

Licence Variation

Section 58(5) Protection of the Environment Operations Act 1997



SYDNEY WATER CORPORATION,
Trading as SYDNEY WATER,
ABN 49 776 225 038,
PO BOX A53,
SYDNEY SOUTH NSW 1232
REGISTERED POST

Attention: Mr. Greg Kane

Notice Number 1032533
File Number 300166
Date 24-Nov-2003

NOTICE OF VARIATION OF LICENCE 1695

BACKGROUND

- A. SYDNEY WATER CORPORATION t/as SYDNEY WATER ("the licensee") is the holder of environment protection licence 1695 for Scheduled Activity - Premises Based ("the licence") under the Protection of the Environment Operations Act 1997 ("the POEO Act").
- B. The licensee and the Environment Protection Authority (EPA) have negotiated the regulatory arrangements under which reclaimed effluent will be provided by the licensee to third parties.
- C. Reclaimed effluent from the premises provided by the licensee to third parties will be for purposes consistent with the controlled public access category in the NWQMS Use of Reclaimed Water Guidelines (2000).
- D. The negotiations between the licensee and the EPA necessitate variations to the licence conditions.
- E. The licensee has advised in writing that it has accepted the varied licence conditions proposed by EPA in its letter dated 7 November 2003.

Licence Variation

Section 58(5) Protection of the Environment Operations Act 1997



VARIATION OF LICENCE 1695

1. By this notice the EPA varies licence 1695 as set out in the Appendix. The Appendix is a copy of the licence marked with the variations that are made to it by this notice.
2. The variations to the licence are indicated in the following way:
 - if a strike through mark appears through any word or other text (eg. ~~Solids or~~) this indicates that the word or other text is deleted from the licence by this notice; and
 - if a double underline appears under any word or other text (eg. must be treated) this indicates that the word or other text is added to the licence by this notice.
3. Except, as provided by s84(2) of the POEO Act, the variations to the licence by this notice begin to operate at the expiry of the period of 21 days from when you get notice of the variations, unless another date is specified in this notice.
4. Note: Section 84(2) provides that a variation to a licence does not operate until
 - the expiry of the period of 21 days after notice of the decision to vary the licence is given to the licensee, or
 - if an appeal against the decision is lodged, until the Land and Environment Court determines the appeal, or
 - the licensee notifies the EPA in writing that no appeal is to be made against the decision to vary the licence,whichever first occurs.
5. This notice is issued under section 58(5) of the Protection of the Environment Operations Act 1997.

.....
Mr Neale Philip
Principal Officer Sydney Catchments
Sydney Catchments
(by Delegation)

INFORMATION ABOUT THIS NOTICE

- Section 287 of the Act enables appeals to be made in connection with decisions about a licence application within 21 days after notice of the decision is given to the applicant.
- Details provided in this notice will be available on the EPA's Public Register in accordance with section 308 of the Protection of the Environment Operations Act 1997.

Environment Protection Authority

Environment Protection Licence

Section 55 Protection of the Environment Operations Act 1997

- ♦ Licence number: 1695
- ♦ File number: 300166
- ♦ Licence Anniversary Date: 01-July
- ♦ Review date not later than 01-Jul-2005

Licence Type

Premises

Licensee

SYDNEY WATER CORPORATION

PO BOX A53

SYDNEY SOUTH NSW 1232

Licensed Premises

WEST HORNSBY SEWAGE TREATMENT SYSTEM including the STP

OFF VALLEY ROAD

HORNSBY NSW 2077

Fee Based Activity

Sewage Treatment - processing by small plants (< 10000 ML per year) (71[a])

Scale

> 5000 - 10000 ML discharged

EPA Region

Sydney Region

Level 7, 79 George Street

PARRAMATTA NSW 2150

Phone: 02 9995 5000

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PO Box 668 PARRAMATTA

NSW 2124

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Information about this licence

Dictionary

The licence contains a dictionary, which defines terms used in the licence. It is found at the end of the licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- Ensure persons associated with you comply with this licence, as set out in section 64 of the Act.
- Control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act).
- Report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Transfer of licence

Transfer of the licence to another person may be requested by the licensee using the form for this purpose available from the EPA.

Variation of licence conditions

Variations to the conditions of this licence may be requested by the licensee using the form for this purpose available from the EPA. The EPA may also vary a licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 3 years after the issue of the licence, as

set out in Part 3.6 of the Act. You will receive advance notice of the licence review. For licences held immediately before 1 July 1999, the first review will take place before 1 July 2002.

Fees and annual return to be sent to the EPA

The licence requires you to forward to the EPA an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints).

The Annual Return must be submitted within 60 days after the end of each reporting period. Where a licence is transferred, surrendered or revoked, a special reporting period applies.

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Usually the licence fee period is the same as the reporting period.

See condition R1 and the accompanying form regarding the Annual Return requirements.

The EPA publication "A Guide to Licensing" contains information about how to calculate your licence fees.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications
- licence conditions and variations
- statements of compliance

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

Licence anniversary date

01-July

This licence is issued to

SYDNEY WATER CORPORATION
PO BOX A53
SYDNEY SOUTH NSW 1232

subject to the conditions which follow:

1 Administrative conditions

A1 What the licence authorises and regulates

A1.1 Not applicable.

A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity
Sewage Treatment Systems

Fee Based Activity	Scale
Sewage Treatment - processing by small plants (< 10000 ML per year) (71[a])	> 5000 - 10000 ML discharged

A1.3 Not applicable.

A2 Premises to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
WEST HORNSBY SEWAGE TREATMENT SYSTEM including the STP
OFF VALLEY ROAD
HORNSBY
NSW
2077

Premises Details

LOT 16 DP 244311

- A2.2 The premises also includes the reticulation system owned and operated by the licensee that is associated with the sewage treatment plant(s) identified in condition A2.1.

A3 Other activities

- A3.1 This licence applies to all other activities carried on at the premises, including:

Chemical Storage Facilities
Waste Facilities - waste storage, transfer separating or processing

A4 Information supplied to the EPA

- A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- (a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998 and
- (b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

- A4.2 Notwithstanding condition A4.1, works and activities carried out by the licensee must not be inconsistent with the EPA's Determining Authority Report for the Sewer Overflow Licensing Program, dated May 2000.

A5 Objectives of this licence

- A5.1 The objectives of this licence are to:

- (a) require practical measures to be taken to protect the environment and public health from sewage treatment plant effluent and sewer overflows;
- (b) require proper and efficient management of the sewage treatment system to minimise harm to the environment and public health;

- (c) require no deterioration and continuing improvement in the sewage treatment system environmental performance relative to existing conditions; and
- (d) minimise the frequency and volume of overflows and sewage treatment plant bypasses.

A5.2 This licence is to be construed in a manner that will promote the objectives referred to in A5.1.

2 Discharges to air and water and applications to land

P1 Location of monitoring/discharge points and areas

P1.1 Not applicable.

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

P1.3 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

Water and land

EPA identification no.	Type of monitoring point	Type of discharge point	Description of location
1		discharge to waters	STP discharge point located at the effluent outfall to Waitara Creek
3		discharge to land	Irrigation with the fenceline of the STP
4	volume of discharge to waters		Downstream of disinfection units
5	effluent quality monitoring		effluent quality downstream of the disinfection facilities
7	quality of water, volume of discharge to waters and duration		Discharges through Point 9 at storm detention basin spillway
8		wet weather discharge	STP discharge point located near the storm screening facilities line to Waitara Creek
9		wet weather discharge	STP discharge point located at the spillway from the storm detention basin to Waitara Creek
10	quality of water, volume of discharge to waters and duration		discharges through point 8 at the storm screening facilities
11		wet weather discharge	SPS490, located at Valley Road, Hornsby, and identified on the system map
12		wet weather discharge	SPS536 located at Fern Tree Close Hornsby and identified on the system map
13	discharge to reuse tanker volume monitoring	discharge to reuse tanker volume monitoring	Drawn off the main reclaimed effluent manifold in between the blower building and the tertiary filters, during Water Restrictions

3 Limit conditions

L1 Pollution of waters

- L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.
- L1.2 This licence does not permit the pollution of waters classified as Class S or Class P under the Clean Waters Regulations 1972.
- L1.3 Subject to the conditions of this licence, sewage or effluent must not be discharged from the components of the reticulation system except from those components identified on the system map.
- L1.4 Notwithstanding the provisions of condition L1.3, this licence does not permit the pollution of waters at any time during dry weather from:
- (a) (i) uncontrolled overflows, or
 - (ii) directed overflows other than from sewage pumping stations,
- if a cause of the pollution is failure to:
- (iii) operate any part of the reticulation system in a proper and efficient manner; or
 - (iv) maintain any part of the reticulation system in a proper and efficient condition, or
- (b) sewage pumping stations listed in the table referenced in condition P1.2.
- L1.5 No dry weather sewage treatment plant discharges are permitted through Point 2.

L2 Load limits

- L2.1 The actual load of an assessable pollutant discharged from the premises during the reporting period must not exceed the load limit specified for the assessable pollutant in the table below.

Note: An assessable pollutant is a pollutant which affects the licence fee payable for the licence.

- L2.2 The actual load of an assessable pollutant must be calculated in accordance with the relevant load calculation protocol.

Assessable Pollutant	Load limit (kg)
BOD (Enclosed Waters)	79570
Nitrogen (total) (Enclosed Waters)	80300
Oil and Grease (Enclosed Waters)	23287
Total Nitrogen Phosphorus (total) (Enclosed Waters)	80300 4643

Assessable Pollutant	Load limit (kg)
Total Phosphorus suspended solids	4643 86140
(Enclosed Waters)	
Total Suspended Solids (Enclosed Waters)	86140

Note: For the purposes of condition L2.1 only, *premises* means the sewage treatment plant referred to in condition A2.1 of this licence.

L3 Concentration limits

- L3.1 For each monitoring/discharge point or utilisation area specified in the table\’s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.
- L3.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.
- L3.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\’s.

Water and Land

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile Concentration Limit
Faecal coliforms Coliforms	cfu/100mL	-	200*	-	-
BOD	mg/L	10	15	30	-
TN	mg/L	-	35	-	-
NH3-N	mg/L	1	5	-	-
TP	mg/L	0.3	1	-	-
TSS	mg/L	10	15	30	-
TRC	mg/L	-	0.01	-	-

POINT 3

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile Concentration Limit
Faecal coliforms Coliforms	cfu/100mL	-	200*	-	-
BOD	mg/L	10	15	30	-
TN	mg/L	-	35	-	-
NH3-N	mg/L	1	5	-	-
TP	mg/L	0.3	1	-	-
TSS	mg/L	10	15	30	-
TRC	mg/L	-	0.01	-	-

POINT 13

Pollutant	Units of Measure	50 percentile concentration limit	80 percentile concentration limit	3DGM concentration limit	100 percentile Concentration limit
Faecal Coliforms	cfu/100ml		800		

Note:

The faecal coliform concentration limits marked by asterisks in the above tables are to be interpreted as 80 percentile concentration limits for the purpose of assessing compliance with this condition.

- L3.4 When a wet weather sewage treatment plant overflow is occurring, exceedences of the 3DGM and the 100 percentile concentration limits in condition L3.3 are permitted at the following points for the duration of the overflow where the overflow was the sole cause of the exceedence:

Points 1 and 3

- L3.5 Not applicable.

- L3.6 In the case of a pollutant which is subject to a 3DGM limit, only the samples collected on the first day of the 3DGM sampling are to be used for the calculation of the percentile.

L4 Volume and mass limits

- L4.1 For each discharge point or utilisation area specified below (by a point number), the volume/mass of:

- (a) liquids discharged to water; or;
- (b) solids or liquids applied to the area;

must not exceed the volume/mass limit specified for that discharge point or area.

Point	Unit of measure	Volume/Mass Limit
1	kL/day	154300
3	kL/day	154300
8	kL/day	0
9	kL/day	0
11	kL/day	0
12	kL/day	0
13	kL/day	154300

L4.2 Notwithstanding the volume limits specified in condition L4.1, the combined volume discharged from point(s) 1, 3, 8, 9 and 13 shall not exceed 154,300 kL/day.

L4.3 The volume/mass limits for point(s) 8, 9, 11 and 12 specified in condition L4.1 apply for dry weather conditions only.

L5 Waste

L5.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L5.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.

L5.3 The licensee may receive and/or transfer sewage generated outside the premises for treatment, processing or reprocessing at the premises. The licensee must take reasonable steps to ensure that sewage received at the premises has been lawfully discharged in accordance with a trade waste agreement or customer contract (as applicable) in force between the licensee and the generator of the waste. The licensee must treat, process or reprocess the sewage in accordance with this licence prior to discharge from the premises.

L5.4 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.

L6 Noise Limits

L6.1 Not applicable.

L7 Frequency limits

- L7.1 No discharges in dry weather are permitted from sewage pumping stations listed in P1.2 or designed and constructed within the sewage treatment system after May 2000.

4 Operating conditions

O1 Activities must be carried out in a competent manner

- O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- (a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- (b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

- O1.2 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.

O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
- (a) must be maintained in a proper and efficient condition; and
 - (b) must be operated in a proper and efficient manner.

O3 Appropriate treatment processes

- O3.1 Sewage or effluent discharged must not be discharged from Point(s) 1, 3, 8 and 9 unless it has been treated in accordance with this condition.
- O3.2 The portion of effluent flows from the sewage treatment plant less than 463 L/s must have received screening, degritting, primary and secondary sedimentation, activated sludge treatment, dual media filtration and disinfection prior to discharge to point(s) 1, 3, 8 and 9.
- O3.3 The portion of effluent flow from the sewage treatment plant that is 463 L/s or more but less than 840 L/s must have received screening, degritting, primary sedimentation and disinfection prior to discharge to point(s) 1, 3, 8 and 9.
- O3.4 The portion of effluent from the sewage treatment plant that is 840 L/s or more must have received screening, ponding and disinfection prior to discharge to point(s) 1, 3, 8 and 9.

O4 Prohibition on acceptance of pesticides

- O4.1 The licensee must not consent to any discharge of organophosphate pesticides (including chlorpyrifos, diazinon, malathion) or organochlorine pesticides (including dieldrin, heptachlor and chlordane) into the sewage treatment system.

O5 Level of Reticulation System Management, Operations and Maintenance Activities

- O5.1 The reticulation system must be managed, operated and maintained such that the operational and maintenance works and activities result in ongoing improvement in the system environmental performance, when compared with existing system environmental performance. The system environmental performance must not at any time fall below existing system environmental performance.
- O5.2 From 1 July 2000, for the purposes of determining whether the system environmental performance has fallen below existing system environmental performance:
- (a) in relation to chokes, the licensee is to compare the average number of chokes per year per 100km of pipe in the reticulation system of all of the licensee's sewage treatment systems averaged over the period 1 July 1995 to 30 June 2000 to the average annual number of chokes averaged over all of the licensee's sewage treatment systems over the reporting period and the preceding four twelve month periods;
 - (b) in relation to odour complaints, the licensee is to compare the number of odour complaints from the reticulation system per year averaged over the period 1 July 1995 to 30 June 2000 to the average annual number of odour complaints over the reporting period and the preceding four twelve month periods; and
 - (c) in relation to wet weather overflows, the licensee is to compare the number of wet weather overflows per 10 years as predicted by the hydraulic sewer system model for 1994 to the number of wet weather overflows per 10 years as predicted by the hydraulic sewer system model for the reporting period. This comparison must use the 10 year rainfall time series data in each model.

O6 Wet Weather Sewage Treatment Plant Overflows

- O6.1 The sewage treatment system must be managed, operated and maintained such that the operational and maintenance works and activities must not at any time increase the frequency of wet weather sewage treatment plant overflows above the existing wet weather sewage treatment plant overflow frequency.
- O6.2 From 1 July 2000, for the purposes of determining compliance with condition O6.1, the licensee is to compare the number of wet weather sewage treatment plant overflows per 10 years as predicted by the hydraulic sewer system model for 1994 to the number of wet weather sewage treatment plant overflows per 10 years as predicted by the hydraulic sewer system model for the reporting period. This comparison must use the 10 year rainfall time series data in each model.
- O6.3 A wet weather sewage treatment plant overflow occurs when the effluent flow rate of sewage from the sewage treatment plant equals or exceeds 1200 L/s.

O7 Additional Sewage Pumping Stations

- O7.1 All sewage pumping stations which are installed within the sewage treatment system after May 2000 must be designed and constructed in such a way that there will be no discharge from the sewage pumping station in dry weather.

5 Monitoring and recording conditions

M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
(a) in a legible form, or in a form that can readily be reduced to a legible form;
(b) kept for at least 4 years after the monitoring or event to which they relate took place; and
(c) produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
(a) the date(s) on which the sample was taken;
(b) the time(s) at which the sample was collected;
(c) the point at which the sample was taken; and
(d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

- M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

Water and Land

POINT 5

Pollutant	Units of measure	Frequency	Sampling Method
1,1,1-Trichloroethane	ug/L	2 Times a year	Grab sample
1,1-dichloroethane 1,1	ug/L	2 Times a year	Grab sample
Dichloroethane			
1,1-dichloroethene 1,1	ug/L	2 Times a year	Grab sample
Dichloroethane			
1,2-Dichlorobenzene	ug/L	2 Times a year	Grab sample
1,2-dichloroethane 1,2	ug/L	2 Times a year	Grab sample
Dichloroethane			
1,3-dichlorobenzene 1,3	ug/L	2 Times a year	Grab sample
Dichlorobenzene			
1,4-dichlorobenzene 1,4	ug/L	2 Times a year	Grab sample
Dichlorobenzene			
2,4,5-trichlorophenol	ug/L	2 Times a year	Special Method 1
2,4-D	ug/L	2 Times a year	Special Method 1
2,4-dichlorophenol 2,4	ug/L	2 Times a year	Special Method 1
Dichlorophenol			
2-Chlorophenol	ug/L	2 Times a year	Special Method 1
2-Methylphenol (o-cresol)	ug/L	2 Times a year	Special Method 1
2-chlorophenol	ug/L	2 Times a year	Special Method 1
3-Methylphenol (m-cresol)	ug/L	2 Times a year	Special Method 1
3,4-DDD	ug/L	2 Times a year	Special Method 1
3,4-DDE	ug/L	2 Times a year	Special Method 1
3,4-DDT	ug/L	2 Times a year	Special Method 1
4-Methylphenol (p-cresol)	ug/L	2 Times a year	Special Method 1
Acenaphthene	ug/L	2 Times a year	Special Method 1
Acenaphthylene	ug/L	2 Times a year	Special Method 1
Acrylonitrile	ug/L	2 Times a year	Grab sample
Aldrin	ug/L	2 Times a year	Special Method 1
Aluminium	ug/L	12 Times a year	Special Method 1
Anthracene	ug/L	2 Times a year	Special Method 1
Arsenic	ug/L	2 Times a year	Special Method 1
Atrazine	ug/L	2 Times a year	Special Method 1
BOD	mg/L	Every 6 days	Composite sample
BOD (for the purpose of determining the 3DGM)	mg/L	Special Frequency 1	Composite sample
Barium	ug/L	2 Times a year	Special Method 1
Benzene	ug/L	2 Times a year	Grab sample
Benzidine	ug/L	2 Times a year	Special Method 1
Benzo(a)anthracene	ug/L	2 Times a year	Special Method 1
Benzo(a)pyrene	ug/L	2 Times a year	Special Method 1
Benzo(b)fluoranthene	ug/L	2 Times a year	Special Method 1
Benzo(e)pyrene	ug/L	2 Times a year	Special Method 1
Benzo(ghi)perylene	ug/L	2 Times a year	Special Method 1
Benzo(k)fluoranthene	ug/L	2 Times a year	Special Method 1
Benzo(b)fluoranthene	ug/L	2 Times a year	Special Method 1
Boron	ug/L	2 Times a year	Special Method 1
Bromoform	ug/L	2 Times a year	Grab sample
Cadmium	ug/L	2 Times a year	Special Method 1
Carbaryl	ug/L	2 Times a year	Special Method 1
Carbon Tetrachloride Carbon tetrachloride	ug/L	2 Times a year	Grab sample
Chloride	ug/L	6 Times a year	Special Method 1
Chlorobenzene	ug/L	2 Times a year	Grab sample
Chloroform	ug/L	2 Times a year	Grab sample
Chlorpyrifos	ug/L	12 Times a year	Special Method 1
Chromium	ug/L	2 Times a year	Special Method 1
Chrysene	ug/L	2 Times a year	Special Method 1
Cobalt	ug/L	2 Times a year	Special Method 1
Copper	ug/L	6 Times a year	Special Method 1
Coronene	ug/L	2 Times a year	Special Method 1
Cyanide	ug/L	2 Times a year	Special Method 1

Pollutant	Units of measure	Frequency	Sampling Method
Dem S-Methyl (Demeton)	ug/L	2 Times a year	Special Method 1
Diazinon	ug/L	12 Times a year	Special Method 1
Dibenz[a,h]anthracene	ug/L	2 Times a year	Special Method 1
Dibromochloromethane	ug/L	2 Times a year	Grab sample
Dichlorobenzidine	ug/L	2 Times a year	Special Method 1
Dichloromethane (methylene chloride)	ug/L	2 Times a year	Grab sample
Dieldrin	ug/L	2 Times a year	Special Method 1
Diphenylhydrazine	ug/L	2 Times a year	Special Method 1
Endrin	ug/L	2 Times a year	Special Method 1
Ethylbenzene	ug/L	2 Times a year	Grab sample
Faecal coliforms	cfu/100mL	Special Frequency 3	Grab sample
Fluoranthene	ug/L	2 Times a year	Special Method 1
Fluorene	ug/L	2 Times a year	Special Method 1
Glyphosate	ug/L	2 Times a year	Special Method 1
Heptachlor	ug/L	2 Times a year	Special Method 1
Heptachlor epoxide	ug/L	2 Times a year	Special Method 1
Hexachlorobenzene (HCB)	ug/L	2 Times a year	Special Method 1
Hydrogen sulfide (un-ionised)	ug/L	12 Times a year	Grab sample
Indeno(1,2,3-cd)pyrene	ug/L	2 Times a year	Special Method 1
Iron	ug/L	2 Times a year	Special Method 1
Lead	ug/L	2 Times a year	Special Method 1
Malathion	ug/L	2 Times a year	Special Method 1
Manganese	ug/L	2 Times a year	Special Method 1
Mercury	ug/L	2 Times a year	Special Method 1
Methoxychlor	ug/L	2 Times a year	Special Method 1
Methyl azinphos	ug/L	2 Times a year	Special Method 1
Methylene Blue Active Substances	ug/L	2 Times a year	Special Method 1
Molybdenum	ug/L	2 Times a year	Special Method 1
NH3-N	mg/L	Every 6 days	Composite sample
Naphthalene	ug/L	2 Times a year	Special Method 1
Nickel	ug/L	2 Times a year	Special Method 1
Nitrate + nitrite (oxidised nitrogen)	mg/L	Every 6 days	Composite sample
Nonyl phenol ethoxylates	ug/L	12 Times a year	Special Method 1
Octyl phenol ethoxylates	ug/L	2 Times a year	Special Method 1
Parathion	ug/L	2 Times a year	Special Method 1
Pentachlorophenol	ug/L	12 Times a year	Special Method 1
Perylene	ug/L	2 Times a year	Special Method 1
Phenanthrene	ug/L	2 Times a year	Special Method 1
Phenol	ug/L	2 Times a year	Special Method 1
Polychlorinated biphenyls	ug/L	2 Times a year	Special Method 1
Polycyclic aromatic hydrocarbons	ug/L	2 Times a year	Special Method 1
Pyrene	ug/L	2 Times a year	Special Method 1
Selenium	ug/L	2 Times a year	Special Method 1
Silver	ug/L	6 Times a year	Special Method 1
Sulfate	ug/L	2 Times a year	Special Method 1
TKN-N	mg/L	Every 6 days	Composite sample
TP	mg/L	Every 6 days	Composite sample
TSS	mg/L	Every 6 days	Composite sample
TSS (for the purpose of determining the 3DGM)	mg/L	Special Frequency 2	Composite sample
Tetrachloroethene (tetrachloroethylene)	ug/L	2 Times a year	Grab sample
Tetrachlorophenol	ug/L	2 Times a year	Special Method 1
Toluene	ug/L	2 Times a year	Grab sample
Total residual chlorine	ug/L	Special Frequency 3	Grab sample
Trichloroethene (Trichloroethylene)	ug/L	2 Times a year	Grab sample
Vanadium	ug/L	2 Times a year	Special Method 1
Zinc	ug/L	2 Times a year	Special Method 1
a-BHC	ug/L	2 Times a year	Special Method 1
b-BHC	ug/L	2 Times a year	Special Method 1

Pollutant	Units of measure	Frequency	Sampling Method
chloronaphthalene	ug/L	2 Times a year	Special Method 1
endosulfan (a,b)	ug/L	2 Times a year	Special Method 1
g-BHC (lindane)	ug/L	2 Times a year	Special Method 1
m-xylene	ug/L	2 Times a year	Grab sample
methyl azinphos	ug/L	2 Times a year	Special Method 1
p-xylene	ug/L	2 Times a year	Grab sample
p,p'-DDE (4,4)	ug/L	2 Times a year	Special Method 1
p,p'-DDD (4,4)	ug/L	2 Times a year	Special Method 1
p,p'-DDT (4,4)	ug/L	2 Times a year	Special Method 1
p-xylene	ug/L	2 Times a year	Grab sample
polychlorinated biphenyls	ug/L	2 Times a year	Special Method 1
styrene	ug/L	2 Times a year	Grab sample
tin (inorganic)	ug/L	2 Times a year	Special Method 1
total chlordanes	ug/L	2 Times a year	Special Method 1
un-ionised hydrogen sulfide	ug/L	12 Times a year	Grab sample

POINT 7

Pollutant	Units of measure	Frequency	Sampling Method
BOD	mg/L	Special Frequency 4	Grab sample
Faecal coliforms	cfu/100mL	Special Frequency 4	Grab sample
NH3-N	mg/L	Special Frequency 4	Grab sample
Nitrate + nitrite (oxidised nitrogen)	mg/L	Special Frequency 4	Grab sample
TKN-N	mg/L	Special Frequency 4	Grab sample
TP	mg/L	Special Frequency 4	Grab sample
TSS	mg/L	Special Frequency 4	Grab sample

POINT 10

Pollutant	Units of measure	Frequency	Sampling Method
BOD	mg/L	Special Frequency 4	Grab sample
Faecal coliforms	cfu/100mL	Special Frequency 4	Grab sample
NH3-N	mg/L	Special Frequency 4	Grab sample
Nitrate + nitrite (oxidised nitrogen)	mg/L	Special Frequency 4	Grab sample
TKN-N	mg/L	Special Frequency 4	Grab sample
TP	mg/L	Special Frequency 4	Grab sample
TSS	mg/L	Special Frequency 4	Grab sample

For the purposes of the table above:

- Special Frequency 1 means the collection of samples twice every 6 days (on the two days immediately following the BOD sample collected above).
- Special Frequency 2 means the collection of samples twice every 6 days (on the two days immediately following the TSS sample collected above).
- Special Frequency 3 means the collection of samples every 6 days (on the day immediately following the first BOD sample collected above).
- Special Frequency 4 means the collection of samples daily during the occurrence of any bypass or discharge greater than 2 hours during normal working hours.
- Special Method 1 means the collection of a composite sample or individual samples of similar volumes collected at equal flow intervals (determined at ADWF) over a 24 hour period.

If the monitoring of a pollutant is required at different frequencies, a single sample may be used to satisfy more than one monitoring requirement provided that all minimum sampling intervals are satisfied.

The monitoring at Point(s) 5 is conducted to determine compliance with limits specified for discharges to Point(s) 1  and  13.

M2.2 The following conditions apply to the monitoring requirements in condition M2.1:

- (a) where a monitoring frequency is specified as 2 times a year, monitoring must be undertaken at a minimum of 160 day intervals;
- (b) where a monitoring frequency is specified as 4 times a year, monitoring must be undertaken at a minimum of 80 day intervals;
- (c) where a monitoring frequency is specified as 6 times a year, monitoring must be undertaken at a minimum of 50 day intervals;
- (d) where a monitoring frequency is specified as 12 times a year, monitoring must be undertaken at a minimum of 25 day intervals; and
- (e) all samples must be representative.

M3 Testing methods - concentration limits

M3.1 Not applicable.

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

Note: Testing methods - load limit

Note: Clause 18 (1) and (2) of the Protection of the Environment Operations (General) Regulation 1998 requires that monitoring of actual loads of assessable pollutants listed in L2.1 must be carried out in accordance with the testing method set out in the relevant load calculation protocol for the fee-based activity classification listed in condition A1.2.

M3.3 The requirements of condition M3.2 also apply to the monitoring of the concentration of pollutants in waters.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:

- (a) the date and time of the complaint;
- (b) the method by which the complaint was made;
- (c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;

- (d) the nature of the complaint;
- (e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- (f) if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 Conditions M5.1 and M5.2 do not apply until 3 months after:

- (a) the date of the issue of this licence or
- (b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

M5.4 For the purpose of this condition, operating hours are defined as twenty four hours a day, seven days a week.

M6 Requirement to monitor volume or mass

M6.1 For each discharge point or utilisation area specified below, the licensee must monitor:

- (a) the volume of liquids discharged to water or applied to the area;
- (b) the mass of solids applied to the area;
- (c) the mass of pollutants emitted to the air;

at the frequency and using the method and units of measure, specified below.

POINT 4

Frequency	Unit Of Measure	Sampling Method
Continuous	kL/day	Electronic level sensor and continuous logger

POINT 7

Frequency	Unit Of Measure	Sampling Method
Each overflow event	kL/day	Estimate

POINT 10

Frequency	Unit Of Measure	Sampling Method
Each overflow event	kL/day	Estimate

POINT 13

Frequency	Unit of Measure	Sampling Method
Per tanker	kL/tanker	Estimate (based on volume of full tanker)

M6.2 In the event that the licensee cannot comply with a volume monitoring method as required by this licence solely due to the failure or malfunction of essential monitoring equipment, volume may be calculated using another agreed method approved in writing by the EPA. This provision only applies for the duration of the failure or malfunction and the licensee is to rectify the failure or malfunction as soon as practical.

M7 Requirement to record wet and dry weather sewage treatment plant bypasses

M7.1 From 1 July 2000 the licensee must record the following details in relation to each bypass from the premises:

- (a) the EPA point identification number through which the bypass discharged;
- (b) the start time, date and duration of the bypass;
- (c) the estimated volume of the bypass;
- (d) the level of treatment at the sewage treatment plant prior to discharge;
- (e) classification as a dry or wet weather bypass;
- (f) the most likely cause of the bypass; and
- (g) the name or names of the treatment process or processes bypassed.

M7.2 A dry weather bypass is a bypass that occurs when the effluent flow rate of sewage from the sewage treatment plant does not exceed 400 L/s and a wet weather bypass occurs when this flow is equalled or exceeded.

M8 Registers

M8.1 The licensee must maintain at the licensee's head office, registers recording the following information, for the sewage treatment system, and make them available for inspection by the public:

- (a) a map or maps of the sewage treatment system showing:
 - (i) the location of the sewage treatment plant or plants, sewage pumping stations, directed overflow structures, pipes and access chambers in the sewage treatment system, referenced by the licensee's identifier and the EPA point identification number, as applicable;
 - (ii) the catchments, sub-catchments and sensitive areas relevant to the sewage treatment system;
- (b) the number of chokes within the system reported to the licensee during each reporting period. This information is also to be included in the licensee's Annual Environment Report required under clause 14(1)(d) of the Sydney Water Act, in addition to the corresponding information from the preceding three years;

- (c) a schedule of proposed works to be carried out in relation to the premises during each reporting period;
- (d) the works completed in relation to the premises during each reporting period;
- (e) the complaints by type of overflow recorded under M5 during each reporting period.

M8.2 Changes to the system map must be recorded by reference to the date of the change, description of the change and the name of the person authorising the change.

M9 Continuation of Monitoring Programs

M9.1 The licensee must conduct the following monitoring:

- (a) continuation of all sewage treatment system and environmental monitoring programs related to sewer overflows that are underway as of 30 June 1999 and
- (b) that monitoring identified at 2.2.4 in the Sydney Water document "Licensing Sewerage Overflows: Methods" dated June 1998 (a copy of which may be inspected at the EPA's Library), unless varied with the prior written approval of the EPA.

Note: Modified monitoring requirements will be attached to the licence following the submission of the reports required by PRP 104.1.

M10 Environmental monitoring

M10.1 The licensee must undertake the following environmental monitoring:

- (a) The licensee must collect water samples at the monitoring sites referred to in the Sydney Water publication "Environmental indicators monitoring for Sydney Water, December 1995", as further detailed in Table 30 of the Sydney Water publication "Sydney Water Annual Environment Report 1996, Auxiliary Volume: Environmental Indicators Monitoring Report & Special Objectives Statement" (Page 71).
- (b) The water samples must be sampled at the frequency specified in the publication cited above.
- (c) The water samples must be analysed for the parameters specified in the publication cited above. It is not necessary to measure light intensity at sites where, due to the shallowness of the stream and the presence of overhanging vegetation, it is not practical to do so.
- (d) The licensee must supply the results of the analyses to the EPA as part of an annual Environment Report, in accordance with Clause 5.12 and Section 14 (1) of the Sydney Water Act. All data must be identified by the site number.

M11 Biosolids monitoring

M11.1 Biosolids at the premises must be recorded, monitored and classified in accordance with the Biosolids Guidelines, or as otherwise approved in writing by the EPA.

6 Reporting conditions

R1 Annual return documents

What documents must an Annual Return contain?

- R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
- (a) a Statement of Compliance; and
 - (b) a Monitoring and Complaints Summary.
- A copy of the form in which the Annual Return must be supplied to the EPA accompanies this licence. Before the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

Period covered by Annual Return

- R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

- R1.3 Where this licence is transferred from the licensee to a new licensee,
- (a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
 - (b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

- R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on
- (a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
 - (b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

Deadline for Annual Return

- R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

Notification where actual load can not be calculated

- R1.6 Where the licensee is unable to complete a part of the Annual Return by the due date because the licensee was unable to calculate the actual load of a pollutant due to circumstances beyond the licensee's control, the licensee must notify the EPA in writing as soon as practicable, and in any event not later than the due date. The notification must specify:
- (a) the assessable pollutants for which the actual load could not be calculated; and
 - (b) the relevant circumstances that were beyond the control of the licensee.

Licensee must retain copy of Annual Return

- R1.7 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

Certifying of Statement of Compliance and Signing of Monitoring and Complaints Summary

- R1.8 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
- (a) the licence holder; or
 - (b) by a person approved in writing by the EPA to sign on behalf of the licence holder.
- R1.9 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

R2 Notification of environmental harm

Note: The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

- R2.1 Notifications must be made by telephoning the EPA's Pollution Line service on 131 555.
- R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

- R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
- (a) where this licence applies to premises, an event has occurred at the premises; or
 - (b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
- and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.
- R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.
- R3.3 The request may require a report which includes any or all of the following information:
- (a) the cause, time and duration of the event;
 - (b) the type, volume and concentration of every pollutant discharged as a result of the event;
 - (c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; and

- (d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
- (e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- (f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;
- (g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R3.5 For the purposes of this condition, the definition of event in the Special Dictionary does not apply.

R4 Notification of bypass or overflow incidents

R4.1 Where either:

- (i) a bypass of the biological or disinfection process at the sewage treatment plant is discharged from the premises during either dry or wet weather conditions;
- (ii) a wet weather sewage treatment plant overflow occurs, (which for the purpose of this condition is defined as being when the effluent flow rate from the sewage treatment plant exceeds 1200 L/s); or
- (iii) an overflow has occurred from the reticulation system that has discharged to waters or could reasonably be expected to discharge to waters,

the licensee must give each of the notifications listed below. Each notification is to be given as soon as practicable after the licensee or one of the licensee's employees or agents becomes aware of the incident, and in the case of (b) below, becomes aware that the incident is of significance for public health. Notifications must be made to the following groups or organisations in the following manner:

- (a) telephoning the EPA's Pollution Line service on 131 555;
- (b) for incidents of public health significance, advising the Department of Health by fax on (02) 9816 0377 (during office hours) and by telephone on 0411 264 070 (after hours);
- (c) except in the case of wet weather overflows, advising the relevant local council(s) by fax;
- (d) issuing a media release to the media for dry weather bypasses or overflows that are of public health significance. This media release must include details (if known) of the nature of the operational incident that led to the bypass or overflow; and
- (e) placing a notification of the details of the overflow on an Internet page accessible from a prominently and appropriately labelled link (URL) from the Internet home page www.sydneywater.com.au.

For (a), (c) or (e) above, notification for wet weather bypasses or wet weather overflows could detail incidents in more than one sewage treatment system operated by the licensee.

Notification of the EPA or Council as required by this condition is to occur even if the licensee is unaware of the cause of the incident, or whether the incident is of significance to public health at the time of notification.

For the purposes of this condition

- (1) "overflow" does not include leakage.

- (2) "waters" do not include artificial watercourses that are dry at the time of the overflow or water in underground pipes or channels designed to receive or pass rainwater.

Note:

- (1) These reporting requirements do not affect any obligations of the licensee to report under Part 5.7 of the Act incidents which cause or threaten material harm to the environment.
- (2) The definition of "waters" does not include any gutter used or designed to receive or pass rainwater.

R4.2 Not applicable.

R4.3 If the same circumstances arise that require a notification under condition R4.1 and are of significance to shellfish production, the licensee is also to notify the Shellfish Quality Assurance Program by fax on (02) 9699 0587 and in addition (02) 9584 0711 after hours. This notification is to be given as soon as practicable after the licensee or one of the licensee's employees or agents becomes aware of the incident.

R5 Notification of New Sewage Pumping Station Connections

R5.1 Prior to the operation of any sewage pumping station that is installed within the sewage treatment system after May 2000, the licensee must notify the EPA in writing of the location of the new sewage pumping station that is to commence operation. The location of that sewage pumping station must also be noted on the system map under condition M8.1 prior to commencement of operation.

R6 Annual System Performance Report

R6.1 The licensee must supply to the EPA an Annual System Performance Report not later than 60 days after the end of each reporting period.

R6.2 The Report is to supplement the Annual Return and must include but need not be limited to:

- (a) the 50 percentile, 80 percentile, 90 percentile, 100 percentile and 3DGM values calculated from the monitoring data for each pollutant which has corresponding concentration limits specified in this licence;
- (b) the relevant reporting forms contained in the Biosolids Guidelines and completed for the reporting period in accordance with the Biosolids Guidelines or as otherwise approved in writing by the EPA;
- (c) a diagram showing the major process elements, discharge points and monitoring points at the sewage treatment plant(s);
- (d) a breakdown of the total number of complaints received by the licensee in relation to the premises into categories of "odours", "water pollution – sewage treatment plant", "water pollution – reticulation system" and any other category indicated by the complaints. A brief description of any significant unresolved issues arising out of the complaints must be provided;
- (e) a summary of observed or reported dry weather overflows from the reticulation system and a summary of chokes reported in the system. These data are to be for the current reporting period and the previous four twelve-month periods. Any actions taken to address these chokes or overflows are to be noted; and

- (f) a progress report on the implementation over the reporting period of actions specified in PRP 105.

R6.3 The Annual System Performance Report must be presented in a format approved in writing by the EPA.

General conditions

G1 Copy of licence kept at the premises

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Signage

- G2.1 The location of EPA point number(s) 4 to 7 must be clearly marked by signs that indicate the point identification number used in this licence and be located as close as practical to the point.

G3 Contact number for incidents and responsible employees

- G3.1 The licensee must operate 24-hour telephone contact lines for the purpose of enabling the EPA to directly contact one or more representatives of the licensee who can:
 - (a) respond at all times to incidents relating to the premises; and
 - (b) contact the licensee's senior employees or agents authorised at all times to:
 - (i) speak on behalf of the licensee; and
 - (ii) provide any information or document required under this licence.
- G3.2 Not applicable.
- G3.3 The licensee is to inform the EPA in writing of the appointment of any subsequent contact persons, or changes to the person's contact details as soon as practicable and in any event within fourteen days of the appointment or change.

G4 Clean-up (Emergency Response)

- G4.1 In the event of an overflow or bypass that harms or is likely to harm the environment, the licensee must use all practicable measures to minimise the impact of the overflow or bypass on the environment and public health.

Pollution studies and reduction programs

U1 PRP012 POLLUTION REDUCTION TARGETS FOR WEST HORNSBY STP

12.1 Definitions

- 12.1.1 Total residual chlorine refers to an analytical measurement which gives the sum of the concentrations of chlorine and chloramines in a sample.
- 12.1.2 Schedule 10 substances refers to the substances listed in Schedule 10 of the Sydney Water Act 1994.
- 12.1.3 Non-detected substances refers to those Schedule 10 substances not listed in Table PRP012.1 except residual free chlorine and chloramines.
- 12.1.4 Relevant actions includes undertaking sewer user education programs, renegotiating trade waste agreements, requiring additional monitoring as part of trade waste agreements and undertaking scientific investigations.
- 12.1.5 For the purpose of this PRP, the premises refers to West Hornsby Sewage Treatment Plant.

12.2 Discharge Targets

Required Reductions

- 12.2.1 By 30 June 2000, the licensee must ensure that the 90 percentile concentration of the observed daily concentration of total residual chlorine in liquid waste discharged from the premises does not exceed 10 micrograms per litre.

Toxicity Reduction

- 12.2.2 The licensee submitted to the EPA a document entitled "Program to assess the toxicity of effluent from STPs discharging to the Hawkesbury-Nepean River", dated February 1997.
- 12.2.3 The licensee must undertake the study described in this document in accordance with the written approval of the EPA.
- 12.2.4 The licensee must prepare a written report describing the results of the study undertaken pursuant to 12.2.3.
- 12.2.5 Not applicable
- 12.2.6 The licensee must provide to the EPA the final written report referred to in 12.2.4 with the annual compliance report for the year ending 30 June 2000.
- 12.2.7 The EPA will require the licensee to take appropriate action upon completion of its assessment of the report submitted pursuant to 12.2.6.

Notification

12.2.8 The licensee must notify the EPA in writing, as soon as practicable, in the event that:

- (a) the annual median of the observed concentration of a substance listed in Table PRP012.1 exceeds the relevant threshold value as determined after the receipt of a full year of monitoring data for the premises using the approved statistical protocol; or
- (b) the annual load for any organochlorine pesticides or heavy metals listed in Table PRP012.1 exceeds the relevant threshold value as determined after receipt of a full year of monitoring data for the premises using the approved statistical protocol; or
- (c) the concentration of a substance listed in Table PRP012.1, with the exception of ammonia which must be reported in accordance with the requirements of Part 6 of this licence, in any single sample taken at the premises exceeds the relevant threshold value by 10 times or greater.

Investigation

12.2.9 Where an increased discharge of a chemical has been notified pursuant to 12.2.8, the licensee must, as soon as practicable:

- (a) investigate the impact of any failure of plant or equipment at the premises on the concentration of the substance(s) which were the subject of the notification;
- (b) investigate the possible sources of the substance(s) including an audit of trade waste agreements, any domestic sources, unauthorised discharges, and any other relevant information;
- (c) inspect any relevant locations identified in accordance with (b);
- (d) take relevant actions to prevent a recurrence;
- (e) take relevant actions to remedy any problems revealed by any investigation they undertake; and
- (f) take any other relevant actions.

Reporting

12.2.10 The licensee must as soon as practicable submit a written report to the EPA. The written report must include the full details of the investigations, inspections and relevant actions taken pursuant to 12.2.9. The written report must also propose a course of action to prevent the recurrence of the increase notified pursuant to 12.2.8.

Appropriate Action

12.2.11 The EPA will require the licensee to take appropriate action upon completion of its assessment of the report submitted pursuant to 12.2.10.

12.3 Monitoring Program

12.3.1 The licensee must conduct a monitoring program in accordance with that approved by the EPA.

12.3.2 The EPA will review the threshold values for concentrations listed in Table PRP012.1 upon the receipt of a full year of monitoring data for the premises.

12.3.3 The EPA will determine the threshold values for the loads of organochlorine pesticides and heavy metals listed in Table PRP012.1 upon the receipt of a full year of monitoring data for the premises.

Non-detected Substances

- 12.3.4 The licensee must as soon as practicable submit a written report to the EPA in the event that a non-detected Schedule 10 substance is detected:
- (a) on more than 3 occasions; or
 - (b) in more than 5% of the annual analyses for that substance in samples collected at the premises.
- 12.3.5 The EPA will review threshold values for any substances notified pursuant to 12.3.4.

12.4 Source Control Program

- 12.4.1 The licensee must conduct a source control program in accordance with the program approved by the EPA.

12.5 Education

- 12.5.1 The licensee must conduct an education program in accordance with the program approved by the EPA.

12.6 Further Investigations

- 12.6.1 The licensee must monitor relevant scientific literature to collect information about the potential effects to aquatic life and/or human health for each Schedule 10 substance and each exposure scenario that could not be fully characterised in the risk assessment report.
- 12.6.2 The licensee must calculate the effects criterion and the potential risk of a Schedule 10 substance to aquatic life and/or human health using the risk assessment methodology approved by the EPA on 19 September 1995 (a copy of which may be inspected at the EPA's Goulburn Street office by appointment) as soon as practicable once the required data becomes available pursuant to 12.6.1.
- 12.6.3 The licensee must notify the EPA in writing of the results of the calculations undertaken according to 12.6.2 as soon as practicable.
- 12.6.4 The EPA will review threshold values for any substances notified pursuant to 12.6.3.
- 12.6.5 The EPA will require the licensee to take appropriate action upon completion of its assessment of reports submitted pursuant to 12.6.3.

12.7 Annual Reporting

- 12.7.1 The licensee must provide the EPA with a written report on an annual basis on:-
- (a) results of the monitoring program;
 - (b) substances notified pursuant to 12.2.8;
 - (c) measures taken to implement the source control program, including sources identified and controlled each year;
 - (d) measures taken to implement the education program;
 - (e) reviews of relevant scientific literature; and
 - (f) risk characterisations undertaken pursuant to 12.6.2 or 12.6.5.
- 12.7.2 The licensee must provide the EPA with a digital copy of all data provided pursuant to 12.7.1 in a form and a format to be specified by the EPA.

- 12.7.3 The licensee must publish and make publicly available an annual summary of the data and information supplied to the EPA in the form of an Annual Environment Report. This annual summary may be published in the same document as the annual results compiled by the licensee pursuant to Clause 5.13 of its Operating Licence.

Table PRP012.1: Threshold Values For Chemicals Detected At West Hornsby STP

Chemical	Threshold Value
2,4-dichlorophenol	0.1ug/L
3-methylphenol (m-cresol)	1ug/L
4-methylphenol (p-cresol)	1ug/L
aluminium	79ug/L
barium	5ug/L
boron	128ug/L
cadmium	0.1ug/L
chloride	118mg/L
cobalt	0.6ug/L
copper	11ug/L
diazinon	0.22ug/L
dibromochloromethane	10ug/L
dieldrin	0.01ug/L
iron	63ug/L
manganese	25ug/L
mercury	0.03ug/L
methylene blue active substances	100ug/L
molybdenum	3ug/L
naphthalene	0.1ug/L
NH ₃ -N	135ug/L (6 times / year)
nickel	5ug/L
nonyl phenol ethoxylates	5ug/L
oxidised nitrogen (NO _x)	19mg/L (6 times / year)
pentachlorophenol	1ug/L
silver	0.1ug/L
sulfate	44.5mg/L
total chlordanes	0.01ug/L
un-ionised hydrogen sulfide	0.05mg/L
zinc	9ug/L

Note: The threshold values listed above are based on data supplied by the licensee and will be reviewed when further monitoring data are available.

PRP100 REVIEW OF SEWAGE TREATMENT LEVELS

- 100.1 The licensee must submit a report to the EPA by 30 June 2000 which reviews:
- the appropriate treatment processes and the corresponding flow rate thresholds contained in condition O3;

- (b) the wet weather sewage treatment plant overflow rate contained in condition O6.3 and the wet weather sewage treatment plant inflow flow rate contained in condition R4.1(ii), both being the flow rate above which full disinfection or a discharge through an outfall to ocean waters does not occur; and
- (c) the flow rate threshold between dry and wet weather bypasses contained in condition M7.2 and recommends any changes to these conditions.

PRP101 SEWER SYSTEM AND WATER QUALITY MODEL DEVELOPMENT

101.1 Development of Approved Performance Indicators and Performance Acceptance Criteria

- 101.1.1 The licensee must develop a set of performance indicators for comparing the predictions of the hydraulic sewer system model with the data from the reticulation sewer gauge network operated by or on behalf of the licensee. The licensee must develop a set of performance acceptance criteria for the hydraulic sewer system model based on the indicators. The indicators and criteria must be applicable to all of the sewage treatment system specific models developed in 101.3 and the range of sewage flows in these systems.
- 101.1.2 By 30 September 2000 the licensee must supply to the EPA a written report detailing:
 - (a) the proposed indicators and criteria developed under 101.1.1 for approval by the EPA;
 - (b) the rationale explaining why these indicators or criteria are proposed.
- 101.1.3 Following approval by the EPA, the licensee must apply the indicators and criteria to the models in accordance with 101.2 to 101.6.

101.2 Generic Model Re-Calibration Protocol

- 101.2.1 The licensee must develop a generic Model Re-Calibration Protocol for the ongoing re-calibration of the hydraulic sewer system models that, at a minimum, addresses the following issues:
 - (a) development of a set of re-calibration triggers based on factors such as time, completion of works or trends in model output;
 - (b) the nature and level of information required to carry out the re-calibration. The assessment of data requirements must address, at a minimum, the following concepts:
 - (i) minimum acceptable time series rainfall data length;
 - (ii) minimum number of rainfall events;
 - (iii) minimum range of rainfall event size;
 that must be collected to enable the model to be re-calibrated.;
 - (c) development of a generic re-calibration methodology that can be used to recalibrate the models and demonstrate that the subsequently re-calibrated models continue to meet the approved performance acceptance criteria;
 - (d) options and actions to be undertaken if the subsequently re-calibrated model is unable to achieve the approved performance acceptance criteria;
 - (e) the need to update monitoring requirements as a result of the re-calibration; and
 - (f) a process for convening an independent Criteria Review Committee for the purposes of 101.4.
- 101.2.2 The licensee must submit for approval to the EPA a copy of the written Model Re-Calibration Protocol by no later than 30 September 2000

101.3 Model Re-Calibration

- 101.3.1 Following approval by the EPA of the Model Re-calibration Protocol, the licensee must re-calibrate the hydraulic sewer system model(s) for the premises to a standard of accuracy that, at a minimum, meets the approved performance acceptance criteria.
- 101.3.2 Prior to running the re-calibrated models, the licensee is to review the flow rate for wet weather STP overflows specified in condition O6.3 to ensure that it is the flow rate above which full disinfection does not occur.
- 101.3.3 Prior to convening the Criteria Review Committee under 101.4, the licensee must run the approved re-calibrated hydraulic sewer system model(s) for the premises with the 10-year rainfall time series data used in the EISs to refine the existing system performance used in the EISs.

101.3.4 By 31 October 2001 the licensee must supply to the EPA a written report comparing the existing system environmental performance based on the models used in the EISs with the revised definition of existing system environmental performance generated by the re-calibrated model run under 101.3.3.

101.4 Independent Review of Model Re-Calibration

101.4.1 The licensee must convene an independent Criteria Review Committee to confirm that the approved performance acceptance criteria continue to be met following the completion of 101.3. The Committee must also review the Model Re-Calibration Protocol prepared under 101.2 and the written report under 101.3.3.

101.4.2 The licensee must supply to the EPA by no later than 31 October 2001 a written report about the Criteria Review Committee process and the recommendations made by the Committee. The report must also describe actions taken to incorporate these recommendations into the Model Re-calibration Protocol and model re-calibrations run under 101.3.

101.4.3 The licensee must convene an independent Criteria Review Committee to review any system models used to assess system environmental performance against a performance criterion contained in PRP105. A copy of the Committee's report and the licensee's response to any issues raised by the Committee is to be included in the Annual System Performance report required under clause R6.

101.5 Quality System Implementation

101.5.1 The licensee is required to implement a quality system to ISO9001 for the hydraulic sewer system and water quality models by 30 September 2000. The quality system should provide a process for ensuring that the modelling protocols developed by Sydney Water and agreed to by the EPA can be demonstrated. The quality system should include an ongoing process for convening an independent Criteria Review Committee to review any hydraulic sewer system models used to assess system environmental performance.

101.5.2 The licensee must submit a written report to the EPA by 31 October 2000 stating that the quality system has been implemented.

101.6 Development of Approved Water Quality Model Performance Indicators and Performance Acceptance Criteria

101.6.1 The licensee must develop a set of performance indicators for comparing the predictions of the water quality model with the data from ambient water quality monitoring carried out by or on behalf of the licensee. The indicators must be applicable to the environmental variables measured in the ambient water quality monitoring program and predicted by the water quality models.

101.6.2 The licensee must develop a set of performance acceptance criteria for the water quality model based on the performance indicators referred to in 101.6.1.

101.6.3 By 31 December 2000 the licensee must supply to the EPA a written report detailing:
(a) the proposed indicators and criteria developed under 101.6.1 for approval by the EPA; and
(b) the rationale explaining why these indicators or criteria are proposed.

PRP102 CALCULATION OF ASSESSABLE LOADS FOR LOAD BASED LICENSING

102.1 Defining Wet Weather Overflows

102.1.1 The licensee must prepare a written report that proposes a definition of wet weather overflows that can be used in conjunction with the hydraulic sewer system model to identify those discharges caused solely by wet weather. The report must be provided to the EPA by 31 August 2000.

Development of local calculation method and trial calculation

102.2.1 The licensee must prepare a written report describing a load calculation method that will be used to calculate the actual load of each assessable pollutant discharged from each type of overflow discharge listed in the Table included in Note 3 below. The report must also include the matters listed in 102.2.2 – 102.2.4 below. The report must be provided to the EPA by 30 November 2000.

102.2.2 The report must include the description of each proposed load calculation method, including:

- (a) the steps to be undertaken to calculate the actual load;
- (b) the details of any other site specific emission factors proposed to be used to calculate the actual load, for example, emission factors to calculate discharges resulting from chokes;
- (c) the detail of how each of the proposed load calculation methods is to be combined to produce the actual load estimate for each assessable pollutant;
- (d) provide a description and detailed documentation of how (if at all) the load calculation method would use the hydraulic sewer system model referred to in 102.1 to calculate the actual load; and
- (e) how (if at all) the proposed load calculation methods will vary according to the size of the sewage treatment system.

102.2.3 The proposed load calculation method must be set out in sufficient detail and in such a way that further implementation of the methods by the licensee will be able to be readily audited by the EPA.

Note 1: The proposed load calculation method will be used to assist the EPA to insert annual load limits for assessable pollutants into the licence and to determine compliance with these limits.

102.2.4 The report must include an estimate of the actual load of assessable pollutants discharged from the reticulation system during a selected previous annual period using the proposed load calculation method. The maximum error range for (i) the actual load calculated for each type of overflow, and (ii) the total actual load must be calculated.

Note 2: Clause 18(7) of the Protection of the Environment Operation (General) Regulation 1998 requires licensees to calculate load-based fees which would have been payable for the licence fee period 1 July 1999 - 30 June 2000. Until a load calculation protocol is developed for the sewage treatment system, load-based fees will be payable only in relation to discharges from the sewage treatment plant.

Note 3: The table below outlines a suggested approach for calculating loads of assessable pollutants from the different types of overflows. The EPA will review the licensee's proposed approach and may require further development work. Any further work must be completed within an agreed timeframe, such that the final program for calculating these loads will be ready for use by 1 July 2001.

Type of overflow discharge	Suggested approach to calculate of loads of assessable pollutants
STP bypasses	Each time sewage bypasses an STP or part of the treatment process at an STP, measurement of the volume of sewage and concentration of assessable pollutants are required. The licensee should assume that default values for pollutant concentration values will be for raw sewage, pro-rated for any otherwise monitored treated effluent which is mixed with the bypass flows. The licensee may propose a program of actual concentration monitoring to override the default values where it is cost effective to do so.
Directed Overflows and wet weather STP overflows	It is envisaged that the hydraulic sewer system models will be used to calculate the volumes of wet weather overflows from directed overflow structures (including SPSs) and STPs, provided that system model development occurs as per PRP101. The licensee should assume that default values for pollutant concentration values will be for raw sewage. The licensee may propose a program of actual concentration monitoring to override the default values where it is cost effective to do so.
SPS	Each time sewage overflows at an SPS, measurement or calculation of the volume of sewage is required. The licensee should assume that default values for pollutant concentration values will be for raw sewage. The licensee may propose a program of actual concentration monitoring to override the default values where it is cost effective to do so.
Uncontrolled overflow – Leakage	The licensee will be required to develop a methodology for calculating loads of assessable pollutants discharged as a result of leakage. It is suggested that this methodology could use sewer gauging and water consumption gauging data.
Uncontrolled overflow – Chokes	The licensee will be required to develop a methodology for calculating the loads of assessable pollutants discharged as a result of chokes in the reticulation system. This methodology could be based on emission factors for various size sewer mains and the estimated duration of each discharge.
Other discharges	Methods for calculating loads for all other possible discharges are to be proposed by the licensee.

PRP103 RETICULATION SYSTEM OPERATION AND MAINTENANCE PLAN

103.1 The licensee must develop an Operation and Maintenance Plan (O&M Plan) for the reticulation system. The O&M Plan must be such that its implementation will result in demonstrable continuous

improvement in system environmental performance compared with existing system environmental performance levels.

- 103.2 The O&M Plan must include but need not be limited to:
- (a) operational strategies, rules and procedures for both normal operation and environmental and public health emergency situations; and
 - (b) preventative and breakdown maintenance strategies and procedures such as:
 - proactive maintenance activities in known problem areas in the reticulation system;
 - routine clean-out of pipes;
 - sealing or maintenance of access chambers;
 - maintenance to prevent or minimise deterioration of sewer lines;
 - maintaining sewer pipe capacity during dry weather conditions, for example by choke reduction;
 - maintenance of sewage pumping stations; and
 - emergency responses to overflows, chokes, sewage pumping station failures and offensive odour incidents.
 - (c) details on how the Plan will be made available to personnel responsible for implementing the plan;
 - (d) related training procedures for appropriate personnel (including the frequency of training activities); and
 - (e) the process for reviewing and revising the Plan.
- 103.3 The licensee must engage an independent expert in sewerage reticulation system operation and maintenance, agreed to in writing by the EPA, to review the adequacy of the O&M Plan against the objective noted in 103.1. The review is to be undertaken with reference to international best practice in sewerage reticulation system operation and maintenance. International best practice can be identified having regard to the document "Wastewater Collection Systems Management", Manual of Practice 7, published by the Water Environment Federation in 1999, or having regard to such other document or documents as may be approved in writing by the EPA prior to the engaging of the independent expert.
- 103.4 The licensee must revise the O&M Plan to meet all reasonable recommendations of the independent expert. If the licensee considers that any recommendations of the independent expert are unreasonable and will not be implemented, the licensee must prepare a report to the EPA in writing that justifies why the independent expert's recommendation will not be implemented. This report must be submitted to the EPA by 30 June 2001 and include a copy of the independent expert's recommendations. The licensee must certify in writing to the EPA that in its opinion, the implementation of the revised Plan will meet the objective stated in 103.1. This certification must be submitted to the EPA by 30 June 2001.

PRP104 RETICULATION SYSTEM MONITORING AND ENVIRONMENTAL MONITORING PROGRAM DEVELOPMENT

104.1 Existing Reticulation System and Environmental Monitoring

- 104.1.1 The licensee must prepare a written report describing the existing sewer monitoring program for the reticulation system. The report must include, but need not be limited to:
- (a) identifying monitoring locations on a map;
 - (b) identifying the parameters monitored;
 - (c) identifying the method and frequency of monitoring;
 - (d) detailing the existing data quality analysis and quality control procedures; and
 - (e) providing a summary of flow characteristics for each gauge.

104.1.2 The licensee must prepare a report of its existing environmental monitoring programs for assessing the impact of overflows on the atmosphere, land and receiving waters. The report must describe the program in terms of, but need not necessarily be limited to:

- (a) sewage quality;
- (b) sensitive areas, receiving water quality and ambient air quality;
- (c) sampling aims and design;
- (d) location and distribution of sampling sites and reference sites;
- (e) parameters measured;
- (f) sample frequency;
- (g) sampling and analytical techniques; and
- (h) statistical assessment techniques used to express the monitoring results.

104.1.3 The report must be submitted to the EPA by no later than 31 July 2000.

104.2 Generic Sewer Monitoring Protocol

104.2.1 By 30 September 2000 the licensee must develop and submit to the EPA for its approval a written Sewer Monitoring Protocol for the purpose of obtaining sufficient data from permanent and temporary sewer gauges within the reticulation system to enable ongoing verification of the accuracy of the hydraulic reticulation system model predictions and calculation of load-based fees.

The data to be collected under the protocol must:

- (a) be capable of verifying that the model has been calibrated to a standard of accuracy that, at a minimum, meets the approved performance acceptance criteria;
- (b) in conjunction with the hydraulic reticulation system models, enable long-term changes in system environmental performance to be identified;
- (c) be capable of assisting, in conjunction with the predictions from the hydraulic sewer system model, in the identification of system failures; and
- (d) be capable of assisting in identifying leakage in the reticulation system.

104.2.2 The Sewer Monitoring Protocol must include methodologies for selecting locations for the operation of sewer gauges. The methodologies must address the following issues:

- (a) minimum sewage flow rates at which monitoring should occur;
- (b) adequacy of the geographic coverage of the sewer gauge network for each sewage treatment system;
- (c) adequacy of the sewer gauge network in measuring the volume flux of sewage in the sewage treatment system;
- (d) criteria for identifying additional or redundant sewer gauges for each reticulation system;
- (e) identification of the nature and location of additional sewer gauges to directly measure significant overflows, including for the purpose of calculating load-based fees; and
- (f) protocols for measuring sewer gauge performance and repairing or replacing those sewer gauges identified as not meeting the licensee's performance specifications.

In respect of reviewing and selecting the location of sewer gauges installed at directed overflow structures for the purposes of (d) and (e), the methodology must also address:

- (g) the adequacy of sewer gauging for directed overflows discharging to each receiving environment zone; and
- (h) location selection criteria based on, at a minimum, overflow volume, frequency and environmental and human health risk

104.3 Sewer Monitoring Proposal – System Specific Proposal

The licensee must prepare a written sewer monitoring proposal for the reticulation system to provide sufficient data to enable ongoing verification of the accuracy of the hydraulic reticulation system model. The Sewer Monitoring Proposal for the reticulation system must:

- (a) be developed in accordance with the Sewer Monitoring Protocol approved under 104.2;
- (b) identify monitoring locations;
- (c) identify parameters to be monitored;
- (d) identify the method and frequency of monitoring; and
- (e) be consistent with the monitoring requirements of all applicable Load Calculation Protocols and any additional monitoring requirements identified in the report prepared under PRP102.

The licensee must submit the Sewer Monitoring Proposal to the EPA by no later than 30 September 2000.

Notes:

- (a) PRP 102 requires the submission on the same date of a report describing, among other issues, any additional monitoring necessary to calculate load-based fees. This information may be combined with the Sewer Monitoring Proposal due on the same day.
- (b) Following approval of the Sewer Monitoring Proposal, the EPA will attach licence conditions to require monitoring and, where necessary, the re-configuration of existing sewer gauges, to implement the approved Sewer Monitoring Proposal.

104.4 Environment Monitoring Proposal

104.4.1 The licensee must prepare a report of its proposed environmental monitoring programs for assessing the impact of overflows on human health and the environment. A written copy of the report must be submitted to the EPA by 31 December 2000. The report must, at a minimum, demonstrate how the proposed monitoring program will:

- (a) enable the short and long-term impacts of leakage, bypasses, directed overflows, uncontrolled overflows and odours on the atmosphere, land and receiving waters to be determined;
- (b) identify and quantify improvements in the environmental performance of the overflows achieved as a result of the works required by PRP 105;
- (c) collect adequate water quality data (which reflect the full range of natural flow conditions in the receiving waters) that will enable the calibration of the water quality models to the performance acceptance criteria established in PRP 101.6.2; and
- (d) collect adequate water quality data to enable identification of areas of receiving waters impacted by dry weather leakage.

104.4.2 The report required by 104.4.1 must also include, but need not necessarily be limited to, the following elements:

- (a) A description of the environmental monitoring program, prepared in relation to each sewage treatment system, that will monitor the impacts of sewer overflows on land and the atmosphere. The program must describe:
 - overflow effluent quality and sensitive areas and how they will be taken into account as regards to sampling location and frequency;
 - sampling design;
 - distribution of proposed sampling sites and reference sites;

- parameters or indicators that will be used and the justification for their use in terms of predicted impacts;
 - sampling, measurement and analytical techniques that will be used;
 - statistical assessment techniques that will be used to express the monitoring results; and
 - an implementation timetable for the monitoring program, with reference to the timetable of the works required by PRP 105. The implementation timetable must allow for the collection of adequate data about existing terrestrial or atmospheric conditions of areas affected by the works required by PRP 105 prior to the commencement of the works, if the data are not already available, so that the effectiveness of the works can be measured;
- (b) A description of the environmental monitoring program, designed for each receiving environment zone, that will monitor the impact of overflows on water quality. The program must be described in the same terms as set out in (a) above, with the discussion of sensitive areas focusing on the receiving water quality; and
- (c) The method that will be used to report the results and conclusions of the program to the EPA and the community.

Note: The EPA will review this program, particularly in relation to how the proposal will meet the required outcomes, with the intention of making the implementation of all or part of the program or a modified form of the program a condition of the licence.

PRP105 RETICULATION SYSTEM WORKS AND ACTIVITIES

Report on EIS Submissions

- 105.1 The licensee must prepare a written report that reviews all written submissions received by the licensee, or by the EPA (copies of which will be provided to the licensee by the EPA), on the EIS for the sewage treatment system that identify areas of concern or propose works or activities. The report must recommend actions to be taken by the licensee to address the issues raised in the submissions additional to those actions contained in the EIS. The written report must be submitted to the EPA by 31 August 2000.

Report on Directed Overflows Discharging to Sensitive Areas

- 105.2 The licensee must prepare a written report that identifies all directed overflows that discharge directly to a sensitive area, excluding sewage pumping stations. The report must include but not be limited to a description of early-action works and activities that could be undertaken to eliminate the discharge from each overflow to a sensitive area and the environmental benefits. The report must be submitted to the EPA by 31 December 2000.

Leakage Reduction

- 105.3 Not applicable.

Choke Frequency Reduction

- 105.4 Not applicable.

Sewage Pumping Station Overflow Frequency Reductions

- 105.5 The licensee must undertake investigations, works and activities to eliminate dry weather overflows from the sewage pumping stations within the sewage treatment system. The elimination of dry

weather overflows from a sewage pumping station must be completed by the date specified in the following table:

Sewage Pumping Station	Completion Date	Status
SPS490	30 June 2001	Completed
SPS536	30 June 2002	Completed
SPS641	30 June 2003	Current

The licensee must submit a written report to the EPA within one month of the completion date. This report is to include but need not be limited to a description of the works and activities undertaken.

Directed Overflows Frequency Reduction

105.6 Not applicable.

Maintenance of System Environmental Performance

105.7 Not applicable

Signage Adjacent to Recognised Swimming Locations

105.8 Not applicable.

Discharge to Class P or S Waters

105.9 Nothing in this PRP is to be construed as authorising a discharge to Class P or S waters.

PRP106 OVERFLOW DISCHARGES TO CLASS P OR S WATERS

U1.1 Not applicable.

COMPLETED PRPS

PRP Number	Title
100	Review of Sewage Treatment Levels
101.1	System Model Performance Indicators
101.2	Generic Model Re-calibration Protocol
101.5	Implementation of System Model Quality System
101.6	Water Quality Model Performance Indicators and Acceptance Criteria
104.1.1	Existing Sewer Monitoring
104.1.2	Existing Environmental Monitoring
104.2	Generic Sewer Monitoring Proposal
104.3	System Specific Sewer Monitoring Proposal
105.1	Report on EIS Submissions

PRP107 Whole of Effluent Toxicity Determination

1. The licensee must assess the toxicity of the effluent being discharged from the STP to the receiving water.
2. Five (5) grab samples of the effluents discharged during normal operating conditions from the STP must be collected over a period of 4 months between Dec 2002 and March 2003. The samples must be collected just prior to the discharge point NOT prior to the disinfection step.
3. On each occasion the toxicity of the effluent must be assessed using 3 tests – the 48 hour cladoceran (*Ceriodaphnia cf dubia*) immobilisation test; the 72 hour *Selenastrum capricornutum* test which assesses the cell division rate and the 48 hour shrimp (*Paratya australiensis*) mortality test.
4. The licensee must report the EC50 or (IC50); IC25; NOEC and LOEC values for all organisms tested on each occasion tested.
5. A report detailing the results of the toxicity testing must be submitted by 31 May 2003.

Special conditions

E1 Not applicable.

Dictionary

General Dictionary

In this licence, unless the contrary is indicated, the terms below have the following meanings:

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998

assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
BOD	Means biochemical oxygen demand
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 1998.
flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
industrial waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
inert waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.

pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
reprocessing of waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
treatment of waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TSP	Means total suspended particles
TSS	Means total suspended solids
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste code	Means the waste codes listed in Appendix 5 of the EPA document A Guide to Licensing Part B.
waste type	Means Group A, Group B, Group C, inert, solid, industrial or hazardous waste

Special Dictionary

ug/L	Means micrograms per litre.
access chamber	a structure constructed to provide physical access to sewer pipes.
approved	Means approved in writing by the EPA. The EPA's approval may be given unconditionally, or subject to conditions.
average dry weather (ADWF)	Means the average flow at a point in the sewage calculated or measured over a 24 hour period.
Biosolids	Has the same meaning as in Schedule 1, Part 3 of the <i>Protection of the Environment Operations Act 1997</i> .
Biosolids Guidelines	Means the "Environmental Guidelines: Use and disposal of biosolids products" published by the EPA in October 1997, or any subsequently updated guidelines which replace this publication.
bypass	Means circumstances where sewage has been received at the sewage treatment plant but is discharged from the plant without it being treated, processed or reprocessed by means of any or all of the designed treatment processes of the plant. A new bypass event is defined as a bypass that commences at least 24 hours after the end of the previous bypass.
catchment	Catchment boundaries are marked on the system map prepared under M8.1.

cfu	Means colony forming units.
choke	Means a full or partial blockage in a sewer pipe that results in sewage being discharged to the environment. A choke may be caused by structural collapse of the sewer pipes, tree roots, debris or siltation.
Cl₂	Means chlorine.
CN	Means cyanide.
condition	Means a condition of this licence.
customer contract	Has the same meaning as in the <i>Sydney Water Act 1994</i> .
directed flow structure	Means a designed structure (excluding access chambers) in the reticulation system which operates as a relief to allow sewage to discharge at a planned location or a sewage pumping station, but does not include a bypass from a sewage treatment plant.
directed overflow	Means an overflow from a directed overflow structure.
discharge	Has the same meaning as in Schedule 1, classification [71] of the <i>Protection of the Environment Operations (General) Regulation 1998</i> .
dry weather	Dry weather occurs when less than 10 millimetres of rainfall has been measured at a rain gauge in the catchment of the sewage treatment system during a 24 hour period (where there is no rain gauge in the catchment, at the rain gauge closest to the centre of the catchment). Dry weather SPS discharge occurs when less than 10mm rainfall has been measured at a rain gauge in the catchment of the SPS during a 24 hour period (where there is no rain gauge in the catchment at the rain gauge closest to the SPS).
dry weather bypass	Mean a bypass that occurs when the flow rate of sewage at the influent point of the STP does not exceed the flow rate specified in M7.2.
dry weather overflow	Means an overflow in the reticulation system not caused by wet weather, as determined by the hydraulic sewer system model.
dry weather sewage treatment plant discharge	Means a discharge of sewage or effluent from the STP that occurs when the flow rate of sewage at the influent point of the STP is less than the rate specified in condition M7.2.
effluent	Means sewage that has received all of the designed treatment processes at the sewage treatment plant.
EIS	Means the Licensing Sewer Overflows Environmental Impact Statements prepared by the licensee dated June 1998 relating to the issuing of Pollution Control Act licences for the operation of 27 sewerage systems.
emission factor	In relation to load-based licensing, means the level of emissions expected to be generated relative to another characteristic of the activity.
error range	Has the same meaning as in 3.2.1 of the Generic Load Calculation Protocol.
event (all systems except NSOOS and SWOOS)	In respect to directed overflows an event is an overflow occurrence at one or more overflow locations in the reticulation system which continues until all overflows have ceased discharging for more than 24 hours.
event (NSOOS and SWSOOS)	In respect to directed overflows an event is an overflow occurrence at one or more overflow locations in a sub-catchment which continues until all overflows have ceased discharging for more than 24 hours.
existing system environmental performance	Means the hydraulic and environmental performance of the reticulation system prior to commencement of any works required by PRP105. From 1 July 2000, the definition of existing system performance in relation to the following is: (a) Chokes: the average of the average annual number of chokes per 100km of pipe in the reticulation system of all the licensee's sewage treatment systems averaged over the period 1 July 1995 to 30 June 2000. (b) Odour complaints: the number of odour complaints from the reticulation system per year averaged over the period 1 July 1995 to 30 June 2000.

	(c) Wet weather overflows: the number of wet weather overflows per 10 years as predicted by the hydraulic sewer system model for reticulation system conditions in 1994 using the 10 year rainfall time series data. (d) Wet weather STP overflows: the number of wet weather STP overflows per 10 years as predicted by the hydraulic sewer system model for reticulation system conditions in 1994 using the 10 year rainfall time series data. Section (d) of this definition does not apply in relation to existing system environmental performance as contained in condition O5 and PRP103.
existing wet weather STP overflow frequency	Means the frequency of wet weather STP overflows prior to commencement of any works required by PRP105. From 1 July 2000, the definition of existing wet weather STP overflows frequency means the number of wet weather STP overflows per 10 years as predicted by the hydraulic sewer system model for reticulation system conditions in 1994 using the 10 year rainfall time series data.
fc	Means faecal coliforms expressed in colony forming units per 100mL.
FRC	Means free residual chlorine.
Group A waste	Has the same meaning as in Part 3 of Schedule 1 of the <i>Protection of the Environment Operations Act 1997</i> .
Group B waste	Has the same meaning as in Part 3 of Schedule 1 of the <i>Protection of the Environment Operations Act 1997</i> .
Group C waste	Has the same meaning as in Part 3 of Schedule 1 of the <i>Protection of the Environment Operations Act 1997</i> .
harm	Has the same meaning as in the <i>Protection of the Environment Operations Act 1997</i> .
hydraulic sewer system model	Means the model relating to the operation of the sewage treatment system, re-calibrated in accordance with PRP101. Until the model is re-calibrated, the licensee will use the hydraulic model as used for the EISs.
infiltration	Means the process by which groundwater enters the reticulation system through faults, such as crack, in sewer pipes.
ISO	Means International Standards Organisation.
kL	Means kilolitre.
L/s	Means litres per second.
leakage	Overflows caused by the leakage of sewage from faults, such as cracks, in sewer pipes to the surrounding environment.
leakage ratio	Means water consumption expressed as a ratio of average dry weather flow, using the method described in Attachment B of the Sydney Water document "Licensing Sewer Overflows Environmental Impacts Statement: Methods" dated June 1998.
licence issue date	Means the date of the issue of this licence, or if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.
metal-A	Means the following metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver and zinc.
mL	Means millilitres.
ML	Means megalitres.
NH₃-N	Means nitrogen as ammonia.

NO_x-N	Means nitrogen as nitrate and nitrite.
node	Is a point in the hydraulic sewer system model that represents one or more overflows in the same catchment.
offensive odour	Has the same meaning as in the <i>Protection of the Environment Operations Act 1997</i> .
overflow	Is a discharge of untreated or partially treated sewage from the sewage treatment system. Overflows may occur as directed overflows, uncontrolled overflows, sewage treatment wet weather overflows or bypasses.
performance acceptance criteria	In relation to computer modelling, means the standard of accuracy (sometimes called the "goodness of fit") to be achieved when observations of a particular performance indicator are compared to the results predicted by the model.
performance indicator	In the context of computer modelling the criterion or criteria used to assess the ability of the model to reproduce observations.
phenols	Means total phenols.
receiving environment zone	Used in the EISs as method of categorising the catchments into which overflows discharge.
reticulation system	Means that part of the sewage treatment system which collects and transports sewage to the sewage treatment plant and includes all sewer pipes (whether greater or less than 300mm diameter), access chambers, vent shafts, directed overflow structures and sewage pumping stations, but does not include the sewage treatment plant.
sensitive areas	The categories of sensitive areas are listed in Attachments C and D of the Sydney Water document "Licensing Sewer Overflows Environmental Impacts Statement: Methods" dated June 1998.
sewage	Means untreated liquid waste received in the reticulation system.
sewage products	Means any by-product of the treatment processes and includes biosolids, raw sludge, liquid sludge, thickened sludge, digested sludge, screenings and grit.
sewage pumping station (SPS)	Is a structure which controls the transport of sewage through the sewer pipes, where steep hills and other variations in the land topography can prevent or limit the gravity flow of sewage to the sewage treatment plant.
sewage treatment plant (STP)	Is a facility at which sewage is stored and treated following delivery from the reticulation system prior to discharge, and includes discharge structures and STP bypass points.
sewage treatment system	Means the reticulation system and the sewage treatment plant used for the transport, treatment and discharge of effluent and sewage.
sewer gauge	Means a device to measure particular parameters of sewage passing a specified point. Commonly measured parameters include pressure, water level and velocity.
sewer gauge network	Means the sewer gauges permanently or temporarily installed in the reticulation system.
sub-catchment	Sub-catchment boundaries are marked on the system map prepared under condition M8.
system environmental performance	Means the hydraulic and environmental performance of the reticulation system. From 1 July 2000, the definition of existing system performance in relation to the following is: (a) chokes: the average of the average annual number of chokes per year per 100km of pipe in the reticulation system of all of the licensee's sewage treatment systems averaged over the reporting period and the preceding four twelve month periods. (b) odour complaints: the number of odour complaints from the reticulation system per year averaged over the reporting period and the preceding four twelve month periods. (c) wet weather overflows: the number of wet weather overflows per 10 years as predicted by the hydraulic sewer system model for the reporting period using the 10 year rainfall time series data.

	(d) wet weather STP overflows: the number of wet weather STP overflows per 10 years as predicted by the hydraulic sewer system model for the reporting period using the 10 year rainfall time series data. Section (d) of this definition does not apply in relation to system environmental performance as contained in condition O5 and PRP103
system map	Means the map or maps maintained by the licensee under condition M8.
TKN – N	Means total Kjeldahl nitrogen.
TN	Means total nitrogen.
TP	Means total phosphorus.
Trade waste agreements	Means agreements reached between the licensee and industrial and commercial customers to restrict the amount of toxic and other potentially harmful substances discharged to the sewerage system.
TRC	Means total residual chlorine.
ten year rainfall time series data	Means the rainfall data for the period 1985 to 1994 as used in the EISs.
uncontrolled overflow	Means an overflow from any part of the reticulation system that is not a directed overflow. Leakage or overflows from access chambers are examples of uncontrolled overflows.
waters	Has the same meaning as in the <i>Protection of the Environment Operations Act 1997</i> .
wet weather	Wet weather occurs when 10 millimetres or more of rainfall has been measured at a rain gauge in the catchment of the sewage treatment system during a 24 hour period (where there is no rain gauge in the catchment, at the rain gauge closest to the centre of the catchment).
wet weather bypass	Means a bypass that occurs when the flow rate of sewage at the influent point of the STP exceeds the rate specified in condition M7.2.
wet weather overflow	A wet weather overflow in the reticulation system is an overflow caused by wet weather, as determined by the hydraulic sewer system model.
wet weather sewage treatment plant overflow	Means a discharge of sewage or effluent from an STP that occurs when the flow rate of sewage at the influent point of the STP equals or exceeds the rate specified in condition O6.3.

Mr Warren Hicks

Manager Sydney Catchments

(By Delegation)

Date of this edition - 17-Jan-2003

End Notes

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| 1 | Licence varied by notice V/M upgrade, issued on 07-Jul-2000, which came into effect on 07-Jul-2000. |
| 2 | Licence varied by notice 1005320, issued on 22-Oct-2001, which came into effect on 16-Nov-2001. |
| 3 | Licence varied by notice 1017906, issued on 27-Jun-2002, which came into effect on 28-Jun-2002. |
| 4 | Licence varied by notice 1018904, issued on 23-Dec-2002, which came into effect on 17-Jan-2003. |