractor		Contract Number			Date Works Complete	
Item	Ref / Drawing	Materials	Pressure Class (PN)	Supplier	Manufacturer	
Stop valves						
Hydrants						
Gibault Joints						
Bends						
Tapping Bands						
Services Valves						
SV Box						
Hydrant Box						
Junctions						
Reflux Valves						
Sluice Valves						
Gate Valves						
Air Valves						
Concrete						
Cement						
Stainless Steel Ladders						
Pre-cast Manholes						
Vent shafts						
Hunter Water Use Only	Hunter Water Representative			Project/Task No.		SWMS Reference

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Version 1.0
Date Approved: February 2014

Page 23 of 22



Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24



Hunter Water Corporation A.B.N. 46 228 513 446

Standard Technical Specification for:

PREPARATION OF ELECTRICAL ENGINEERING DRAWINGS

STS904

This Standard Technical Specification was developed by Hunter Water Corporation to be used for the design, construction/installation and/or maintenance of facilities that are, or are to become, the property of Hunter Water Corporation. It is intended that this Standard Technical Specification be used in conjunction with various other standard and project specific drawings and design requirements as defined by Hunter Water Corporation for each particular project.

Hunter Water Corporation does not consider this Standard Technical Specification suitable for use for any other purpose or in any other manner. Use of this Standard Technical Specification for any other purpose or in any other manner is wholly at the user's risk.

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Version 1.0
Date Approved:

Page 1 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

Table of Contents

- 1 Purpose..... 5**
- 2 Interpretation..... 6**
 - 2.1 Order of Precedence..... 6
- 3 Roles and Responsibilities..... 7**
 - 3.1 Document Owner..... 7
 - 3.2 Responsibilities..... 7
- 4 Definitions 8**
- 5 Compliance Requirements 9**
 - 5.1 Standards 9
 - 5.2 Copyright 9
- 6 Drawing Requirements 11**
 - 6.1 Information Provided by Hunter Water..... 11
 - 6.2 File Format..... 11
 - 6.3 Drawing Size..... 11
 - 6.4 Drawing Numbers 12
 - 6.4.1 Electronic File Name..... 12
 - 6.5 Drawing Specifications 12
 - 6.5.1 Drawing Environment 12
 - 6.5.2 Text Styles 13
 - 6.5.3 Dimensioning..... 14
 - 6.5.4 Linetypes..... 16
 - 6.5.5 Layers..... 17
 - 6.5.6 Title Block Information 17
 - 6.5.7 External References..... 17
 - 6.5.8 Plotted Drawing Identification..... 17
 - 6.5.9 Hatching..... 18
 - 6.5.10 Symbols, Blocks and Abbreviations..... 18
 - 6.5.11 Signatories 19
 - 6.5.12 Other..... 19
 - 6.6 Supply of Drawings 20

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Version: 1.0
Date Approved:

Page 2 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

- 6.6.1 Revisions..... 20
- 6.6.2 Highlighting Revisions 21
- 6.6.3 Work As Constructed..... 21
- 6.7 Completed Drawings..... 22
 - 6.7.1 Final Drawing Settings..... 22
 - 6.7.2 Company Logos 22
 - 6.7.3 Drawing Register Details 22
 - 6.7.4 Transmittals..... 22
- 6.8 Technical Presentation..... 23
 - 6.8.1 Wire Numbering..... 23
 - 6.8.2 Cross Referencing..... 24
 - 6.8.3 Component Ratings and Settings..... 24
- 6.9 Drawings Prepared Prior to the First Issue of STS904 26
 - 6.9.1 Revisions..... 26
 - 6.9.2 Electronic File Name..... 26
 - 6.9.3 Drawing Title 26
 - 6.9.4 Revision Description..... 27
 - 6.9.5 Redrawing TIF Files..... 27
 - 6.9.6 Plot Style..... 27
 - 6.9.7 Drawing Register Details 27
- 7 Related Documents..... 28
- 8 Document Control..... 29

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Version: 1.0
Date Approved:

Page 3 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

FIGURES

Figure 1: Dimensions 14

TABLES

Table 1: Documentation Provided by Hunter Water 11
Table 2: Text Styles 13
Table 3: Multileader Style Manager 15
Table 4: Standard AutoCad Linetypes 16
Table 5: Linetypes 16
Table 6: Drawing Title Examples 17
Table 7: Print Layout Setup 18
Table 8: Signatories 19
Table 9: Drawing Suffix List 23

APPENDICIES

Appendix 1. Australian Standards 30
Appendix 2. Drawing Layers 31

Warning – This document is current at time of printing or downloading. It may be reviewed and amended prior to the noted review date at the discretion of Hunter Water Corporation.

Version: 1.0
Date Approved:

Page 4 of 31



Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24



Standard Technical Specification Electrical Engineering Drawings – STS904

1 Purpose

This Standard Technical Specification details the preparation and submission of all electrical engineering design drawings to Hunter Water Corporation (Hunter Water).

It does not cover requirements for

- Work as Constructed (WAC) Drawings specified in *STS903*
- Civil, Structural and Mechanical Drawings specified in *STS911*

This Specification is available on the Hunter Water website <http://www.hunterwater.com.au>.

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Version: 1.0
Date Approved:

Page 5 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

2 Interpretation

For the purposes of the interpretation of *STS904*, except where the context requires otherwise:

- 'Drawings' means the drawings detailing the work involved in a particular project
- 'Include' means including but not limited to, and is used to provide clarification or examples of the type and nature of items intended
- 'Specification' means a specification detailing the work involved in a particular project
- 'Standards' means applicable industry standards including the Australian Standards (AS), Australian / New Zealand Standards (AS/NZS) and ISO Standards (ISO)
- 'Standard Drawings' means Hunter Water Corporation drawings
- 'Standard Technical Specification' (STS) is a reference to any of Hunter Water's Standard Technical Specifications, as implied by the text.

Headings are for the convenience of the reader and shall not be used in the interpretation of this STS.

Unless stated otherwise any expression such as "give notice", "submit", "approval", or "directed" means give notice to, submit to, approval by, or directed by the person nominated by Hunter Water.

Approval does not imply acceptance of responsibility by Hunter Water for compliance with this STS.

Unless approval has been issued in writing by Hunter Water, approval has not been granted.

2.1 Order of Precedence

The order of precedence of technical documents for a project should be stated in the project's documentation. The hierarchy of specifications are:

1. Specification, Drawings, Standard Drawings (project documents)
2. Facility related STS
3. Equipment related STS
4. *STS904*

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Version 1.0
Date Approved:

Page 6 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

3 Roles and Responsibilities

3.1 Document Owner

The Document Owner of this *STS* is the Manager Asset Management.

3.2 Responsibilities

Any request for a variation to this *STS* shall be made in accordance with the change management process in *Hunter Water Asset Standards Management Plan*.

The Document Owner shall approve in writing the issue of any updates.

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Version: 1.0
Date Approved:

Page 7 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

4 Definitions

Where the following term, abbreviation or expression occurs in this STS, it is defined as follows, unless the context implies otherwise:-

Term / Abbreviation / Expression	Definition
AS	Australian Standard
AS/NZS	Australian and New Zealand Standard
Designer	Person or organisation creating design and drawings for manufacture of equipment or construction of a system of mechanical equipment
Hunter Water	Hunter Water Corporation
STS	Standard Technical Specification

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Version: 1.0
Date Approved:

Page 8 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

5 Compliance Requirements

5.1 Standards

Electrical drawings shall comply with:

- This STS
- Other relevant Hunter Water Standards
- Relevant Australian Standards

Except where otherwise required in this specification, drawings are to comply with the current relevant Standards including, but not limited to those found in Appendix 1.

Any deviation from *STS904* shall be approved in writing on a case by case basis by an authorised Hunter Water representative

5.2 Copyright

All electronic files supplied by Hunter Water are the property of Hunter Water. This includes, but is not limited to, the contents of the Technical Information Package, including the Microsoft Office format files, AutoCAD format files and associated files, menus, plug-ins, code and scripts (Files). Hunter Water retains all intellectual property and related rights in or relating to the Files including without limitation copyright (including future copyright); confidential information, and all other rights conferred by statute, common law or equity in relation to the Files.

The purpose of the Files is to assist the user in the production of electrical drawings for Hunter Water in accordance with this Standard Technical Specification and to confirm whether electrical drawings produced for Hunter Water are compliant with this STS (Intended Use).

The Files are not to be used, copied, modified, manipulated, supplied, reproduced, provided or disclosed by or to any other person or for any purpose other than the Intended Use without the prior written consent of Hunter Water.

To the extent permitted by law, all conditions and warranties concerning the Files expressed or implied by statute, common law, equity, trade, custom or usage or otherwise are expressly excluded. Hunter Water makes no representation as to the stability of the Files and accepts no liability for any loss or damage arising from the instability of the Files.

Hunter Water is not required to provide maintenance support for the Files or detailed instructions on operational use.

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Version 1.0
Date Approved:

Page 9 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

The user must ensure that the Files are:

- Used in accordance with any instructions provided by Hunter Water
- Used appropriately and only for such of the Intended Use
- Only used, accessed, operated, and copied by, or provided to persons who are officers, employees or agents of the user and are aware of and have agreed to be bound by these terms and conditions

The user acknowledges that a zero error report by the compliance checking files does not guarantee that the drawings checked are compliant with this STS.

The user indemnifies and will keep indemnified Hunter Water against all actions, suits, claims, demands, costs, charges, damages, liabilities, loss and expenses to which Hunter Water may incur arising out of the provision to the user of, and any use, reproduction or disclosure of or change to, the Files by the user or any other person claiming through the user, which is in any way connected with or arises from the use of the Files.

Drawing files submitted to Hunter Water shall become the copyright property of Hunter Water

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Version 1.0
Date Approved:

Page 10 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6 Drawing Requirements

6.1 Information Provided by Hunter Water

Prior to commencement of a design, or modification of an existing drawing package, it is the responsibility of the designer to obtain the following information from Hunter Water, and ensure the drawing package is the latest revision.

Hunter Water Electrical Drafting has template drawings available to the Contractor in the form of a Technical Information Package.

A meeting with Hunter Water Electrical Drafting prior to commencement is strongly advised if this is the first time the Contractor has carried out drafting for Hunter Water.

The following information is provided by Hunter Water:

Table 1: Documentation Provided by Hunter Water

Information	Contact at Hunter Water
Equipment Number	Hunter Water Project Manager
Asset Name	Hunter Water Project Manager
Drawing Set Number	electrical.drafting@hunterwater.com.au
Technical Information Package including electronic copy of the standard electrical menu, borders, symbols and template drawing set	electrical.drafting@hunterwater.com.au prior to commencement of each project

6.2 File Format

Drawings shall be supplied in an AutoCad version which is two versions prior to the current Autocad release.

6.3 Drawing Size

Draw all electrical schematics, switchboard constructions, and layouts on an A3 size sheet.

A1 drawing sizes may be used upon request from Hunter Water Electrical Drafting. If approved, the Hunter Water standard A1 border will be provided.

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Version: 1.0
Date Approved:

Page 11 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.4 Drawing Numbers

The drawing number consists of three segments of information inserted in the title block as follows:

- Drawing set
- Sheet number (two digits & three digits if over 100 sheets)
- Revision number (one digit)

An example of a drawing number is shown below

SK12345	01	2
Drawing Set	Sheet Number	Revision Number

or

SK12345	101	2
Drawing Set	Sheet Number	Revision Number

All drawings submitted to Hunter Water shall only have drawing set numbers provided by Hunter Water.

6.4.1 Electronic File Name

The name of the electronic drawing files are to reflect the drawing number, but an extra zero is to be inserted in front of the sheet number if two digits and in front of the revision number. A dash is inserted between the drawing set number and sheet number, an underscore is inserted between the sheet number and the revision number. For the above example the digital file name would be SK12345-001_02 or SK12345-101_02.

The drawing title page will be on Sheet 00 and the drawing index is on Sheet 01.

6.5 Drawing Specifications

6.5.1 Drawing Environment

All electrical single line, schematic and connection diagrams are to be produced as a 2D drawing file using only Model Space.

Panel layouts and construction diagrams along with general arrangements are to be produced using a combination of Model and Paper Space. The drawing shall be drawn at a 1:1 scale in Model Space and the border inserted in Paper Space. Viewports are to be created to show the drawing in Paper Space.

Standard scales of Viewports are to be used.

Only one drawing per file; i.e. no multiple Paper Space tabs containing more than one drawing.

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Version 1.0
Date Approved:

Page 12 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.5.1.1 Scaling

All electrical single line, schematic and connection diagrams are to be drawn at a 1:1 scale. Construction and layout drawings of electrical panels will also be drawn at a 1:1 scale, but may be scaled using the Viewports and Paper Space mode as detailed in Section 6.5.1.

6.5.1.2 Borders

Only use the standard border provided by Hunter Water.

All borders are to be inserted as a block at 0,0,0 and are not to be exploded or modified.

6.5.2 Text Styles

All text is in accordance with the table below.

Table 2: Text Styles

Text Height Plotted Height	Layer	Colour	Font	Style	Width Factor	Oblique Angle
2.0mm – references	TEXT20	ByLayer	ISOCP	T20	1	0
2.0mm – wire number only	Wire	ByLayer	ISOCP	Wire	1	15
2.5mm	TEXT25	ByLayer	ISOCP	T25	1	0
3.5mm	TEXT35	ByLayer	ISOCP	T35	1	0
5.0mm	TEXT50	ByLayer	ISOCP	T50	1	0
7.0mm	TEXT70	ByLayer	ISOCP	T70	1	0

All general text in the drawing shall be Dtext and is to be horizontal and upper case. Only use lower case lettering for abbreviations for engineering units of measure. Mtext only permitted for multileader objects.

Annotative text is a property that belongs to objects that are commonly used to annotate drawings. This property allows you to automate the process of scaling annotations. Annotative objects are set to Paper Space defined height, and displayed in layout viewports and model space at the size determined by the annotation scale set for those spaces. Annotative text is to be used when drawing panel layouts, etc.

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Version: 1.0
Date Approved:

Page 13 of 31

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.5.3 Dimensioning

All dimensions are shown in millimetres. Only solid arrowheads will be used to terminate a dimension line or leader. Align dimension text parallel to the dimension line as shown below.

Use dimension style as found in AS1100 and multileader style 'Standard' as provided with the standard borders and template drawings.

Note: Annotative scaling can be used to control the overall scale of dimensions displayed in layout viewports. When you create annotative dimensions, they are scaled based on the current annotation scale setting and automatically displayed at the correct size.

Dimensions and leaders to be drawn in Paper Space (as per template drawing set)

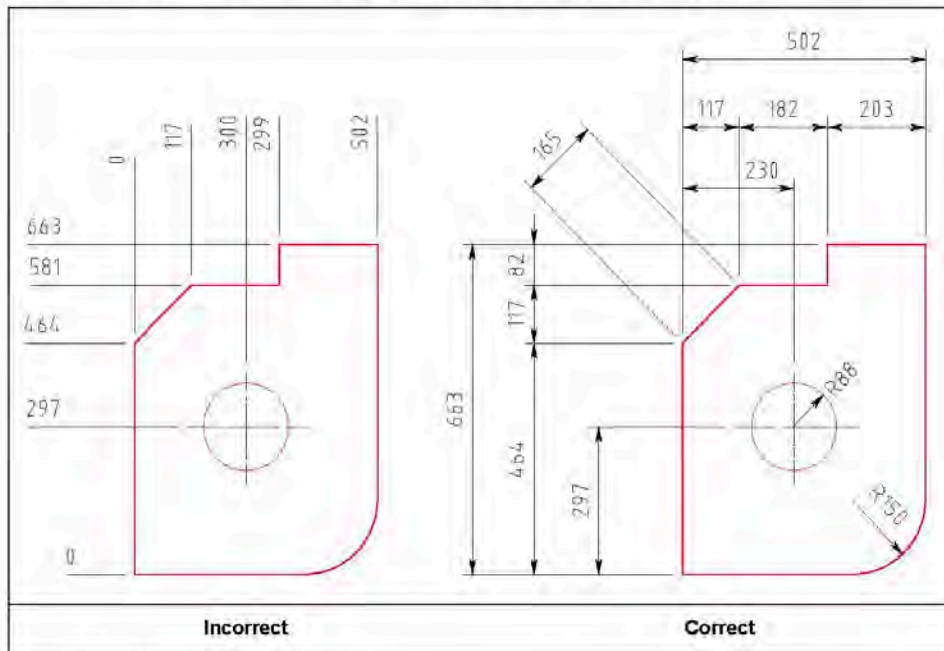


Figure 1: Dimensions

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Version: 1.0
Date Approved:

Page 14 of 31



Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.5.3.1 Leaders

All leaders to be placed onto layer TEXT20 and formatted as follows:

Table 3: Multileader Style Manager

Leader Format		
General	Type	Straight
	Colour	ByLayer
	Linetype	ByLayer
	Lineweight	ByLayer
Arrowhead	Symbol	Closed filled
	Size	2.5
Leader Break	Break size	2.5
Leader Structure		
Constraints	Maximum leader points	2
Landing settings	Automatically include landing	Selected
	Set landing distance	2.5
Scale	Annotative	Selected
	Specify scale	1
Content		
Multileader type:	Mtext	(only time Mtext is permitted)
Text options:	Default text	Default text
	Text Style	T20
	Text Angle	Keep horizontal
	Text Colour	ByLayer
	Text Height	Defaults to 2.0
Leader connection:	Horizontal attachment	Selected
	Left attachment	Middle of top line
	Right attachment	Middle of top line
	Landing gap	2.5

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Version: 1.0
Date Approved:

Page 15 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.5.4 Linetypes

Linetypes and associated colour of all entities are defined "Bylayer". Lines that are not 'Continuous' (i.e. hidden, dashed) shall be changed with the properties command and shall remain on the allocated layer

Do not break lines to simulate a linetype.

Standard AutoCAD linetypes shall be used as per the ACADISO.LIN file and as shown below.

Table 4: Standard AutoCad Linetypes

Linetype	Appearance
Continuous	
Hidden	
Dashed	
Centre	
Phantom	

The global linetype scale of 1 with an object scale of 0.25 shall be used, resulting in an object general properties linetype scale of 0.25. This shall be set up before starting any new drawing and confirmed before editing an existing drawing.

The only non STS904 linetypes that are allowable are found on the electrical template drawing SK10062-99. These represent the civil linetypes which show HV, LV and underground cabling. They are only allowable in similar type drawings to that template. Non STS904 linetypes require written approval from Hunter Water Electrical Drafting before use.

Use linetypes on drawings in accordance with the table below:

Table 5: Linetypes

Linetype	Application	Schematic	Layout
Continuous	Solid lines	✓	✓
	Visible outlines of objects and components	✓	✓
	General details and symbols	✓	
	Dimension lines, projection lines and leaders		✓
	General purpose electrical circuits	✓	
	Hatching line work	✓	✓
Hidden	Hidden outlines and edges of objects	✓	✓
	To group a number of devices in one area	✓	
	Cable runs on electrical arrangements and site plans		✓
	Objects or material to be removed	✓	✓
Centre	Centre lines and axis of components, solids, holes, hole groups and services	n/a	✓
	Cutting planes		✓
Dashed	Field wiring lines only	✓	✓

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Version: 1.0
Date Approved:

Page 16 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.5.5 Layers

Layers shall be in accordance with the table in Appendix 2.

6.5.6 Title Block Information

6.5.6.1 Drawing Title

Drawing titles identify the drawing in the context of Hunter Water’s Asset Management System. The drawing title includes the site name, asset number and functional area to which the drawing refers, as well as the specific detail of the drawing’s content. Do not use ‘No.’ or ‘#’ to signify the number of the pump station or pump, refer to examples.

Table 6: Drawing Title Examples

Title Line	Format	Pump Station	Treatment Plant
1	Asset Name (Equipment Number)	CARDIFF SOUTH 1 WPS (WSCAS015)	BELMONT WWTW (STBEL)
2	Sub Plant Area	PUMP 1 SOFT STARTER CONTROL CIRCUIT	INLET WORKS / MCC6000
3	Equipment Description	24VDC PLC CONTROL	CLARIFIER PUMP 1 – MV1234
4	Drawing Type	SCHEMATIC DIAGRAM	SCHEMATIC DIAGRAM
5	Sheet Data	SHEET 1 OF 2	SHEET 1 OF 2

6.5.6.2 Revision Table

The revision table in left-hand corner of border is to have the latest revision on the top line at all times and the revisions shall read from latest to earliest, top to bottom. If the revision table is full the earliest revision is removed from the list and the latest is put on the top line. The revision description is to reflect what has been changed on the drawing. I.e. WAC - PLC UPGRADE as detailed in Section 6.6.3.

6.5.7 External References

External references (drawing dependent on another file) on electronic drawings are not permitted. All external references must be bound prior to submission.

6.5.8 Plotted Drawing Identification

The plot style supplied with the Technical Information Package must be used. The drawing must be saved using this plot style; there will be no variations to this. The plot style is named HWC-ELEC. All drawings will be saved using this plot style.

All drawings must be saved with the plotter / printer name being the ‘Default Windows system printer’ and the paper size ‘A3’ as follows.

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Version: 1.0
Date Approved:

Page 17 of 31



Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.5.8.1 Page Setup Manager / Printer Setup

Create new layouts as follows:

Table 7: Print Layout Setup

Layout	A3 Model	A3 Layout	A4 Model	A4 Layout
Plot Style Table	HWC-ELEC.ctb		HWC-ELEC-A4.ctb	
Paper size	A3 (297 x 420mm)		A4 (210 x 297mm)	
Plot Scale	1:1		Fit to paper	
Printer/plotter	Default Windows System Printer.pc3			
Shaded viewport options	Quality – Normal Shade plot – As displayed			
Plot Area	Extents			
Plot offset	Centre the plot			
Drawing Orientation	Landscape			
Plot options	Plot object lineweights Plot with plot styles Plot paper space last			

6.5.9 Hatching

Use standard AutoCAD defined hatch patterns for all shading requirements. Do not explode hatching patterns.

6.5.10 Symbols, Blocks and Abbreviations

Use standard Hunter Water symbols on the drawings. These are located in the Technical Information Package. To receive a copy, refer to Section 6.1.

Where a symbol/block for an item of equipment or detail is not available from the Hunter Water standard list, obtain approval in writing from Hunter Water Electrical Drafting before use of the symbol. If new blocks are to be drawn, they are to be created on layer "symbol" with their attributed tag name and reference and change the text to layer symbol, bylayer, colour and the colour of the text.

Do not create blocks on any other standard layer.

Do not insert blocks with different X, Y and Z scales.

For each particular drawing, blocks shall be inserted at the same scale every time they are used, (i.e. X = 1, Y =1, Z=1))

Do not explode blocks provided by Hunter Water.

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Version 1.0
Date Approved:

Page 16 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

See drawing set SK10055 for full details of Hunter Water blocks and symbols, which will be supplied in the Technical Information Package. This set is supplied as a PDF and is for reference only.

Use abbreviations where appropriate. List and define abbreviations on the Abbreviations and Symbols drawing.

6.5.11 Signatories

The following drawing review and approval information is required on the title book.

Table 8: Signatories

Signatory	Information to be Included
Designed	The name of the designer certifying that the design requirements for the project (including technical standards) have been met. Abbreviate the name by using the designer's three initials. The date on which the designer has certified the above. The abbreviated name of the company for which the designer is employed.
Drawn	The name of the draftsman who prepared the drawing. Abbreviate the name by using the draftsman's three initials. The date for which the draftsman has completed the above. The abbreviated name of the company for which the draftsman is employed.
Checked	The name of the appropriate design team leader verifying that an independent examination of the engineering design and drawing has been carried out to confirm compliance with design standards, accuracy of content and conformance with accepted good practice. Abbreviate the name by using the design team leader's three initials. The design team leader is typically not the same person who has completed the design / drafting. The date for which the design team leader has completed the above. The abbreviated name of the company for which the design team leader is employed.
Approved	The name of the delegated officer confirming that the drawing meets the requirements of the project and that the drawing can be issued for use. The person approving the drawing is typically not the same person who has checked / designed or has completed the drawing. The date for which the delegated officer has verified the above. The abbreviated name of the company for which the delegated officer is employed.
Date Drawn	Dates are to be shown with a 'Dot' separation and with two digits for day, month and year, e.g. 01.01.11 Formats which are not acceptable include 1.1.11, 1/1/11, 01-01-11 and 01/01/11

6.5.12 Other

6.5.12.1 Grids and Grid Snap

A grid of 5.0mm and a snap of 1.25mm shall be used to ensure that all sectors align correctly. Text where applicable is to be positioned using a 5.0mm grid, 1.25mm snap to ensure a 1.25mm gap between objects and text.

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Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

Electrical symbols are in multiples of 2.5mm width and positioned to ensure that line work will snap to the symbols precisely.

6.5.12.2 P & I Diagrams

All P & I Diagrams are to be drawn using current Australian Standard symbols.

6.6 Supply of Drawings

6.6.1 Revisions

Drawings supplied during the review stages of a design, as well as at construction are to be given a sequential letter starting with Revision A.

The latest revision is always on the top line of the revision box in the drawing border.

e.g.:

Revision D	Issued for Construction
Revision C	Client Review, etc.
Revision B	Second Draft
Revision A	First Draft

If an amendment is made to the drawing following construction issue, the drawings will display the next sequential alpha revision in the title block, such as a 'D', 'E' or 'F'. The revision box of the drawing is to be updated with the revision number and description of the amendment before the drawing is re-issued.

Once a drawing has been constructed and is submitted to Hunter Water as a Work as Constructed 'WAC' Drawing (refer to STS903), it shall be given a revision status of '1'. The latest revision is always on the top line of the revision box in the drawing border.

e.g.:

23 24	1 WORK AS CONSTRUCTED					WW	XX	YY	ZZ	DD.MM.YY
No.	REVISION DETAILS					DES	DWN	CHK	APP	DATE
	A	E	C	D	E	F	G	H	I	K
										L
										M

All revision information shall be entered onto the border using the Revision Block supplied

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Version: 1.0
Date Approved:

Page 20 of 31



Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.6.2 Highlighting Revisions

When changes to the final design drawing have been made, amendment triangle/s, containing the revision number, can be placed adjacent to the modified section. For additional clarity, revision cloud/s may also be used to highlight the modifications. Once the modification has been carried out physically on site, all amendment triangles and clouding will be removed before issuing a WAC version. All notes are to be amended as appropriate.

6.6.3 Work As Constructed

6.6.3.1 General

Revise the electronic versions of all Construction Drawings to accurately depict WAC. "Construction Drawings" refers to all drawings issued or prepared to define the physical characteristics of the works to be constructed. WAC drawings are to be delivered as follows:

- Show only the WAC revision when submitted to Hunter Water; remove all pre-WAC revisions
• Comply with all the requirements of this STS when preparing and submitting WAC drawings
• Check and revise as necessary all dimensions, co-ordinates, levels, materials and other drawing notations
• For any features which are noted on the Construction Drawings to be located, sized or otherwise determined during construction amend the notation to indicate the actual location, size or characteristic
• Remove all pre-construction notes

6.6.3.2 Ongoing Revisions

When the drawings are revised after "WAC" the revision must show the following information:

- The Lead Engineer's initials and company
• The Lead Drafter's initials and company
• A relevant description of the work done along with the initials of person requesting the modification and the date of completion of the revision

e.g.

Table with 6 columns: Revision Number, Description of Work, Designed By, Drawn By, Approved By, Date Completed. Example row: 2, PLC UPGRADE (XX 01.01.11), YY, ZZ, WW, 02.02.11

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Version 1.0
Date Approved:

Page 21 of 31



Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.7 Completed Drawings

6.7.1 Final Drawing Settings

Completed drawings to be supplied to Hunter Water as follows:

- Grid of 5mm
- Snap of 1,25mm
- All layers to be turned on and thawed
- Purge drawing
- Save drawing at "ZOOM EXTENTS"
- Run CAD standard checker which is provided in the Technical Information Package
- The electronic file name shall be in accordance with Section 6.4.1
- All drawing sets are to be submitted as a whole set regardless of how many sheets were revised

6.7.2 Company Logos

No company logos are to be placed on the drawing. The company's abbreviated name is detailed in the allocated area on the standard border.

6.7.3 Drawing Register Details

The Technical Information Package shall include a Drawing Register Excel spreadsheet template. A completed Drawing Register shall be included as part of the WAC drawing submission. The drawing register contains information that is placed into the Hunter Water Plan Room Database. For electrical drawings, only complete the columns highlighted in orange.

All information that is filled in on the completed spreadsheet database is to be in UPPERCASE. An example of what is required will be supplied to the Contractor.

The spreadsheet that accompanies the WAC drawings is to contain all drawings in the package, not only drawings updated as a result of construction modifications.

The spreadsheet is required for all electrical drawings.

6.7.4 Transmittals

The command ETRANSMIT in AutoCAD is to be used to submit drawings to Hunter Water Electrical Drafting.

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Version 1.0
Date Approved:

Page 23 of 31



Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.8 Technical Presentation

All electrical drawings shall be drawn on the 5mm grid system. Electrical control schematic diagrams are drawn with the circuit ladder rungs vertical on the alpha/numerical grid.

Each Pump Station set should typically contain the following drawing sheets as defined in Section 6.8.3:

Table 9: Drawing Suffix List

Sheet	Sheet Suffix Example
Title Sheet	SK12345-00
Index Sheet	SK12345-01
Single Line Diagram	SK12345-03
Schematic Diagram	SK12345-10
P&I Diagram	SK12345-28
Termination Diagram	SK12345-76
Instrument Loop Diagram	SK12345-__
Block Cabling Diagram	SK12345-70
Cable Schedule	SK12345-69
Conduit Schedule	SK12345-__
General Arrangement	SK12345-79
P & I Diagram Legend	SK12345-90
Drafting Legend	SK12345-91
Equipment List	SK12345-92
Locality/Site Plan	SK12345-99

For a Treatment Plant spaces are to be left to allow future modifications. e.g. Pump 1 sheets 5-20, Pump 2 sheets 25-40.

Refer to *SK10062-01* for a typical sheet layout

6.8.1 Wire Numbering

All wires on the drawings will be numbered. Hunter Water uses two separate wiring numbering systems, which is dependent on the size of the electrical installation.

The system is based on sheet of origin of the wire. The prefix is based on the sheet number, the suffix of the wire numbering system used is a standard incremental two digit number. The suffix of the wire number on each sheet shall start from 00, be incremented by one, and shall not exceed 99. The allocation of suffixes will start in the top left hand corner of the drawing, flowing top to bottom and then left to right.

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Version: 1.0
Date Approved:

Page 23 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

The wire number is to be horizontal and placed adjacent to the wire with spacing as detailed in Section 6.5.12.1. The numbers are to be placed at frequent intervals along the length of the wire.

Wire numbers are to be placed on the associated layer as detailed in Appendix 2 and using the standard text style 'Wire'.

The last wire number used shall be noted on the bottom corner of the drawing above the border as shown on the template drawings and using the standard text style "T20".

6.8.1.1 Small to Medium Installations (e.g. Pumping Stations)

This system is applicable when one drawing set is used for the installation with a maximum of 99 Sheets.

Control circuit wire numbers consist of a four digit number. The number is determined by using the last two digits of the sheet number, the remaining two digits are an incremental number as detailed above, e.g. for a typical wire on drawing SK12345-53, the wire number would be '5317', where 5317 is the 17th wire that requires numbering on Sheet 53.

6.8.1.2 Large Installations (e.g. Treatment Facilities)

This system is applicable when the drawing set used for the installation has more than 99 Sheets.

Control circuit wire numbers consist of a seven digit number. The first five digits are made up from the last two digits of the drawing set number, followed by the three digit sheet number. The remaining two-digits are an incremental number as detailed above, e.g. for a typical wire on drawing SK12345-153, the wire number would be '4515317', where 4515317 is the 17th wire that requires numbering on Sheet 153.

6.8.2 Cross Referencing

All associated contacts and coils are to be cross referenced using the format detailed in this section.

Cross referencing uses a XY reference system. The first two or three characters represent the sheet number and the last two or three characters represent the XY co-ordinates of the contact or coil, etc. The cross reference will be distinguished from the wire numbers by placing the number in brackets. For example, a coil which is on Sheet 3 which has a XY co-ordinate of F20 shall be detailed on the associated contact as (03F20). If the number of sheets goes over 99, i.e. for a Treatment Plant, the reference would be (003F20).

The references are to be on layer "TEXT20" with the standard text style of "T20" as detailed in Section 6.5.2.

If wire numbers are cross referenced to other drawings in the same drawing set the cross reference will contain the sheet number followed by the XY reference or just the sheet number. For example (10A15) or (SHT 10) either is acceptable.

If wire numbers, contacts or coils are cross referenced to other drawings not in the same drawing set the cross reference will contain the whole drawing number, e.g. (SK11223-45).

6.8.3 Component Ratings and Settings

Refer to template drawings for further detail.

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Version: 1.0
Date Approved:

Page 24 of 31



Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.8.3.1 Single Line Diagrams

Single line diagrams will contain the prospective fault levels at the incoming supply to the plant and at each node (e.g. CB, Isolators, etc.) on the diagram. The protection type and setting will be displayed next to the associated protection device. The single line diagram will also display the National Meter Identifier (NMI), the Supply Authorities substation reference and if available the closest Supply Authority pole number.

6.8.3.2 Schematic Diagrams

All electrical schematic drawings will clearly identify the type and operating range of the electrical or instrumentation device used in the circuit. All analogue measurement devices are to fully detail the range and unit of measurement including the voltage or current value this range represents. Any adjustable circuit breakers are to show the setting.

6.8.3.3 Termination Diagrams

All termination diagrams will clearly identify the terminals of equipment or items of the station and indicate the interconnection between the terminals. They will flow from the voltage original protective device through to the field device.

6.8.3.4 Cable Schedules

All cable schedules will clearly identify the following:

- Origin / destination
- Class (data, power or control)
- Cable size
- Number of cores
- Ratings of cable
- Type of cable
- Estimated length

6.8.3.5 Cabling Block Diagrams

All cabling block diagrams will show a simple representation of the principle operation or function, with blocks representing the components or groups of components. No details of connections are to be given.

6.8.3.6 Switchboard Layouts

All switchboard layouts will clearly identify the switchboard dimensions and general arrangement.

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Version 1.0
Date Approved:

Page 25 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

6.8.3.7 Equipment Lists

All equipment lists will clearly identify the tag name, a description of the device, the make and model of the equipment.

6.8.3.8 Site / Locality Layout

All site / locality layouts will clearly identify major electrical elements, conduits, pits, etc. The locality plan is to show the station location, the closest main road, and surrounding streets. Show ratings of all cables and identify the cable and its mounts, e.g. ladders, conduits, power poles, transformer, etc.

6.8.3.9 Graphical Exactness

All connecting entities; (i.e. lines, circles, etc.) must meet accurately at their intersecting co-ordinate. Use object snap at all times when editing line work.

6.9 Drawings Prepared Prior to the First Issue of STS904

6.9.1 Revisions

Drawings produced prior to the initial release of *STS904* may require modification to meet current drawing standards. The following are the requirements for the modification of older drawings.

Contact Hunter Water Electrical Drafting at electrical.drafting@hunterwater.com.au for advice.

6.9.1.1 Major Revisions

Hunter Water Electrical Drafting will determine if the complete drawing set will need to be redrawn to *STS904*; i.e. if a number of new drawings are integrated into an existing set or if there are revisions to existing .tif files.

6.9.1.2 Minor Revisions

These shall comply with Sections, 6.6, 6.7.1, 6.7.2, 6.7.4 and 6.8.3.

6.9.2 Electronic File Name

All pre-*STS904* CAD file names are to be renamed to *STS904* naming convention as detailed in Section 6.4.

6.9.3 Drawing Title

All pre-*STS904* drawings, the first line of the title is to be as detailed in Section 6.5.6.1. The index sheet only shall include on the second line of the title the station address.

Contact Hunter Water electrical.drafting@hunterwater.com.au for this information.

A pre-*STS904* attributed border shall be provided in the Technical Information Package to replace the existing pre-*STS904* border.

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Version: 1.0
Date Approved:

Page 26 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

Leave previous revision details intact.

6.9.4 Revision Description

As detailed in Section 6.6.3.2.

6.9.5 Redrawing TIF Files

If old Hunter Water drawings in .tif format require revisions to be made and it is still in use, then a new SK number must be obtained by Hunter Water and it must be redrawn to *STS904* format and referenced to any other drawings if required.

6.9.6 Plot Style

The plot style supplied with the Technical Information Package must be used. The drawing must be saved using this plot style; there will be no variations to this. The plot style is named HWC-ALLBLACK. All pre-*STS904* drawings must be saved using this plot style.

All drawings must be saved with the plotter / printer name being the 'Default Windows system printer' and the paper size 'A3'. See Section 6.5.8.

6.9.7 Drawing Register Details

Refer to Section 6.7.3.

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Version 1.0
Date Approved:

Page 27 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

7 Related Documents

Other Hunter Water drawing standards include:

- *STS911 – Standard Technical Specification – Preparation of Civil Structural and Mechanical Engineering Drawings*
- *STS903 – Standard Technical Specification – Preparation of Work as Constructed Drawings*

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Version: 1.0
Date Approved:

Page 28 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM: HW2009-2368/2/24

8 Document Control

Version	Date	Author	Details of Change	Approval Date	Approved By	Next Scheduled Review
1.0	Dec 2013	M Bucci	Full revision Update to new format	Dec 13	S Horvath	Dec 15

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Version: 1.0
Date Approved:

Page 29 of 31



Asset Information Procedure

Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM HW2009-2388/2/24

Appendix 1. Australian Standards

Number	Name
AS ISO 1000-1998	The international system of units (SI) and its application
AS 1100.101-1992	Technical drawing - General principles
AS 1102.101-1989	Graphical symbols for electrotechnical documentation – General information and general index
AS/NZS 1102.102:1997	Graphical symbols for electrotechnical documentation – Symbol elements, qualifying symbols and other symbols having general application
AS/NZS 1102.103:1997	Graphical symbols for electrotechnical documentation – Conductors and connecting devices
AS/NZS 1102.104:1997	Graphical symbols for electrotechnical documentation – Basic passive components
AS/NZS 1102.105:1997	Graphical symbols for electrotechnical documentation – Semiconductors and electron tubes
AS/NZS 1102.106:1997	Graphical symbols for electrotechnical documentation – Production and conversion of electrical energy
AS/NZS 1102.107:1997	Graphical symbols for electrotechnical documentation – Switchgear, controlgear and protective devices
AS/NZS 1102.108:1997	Graphical symbols for electrotechnical documentation – Measuring instruments, lamps and signalling devices
AS/NZS 1102.109:1997	Graphical symbols for electrotechnical documentation – Telecommunications – Switching and peripheral equipment
AS/NZS 1102.110:1997	Graphical symbols for electrotechnical documentation – Telecommunications - Transmission
AS/NZS 1102.111:1997	Graphical symbols for electrotechnical documentation – Architectural and topographical installation plans and diagrams
AS/NZS 1102.112:1995	Graphical symbols for electrotechnology – Binary logic elements
AS/NZS 1102.113:1995	Graphical symbols for electrotechnology – Analogue elements
AS3702-1989	Item designation in electrotechnology
AS/NZS 4383.1:1996	Preparation of documents used in electrotechnology General requirements
AS 60417.1-2004	Graphical symbols for use on equipment: Overview and application
SAA/SNZ HB3:1996	Electrical and electronic drawing practice for students
HB7-1993	Engineering drawing handbook
Other reference standards	
AS1101.6-1989 (obsolete)	Process measurement control functions and instrumentation

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Version: 1.0
Date Approved:

Page 30 of 31



Standard Technical Specification – Preparation of Electrical Engineering Drawings TRIM HW2009-2388/2/24

Appendix 2. Drawing Layers

Layer Name	Colour	Line Type	Line Weight Thickness	Description/ Application	Schematics	Layouts
0	7 white	continuous	varies	Standard layer and is not to be used	✓	✓
BORDER	7 white	ByLayer	0.25	Border and revision blocks only	✓	✓
DEFPOINTS	7 white	continuous	default	Standard layer and is not to be used	✓	✓
DIM	7 white	ByLayer	0.25	Dimensioning		✓
PEN018	9 grey	ByLayer	0.18	Hidden lines Future designs and switch links Hatching	✓	✓
PEN025	7 white	ByLayer	0.25	Control circuit wiring	✓	
PEN035	2 yellow	ByLayer	0.35	Construction outlines Relay outlines	✓	✓
PEN050	1 red	ByLayer	0.50	Power circuit wiring Panel designs	✓	✓
PEN070	5 blue	ByLayer	0.70	Heavy outlines Bridging bars on terminals	✓	✓
WIRE	7 white	ByLayer	0.20	All wire numbers, text only	✓	
TEXT20	7 white	ByLayer	0.20	Cross reference text only	✓	
TEXT25	7 white	ByLayer	0.25	Symbol labels General text	✓	✓
TEXT35	2 yellow	ByLayer	0.35	Headings and titles	✓	✓
TEXT50	1 red	ByLayer	0.50	Headings and titles for A1 drawings only		✓
TEXT70	5 blue	ByLayer	0.70	Headings and titles for A1 drawings only		✓
Vports	7 white	ByLayer	0.25	Viewports Only (print turned off)		✓
SYMBOL	2 yellow	ByLayer	0.35	Symbol	✓	
	7 white	ByLayer	0.25	Associated text	✓	

NB: Future text/lines to be in PEN018 and removed from the template drawings if not applicable.

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Version: 1.0
Date Approved:

Page 31 of 31



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25



Hunter Water Corporation A.B.N. 46 228 513 446

Standard Technical Specification for:

**PREPARATION OF CIVIL, STRUCTURAL AND
MECHANICAL ENGINEERING DRAWINGS**

STS911

This Standard Technical Specification was developed by Hunter Water Corporation to be used for the design, construction/installation and/or maintenance of facilities that are, or are to become, the property of Hunter Water Corporation. It is intended that this Standard Technical Specification be used in conjunction with various other standard and project specific drawings and design requirements as defined by Hunter Water Corporation for each particular project.

Hunter Water Corporation does not consider this Standard Technical Specification suitable for use for any other purpose or in any other manner. Use of this Standard Technical Specification for any other purpose or in any other manner is wholly at the user's risk.

Hunter Water Corporation makes no representations or warranty that this Standard Technical Specification has been prepared with reasonable care and does not assume a duty of care to any person using this document for any purpose other than stated.

In the case of this document having been downloaded from Hunter Water Corporation's website;

- Hunter Water Corporation has no responsibility to inform you of any matter relating to the accuracy of this Standard Technical Specification which is known to Hunter Water Corporation at the time of downloading or subsequently comes to the attention of Hunter Water Corporation.
- This document is current at the date of downloading. Hunter Water Corporation may update this document at any time.

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Version: 2.0

Page 1 of 23

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

- 1 Purpose..... 4**
- 2 Interpretation 5**
 - 2.1 Order of Precedence 5
- 3 Roles and Responsibilities 6**
 - 3.1 Document Owner 6
 - 3.2 Responsibilities 6
- 4 Definitions..... 7**
- 5 Compliance Requirements 8**
 - 5.1 Standards 8
 - 5.1.1 Hunter Water Standards 8
 - 5.2 Copyright 8
- 6 Drawing Requirements 10**
 - 6.1 Information Provided by Hunter Water 10
 - 6.1.1 Design Documentation 10
 - 6.2 File format 11
 - 6.3 Drawing size 11
 - 6.4 Drawing Numbers 11
 - 6.4.1 Electronic File Name 12
 - 6.5 Drawing Specifications 12
 - 6.5.1 Drawing environment 12
 - 6.5.2 Dimensioning 14
 - 6.5.3 Line types 14
 - 6.5.4 Layers 14
 - 6.5.5 Title block 15
 - 6.5.6 External References 15
 - 6.5.7 Plotting Drawing Information 15
 - 6.5.8 Hatching and Shading 15
 - 6.5.9 Symbols, Blocks and Abbreviations 15
 - 6.5.10 Signatories 16
 - 6.5.11 Other 17
 - 6.6 Drawing Modifications 18
 - 6.6.1 Revisions 18

Warning – This document is current at time of printing or downloading. It may be reviewed and amended prior to the noted review date at the discretion of Hunter Water Corporation.

Version: 2.0

Page 2 of 23

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

6.6.2	Highlighting revisions.....	18
6.6.3	Work as Constructed.....	18
6.7	Supply of Drawings.....	19
7	Related Documents.....	20
8	Document control.....	21

TABLES

Table 1:	Information to be supplied by Hunter Water.....	10
Table 2:	Text Styles - A3 Drawings.....	13
Table 3:	Text Styles - A1 Drawings.....	14
Table 4:	Colour and Line Weights.....	14
Table 5:	Approvals.....	16
Table 6:	Accepted File Types.....	17
Table 7:	Drawing Completion Checklist.....	19

APPENDICIES

Appendix 1.	Australian Standards.....	22
Appendix 2.	Sample Template.....	23

Warning – This document is current at time of printing or downloading. It may be reviewed and amended prior to the noted review date at the discretion of Hunter Water Corporation.

Version: 2.0

Page 3 of 23

Date Approved: February 2014.



Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25



Standard Technical Specification Preparation of Civil, Structural and Mechanical Drawings - STS 911

1 Purpose

This Standard Technical Specification details the preparation and submission of all civil, structural and mechanical engineering design drawings to Hunter Water Corporation (Hunter Water). This document supersedes requirements included in WSA02 and WSA03 Appendix 3A.

It does not cover requirements for

- Work as Constructed (WAC) Drawings specified in *STS903*
- Electrical Drawings specified in *STS904*.

This Specification is available on the Hunter Water website <http://www.hunterwater.com.au>.

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Version: 2.0

Date Approved: February 2014

Page 4 of 23



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings. TRIM: HW2009-2368/2/25

2 Interpretation

For the purposes of the interpretation of *STS911*, except where the context requires otherwise:

- 'Drawings' means the drawings detailing the work involved in a particular project
- 'Include' means including but not limited to, and is used to provide clarification or examples of the type and nature of items intended
- 'Specification' means a specification detailing the work involved in a particular project
- 'Standards' means applicable industry standards including the Australian Standards (AS), Australian / New Zealand Standards (AS/NZS), and ISO Standards (ISO)
- 'Standard Drawings' means Hunter Water drawings
- 'Standard Technical Specification' (STS) is a reference to any of Hunter Water's Standard Technical Specifications, as implied by the text.

Headings are for the convenience of the reader and shall not be used in the interpretation of this STS.

Unless the stated otherwise any expression such as "give notice", "submit", "approval", or "directed" means give notice to, submit to, approval by, or directed by the person nominated by the Hunter Water.

Approval does not imply acceptance of responsibility by Hunter Water for compliance with this STS. Unless approval has been issued in writing by Hunter Water, approval has not been granted.

2.1 Order of Precedence

The order of precedence of technical documents for a project should be stated in the project's documentation. The hierarchy of specifications are:

1. Specification, Drawings, Standard Drawings (project documents)
2. Facility related STS
3. Equipment related STS
4. *STS911*

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Version: 2.0

Date Approved: February 2014

Page 5 of 23



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

3 Roles and Responsibilities

3.1 Document Owner

The Document Owner of this STS is the Manager Asset Management.

3.2 Responsibilities

Any request for a variation to this STS shall be made in accordance with the change management process in *Hunter Water Asset Standards Management Plan*.

The Document Owner shall approve in writing the issue of any updates.

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Version: 2.0

Page 5 of 23

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

4 Definitions

Where the following term, abbreviation or expression occurs in this STS, it is defined as follows, unless the context implies otherwise:-

Term / Abbreviation / Expression	Definition
AS	Australian Standard.
AS/NZS	Australian and New Zealand Standard.
Designer	Person or organisation creating design and drawings for manufacture of equipment or construction of a system of mechanical equipment.
Hunter Water	Hunter Water Corporation.

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Version: 2.0

Date Approved: February 2014

Page 7 of 23



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

5 Compliance Requirements

5.1 Standards

Civil, structural and mechanical drawings shall comply with

- This STS
- Other relevant Hunter Water Standards
- Relevant Australian Standards

Except where otherwise required in this specification, drawings are to comply with the current relevant Standards including, but not limited to those found in Appendix 1.

Any deviation from *STS911* shall be approved in writing on a case by case basis by an authorised Hunter Water representative.

5.1.1 Hunter Water Standards

Check completed drawings using the standard files HWC Civil_A3.dws or HWC Civil_A1.dws before submission to Hunter Water. Drawings containing errors will not be accepted.

Where the Standards are referenced throughout this STS, they will refer to the number only.

5.2 Copyright

All electronic files supplied by Hunter Water are the property of Hunter Water. This includes, but is not limited to, the contents of the Technical Information Package, including the Microsoft Office format files, AutoCAD format files and associated files, menus, plug-ins, code and scripts (Files). Hunter Water retains all intellectual property and related rights in or relating to the Files including without limitation copyright (including future copyright), confidential information, and all other rights conferred by statute, common law or equity in relation to the Files.

The purpose of the Files is to assist the user in the production of civil, structural and mechanical drawings for Hunter Water in accordance with this Standard Technical Specification and to confirm whether the drawings produced comply with this STS (Intended Use).

The Files are not to be used, copied, modified, manipulated, supplied, reproduced, provided or disclosed by or to any other person or for any purpose other than the Intended Use without the prior written consent of Hunter Water.

To the extent permitted by law, all conditions and warranties concerning the Files expressed or implied by statute, common law, equity, trade, custom or usage or otherwise are expressly excluded. Hunter Water makes no representation as to the stability of the Files and accepts no liability for any loss or damage arising from the instability of the Files.

Hunter Water is not required to provide maintenance support for the Files or detailed instructions on operational use.

The user must ensure that the Files are:

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Version: 2.0

Date Approved: February 2014

Page 8 of 23



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

- Used in accordance with any instructions provided by Hunter Water;
- Used appropriately and only for such of the Intended Use; and
- Only used, accessed, operated, and copied by, or provided to persons who are officers, employees or agents of the user and are aware of and have agreed to be bound by these terms and conditions.

The user acknowledges that a zero error report by the compliance checking files does not guarantee that the drawings checked are compliant with this STS.

The user indemnifies and will keep indemnified Hunter Water against all actions, suits, claims, demands, costs, charges, damages, liabilities, loss and expenses to which Hunter Water may incur arising out of the provision to the user of, and any use, reproduction or disclosure of or change to, the Files by the user or any other person claiming through the user, which is in any way connected with or arises from the use of the Files.

Drawing files submitted to Hunter Water shall become the copyright property of Hunter Water

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Version: 2.0

Date Approved: February 2014

Page 9 of 23



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

6 Drawing Requirements

6.1 Information Provided by Hunter Water

6.1.1 Design Documentation

Prior to design commencement of a design, or modification of an existing drawing package, it is the responsibility of the designer to obtain the following information from Hunter Water, and ensure the drawing package is the latest revision.

The following information is provided by Hunter Water:

Table 1: Information to be supplied by Hunter Water

Information	Description	Source
Drawing Set Number	Project drawing number	plan_room@hunterwater.com.au
Equipment Number	Hunter Water Equipment number	Project Manager
Asset Name	Hunter Water Asset name	Project Manager
Index Number	Hunter Water Index number	Project Manager
Drawing setup files		
HWC.ctb	Standard plot style pen table	Civil Drafting Package
HWC_scale.ctb	A1 to A3 plot style pen table	Civil Drafting Package
HWC_B&W.ctb	Standard black and white plot style pen table	Civil Drafting Package
HWC_B&W_scale.ctb	A1 to A3 black and white plot style pen table	Civil Drafting Package
A3 drawings:		
HWC Civil_A3.dws	Drawing standards file	Civil Drafting Package
HWC Civil_A3.dwt	Drawing template	Civil Drafting Package
HWC_A3.lin	Line type file	Civil Drafting Package
A1 drawings:		
HWC Civil_A1.dws	Drawing standards file	Civil Drafting Package
HWC Civil_A1.dwt	Drawing template	Civil Drafting Package
HWC_A1.lin	Line type file	Civil Drafting Package

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Version: 2.0

Page 10 of 25

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

If required the following information shall be provided by the Hunter Water Project Manager:

- Maintenance hole number
- Maintenance shaft number
- Line number
- Vent number
- Flow relief structure number

6.2 File format

Supply all drawings in the latest version of AutoCAD or previous two revisions, and in .dwg format.

Do not save standard borders drawings and symbols to an earlier AutoCAD version.

6.3 Drawing size

Prepare drawings as A3 or A1 using supplied drawing templates HWC Civil_A3.dwt or HWC Civil_A1.dwt. The template contains layer, line type, text and dimension style definitions, sheet frame and title block.

6.4 Drawing Numbers

The drawing number consists of three segments of information. The segments define a valid drawing number:

- Drawing set number
- Sheet number (3 characters)
- Revision number (2 characters)

The Drawing set, Sheet and Revision number is inserted in the title block.

TITLE: CG370202 SANDGATE WWPS SSSH0105 SITE PLAN								
SIZE: A3	SCALE: NTS	INDEX No.	DRAWING No.	151500	SHEET 001	REV No. 01		
R	S	T	U	V	W	X	Y	Z

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Version: 2.0

Page 11 of 23

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

6.4.1 Electronic File Name

The name of the electronic drawing files are to reflect the drawing number

eg.

15100 - 001 _ 0A.dwg

Drawing Set Number	Sheet Number	Revision
-----------------------	-----------------	----------

or

15100 - 001 _ 01.dwg

Drawing Set Number	Sheet Number	Revision
-----------------------	-----------------	----------

6.5 Drawing Specifications

6.5.1 Drawing environment

Supply drawings in AutoCAD model and paper space.

Create all structures in model space with co-ordinates in Map Grid of Australia (GDA94 Zone 56) and levels in Australian Height Datum (AHD) at a 1:1 scale.

Insert dimensions, labels and annotation text in model space.

Insert the drawing frame, general notes, reference drawing list, material list, pipe work schedule and other notation in "paper space".

Set the AutoCAD system variable "Measurement" to "1". (i.e. Metric)

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Version: 2.0

Page 12 of 25

Date Approved: February 2014

Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

Set Drawing units to:



Call up Sections and Views alphabetically using capital letters. e.g. Section A. Call up Details numerically e.g. Details 1.

Arrange sections, views and details in sequential order left to right, top to bottom on the drawing sheet.

6.5.1.1 Multiple Sheet Layouts

Multiple sheet layouts in a single .DWG file are accepted. Present PDF copies as one layout for each file.

6.5.1.2 Scales

AS 1100 scales only shall be used. Scales shall be as adopted from AS1100 Table 5.1 and 5.2 only on original sized documents.

6.5.1.3 Text styles

All text shall be in accordance with the following:

Table 2: Text Styles - A3 Drawings

Text height	Application	Font	Style	Width Factor	Oblique Angle
1.8mm	Notes and Dimensions	ISOCP	T18	1	0
2.5mm	Labels and Sub Headings	ISOCP	T25	1	0
3.5mm	Main Headings	ISOCP	T35	1	0
5.0mm	Drawing & Index numbers	ISOCP	T50	1	0

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Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

Table 3: Text Styles - A1 Drawings

Text height	Application	Font	Style	Width Factor	Oblique Angle
2.5mm	Notes and Dimensions	ISOCP	T25	1	0
3.5mm	Labels and Sub-Headings	ISOCP	T35	1	0
5.0mm	Main Headings	ISOCP	T50	1	0
7.0mm	Main Headings	ISOCP	T70	1	0

Text shall be upper case.

Use lower case lettering for abbreviations for unit of measure. Do not place text directly on line work or symbols. Text must be readable from the bottom or right hand side of the drawing.

6.5.2 Dimensioning

Each dimension shall be a single AutoCAD entity. The AutoCAD dimension style shall be CIV or SVY to suit display scale as defined in the drawing template file.

6.5.3 Line types

Set the AutoCAD entity's "Linetype" property to "Bylayer".

Set the AutoCAD system variables "Ltscale" and "Psltscale" to "1". Individual elements shall have a constant "Ltscale" of "1".

6.5.4 Layers

Set the drawing entity's colour, line weight and plot pen thickness to:

Table 4: Colour and Line Weights

AutoCAD Entity	Property
Colour	Bylayer
Lineweight	Bylayer
Plot Style	Bycolor

6.5.4.1 Layering structure

Use layers supplied in the template files *HWC Civil_A3.dwt* or *HWC Civil_A1.dwt*. Freeze layers not required in the drawing.

Drawings with non standard layers will not be accepted unless previously agreed in writing from:

plan_room@hunterwater.com.au.

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Version: 2.0

Date Approved: February 2014

Page 14 of 25



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

6.5.5 Title block

Complete all title block text attribute fields. If there is no information available for a specific field leave the field blank, e.g. Equipment number

Do not place company logos on the drawing. The company's abbreviated name shall be detailed in the allocated area on the standard border. Insert consultant's project reference number in appropriate field.

6.5.6 External References

Drawings containing external references shall not be accepted. Convert all external references to AutoCAD inserted "Blocks" prior to submission. Binding the reference file and layers containing external reference file names shall not be accepted.

All external reference files inserted as blocks shall be inserted on

layer "0" (zero). External reference files must not contain additional layers to those provided in the Hunter Water template.

6.5.7 Plotting Drawing Information

The file path, name and last plotted information are inserted as an RTEXT element. This shall not be removed.

Plotted drawings shall:

- Be Colour dependant plot style using pen style table HWC.ctb or HWC_scale.ctb
- Have Default plotter set as "default windows system printer"

6.5.8 Hatching and Shading

Use hatching or shading to clarify or enhance the drawing content. It shall be "bylayer" for colour, line type and weight and be consistent throughout the drawing set. Place hatching on appropriate hatching layers.

6.5.9 Symbols, Blocks and Abbreviations

Use symbols where appropriate. List and define symbols on a Symbols and Abbreviations drawing towards the front of drawing set.

Use abbreviations where appropriate. List and define abbreviations on the Abbreviations and Symbols drawing.

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Version: 2.0

Date Approved: February 2014

Page 19 of 23



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

6.5.10 Signatories

The following drawing review and approval information is required on the title block.

Table 5: Approvals

Signatory	Information to be included
Designed	The name of the designer certifying that the design requirements for the project (including technical standards) have been met. Abbreviate the name by using the designer's three initials. The date on which the designer has certified the above. The abbreviated name of the company for which the designer is employed.
Drawn	The name of the draftsman who prepared the drawing. Abbreviate the name by using the draftsman's three initials. The date for which the draftsman has completed the above. The abbreviated name of the company for which the draftsman is employed.
Checked	The name of the appropriate design team leader verifying that an independent examination of the engineering design and drawing has been carried out to confirm compliance with design standards, accuracy of content and conformance with accepted good practice. Abbreviate the name by using the design team leader's three initials. The design team leader is typically not the same person who has completed the design / drafting. The date for which the design team leader has completed the above. The abbreviated name of the company for which the design team leader is employed.
Approved	The name of the delegated officer confirming that the drawing meets the requirements of the project and that the drawing can be issued for use. The person approving the drawing is typically not the same person who has checked / designed or has completed the drawing. The date for which the delegated officer has verified the above. The abbreviated name of the company for which the delegated officer is employed.
Date Drawn	Dates are to be shown with a 'Dot' separation and with two digits for day, month and year, e.g. 01.01.11 1.1.11, 1/1/11, 01-01-11 and 01/01/11 format are not acceptable.

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Version: 2.0

Page 16 of 25

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

6.5.11 Other

6.5.11.1 Images

Keep the use of images to a minimum. Place images on the defined layer and set "imageframe" system variable to "2". The inserted image shall have a box with diagonal line placed around it on the "defpoints" layer to indicate extents. Text shall be placed along the line to identify the image file name

Image file names shall comply with the following:

- Drawing set number
- 3 letter image identifier prefix (IMG)
- Image descriptor (eg. locality map)

eg 14919-IMG-locality_map.jpg

The following files are accepted:

Table 6: Accepted File Types

Extension	Description
*.ecw	ECW Compressed Image Format
*.gif	Graphics Interchange Format
*.jpg	JPEG File Interchange Format
*.jpeg	JPEG File Interchange Format
*.jp2	JPEG 2000
*.j2k	JPEG 2000
*.tif	Tagged Image File Format
*.tiff	Tagged Image File Format
*.bmp	Windows Bitmap

Insert image files using relative paths to avoid loss of data when submitted. Locate all files in the same directory as the drawing they are inserted in. Transmit all image files with the drawings when drawing files are submitted.

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Version: 2.0

Page 17 of 33

Date Approved: February 2014

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

6.6 Drawing Modifications

6.6.1 Revisions

Drawings supplied during review stages of a design shall be given a sequential letter.

eg. Revision A – 1st Draft, Revision B – 2nd Draft or Revision C – Client Review etc

Once a drawing has been approved for Construction it shall be given a revision status of 0 (zero). eg. Revision 0 – Construction Issue

When an amendment is made to the drawing following construction issue, the drawings shall display the next sequential number in the title block such as a '1', '2' or '3'.

eg. Revision 1 – Dimension Updated or Revision 2 – Work-As-Constructed

The revision box of the drawing shall be updated with the revision number and description of the amendment before the drawing is re-issued. e.g.

REVISION DETAILS				CONSULTANT DETAILS	
No.	DESCRIPTION	BY	DATE	NAME	DATE
2	WORK AS CONSTRUCTED	DW	12/10/06		
1	DIMENSION ADDED	HG	25/05/08		
0	CONSTRUCTION	PT	25/03/08		
B	SECOND DRAFT	AB	04/09/07		
A	FIRST DRAFT	TA	06/08/07		

Plot Date: 02/11/10 - 10:21 Cad File: M:\ADMINISTRATION\HWCCIVIL\2010 REVISED\New Folder\HWCC Civil_A1.dwg

6.6.2 Highlighting revisions

Amendment triangle/s containing the revision number shall be placed adjacent to the modified section when changes to the final design drawing have been made. Revision cloud/s shall also be used to highlight modifications.

6.6.3 Work as Constructed

Revise the electronic versions of all Construction Drawings to accurately depict the Work As Constructed. "Construction Drawings" refers to all drawings issued or prepared to define the physical characteristics of the works to be constructed.

Show only the 'WAC' revision when submitted to Hunter Water; remove all pre-Work As Constructed revisions.

Comply with all the requirements of this STS when preparing and submitting Work As Constructed drawings.

Check and revise as necessary all dimensions, co-ordinates, levels, materials and other drawing notations.

For any features which are noted on the Construction Drawings to be located, sized or otherwise determined during construction amend the notation to indicate the actual location, size or characteristic.

Remove all pre-construction notes when submitting Work as Constructed drawings.

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Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

Revision symbols and clouds shall be in "paper space" and removed or placed on a frozen layer when drawings are revised as Work as Constructed.

6.7 Supply of Drawings

Supply draft design drawings for review as A3 hard copies and individual PDF files. Hunter Water may also request the DWG files of the drawings.

Supply final design drawings and any subsequent amendments as full size hard copies and DWG and individual PDF files.

Supply populated spread sheet (Drawing register.xls) provided in the HWC Civil_3 zip file

The following checklist shall be completed before drawings are submitted:

Table 7: Drawing Completion Checklist

1	Entities in "Model" space which are not part of the final design removed
2	All irrelevant blocks, layers, text styles purged
3	Drawings checked using relevant DWS file
4	Drawings checked for errors using the AutoCAD "Audit" command and any encryption or passwords removed
5	UCS set to "world"
6	Model view set to "plan"
7	Ltscale set to 1
8	PSLtscale set to 1
9	Drawings plotted using relevant CTB file
10	Default plotter set as "default windows system printer"
11	Saved in "zoom extents" format in paper space
12	Viewport layer frozen off for display
13	Viewports locked for display

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Version: 2.0

Date Approved: February 2014

Page 11 of 23



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

7 Related Documents

Other Hunter Water drawing standards include:

- STS904 – Standard Technical Specification – Preparation of Electrical Drawings
- STS903 – Standard Technical Specification – Preparation of Work as Constructed Drawings

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Version 1.0

Date Approved: February 2014

Page 20 of 23



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

8 Document control

Version	Date	Author	Details of change	Approval Date	Approved by	Next Scheduled Review
2.0	Dec 2013	J Yearsley	Full revision Update to new format Add 'Mechanical' to title	Feb 14	G Baker	Jan 16

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Version 2.0

Page 21 of 23

Date Approved: February 2014



Asset Information Procedure

Standard Technical Specification – Civil, Structural and Mechanical Engineering Drawings TRIM: HW2009-2368/2/25

Appendix 1. Australian Standards

Name	Number
AS ISO 1000-1988	The international system of units (SI) and its application
AS 1100.101-1992	Technical drawing - General principles
AS 1100.201-1992	Part 201: Mechanical engineering drawing
AS 1100.401-1984 / Amdt 1-1984	Technical drawing - Engineering survey and engineering survey design drawing
AS/NZS 1100.501:2002	Technical drawing - Structural engineering drawing
AS 1101.1-2007	Graphic symbols for general engineering - Hydraulic and pneumatic systems
AS 60417.1-2004	Graphical symbols for use on equipment - Overview and application
HB7-1993	Engineering drawing handbook

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Version: 0.0

Page 23 of 23

Date Approved: February 2011



Asset Information Procedure

Standard Technical Specification – Preparation of Civil and Structural Engineering Drawings

TRIM: HW2009-2368/2/25

Appendix 2. Sample Template

CONTRACT NO.	
ASSIGNED	
EQUIPMENT NO.	
DRAWING DESCRIPTION	
DRAWING EQUIPMENT	

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Version: 2.0

Date Approved: February 2014

Page 23 of 23

[ends]



PN603 GUIDED FACILITY TOURS

Application

This Practice Note sets out the requirements for the management of any guided tours of the Facilities.

Information

On occasions Hunter Water is approached to provide tours of its Facilities. Such requests can come from schools, universities, industry groups and special interest groups. Hunter Water wishes to promote understanding of the treatment activities and will accommodate such requests if appropriate.

Process

Subject to clause 17.3(3) of the Agreement and paragraph (c) of this Practice Note:

- a) Hunter Water will give the Service Provider at least 20 Business Days advance notice of any tour which Hunter Water requires the Service Provider to guide.
- b) Hunter Water shall advise the purpose of the tour and the Service Provider shall provide suitable personnel, familiar with the Facility, to guide the tour (eg. a tour by a university group or senior school group will require an engineer or scientist to answer questions).
- c) If less than 20 Business Days advance notice is not possible, Hunter Water may elect to allow the tour and provide its own personnel as guides.

[PN603 ends]



PN702 NEW WORK HANDOVER

Application

This document outlines the requirements for handover of upgraded or new assets to the Service Provider for operation and maintenance.

Handover of New Work

It is Hunter Water's intention to involve the Service Provider throughout the planning, design and construction phases of projects to provide input and gain familiarity with the work. Hunter Water and the construction contractor engaged by Hunter Water (**Contractor**) will liaise with the Service Provider during the pre-commissioning and commissioning phases of the project to ensure all parties are aware of the commissioning, operating and licence requirements and risks, and that these issues have been addressed in the pre-commissioning / commissioning plan prepared by the Contractor.

Boundaries of responsibility may be required to define the areas and processes for which the Contractor and Service Provider are responsible during construction and handover.

Depending on the size and complexity of the work, a detailed Asset Handover Plan may be prepared for specific projects by Hunter Water. Handover may take place as a single occurrence or there may be several interim handovers of assets depending on the nature of the project.

Following handover, the Service Provider will be responsible for the operation and maintenance of the upgraded or new asset.

In general the following will be provided to the Service Provider at handover of the asset:

- a) Work As Constructed drawings
- b) Operation and Maintenance Manual
- c) Asset Information / Maintenance Schedule (part of the O&M Manual)
- d) Chemical and consumable requirements (part of the O&M Manual)
- e) Automatic Control and Monitoring Manual (if applicable)
- f) Training for Operations and Maintenance staff for new or modified equipment and processes
- g) Asset Defects Register (outstanding items for rectification by the Contractor)
- h) Completed Pre-Commissioning and Commissioning Checklists



New Work Handover

- i) Risk Assessment / Standard Operating Procedures / Safe Work Method Statements for the operation and maintenance of the new or modified equipment and processes (interim SOP/SWMS documents may be required if interim handovers occur)
- j) Any Environmental Management requirements / Environment Protection Licence variations
- k) Any special tools or equipment required for operation and maintenance
- l) Revised documentation of Roles and Responsibilities for the Contractor and Service Provider (if interim handovers occur)
- m) Updated Works Boundary Plan (if interim handovers occur)
- n) Defects Rectification Period expiry date for the works

Defects Rectification Period

The Contractor remains responsible for the rectification of any defects until the expiry of the Defects Rectification Period. Under the Contract for the construction of the new work, Hunter Water must give the Contractor the opportunity to rectify any defective work which becomes apparent during the Defects Rectification Period. If the Service Provider becomes aware of any defect for which the Contractor may be responsible, the Service Provider must provide **written** notification to Manager Treatment Operations as soon as possible so that action can be taken in accordance with the Contract. If the defect requires **urgent** attention the Service Provider should take the appropriate action and provide the written notification to Manager Treatment Operations as soon as possible after the action is taken. A defect could be classified as **urgent** if the defect:

- creates a safety hazard or similar which would place Hunter Water in breach of the WHS Act, or
- creates an environmental hazard or similar which would place Hunter Water in breach of environmental legislation, or
- causes significant damage to the assets if the urgent action is not taken, or
- may cause or has caused an operational incident where people are denied a water or wastewater service, or
- may cause or has caused disruption or disturbance to public and/or private property (eg roads, buildings, etc).

Notwithstanding the expiration of the Defects Rectification Period the Contractor may be liable for rectification of defective work. The Service Provider must provide written notification of potential defective work to Manager Treatment Operations for investigation.

[PN702 ends]



PN703 MINOR CAPITAL WORKS DEFINITION

Application

This practice note sets out the guidelines defining which works are to be treated as Minor Capital Works to be carried out under the Agreement.

Definition

Capital Works are defined in clause 2.1 of the Agreement. The following examples have been prepared as an aid to applying the definition.

CAPITAL	OPERATING
<p>1) Switchboard (component) at a water pumping station (WPS) (larger asset).</p> <p>Replacement or enhancement of a switchboard that extends the useful life or increases the capacity of the switchboard is capitalised.</p>	<p>1) Replacement of a relay in a switchboard.</p> <p>If a sub component of the switchboard is replaced, and this sub-component does not extend the useful life of the switchboard as a whole, the relay meets the criteria for operating expenditure.</p>
<p>2) Replacement of a variable speed drive (VSD) in an existing switchboard.</p> <p>Although a VSD is utilised in combination with a switchboard, the VSD is considered a separate unit as it alters the operability of the driven motor. As such, the VSD is defined as a discreet unit that can be separately identified and performs a discreet function to that of a switchboard without a VSD. Therefore, the full or substantial replacement (more than 50%) of a VSD will be capitalised.</p> <p>Similar treatment will apply to Soft Starters.</p>	<p>2) Repair of a variable speed drive (VSD) in an existing switchboard.</p> <p>Where the replacement/repair of the VSD is less than 50% in value of the VSD on the whole, this work will be classified as operating expenditure.</p> <p>Similar treatment will apply to Soft Starters.</p>
<p>3) New safety mesh covers over pits.</p> <p>This can be capitalised where no safety mesh covers previously existed. As by installing the mesh covers, we are improving the functionality of the pit.</p>	<p>3) Replacing safety mesh covers over pits.</p> <p>These covers are not separable assets from the pits and therefore this should be charged to operating expenditure.</p>
<p>4) Pump Replacement</p> <p>Replacement of a complete pump can be capitalised.</p>	<p>4) Pump Repair</p> <p>Repairs to a pump to bring it back to its original condition prior to the need for the repair is considered to be operating</p>



Minor Capital Works Procedures

	expenditure.
<p>5) Fencing Installation or Enhancement</p> <p>Installing a fence where it previously did not exist or replacing an old fence with an enhanced / improved fence can be capitalised. Also, if repairing more than 50% of the length of the fence costs can again be capitalised.</p>	<p>5) Fence Repairs</p> <p>General repairs for example, repairs to broken fences (bringing the asset back to its original condition, prior to it being broken) are . However, if more than 50% of the length of the fence is replaced it would be capital.</p>
<p>6) Roof Replacement</p> <p>This can be capitalised where it is part of a new asset, for example, new water treatment plant (WTP) or replacing more than 50% of a pre existing roof of WTP.</p>	<p>6) Replacement of Roof Tiles</p> <p>Expenditure in relation to replacing / repairing only part of the roof of the WTP should be operating.</p> <p>This does not change the original functionality of the WTP and it has not been wholly or substantially replaced.</p>
<p>7) Water Reservoir Tank Major Recoat</p> <p>This is to be capitalised as the complete re-coating of the surfaces of the tank represents replacement of more than 50% in value of the tank as a whole.</p>	<p>7) Water Reservoir Tank Minor Repairs</p> <p>Repairs representing replacement of less than 50% of the tank as a whole in both physical and value terms are operating expenditure.</p>
<p>9) Hatch Cover original installation</p> <p>The original installation occurs as part of the civil structure. The hatch cover is not a separate unit from the rest of the civil structure as the hatch cover performs no separate function. The original installation is capitalised along with the rest of the civil structure expenditure.</p>	<p>9) Hatch cover replacement</p> <p>The replacement of an existing hatch cover is replacement of less than 50% of a unit as the civil structure as a whole is the unit not the hatch cover. Therefore replacement or repairs of a hatch cover are operating expenditure.</p>
<p>11) Replacement of an aeration diffusers</p> <p>Where more than 50% of the diffusers in a tank are replaced, this amount can be capitalised.</p>	<p>11) Repair of aeration diffusers</p> <p>Where less than 50% of the diffusers are replaced the amount is operating expenditure. Cleaning of diffusers is an operating expense</p>
<p>12) Replacement of filter media in</p>	<p>12) Replacement of filter media in granular</p>



Minor Capital Works Procedures

granular media filter Where more than 50% of the media in a filter is replaced, this amount can be capitalised.	media filter Where less than 50% of the media in a filter is replaced, the amount is operating expenditure.
13) UV lamp replacement Where more than 50% of the lamps in a UV bank are replaced, this amount can be capitalised.	13) UV lamp replacement Where less than 50% of the lamps in a UV bank are replaced, the amount is operating expenditure.
14) Soil bed filter replacement Where more than 50% of the media in a soil bed filter is replaced, this amount can be capitalised.	14) Soil bed filter replacement If less than 50% of the media in a soil bed filter is replaced, this amount is operating expenditure.
15) Re-concreting of pump base The pump base is part of the civil structure of the pump station, and therefore it would only be classified as capital where the re-concreting represents more than 50% of the value of the civil structure. The pump itself is separate from the pump base and would be classified as a unit on its own.	15) Re-concreting of pump base The pump base is part of the civil structure of the pump station, therefore if re-concreting represents less than 50% of the value of the civil structure it would be classified as operating expenditure.

[PN703 ends]



PN704 ELECTRICITY BILLING PROCEDURES

Application

This practice note sets out the methodology for determining the amount Hunter Water can deduct from the respective Facility Variable Fees for any Electricity Costs Hunter Water is charged by its electricity supplier with respect to a relevant Facility – refer clauses F6 and F7 of Part F of Schedule 3.

The deduction will be based on the consumption as recorded on the invoices issued by the electricity supplier and rates applied equal to the Base Date Rates, with adjustments on consumption made for electricity supplied for Hunter Water infrastructure separate to the Facilities (**HW Separate Infrastructure**).

HW Separate Infrastructure

There are three known Facilities where adjustments will need to be made because not all of the electricity measured by the electricity supplier's meter is used at the Facility.

1. The electricity usage for the Chichester Dam Chlorination Facility does not have a separate meter. The majority of the power usage is for the water pump which delivers water to the chlorination facility.
2. The electricity usage measured on the electricity supplier's meter at the Masonite Rd HV switchyard (that supplies Grahamstown WTF) also includes usage for several major pumps not part of the Facility. There is a submeter that measures the electricity usage for the Facility.
3. The electricity usage measured on the electricity supplier's meter at the Lemon Tree Passage WTF includes usage for a nearby water bore pump. A submeter will measure the electricity usage of the bore pump.

Adjustments for HW Separate Infrastructure

1. The cost for the power usage at the Chichester Chlorination Facility will be determined by calculating the power usage for the pumps. Power usage is to be calculated based on the hours run of the pumps at the Chichester Chlorination Facility as recorded in SCADA for the period of the electricity invoice and the motor size of the pumps as follows:

$$\begin{array}{l} \text{The calculated} \\ \text{power usage} \end{array} = \begin{array}{l} \text{Hours of pump run in the period} \\ \text{as recorded in SCADA} \end{array} \times \begin{array}{l} \text{Power rating of the pump} \end{array}$$

2. Consumption for Grahamstown WTF will be measured at the submeter and recorded on SCADA, in half hour intervals.



Electricity Billing Procedures

3. The adjustment for the Lemon Tree Passage WTF will be made by deducting the measured power usage for the borehole pump from the total invoice usage amount of the Lemon Tree Passage WTF, in half hour intervals.

If submeter readings are not available or pump run hours have not been extracted from SCADA for the relevant period Hunter Water may use estimates. Costs may be adjusted at subsequent invoice periods based on actual cumulative readings.

Adjustments for Base Rate

Hunter Water will in its absolute and sole discretion calculate the required reimbursement amount to be deducted from any payment due to the Service Provider by calculating, for each Facility, the cost of the electricity based on the applicable rate as at the base date and the usage shown on the electricity supplier's invoice (with any necessary adjustments as noted above).

Hunter Water will provide the Service Provider with a copy of the electricity supplier's invoice and the adjustment calculations with each payment schedule.

[PN704 ends]



PN705 PREPARATION OF VARIATION PRICE

Application

This Practice Note sets out the methodology to be used for determining a Variation Price.

Context

A Variation can only be approved in accordance with clause 34.

The proposed Variation Price to be submitted by the Service Provider in a Variation Response in response to a Variation Proposal is to be prepared based on the Estimated Additional Cost of the work comprising the Variation.

In some instances, such as an Emergency or an Urgent Work Variation, a claim may be submitted for a Variation after the work has been completed. In this case the Variation Price will be determined based on actual incurred Additional Costs, as described later in this Practice Note.

Proposed Pricing for Variation Work

The proposed Variation Price submitted in a Variation Response, for work that has not yet been carried out, is to be established taking into account the general methodology set out below. It is to comprise the Estimated Additional Cost and the applicable proposed Margin Amount.

A detailed cost breakdown of the proposed Variation Price, developed in accordance with the methodology below, is to be clearly shown in the Variation Response.

Generally, Variations are intended to be priced, Endorsed and approved as fixed lump sum amounts for the intended scope of work, where the meaning of 'intended scope' is inclusive of the particular performance outcome for the proposed activity.

If the Service Provider believes that the work is of a nature, e.g. the detailed content is so uncertain, so as to make a fixed lump sum an unreasonably risky pricing model then, if the CMG recommends and if Hunter Water approves, a reimbursable cost model may be adopted for pricing the Variation. A 'reimbursable cost model' means that the actual incurred Additional Costs, as evidenced by an 'open book' review of the Service Provider's cost records, and the appropriate Margin Amount, will be paid by Hunter Water.

Methodology for Pricing Variations

As a basis for determining the price for a Variation, the full scope of the work, including battery limits and performance outcomes that define the expected completion of the work, is to be defined and the resources required for carrying out the work are to be identified. The



Preparation of Variation Price

resources will include labour, materials, subcontractors, plant and equipment. Stages/phasing of the work activity should, where applicable, be included. Subcontract estimates or quotes should also be broken down by stage and itemised to labour, materials and plant and equipment.

Estimates should include intrinsic risks (e.g. measurement risks and supplier pricing risks) estimated on a P50 (most likely) basis for items that are definitely included in the scope of the work.

Where contingent risks are applicable (e.g. latent conditions, time windows for safe work conditions) these should be itemised. The estimated cost consequences of contingent risks are not to be included in the proposed Variation Price. These contingent risks are to be identified (i.e. event or scope item, likelihood, and consequences including cost) separately; so that if a contingent risk(s) does eventuate then payment for the realised consequences can be made, subject to approval of Hunter Water.

The source of the resources to be used to carry out the variation work is to be identified such that the breakup between Actual Costs and Additional Costs is clearly defined. The resources already provided to carry out the work required under the Agreement as part of the Management Fee, Fixed Fee and Variable Fee are to be used to carry out the variation work wherever possible; provided that this does not create an unacceptable risk to continuity of the Services.

The component of the resources that relate to each of the Margin types referred to in schedule 3 part H is to be identified so that the appropriate Margin can be applied.

The price for resources provided by subcontract is to be based on competitive pricing. This may be based on competitive prices established by tendering individual works or by using competitive prices, established via tendering, for services to be provided as required over a period of time.

Pricing For Completed Variation Claims

Where the cost for Variation work undertaken due to an Emergency in accordance with clause 34.7(4) or as an Urgent Work Variation in accordance with clause 34.10 is claimed after the work has been completed, then the price is to comprise the actual incurred Additional Costs, as evidenced by an 'open book' review of the Service Provider's cost records, and the appropriate Margin Amount.

A detailed cost breakdown to reflect the Actual Costs for the full scope of the work and the split up between Actual Costs and Additional Costs in accordance with the above methodology, as appropriate, is to be included in the Variation Response or the written request.



Preparation of Variation Price

Endorsement of Variation Proposal

Following submission of the Variation Proposal to the CMG for Endorsement the members of the CMG may review the Variation Response for Endorsement or they may arrange for the Variation Response to be reviewed by specialist staff members of their organisation or other engaged consultants. The CMG members may then seek further information or amendment to the Variation Proposal (including the Variation Price) as part of the review process. There may be several iterations of this review process before the CMG agrees that the Variation Proposal (including the Variation Price) is acceptable for Endorsement.

The Variation Proposal can be Endorsed if the Hunter Water CMG representatives have the necessary authority to do so or, if the Hunter Water CMG representatives do not have the necessary authority, the Variation Proposal will be submitted to the ELG for Endorsement.

Approval of Variation

If a Variation Proposal is Endorsed by the CMG or ELG, the Hunter Water contract manager will then seek approval for the Variation from the Hunter Water representative with the necessary delegated authority. This may include seeking endorsement from the Expenditure Review Committee and if necessary approval from the Hunter Water Board.

Hunter Water will then advise the Service Provider in accordance with clause 34.2(3).

Services Direction

If Hunter Water issues a Services Direction then the Variation Price of the relevant Variation shall be determined by Hunter Water in its absolute and sole discretion.

[PN 705 ends]



PN706 MINOR CAPITAL WORKS PROCEDURES

Application

This practice note sets out the guidelines for the management of the Minor Capital Works to be carried out under the Agreement. Refer to PN703 for a guide to the definition of a Capital Work.

Funds Approval and Budgeting Process

The Agreement addresses Capital Works planning at clause 9 and Capital Works delivery at clause 10.

Minor Capital Works are funded through the Price Path Provisions. The funding for the provisions is generally allocated for the period of the price path but funds are approved by the Board on an annual basis in March each year. Assessment and prioritisation of works to be funded by the board commences in September each year. Priority will be given to funding projects that address safety or environmental hazards or that will ensure the reliable operation of the facilities.

The program of Minor Capital Works to be undertaken each year is made up of planned work and unplanned work.

Planned work to be carried out is identified at the beginning of the financial year and funds are allocated to individual works on a priority basis determined by Hunter Water. Funds are approved subject to assessment and recommendation of Project Development Plans (PDP). A template for the PDP is attached. In allocating funds for planned work Hunter Water will hold back funds to cover the anticipated demand for funds for unplanned work.

Unplanned work is identified as it arises during the year and will generally be a result of Breakdown Maintenance or Corrective Maintenance. Funds for these Minor Capital Works are also approved subject to assessment and recommendation of Project Development Plans (PDP) and availability of funds.

Planned Minor Capital Works

The Service Provider is required to identify a program of planned works and prepare PDP's supporting the recommended program. These are to be submitted to Hunter Water by 30 August each year. Hunter Water will use these in preparing submissions for funding for following financial year to the Board.

The Minor Capital Works proposed for inclusion in the program of planned works may include work identified in previous years as Breakdown Maintenance or Corrective Maintenance and for which approval to proceed has not been obtained due to insufficient



Minor Capital Works Procedures

funds as well as works identified to improve service delivery outcomes in accordance with clause 9.5.

By the beginning of the financial year Hunter Water will provide the Service Provider with a schedule of works for which funds have been approved and issue Variation Proposals in accordance with clause 34. Submit Variation Responses and proceed with any Minor Capital Work variation that is approved by Hunter Water.

Unplanned Minor Capital Works

Unplanned Minor Capital Works will arise during the term as a result of Breakdown Maintenance or Corrective Maintenance. When unplanned work is identified obtain approval to proceed with Minor Capital Works where the Additional Cost is more than \$10,000 by submitting a PDP. The PDP is to clearly set out the cost of the alternative solutions to overcome the problem and the urgency for the work. Hunter Water will assess the need for the Minor Capital Work, its priority compared with the schedule of planned work and the available funds. Hunter Water may issue a Variation Proposal in accordance with clause 34. Submit Variation Responses and proceed with any Minor Capital Work variation that is approved by Hunter Water.

Unplanned Urgent Works may arise during the term as a result of Breakdown Maintenance or Corrective Maintenance. When Urgent Work is identified obtain approval to proceed with the Urgent Works where the Additional Cost is more than \$10,000 by initially making a verbal submission to Hunter Water. If agreement is reached that Urgent Work needs to proceed submit a statement to Hunter Water by email stating the scope of the work, the reason it is considered urgent, a preliminary estimate for the work and the time by which a response is required. Hunter Water may issue a Variation instruction in accordance with clause 34.10. Proceed with any Urgent Work Variation that is approved by Hunter Water. The approved Variation Price for this work will be based on the open book Additional Costs plus the Margin Amount for the work except that the maximum Variation Price will be no more than 50% above the estimate provided in the statement submitted by email.

Monitoring Funds

The funds approved for the Minor Capital Works provisions each year are required to fund planned and unplanned minor capital work above \$10,000 carried out by the Service Provider as well as Capital Works valued at less than \$10,000 carried out by the Service Provider and Minor Capital Works managed outside of this Agreement. Monitor the cost of all of the Capital Works carried out by the Service Provider and liaise with Hunter Water to manage expenditure to ensure that there are sufficient funds remaining at any time during the financial year to allow for unplanned high priority work that arises and that all of the funds allocated in each year are fully expended.



Project Development Plan (PDP) Template

Project Development Plan

Mini Project



(Delete blue text as you complete this form)

1. Project Details	
Project Name:	
CAP No.:	
PPP Owner:	<i>Greg Baker for Mechanical replacements Scott Mitchell for Electrical replacements Glen Robinson for civil structures and minor improvements</i>
PDP Author:	<i>Person who prepared this PDP</i>
PDP Owner (eg. Team Leader)	
Date:	
TRIM Ref.:	
HWC Initiator Contact:	<i>Name, Position Title, Section</i>

2. Brief Description of Works	
Facility Name	
AOMS No.	
Equipment Reference	

3. Objective of Project
<i>Provide a brief explanation of the objective of this project. The objective should be defined in terms of the outcome to be achieved, not what will be built or delivered, and should directly address (ie reduce or remove) the risks to Hunter Water.</i>
The objectives of this project are

4. Project Information



Minor Capital Works Procedures

*Provide a detailed description of the issue/problem to be addressed by this work.
 Define the problem or opportunity which the project addresses.
 Provide a brief history of events which led to the work being required.
 Include impacts on operating expenditure and revenue.*

4.1. Why is the work required?

Replace tick boxes as required with .

- Safety risk Low Medium High Extreme
- Environmental risk Low Medium High Extreme
- Production/ Service interruption Low Medium High Extreme
- Negative Customer or
Media Impact Low Medium High Extreme
- Condition of Equipment
- Failure of Equipment
- Reliability
- Loss of Redundancy
- Loss of Capacity
- Legislation
- Other (describe)

5. Project Risk Assessment

	YES	NO
Any high-risk construction work?	<input type="checkbox"/>	<input type="checkbox"/>
Any other work with foreseeable hazard(s)?	<input type="checkbox"/>	<input type="checkbox"/>
Any high or extreme environmental risks?	<input type="checkbox"/>	<input type="checkbox"/>
Does the project contain a design element?	<input type="checkbox"/>	<input type="checkbox"/>
Does design comply with HWC standards?	<input type="checkbox"/>	<input type="checkbox"/>
Is it 'like for like'?	<input type="checkbox"/>	<input type="checkbox"/>
If no, will consultants be engaged to assist with the design?	<input type="checkbox"/>	<input type="checkbox"/>
Will the chosen design include consideration of whole of life costs?	<input type="checkbox"/>	<input type="checkbox"/>
Is there a risk of scope creep and/or expansion?	<input type="checkbox"/>	<input type="checkbox"/>
Are stakeholders clearly identified and needs understood, eg Council, neighbours, land owner, plant operators, or other?	<input type="checkbox"/>	<input type="checkbox"/>
Is proposed system supported by ICT?	<input type="checkbox"/>	<input type="checkbox"/>
Does contractor have cash flow constraints?	<input type="checkbox"/>	<input type="checkbox"/>
Have appropriate measures been applied to tackle risk due to fraud?	<input type="checkbox"/>	<input type="checkbox"/>



Minor Capital Works Procedures

Unanticipated time constraints/restrictions/project completion deadline not met?	<input type="checkbox"/>	<input type="checkbox"/>
Interdependencies – can other work impact on the project, or can the project impact on other work?	<input type="checkbox"/>	<input type="checkbox"/>
Are there any site access and ownership issues?	<input type="checkbox"/>	<input type="checkbox"/>
Are there any shutdown/start-up requirements?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, has a strategy for planning been developed?	<input type="checkbox"/>	<input type="checkbox"/>
Are there any possible water continuity / pressure / quality impacts?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, has a strategy been developed?	<input type="checkbox"/>	<input type="checkbox"/>

6. Options

The options considered were:

6.1. Option 1 - Do Nothing

Implications:

6.2. Option 2 - [Name] – Preferred Option

Proposal:

Duration:

Estimated Cost:

6.3. Option 3 - [Name]

Proposal:

Duration:

Estimated Cost:

7. Procurement Plan

Simply provide an overview of how you expect this to be done or want this to be done.

E.g.:

In order to set up the new metering service provision with Origin's metering service provider, Acumen, contractors are required to access all large sites and change over meters. A single supplier has been identified for this service as advised by Acumen.

This project will be delivered by Maintenance Services who will utilise a suitable contractor from the maintenance panel under the terms of that Panel.

8. Community Consultation Plan



Minor Capital Works Procedures

Provide a brief overview of the consultation plan if the project has a community impact eg digging up the street or driveway. Otherwise N/A.

9. Recommendation

Preferred Option

To ...

Required Delivery Dates:

Start date:

Completion date:

Cost Estimates for Project:

Cost:

Price Path Provision Budget

CP	Description	Funding (\$)
CPXXXX00	Approved Funds for PPP	
	Projects approved to date	
CPXXXX01	Rolloff / Available Funds	
	This project	
	Available Funds (after this project)	

Preferred Option

Item	Amount (\$)
Internal labour	
HWC material purchases	
Contractors	
Designers	
Other (nominate)	
Total	

Indicate the nature of the cost estimate – estimate based on:

- Supplier quote
- HWC Internal estimate
- Similar works performed previously



Indicative figure/best guess



10. Approval / Funding Delegations

Approval of the Preferred Option contained in this PDP & authorise capital funding covered by this submission, under delegated authority rules.

Delegate	Signature
Team Leader – Supervisor	
Manager Level D	

[PN706 ends]



PN707 PRICING OF MINOR CAPITAL WORKS

Application

This practice note sets out guidelines for determining if the cost of a Minor Capital Work or other variation work to be funded by Hunter Water is less than or greater than the [REDACTED] Additional Cost threshold for works to be funded by Hunter Water.

Estimate of Costs

If the Additional Cost of a Minor Capital Work or other variation work to be funded by Hunter Water is expected to exceed [REDACTED] and the Service Provider wishes to claim costs from Hunter Water a Variation Proposal must be requested, which Hunter Water will provide, and a Variation Response is to be submitted. The Variation Response will need to establish that the Additional Costs are in excess of [REDACTED].

Two examples are shown below for assistance. The submission to Hunter Water should set out the scope of work and the breakup in the costs as described in PN705 – Preparation of Variation Price.

The costs shown below under the “base costs” column are the costs that the Service Provider would have incurred regardless of whether or not the Minor Capital Work or other variation work to be funded by Hunter Water was carried out. This will include costs such as labour and equipment already provided to deliver the Services.

Example 1 – Additional Costs less than \$10,000

Item	base cost \$	Additional Cost \$	Actual Cost \$
Supply of materials and plant	[REDACTED]		
Use of plant and equipment on site			
Use of plant and equipment not available within the current Services deployment			
Installation labour			
Testing and Commissioning costs			
Planning and project management			
Site supervision			
Total			

In this example the Additional Cost is less than [REDACTED] and the Service Provider is not entitled to any payment in addition to the base fees.



Pricing of Minor Capital Works

Example 2 – Additional Costs greater than [REDACTED]

Item	base cost \$	Additional Cost \$	Actual Cost \$
Supply of materials and plant			
Use of plant and equipment on site			
Use of plant and equipment not available within the current Services deployment			
Installation labour			
Testing and Commissioning costs			
Planning and project management			
Site supervision			
Total			

In this example the Additional Cost is greater than [REDACTED] and the Service Provider may claim payment of the Additional Costs of [REDACTED] as a variation to the Agreement.

Example 3 – Effect of a change of law requiring work at 12 plants on one occasion

Item	base cost \$	Additional Cost \$	Actual Cost \$
Plant 1			
Plant 3			
Plant 3			
Plant 4			
Plant 5			
Plant 6			
Plant 7			
Plant 8			
Plant 9			
Plant 10			
Plant 11			



Pricing of Minor Capital Works

Plant 12	
Total	
Adjustment for plant 6 cost above \$10,000	
Total aggregate Additional Costs	

Plant 6 has an Additional Cost greater than [redacted] and will be eligible for payment.

The total aggregate excluding plant 6 is less than [redacted] and therefore the remaining plants are not eligible for payment.

Example 4 – Effect of a change of law requiring work at 20 plants on one occasion

Item	base cost \$	Additional Cost \$	Actual Cost \$
Plant 1			
Plant 3			
Plant 3			
Plant 4			
Plant 5			
Plant 6			
Plant 7			
Plant 8			
Plant 9			
Plant 10			
Plant 11			
Plant 12			
Plant 13			
Plant 14			
Plant 15			
Plant 16			



Pricing of Minor Capital Works

Plant 17	
Plant 18	
Plant 19	
Plant 20	
Total	
Adjustment for plant 6 cost above \$10,000	
Total aggregate Additional Costs	

Plant 6 has an Additional Cost greater than [REDACTED] and will be eligible for payment.

The total aggregate excluding plant 6 is greater than [REDACTED] and therefore the remaining plants are eligible for payment.

The Service Provider may claim payment of the Additional Costs of [REDACTED] as a variation to the Agreement.

[PN707 ends]



PN801 TREATMENT PLANNING MEETINGS

Background

The purpose of the Treatment Planning Meetings is to allow exchange of information between various groups involved in:

- a) dealing with regulators and assessing implications of regulatory changes;
- b) considering growth and impacts on demand and capacity;
- c) assessing the need to upgrade the Facilities;
- d) preparing strategy studies and options for upgrades;
- e) managing the design and delivery of new works;
- f) operations and maintenance of the Facilities.

Scope of Work for Service Provider

Input required: The Service Provider's representatives must attend all meetings and provide input on relevant topics as required. The Service Provider is also required to undertake any follow-up actions that arise from the meetings.

Timing

Frequency: Monthly

Timing: to be advised by Hunter Water

[PN801 ends]



PN802 RECYCLED WATER QUALITY MEETINGS

Background

Reason for meeting: The responsibility of the Recycled Water Quality Committee is to:

1. Oversee and review performance against the Australian Guidelines for Water Recycling
2. Review the quality of recycled water supplied to customers by Hunter Water
3. Ensure that regular contact occurs between relevant staff involved in the marketing, planning and supplying of recycled water
4. Review current and planned operational and asset changes and issues
5. Review emerging recycled water quality issues and regulatory changes
6. Verify that effective corrective action is undertaken in response to quality exceptions
7. Operate as a core knowledge management centre for recycled water quality

Scope of Work for Service Provider

Input required: The Service Provider's representatives must attend all meetings and provide input on relevant topics as required. The Service Provider is also required to undertake any follow-up actions that arise from the meetings.

Timing

Frequency: Monthly

Timing: to be advised

[PN802 ends]



PN803 WATER QUALITY COMMITTEE MEETINGS

Background

Reason for meeting: The responsibility of the Water Quality Committee is to:

1. Oversee and review Hunter Water's performance against the Framework for Managing Drinking Water Quality which is part of the Australian Drinking Water Guidelines.
2. Review the quality of raw and treated drinking water supplied to customers by Hunter Water
3. Ensure that regular contact occurs between relevant staff from:
 - Hunter Water Water Resources
 - Hunter Water Treatment Operations
 - Hunter Water Network Operations
 - Treatment Operations Service Provider
 - Laboratory Service Provider
4. Review current and planned operational and asset changes and issues
5. Review emerging drinking water quality issues and regulatory changes
6. Verify that effective corrective action is undertaken in response to water quality variations and exceptions
7. Operate as a core knowledge management centre for drinking water quality

References:

Water Quality Committee Terms of Reference (HW2006-1417/15/5.001)

Water Quality Committee Standing Agenda (HW2006-1417/15/5.006)

Scope of Work for Service Provider

Input required: The Service Provider's representatives must attend all meetings and provide input on relevant topics as required. The Service Provider is also required to undertake any follow-up actions that arise from the meetings.

Typical agenda items for the meeting include (Note: not all will be applicable to the Service Provider):



Water Quality Committee Meetings

- a) Minutes from previous meeting
- b) Actions arising from previous meeting / actions register
- c) Water quality exception reporting & zone means
- d) Network operations water quality report
- e) Drinking water quality management system (DWQMS) and regulatory changes
- f) Forward capital program and planned operational changes
- g) Catchment and storage report
- h) Research & emerging issues
- i) General business

Timing

Frequency: Monthly

Timing: 1st Thursday of each month

[PN803 ends]



PN804 MONTHLY CONTRACT REPORT

Background

Reason for report: The Contract requires the Service Provider to submit a written Monthly Contract Report to the Collaborative Management Group (**CMG**) covering all Facilities.

References: Nil

Scope of Work for Service Provider

Input required: Prepare the full report Monthly Contract Report.

Content: The final content and format will be developed over time but will include items such as:

- Summary
- WHS Management
 - Complete the Service Provider WHS Performance Report (see [Attachment 1](#) for template) including an updated register of Safe Work Method Statements/Standard Operating Procedures, a summary of all WHS inspections and reviews carried out, updated training register and details of all WHS training carried out, and details of any WHS incidents and issues.
 - Enter the same safety performance indicators as in [Attachment 1](#) into the Contractor WHS Report (refer [PN812](#))
 - Consideration of information contained in the Contractor WHS Report is for the purposes of monitoring and reviewing the Service Provider's performance under this Agreement.
- Environmental Management
 - Complete the Contract Environmental Management Report (see [Attachment 2](#) for template) including Waste Management and Greenhouse Gas data.
- Quality Management
 - Results of audits completed by the Service Provider (including those on subcontractors),
 - Status of development of Procedures, Method Statements and Inspection and Test Plans,
 - Report on any non-conformances and associated corrective and preventive actions.
- Environment Protection Licence Performance and Data



Monthly Contract Reports

- Provide commentary on any non-compliances or predicted non-compliances. Submit data on the ;
 - Compliance with EP Licence conditions (Required for HWC Corporate Monthly Performance Report – refer [PN820](#)), and
 - Number of Compliant WWTWs (Required for HWC Corporate Monthly Performance Report – refer [PN820](#))
- Provide licence summary data (Load limit (%) performance graphs) (example available on request)
- Provide load tracking spreadsheets and graphs showing cumulative load (example available on request)
- Provide Wastewater Treatment Overflow data (example available on request)
- Effluent Reuse data (example available on request)
- Water quality
 - Provide commentary on any water quality issues.
- Maintenance
 - Scheduled Maintenance Works Progress: Provide an updated program for the scheduled maintenance work showing progress made. Report on the ability to achieve the maintenance schedule and the action to be taken to improve progress if necessary.
 - Maintenance tasks completed: Report on planned vs actual maintenance for the month
 - Scheduled Maintenance completed for the month (%) (Required for HWC Corporate Monthly Performance Report - refer [PN820](#))
 - Scheduled Maintenance completed for the month (%) – Critical components (Required for HWC Corporate Monthly Performance Report - refer [PN820](#))
 - Discuss any Asset Deficiency Notifications submitted during the month (Refer [PN205](#))
 - Any planned work impacting the flow rate at a treatment plant. Discuss progress of any requests to vary flow submitted to Hunter Water (refer PN301, PN302 and PN303)
- Industrial Relations Management
 - Industrial action (on site or off site) which may impact upon the work under the Contract, inspections of the site by union officials.
- 1st Year Apprentices



Monthly Contract Reports

- Report on the number of 1st year Apprentices employed. (see [Attachment 3](#) for template)
- Financial
 - Contract Payments: Provide a table of payment claims, payments received and predicted payment claims.
 - Variations/Claims for Extra Cost: Provide a variation/claim register that shows the status of actual and anticipated Variations/Claims for Extra Cost.
 - Breakdown of Payments: Provide a breakdown of the monthly payment showing the details for each plant listed in the Attachment 4.
- Subcontract Matters
 - Provide a register of the work which has been or will be subcontracted and the name of the subcontractors.
- Requests for Information (Register)
 - Provide details of correspondence for which a response from the Collaborative Management Group (**CMG**) is outstanding.
- Status of Third Party Complaints
 - Provide a register of all complaints received including source, date, time, issue, action/status.

Format: Final report in format to be agreed by Hunter Water and Service Provider.

Templates are available for:

- Service Provider WHS Performance Report (refer [Attachment 1](#)),
- Contract Environmental Management Report (refer [Attachment 2](#)),
- 1st Year Apprentice Report (refer [Attachment 3](#)).
- Monthly Contract Report (Refer HW2010-1577/3.001 – out of date refers to OHS)

Timing

Timing/Frequency: Monthly

Due Date: The report is due within 5 calendar days of the end of each month.

[PN804 ends]



ATTACHMENT 1 - SERVICE PROVIDER WHS PERFORMANCE REPORT

Contract/Brief Name:		Month:	
Contract/Brief Number:		Prepared by:	
Service Provider:		Date:	
PERFORMANCE INDICATOR	Occurrences including subcontractors, subconsultants & employees		
	Current Month	Total to Date on Contract/Brief	Reported to HWC during month? Y/N
Lost Time Injuries <i>(incident that resulted in time lost of one day/shift or more)</i>			
Total No. of Days Lost to above LTI's			
Medical Treatment Injuries <i>(treatment administered by a doctor or hospital)</i>			
First Aid Injuries <i>(first aid treatment in the workplace)</i>			
Near Misses <i>(incident with no injury but potential for injury)</i>			
Notifiable Occurrences reported to WorkCover			
Property Damage			
WHS Training (first day on site)			
WHS Training (later than first day on site)			
Workplace Inspections Carried Out			
Total hours worked by Service Provider			
Total hours worked by subcontractors/consultants			

Details of the following information are attached as applicable:-

Safe Work Method Statements

An up to date copy of the register of safe work method statements, including confirmation that the principal contractor has ensured that all safe work method statements comply with the WHS Regulation.

Inspections and Reviews

Summary of all WHS inspections and reviews carried out to identify hazards and ensure that risk management controls are being implemented and adhered to.

WHS training

An up to date copy of the training register and details of all WHS training carried out.

Incident management



IPART Pricing Submissions

Details of any WHS incidents (including near misses), WHS issues (including non-compliance with procedures) and proposed or completed corrective actions.

Service Provider Comments _____

I certify that all actions required by the Safety Plan / WHS Management Plan have been completed.

Name of Service Provider's Representative: _____

Signature: _____ Date: _____

Hunter Water's Comments _____

1	Number of audit / inspections carried out by HWC during the month	
2	Number of audit / inspections carried out by a third party during the month	
3	Meeting/s held with the Service Provider during the month?	Yes / No
4	Number of issues logged in Issue Management System during the month	

Name of Hunter Water Representative: _____

Signature: _____ Date: _____



ATTACHMENT 2 - CONTRACT ENVIRONMENTAL MANAGEMENT REPORT

CONTRACTOR - MONTHLY ENVIRONMENT REPORT



Please enter data into blue and yellow cells where relevant. Comments may be added at the base of the page. When calculating data include data relevant to Subcontractors working on the site as part of the project team. Do not include data that relates to Subcontractors who only make deliveries to the site.

REPORT FOR THE MONTH/YEAR OF		
-------------------------------------	--	--

CONTRACT NUMBER	
CONTRACT NAME	
MY NAME	
MY HWC PROJECT MANAGERS NAME	

<u>ENVIRONMENT</u>	<u>UNITS</u>	This Month
Reportable environmental incidents*	number	
Third party complaints	number	
Any prosecutions and penalty notices	number	

* Provide detail on the nature of the incident at the base of the page

<u>PEOPLE</u>		
Staff given environmental training #	number	

This may include specific environmental training or be part of site induction.

<u>ENERGY USE</u>		This Month	
Biodiesel	litres		
Diesel	litres		
Ethanol	litres		
E10	litres		
Petrol (Unleaded)	litres		
LPG	GJ		
Natural Gas	GJ		
Electricity (If not supplied to site by HWC)	KWatthours		From Bill

<u>TOTAL WASTE GENERATED THIS MONTH</u>		Waste Volume	Volume Recycled	% Recycled
Vegetation	Tonnes			0%
Concrete	Tonnes			0%
Soil or fill	Tonnes			0%
Asphalt	Tonnes			0%
Timber	Tonnes			0%
Bricks and roof tiles	Tonnes			0%
Metals - iron and steel	Tonnes			0%
Metals - non ferrous	Tonnes			0%
Plasterboard	Tonnes			0%



IPART Pricing Submissions

Plastics	Tonnes			0%
Glass	Tonnes			0%
Paper & Packaging	Tonnes			0%
Mixed general waste sent to landfill	Tonnes			
Co-mingled recycling waste(cans,bottles,etc)	Tonnes			
Contaminated/hazardous waste(ie.Asbestos)	Tonnes			

COMMENTS

For further information, please contact roland.bow@hunterwater.com.au



ATTACHMENT 3

1st Year Apprentices engaged by Contractors on NSW Government funded projects, by primary work location

Contract No./ Name:	Month:	Year:
Contractor:	Signed:	

Primary work location	Trade Qualification	Total Apprentices	Number of Indigenous Apprentices	Number of Female Apprentices	Comments

ATTACHMENT 4

Category	Driver	Water Treatment	Wastewater Treatment	Recycled Water
Variable Facility Fees				
	Chemicals	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Screening & Grit		<input checked="" type="checkbox"/>	
	Continuous Biosolids		<input checked="" type="checkbox"/>	
Fixed Facility Fees				
	Operator Labour	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Maintenance Labour	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Other Labour	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Lagoon Dewatering	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Civil/Operational Maintenance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Electrical Mechanical Maintenance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Grounds Maintenance	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Effluent Reuse	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	General Miscellaneous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Capitlal Works with costs <\$10k	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Management Fee	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Profit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



PN805 IPART PRICING SUBMISSIONS

Background

The prices that Hunter Water charges its customers are regulated by the NSW Independent Pricing and Regulatory Tribunal (IPART). In response to a submission from Hunter Water, IPART determines the prices for a period, typically of four years.

The submission details Hunter Water's operating and capital works budgets for the price path period, giving particular attention to any matters driving increases such as regulatory changes, population growth and actions taken to ensure cost efficiency.

Scope of Work for Service Provider

Input required: Assist in the development of capital and operating budgets for any upcoming price path and the justification of any increases. The competitive tendering process will initially provide evidence of cost efficiency but IPART may look for efficiencies in subsequent price paths.

Specific requirements may be defined or indicated by IPART approaching the time for preparation of the submission

Timing

Timing/Frequency: As directed by Hunter Water. Typically once every 4 years but it is possible that this may change.

Due Date/s: Hunter Water will provide program requirements as each submission approaches. Information is generally required about 18 months prior to the end of the current price path.

[PN805 ends]



PN806 CUSTOMER COMPLAINT INVESTIGATIONS AND REPORTING

Background

All customer complaints are received logged and managed by Hunter Water's Customer Service group. Details of any complaints which are suspected to relate to the Facilities will be provided to the Service Provider.

Scope of Work for Service Provider

All customer complaints are not to be dismissed lightly and must be investigated to identify whether the complaint relates to the Facilities or provision of the Services in any way.

If it is determined that the complaint relates to the Facilities or provision of the Services, the Service Provider must identify what action can reasonably be taken to prevent a recurrence of the conditions which lead to the complaint.

Provide feedback to Hunter Water in the form and timeframes advised when notified of the complaint.

Do not contact the complainant without first obtaining approval from Hunter Water.

[PN806 ends]



PN808 AUDIT RECOMMENDATION STATUS REPORT

Background

Reason for report: HWC Operating Licence requirement

References:

- a) HWC Operating Licence 2012-2017
hunterwater.com.au/Resources/Documents/Legislation-and-Governance/Operating-Licence.pdf (Refer Section 8.2: Reporting)
- b) HWC Operating Licence Reporting Manual 2012-2017 ([HW2010-2072/13/5.002](#)) (Refer Section 9 Other Reporting)

Scope of Work for Service Provider

Input required: Provide input as required into brief report.

Content: Provide information on the status of any relevant audit recommendations identified in the most recent Operational Audit

Provide information on any significant changes that have been made since 31 March the previous year to the Service Provider's Drinking Water Quality Management System and Recycled Water Quality Management System.

Format: Final draft in template provided by Hunter Water

Examples of past reports: Available on request.

- a) [No example for status of audit recommendations – table format similar to Significant Changes report.](#)

Timing

Timing/Frequency: Annual

Due Date/s: Report to be submitted to IPART by 31 March each year. Any information required from the Service Provider is due to Hunter Water by the end of February in that year.

[PN808 ends]



PN809 AUSTRALIAN BUREAU OF STATISTICS DATA

Background

Reason for report: Australian Bureau of Statistics requirement.

References: Nil

Scope of Work for Service Provider

Input required: Provide input to relevant parts of ABS survey. (Part 9- Wastewater) The remainder of the survey is completed by Hunter Water.

Content: Same content each financial year:

- a) Volume of Wastewater collected
- b) Volume of Wastewater treated
- c) Volume of Recycled Water supplied
- d) Volume of Recycled Water supplied by customer type (eg: residential/non-residential, agriculture, mining etc)
- e) Volume of Recycled Water used by Hunter Water
- f) Volume of Wastewater discharged by location (surface water, groundwater, sea)

Format: Provide data by email or marked up on a copy of the survey provided by Hunter Water.

Examples of past reports: Available on request.

[Hunter Water Reference Only:

- a) [Water Supply and Sewerage Services Survey 2010/11 \(HW2007-224/7.001\)](#).
- b) [See also extract from 2011/12 report](#)]

Timing

Timing/Frequency: Annually around September /October in each year

Due Date/s: As directed by Hunter Water. There is normally a tight timeframe for submission of data (allow 3 days for submission of draft).

[PN809 ends]



PN810 ANNUAL INFORMATION REPORT (AIR)

Background

Reason for report: NSW Government requirement. The data feeds into the Metropolitan Water Suppliers In NSW - Annual Information Return.

References: Nil

Scope of Work for Service Provider

Input required: Provide input into spreadsheet.

Content:

Wastewater Collection and Treatment Data:

- a) Total Treatment Capacity,
- b) Total Licenced Capacity
- c) Sewage collected
- d) Sewage treatment level
- e) Sewage Discharge
- f) Sewage Sludge Disposal

Recycled Water Data:

- a) Total Operating Capacity of Treatment Plant – average
- b) Total Operating Capacity of Treatment Plant – peak
- c) Maximum day's demand
- d) Average day's demand

Format: Data entered into template provided by Hunter Water.

Examples of past reports: Available on request.

[Hunter Water Reference Only:

Service Provider Content is all items with BJ/MR marked as the Data Provider in the Index_Contacts tab of the example report.

- a) HW2006-2424/17/19.001 - 2013 AIR
- b) HW2006-2424/16/4.001 - 2012 AIR]

Timing

Timing/Frequency: Annual. Due in September 2012. Due in November 2013.

Due Date/s: As directed by Hunter Water. Data to be submitted to Hunter Water two weeks after the spreadsheet becomes available and Hunter Water notifies the Service Provider of the availability of the spreadsheet.



[PN810 ends]



PN811 COMPLIANCE AND PERFORMANCE REPORT (WEBSITE)

Background

Reason for report: HWC Operating Licence requirement.

References:

- a) HWC Operating Licence 2012-2017 hunterwater.com.au/Resources/Documents/Legislation-and-Governance/Operating-Licence.pdf (Refer Section 8.2: Reporting)
- b) HWC Operating Licence Reporting Manual 2012-2017 ([HW2010-2072/13/5.002](#)) Refer Table 1.1.1 Summary of Hunter Water's reporting requirements and Section 2.2.1 Compliance and Performance Reporting
- c) Draft Critical Control Points (refer Practice Note PN111)

Scope of Work for Service Provider

Input required: Provide input to report.

Content: As per HWC Operating Licence Reporting Manual 2012-2017 Section 2.2.1:

- a) Drinking Water and Recycled Water quality management activities and programs completed
- b) Drinking Water and Recycled Water quality management activities and programs proposed
- c) An assessment of the performance of critical control points
- d) Any proposed significant changes to the Drinking Water Quality Management System and/or the Recycled Water Quality Management System
- e) Any failures in the Drinking Water Quality Management System and/or the Recycled Water Quality Management System, and the action taken to resolve them.

For 2012/13 the reporting included performance of Critical Control Points (exceedance of limits). From 1/7/14 (2014/15 financial year) reporting of filtered water turbidity and disinfection (exceedance of limits and also % of flow within target range) may be required from the Service Provider. A new report is being developed (K Moore and HWA).

Format: Similar to the template provided in Appendix F of the Reporting Manual (Note: Section 2.2.1 refers to App C). Requirements are likely to change for the 2014/2015 financial year.

Examples of past reports: See Compliance and Performance Report 2012/13 on the Hunter Water website hunterwater.com.au/Resources/Documents/Other-Reports/Regulatory-Reports/Compliance-and-Performance-Report---2012-13.pdf



Compliance and Performance Report (website)

Timing

Timing/Frequency: Annually, due to IPART by 1 September in each year.

Due Date/s: Due to Hunter Water end of July in each year.

[PN811 ends]



PN812 CONTRACTOR WHS REPORT

Background

Reason for report: Contract Requirement. Information feeds into Monthly Performance Report. Consideration of information contained in the Monthly Performance Report is for the purposes of monitoring and reviewing the Service Provider's performance under this Agreement.

References: Nil

Scope of Work for Service Provider

Input required: Provide input into report.

Content:

WHS statistics including:

- a) hours worked,
- b) Lost Time Injuries,
- c) other injuries,
- d) near misses,
- e) Audit/Inspections,
- f) Contract Meetings,
- g) Issues logged in the Hunter Water Incident Management System

Format: Submit in template provided by Hunter Water. **Examples of past reports:** Available from Hunter Water on request.

Timing

Timing/Frequency: Monthly

Due Date/s: Data is to be submitted within 5 calendar days of the end of each month.

[PN812 ends]



Drinking Water and Recycled Water Exception Report

PN813 DRINKING WATER AND RECYCLED WATER EXCEPTION REPORT

Background

Reason for report: It is a HWC Operating Licence requirement to provide a Drinking Water and Recycled Water Exception Report to NSW Health each quarter.

References:

- a) HWC Operating Licence 2012-2017
hunterwater.com.au/Resources/Documents/Legislation-and-Governance/Operating-Licence.pdf (Refer Section 8.2: Reporting)
- b) HWC Operating Licence Reporting Manual 2012-2017 (HW2010-2072/13/5.002) Refer Section 2.1.2 NSW Health Reporting
- c) HWC Recycled Water Quality Incident Response Standard Operating Procedure (HW2008-1592/8/2.002)

Scope of Work for Service Provider

Input required: Provide data for input into reports.

Content: The report is to include details of test results where health and/or aesthetic limits for the required water quality characteristics have been exceeded. Details such as the dates, duration, risk posed, cause of the exception and actions taken to rectify and prevent recurrence are also required to be included in the report. A report is required to be submitted even if there are no exceptions for the reporting period.

Format: Final draft in template provided by Hunter Water. **Examples of past reports:** Available on request.

[Hunter Water Reference Only:

- a) Drinking Water and Recycled Water Quality Exceptions Oct–Dec 2012 HW2006-1448/41/3.003
- b) Email 26/6/13 Recycled Water Quality Report – under development]

Timing

Timing/Frequency: Quarterly (1 January, 1 April, 1 July, 1 October in each year)



Drinking Water and Recycled Water Exception Report

Due Date/s: As directed by Hunter Water. Required to be submitted to NSW Health within 6 weeks of end of each quarter. The Service Provider is to provide the required data to Hunter Water two weeks prior to the due date.

[PN813 ends]



PN815 EPA POLLUTION MONITORING MONTHLY SUMMARY REPORT (WEBSITE)

Background

Reason for report: The Protection of the Environment Legislation Amendment Act 2011 requires holders of Environment Protection Licences to publish on their website pollution monitoring data that has been collected as a result of a licence condition.

References:

- a) Protection of the Environment Legislation Amendment Act 2011
epa.nsw.gov.au/legislation/poelegisamend2011.htm
- b) EPA Requirements for Publishing Pollution Monitoring Data
epa.nsw.gov.au/legislation/20120263reqpubpmdata.htm
- c) FAQ Requirements for Publishing Pollution Monitoring Data
epa.nsw.gov.au/legislation/faqspubpmdata.htm

Scope of Work for Service Provider

Input required: Prepare full report for publication on Hunter Water website (Hunter Water enters Date Published only).

Content: As per the individual EP Licence monitoring requirements. eg: For each pollutant; Sample Frequency, Number of samples, Minimum, Mean, Median, Maximum, 3DGM Limit (if applicable), 3DGM actual (if applicable), 100%ile limit (if applicable), 100%ile actual (if applicable), within limits (Yes / No/ N/A)

Format: Final draft in template provided by Hunter Water.

Examples of past reports: See HWC website [http://www.hunterwater.com.au/Water-and-Sewer/EPA-Monitoring/Environment-Protection-Authority-\(EPA\)-Pollution-Monitoring-Results.aspx](http://www.hunterwater.com.au/Water-and-Sewer/EPA-Monitoring/Environment-Protection-Authority-(EPA)-Pollution-Monitoring-Results.aspx)

[Hunter Water Reference Only: See spreadsheet provided by Service Provider 1308_August_Pollution Monitoring Report (2).xls including reports for all Environment Protection Licences.]

Timing

Timing/Frequency: Monthly. The monthly summary must be published within 14 days of the data being obtained for the last sample for that period.

**EPA Pollution Monitoring Monthly Summary Report (website)**

Due Date/s: The final draft is to be provided to Hunter Water as soon as possible no later than within the 14 day time frame. (The duration of tests vary depending on the type of testing required and impact the timeframe in which the Service Provider can provide the results).

[PN815 ends]



PN816 EPL ANNUAL RETURNS

Background

Reason for report: Environmental Protection Licence requirement

References:

- a) Environment Protection Licences epa.nsw.gov.au/licensing/
- b) EPA POEO Public Register (search for licences) epa.nsw.gov.au/prpoeo/index.htm
- c) EPL Anniversary Dates summary (available on request)
- d) Annual Return Process Flowchart (available on request)

Scope of Work for Service Provider

Input required: Prepare full report for each EP Licence (16 EPLs – not Balickera)

Content: As per the Annual Return form provided by the EPA including:

- a) Compile data for all licence conditions
- b) Report compliance against all licence conditions
- c) Complete load calculations
- d) Determine the applicable annual licence fees for the next licence period.
- e) Report on any non-compliance.
- f) Annual System Performance Report

Format: Service Provider prepares draft report for Hunter Water review using the customised annual return form provided by the EPA.

Examples of past reports:

[Hunter Water Reference Only: Boulder Bay Annual Return – Network Non-Compliance 2012-13]



Timing

Timing/Frequency: Annually within 60 days of the relevant EPL Anniversary Date set out below. The various licence periods are grouped quarterly as follows:

- | | |
|-----------------------------------|---|
| 1 Jan in each year | (3 EPLs: Cessnock, Kurri Kurri, Clarence Town) |
| 1 Apr in each year | (4 EPLs: Dungog WWTW, Kearsley, Paxton, Morpeth) |
| 1 Jul in each year | (3 EPLs: Belmont {inc Edgeworth, Toronto, Dora Ck},
Boulder Bay, Burwood Beach {inc Shortland}) |
| 1 Oct in each year
Bay) | (5 EPLs: Branxton, Farley, Karuah, Raymond Terrace, Tanilba
Bay) |
| 31 March in each year | (1 EPL – Dungog WTP) |

The report is to be submitted to the EPA within 60 days of each date above. The EPA send a Licence Anniversary Notice providing the Annual Return form and stating the due date.

Due Date/s: The draft report is required to be submitted to Hunter Water within 30 days of each EPL Anniversary Date. The final report from the Service Provider is due as directed by Hunter Water.

[PN816 ends]



PN817 FLUORIDE MONITORING

Background

Reason for report: It is a requirement of the Operating Licence to report on fluoride monitoring to NSW Health.

References:

- a) HWC Operating Licence 2012-2017
hunterwater.com.au/Resources/Documents/Legislation-and-Governance/Operating-Licence.pdf (Refer Section 8.2: Reporting)
- b) HWC Operating Licence Reporting Manual 2012-2017 (HW2010-2072/13/5.002) Refer Section 2.1.2 NSW Health Reporting
- c) NSW Code of Practice for Fluoridation of Public Water Supplies
health.nsw.gov.au/resources/aboutus/legal/pdf/code_of_practice.pdf

Scope of Work for Service Provider

Input required: Provide data for inclusion in the report by Hunter Water.

Content: As per Section 2.1.2 of Reporting Manual (ie: the information required by the Code of Practice for Fluoridation of Public Water Supplies)

- Daily Fluoride readings at each Water Treatment Plant

Format: Provide data in spreadsheet form.

Examples of past reports: Available on request

[Hunter Water Reference Only: Example of data provided by HWA Note: only require Clear Water Tank data (HWA provides Raw, CWT and Town data)]

Timing

Timing/Frequency: Monthly

Due Date/s: Report due to NSW Health within the 1st week of the month following the prior month. Data to be provided to Hunter Water by the Service Provider by the 3rd day of the month following the prior month. Hunter Water then combines this with other data and sends to NSW Health.



[PN817 ends]



Monthly Compliance and Performance (Drinking Water)

PN818 MONTHLY COMPLIANCE AND PERFORMANCE (DRINKING WATER)**Background**

Reason for report: Hunter Water may be required to provide additional monthly reporting to NSW Health commencing in the 2014/15 financial year.

References: Nil

Scope of Work for Service Provider

Input required: Provide input to report

Content: Possible content includes monthly reporting against Critical Control Points. Also possible future monthly reporting of any exceptions eg: failure of disinfection, turbidity exceedances, plant bypass etc.

Format: As directed by Hunter Water.

Examples of past reports: N/A

Timing

Timing/Frequency: Monthly

Due Date/s: As directed by Hunter Water.

[PN818 ends]



Monthly Performance and Issues at WWTW (Recycled Water)

PN819 MONTHLY PERFORMANCE AND ISSUES AT WWTW (RECYCLED WATER)

Background

Reason for report: Hunter Water may be required to provide additional monthly reporting to NSW Health commencing in the 2014/15 financial year.

References: Nil

Scope of Work for Service Provider

Input required: Provide input to report

Content: As directed by Hunter Water

Format: As directed by Hunter Water.

Examples of past reports: N/A

Timing

Timing/Frequency: Monthly

Due Date/s: As directed by Hunter Water.

[PN819 ends]



PN820 MONTHLY PERFORMANCE REPORT

Background

Reason for report: Provided to Board and also quarterly to Treasury and Minister

References: Manual - Key Performance Indicators Definitions Handbook HW2009-1893/17/1.009

Scope of Work for Service Provider

Input required: Provide input to HWC Corporate Monthly Performance Report.

Content:

- Non-compliances (Compliance with EPA WWTP conditions & Compliant WWTWs)
- Monthly WHS report (Service Provider provides input into System Operations report)
- Preventive Maintenance completed Preventive Maintenance completed – Critical components
- Provide commentary on non-compliances and predicted non-compliance issues

Format: Provide spreadsheets and graphs in format provided by Hunter Water

Examples of past reports: Available on request.

[Hunter Water Reference Only:

[August Monthly Reporting Documents](#)

[September 2013 Monthly Reporting Documents Email from HWA\]](#)

Timing

Timing/Frequency: Monthly

Due Date/s: Service Provider to provide draft to HWC within 5 calendar days of the end of each month.

[PN820 ends]



Monthly Performance Report



PN821 NATIONAL PERFORMANCE REPORT

Background

Reason for report: National Water Commission requirement. Hunter Water provide National Water Indicator (NWI) data to the National Water Commission so they can prepare the National Performance Report.

References:

- National Water Commission: nwc.gov.au/publications/topic/nprs
- National Performance Framework 2012-13 Urban Performance Reporting Indicators and Definitions Handbook: nwc.gov.au/publications/topic/nprs/2012-13-urban-handbook
- HWA Standard Operating Procedure WWP00.02.04 National Performance Reporting

Scope of Work for Service Provider

Input required: Populate applicable data into NPR Data Sheet provided by the National Water Commission/Hunter Water. Provide data calculation spreadsheets.

Content: Annual biosolids data, Recycled water use data (EPI 13 - Recycled water volume by reuse type), WSAA Summary data (total flow data, total bypass flow, total overflow, total flow by treatment level, flow weighted compliance data, licence compliance data, beachwatch compliance data, commentary on non-compliances) and input of this data into the NPR Data Sheet (same content each year).

Format: Input data required into NPR Data Sheet provided by HWC. See examples for format of data calculation spreadsheets.

Examples of past reports: Available on request.

[Hunter Water Reference Only:

[Biosolids Financial Year Totals \(12-13\); NPR Data Sheet 2012-13; EPI 13; WSAA 12-13\]](#)

Timing

Timing/Frequency: Annually for the reporting period 1 July – 30 June.

Due Date/s: Typically due around the end of July each year but this will vary each year and is to be supplied as directed by Hunter Water.

[PN821 ends]



PN822 NATIONAL POLLUTANT INVENTORY

Background

Reason for report: The National Environment Protection Measures (**NEPMs**) legislation requires industries to monitor, measure and report their emissions. The data is used to populate the National Pollution Inventory (**NPI**) database which provides free information on emission estimates, source and location for 93 substances.

References:

National Pollutant Inventory: npi.gov.au

EPA: epa.nsw.gov.au/licensing/lbl/NPI.htm

Scope of Work for Service Provider

Input required: Service Provider to input data directly into the NPI online reporting system and provide copies of data/calculation spreadsheets to HWC. HWC (Manager Treatment Operations) checks and submits the final report using the online system.

Content: This reporting applies to WWTW and WTP (including Chichester Dam Chlorinator). Not all treatment plants need to be included in the report – only those facilities that exceed the NPI reporting threshold. To provide an indication of likely reporting requirements, the file note HW2006-2366/2/2.016 shows the emissions that were required to be reported on in the **2012/13 reporting period** were:

- a) Water Treatment- fluoride compounds (fluosilicic acid), chlorine and compounds (2 WTP and Chichester Dam Chlorinator were included in the report)
- b) Wastewater Treatment - ammonia, nitrogen (total), phosphorus, hydrogen sulphide, fluoride and chlorine compounds. (14 WWTW were included in the report)

Format: Use online reporting system.

Examples of past reports: Available on request.

[Hunter Water Reference Only:

WWTW: Refer to TRIM record HW2006-2367/17/2.001: Email - Calculations used for NPI reports 2011/12 which has a calculation sheet attached.

WTP: Refer to TRIM record HW2006-2367/18/3.002 Data - Calcs for WT NPI_1213]



Timing

Timing/Frequency: The NPI is required to be submitted annually by 30 September in each year for the reporting period 1 July-30 June.

Due Date/s: As directed by Hunter Water. Data is to be entered into the online system and supporting calculation spreadsheets provided to Hunter Water by the end of the first week of September in each year.

[PN822 ends]



PN823 OPERATING LICENCE AUDIT

Background

Reason for report: IPART Operating Licence requirement.

References:

HWC Operating Licence 2012-2017 (Refer Section 8.1: Operational Audits)
hunterwater.com.au/Resources/Documents/Legislation-and-Governance/Operating-Licence.pdf

Scope of Work for Service Provider

Input required:

- a) Provide input to Operating Licence Audit Questionnaire / NWI Questionnaire. Further Service Provider input is dependent on the particular audit requirements. Provide advice as required during audit, attend audit interviews as required, provide records/evidence as requested, provide presentations / site inspections and any follow up information as required by auditor.
- b) The Service Provider is to arrange for an annual audit of their Drinking Water Quality Management System (DWQMS) and the audit compliance report to be submitted to Hunter Water. The audit of the Service Provider's DWQMS is to be timed so the audit report is provided to Hunter Water prior to September in each year to feed into the annual Operating Licence Audit.

Content: The content varies each year depending on the focus of the audit. Details of the Audit content are likely to be available around August each year or as provided by Hunter Water.

Format: Provide required information into Operating Licence Audit questionnaire / NWI Questionnaire supplied by Hunter Water.

Examples of past reports: Available on request.

[Hunter Water Reference Only:

Audit Questionnaire - Hunter Water NWI Audit for 20122013 (6)]



Timing

Timing/Frequency: Audit conducted annually in September in each year.

Due Date/s: As directed by Hunter Water. The timeframe for any required input to the questionnaire is likely to be around 7 Business Days. (In 2013 the questionnaires were provided to staff on 13 August and were due 23 August).

[PN823 ends]